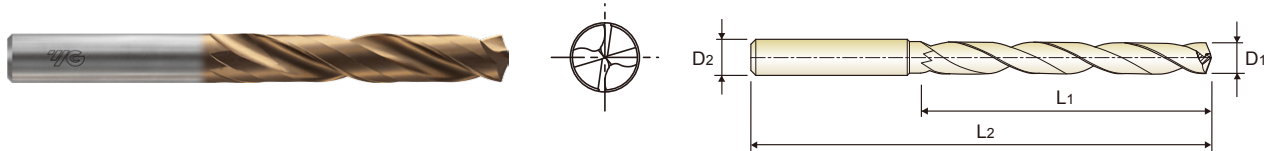


Z-COATED SOLID CARBIDE DREAM DRILLS PRO without Coolant Holes (5XD)

DGN526 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°
P. 19

LONG

5 × D

					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2	Z-Coating	D1	D2	L1	L2
DGN526010	1.0	3	8	55	DGN526034	3.4	6	28	66
DGN526011	1.1	3	12	55	DGN526035	3.5	6	28	66
DGN526012	1.2	3	12	55	DGN526036	3.6	6	28	66
DGN526013	1.3	3	12	55	DGN526037	3.7	6	28	66
DGN526014	1.4	3	12	55	DGN526038	3.8	6	36	74
DGN526015	1.5	3	16	55	DGN526039	3.9	6	36	74
DGN526016	1.6	3	16	55	DGN526040	4.0	6	36	74
DGN526017	1.7	3	16	55	DGN526041	4.1	6	36	74
DGN526018	1.8	3	16	55	DGN526042	4.2	6	36	74
DGN526019	1.9	3	16	55	DGN526043	4.3	6	36	74
DGN526020	2.0	4	21	57	DGN526044	4.4	6	36	74
DGN526021	2.1	4	21	57	DGN526045	4.5	6	36	74
DGN526022	2.2	4	21	57	DGN526046	4.6	6	36	74
DGN526023	2.3	4	21	57	DGN526047	4.7	6	36	74
DGN526024	2.4	4	21	57	DGN526048	4.8	6	44	82
DGN526025	2.5	4	21	57	DGN526049	4.9	6	44	82
DGN526026	2.6	4	21	57	DGN526050	5.0	6	44	82
DGN526027	2.7	4	21	57	DGN526051	5.1	6	44	82
DGN526028	2.8	4	21	57	DGN526052	5.2	6	44	82
DGN526029	2.9	4	21	57	DGN526053	5.3	6	44	82
DGN526030	3.0	6	28	66	DGN526054	5.4	6	44	82
DGN526031	3.1	6	28	66	DGN526055	5.5	6	44	82
DGN526032	3.2	6	28	66	DGN526056	5.6	6	44	82
DGN526033	3.3	6	28	66	DGN526057	5.7	6	44	82

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

ISO	P										M				K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron			
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRC	13	25	28	32	30	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)

DGN526 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° P. 19

LONG
5 × D

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

Unit : mm

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

▶ Other shank types are available on your request.

▶ NEXT PAGE

◎ : Excellent ○ : Good

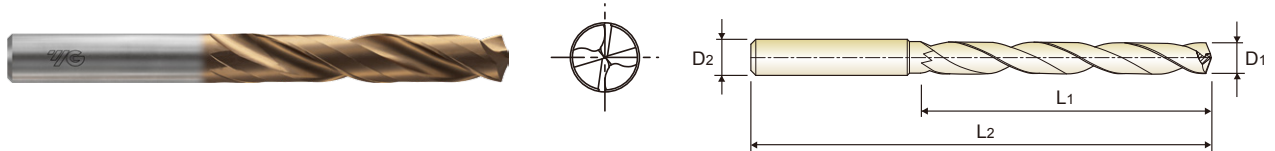
ISO	P										M				K					
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	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					
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)

DGN526 SERIES

- ▶ Drilling for Carbon Steels, Alloy Steels (HB225-325), Pre-hardened Steels (HRC30-50), Cast Iron
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DIN 6537
CARBIDE
h6
m7
140°
P. 19

LONG

5 × D

					Unit : mm				
EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
Z-Coating	D1	D2	L1	L2	Z-Coating	D1	D2	L1	L2
DGN526106	10.6	12	71	118	DGN526142	14.2	16	83	133
DGN526107	10.7	12	71	118	DGN526145	14.5	16	83	133
DGN526108	10.8	12	71	118	DGN526148	14.8	16	83	133
DGN526109	10.9	12	71	118	DGN526150	15.0	16	83	133
DGN526110	11.0	12	71	118	DGN526151	15.1	16	83	133
DGN526111	11.1	12	71	118	DGN526152	15.2	16	83	133
DGN526112	11.2	12	71	118	DGN526155	15.5	16	83	133
DGN526113	11.3	12	71	118	DGN526158	15.8	16	83	133
DGN526114	11.4	12	71	118	DGN526160	16.0	16	83	133
DGN526115	11.5	12	71	118	DGN526165	16.5	18	93	143
DGN526116	11.6	12	71	118	DGN526170	17.0	18	93	143
DGN526117	11.7	12	71	118	DGN526173	17.3	18	93	143
DGN526118	11.8	12	71	118	DGN526175	17.5	18	93	143
DGN526119	11.9	12	71	118	DGN526177	17.7	18	93	143
DGN526120	12.0	12	71	118	DGN526180	18.0	18	93	143
DGN526122	12.2	14	77	124	DGN526185	18.5	20	101	153
DGN526125	12.5	14	77	124	DGN526190	19.0	20	101	153
DGN526128	12.8	14	77	124	DGN526193	19.3	20	101	153
DGN526130	13.0	14	77	124	DGN526195	19.5	20	101	153
DGN526135	13.5	14	77	124	DGN526200	20.0	20	101	153
DGN526138	13.8	14	77	124					
DGN526140	14.0	14	77	124					

▶ Other shank types are available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron			
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRC	13	25	28	32	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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HB	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	55	60	42	55	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

RECOMMENDED CUTTING CONDITIONS

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)		Vc	Parameter	Drill Diameter (mm)						
					1.0	2.0			3.0	4.0	5.0	6.0			
P	2	Non-alloy steel	85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370			
				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			
			85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370			
	P	3	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		
				85	RPM	27,060	13,530	120	RPM	12,730	9,550	7,640	6,370		
		P	4	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	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
					75	RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040	
			P	5	Non-alloy 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	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
75						RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040	
P				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
	75					RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040	
	P			7	Low alloy 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	0.10-0.20	0.12-0.24
		75				RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040	
		P		8	Low alloy steel	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
			36			RPM	11,460	5,730	50	RPM	5,310	3,980	3,180	2,650	
			P	9	Low alloy steel	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
36						RPM	11,460	5,730	50	RPM	5,310	3,980	3,180	2,650	
P				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
	35					RPM	11,140	5,570	45	RPM	4,770	3,580	2,860	2,390	
	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
		45				RPM	14,320	7,160	55	RPM	5,840	4,380	3,500	2,920	
		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	0.18-0.24	0.14-0.26
			80			RPM	25,460	12,730	95	RPM	10,080	7,560	6,050	5,040	
			K	16	Grey cast iron	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
80						RPM	25,460	12,730	95	RPM	10,080	7,560	6,050	5,040	
K				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	0.18-0.24	0.14-0.26
	60					RPM	19,100	9,550	85	RPM	9,020	6,760	5,410	4,510	
	K			18	Nodular cast iron	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
		60				RPM	19,100	9,550	85	RPM	9,020	6,760	5,410	4,510	
		K		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	0.18-0.24	0.14-0.26
			75			RPM	23,870	11,940	95	RPM	10,080	7,560	6,050	5,040	
			K	20	Malleable cast iron	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
60						RPM	19,100	9,550	85	RPM	9,020	6,760	5,410	4,510	

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	0.22-0.28	0.20-0.30	0.22-0.32	0.24-0.34	0.28-0.38	0.30-0.40			
			120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910			
	P	3	Non-alloy steel	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910		
					FEED	0.18-0.24	0.22-0.28	0.20-0.30	0.22-0.32	0.24-0.34	0.28-0.38	0.30-0.40		
				120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910		
		P	4	Non-alloy steel	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910	
						FEED	0.14-0.20	0.18-0.24	0.14-0.24	0.16-0.26	0.18-0.28	0.20-0.30	0.22-0.32	
					95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510	
			P	5	Non-alloy steel	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
							FEED	0.14-0.20	0.18-0.24	0.14-0.24	0.16-0.26	0.18-0.28	0.20-0.30	0.22-0.32
95						RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510	
P				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	0.22-0.28	0.20-0.30	0.22-0.32	0.24-0.34	0.28-0.38	0.30-0.40
	95					RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510	
	P			7	Low alloy steel	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
							FEED	0.16-0.28	0.20-0.30	0.21-0.30	0.22-0.35	0.25-0.36	0.28-0.38	0.30-0.40
		95				RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510	
		P		8	Low alloy steel	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
							FEED	0.14-0.20	0.18-0.24	0.14-0.24	0.16-0.26	0.18-0.28	0.20-0.30	0.22-0.32
			50			RPM	1,990	1,590	1,330	1,140	990	880	800	
			P	9	Low alloy steel	50	RPM	1,990	1,590	1,330	1,140	990	880	800
							FEED	0.12-0.18	0.14-0.20	0.12-0.22	0.13-0.23	0.14-0.24	0.16-0.26	0.18-0.28
50						RPM	1,990	1,590	1,330	1,140	990	880	800	
P				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	0.18-0.24	0.14-0.24	0.16-0.26	0.18-0.28	0.20-0.30	0.22-0.32
	45					RPM	1,790	1,430	1,190	1,020	900	800	720	
	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	0.22-0.28	0.20-0.30	0.22-0.32	0.24-0.34	0.28-0.38	0.30-0.40
		55				RPM	2,190	1,750	1,460	1,250	1,090	970	880	
		K		15	Grey cast iron	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910
							FEED	0.16-0.28	0.24-0.34	0.26-0.36	0.28-0.38	0.30-0.40	0.32-0.42	0.34-0.44
			95			RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510	
			K	16	Grey cast iron	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
							FEED	0.18-0.24	0.22-0.28	0.20-0.30	0.22-0.32	0.24-0.34	0.28-0.38	0.30-0.40
95						RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510	
K				17	Nodular cast iron	120	RPM	4,770	3,820	3,180	2,730	2,390	2,120	1,910
							FEED	0.16-0.28	0.24-0.34	0.26-0.36	0.28-0.38	0.30-0.40	0.32-0.42	0.34-0.44
	85					RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350	
	K			18	Nodular cast iron	85	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350
							FEED	0.18-0.24	0.22-0.28	0.20-0.30	0.22-0.32	0.24-0.34	0.28-0.38	0.30-0.40
		95				RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510	
		K		19	Malleable cast iron	95	RPM	3,780	3,020	2,520	2,160	1,890	1,680	1,510
							FEED	0.16-0.28	0.24-0.34	0.26-0.36	0.28-0.38	0.30-0.40	0.32-0.42	0.34-0.44
			85			RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350	
			K	20	Malleable cast iron	85	RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350
							FEED	0.18-0.24	0.22-0.28	0.20-0.30	0.22-0.32	0.24-0.34	0.28-0.38	0.30-0.40
85						RPM	3,380	2,710	2,250	1,930	1,690	1,500	1,350	

► Recommend to reduce the feed rate as following

Feed 100% : DGN523(3×D), DGN526(5×D)

SELECTION GUIDE



HOLEMAKING TOOLS

SERIES
 DRILLING DEPTH / STANDARD
 LENGTH
 SIZE MIN
 SIZE MAX
 PAGE

PRO ^{NEW}				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

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◎ : 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 _m												
	37		Alpha + Beta Alloys Hardened	1050 _m												
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												