HSSCo8, STRAIGHT SHANK TWIST DRILLS

LONG

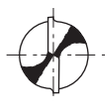
HSSCo8, SPIRALBOHRER mit ZYLINDERSCHAFT — LANG

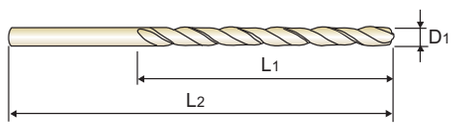
Forets HSSCo8, queue cylindrique, série longue — LONGUE

PUNTE ELICOIDALI, GAMBO CILINDRICO, HSSCo8 — LUNGA

▶**Surface treatment** : Coloring(Gold color)
▶**Application** : Drilling deep holes in stainless steels and difficult - to - cut materials such as titanium and inconel.

▶**Oberflächenbehandlung** : Coloring(Goldfarbe)
▶**Verwendung** : Für Bohrarbeiten mit Bohrungen oder an tief liegenden Stellen. Zum Bohren von rostfreien und austenitischen Stählen, schwerzerspanbaren Werkstoffen wie Titan und Inconel.





DIN 340 | HSS Co8 | 33° | h8 | 135°

P.276-277

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2104020	2.0	56	85
D2104021	2.1	56	85
D2104022	2.2	59	90
D2104023	2.3	59	90
D2104024	2.4	62	95
D2104025	2.5	62	95
D2104026	2.6	62	95
D2104027	2.7	66	100
D2104028	2.8	66	100
D2104029	2.9	66	100
D2104030	3.0	66	100
D2104031	3.1	69	106
D2104032	3.2	69	106
D2104033	3.3	69	106
D2104034	3.4	73	112
D2104035	3.5	73	112
D2104036	3.6	73	112
D2104037	3.7	73	112
D2104038	3.8	78	119
D2104039	3.9	78	119
D2104040	4.0	78	119
D2104041	4.1	78	119
D2104042	4.2	78	119
D2104043	4.3	82	126
D2104044	4.4	82	126
D2104045	4.5	82	126

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2104046	4.6	82	126
D2104047	4.7	82	126
D2104048	4.8	87	132
D2104049	4.9	87	132
D2104050	5.0	87	132
D2104051	5.1	87	132
D2104052	5.2	87	132
D2104053	5.3	87	132
D2104054	5.4	91	139
D2104055	5.5	91	139
D2104056	5.6	91	139
D2104057	5.7	91	139
D2104058	5.8	91	139
D2104059	5.9	91	139
D2104060	6.0	91	139
D2104061	6.1	97	148
D2104062	6.2	97	148
D2104063	6.3	97	148
D2104064	6.4	97	148
D2104065	6.5	97	148
D2104066	6.6	97	148
D2104067	6.7	97	148
D2104068	6.8	102	156
D2104069	6.9	102	156
D2104070	7.0	102	156
D2104071	7.1	102	156

▶ HSS-E(DL104) is available on your request.
▶ TiN(D4104), TiCN(D7104) and TiAlN(DQ104) 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	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
HB											15	30	25	38	34			55	60	42	55
Recommended	○	○	○						○							○					

STRAIGHT SHANK DRILLS

D2104 SERIES

HSSCo8, STRAIGHT SHANK TWIST DRILLS — *LONG*

HSSCo8, SPIRALBOHRER mit ZYLINDERSCHAFT — *LANG*
Forets HSSCo8, queue cylindrique, série longue — *LONGUE*
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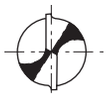
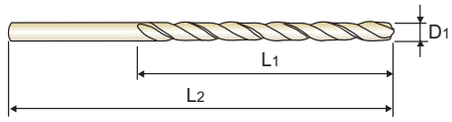




DIN 340 | HSS Co8 | 33° | h8 | 135°

P.276-277

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2104072	7.2	102	156
D2104073	7.3	102	156
D2104074	7.4	102	156
D2104075	7.5	102	156
D2104076	7.6	109	165
D2104077	7.7	109	165
D2104078	7.8	109	165
D2104079	7.9	109	165
D2104080	8.0	109	165
D2104081	8.1	109	165
D2104082	8.2	109	165
D2104083	8.3	109	165
D2104084	8.4	109	165
D2104085	8.5	109	165
D2104086	8.6	115	175
D2104087	8.7	115	175
D2104088	8.8	115	175
D2104089	8.9	115	175
D2104090	9.0	115	175

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2104091	9.1	115	175
D2104092	9.2	115	175
D2104093	9.3	115	175
D2104094	9.4	115	175
D2104095	9.5	115	175
D2104096	9.6	121	184
D2104097	9.7	121	184
D2104098	9.8	121	184
D2104099	9.9	121	184
D2104100	10.0	121	184
D2104102	10.2	121	184
D2104105	10.5	121	184
D2104108	10.8	128	195
D2104110	11.0	128	195
D2104112	11.2	128	195
D2104115	11.5	128	195
D2104118	11.8	128	195
D2104120	12.0	134	205

▶ HSS-E(DL104) is available on your request.
▶ TiN(D4104), TiCN(D7104) and TiAlN(DQ104) 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	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
HB											15	30	25	38	34			55	60	42	55
Recommended	○	○	○						○							○					

phone:+82-32-526-0909, www.yg1.kr, E-mail:yg1@yg1.kr
YG-1 CO., LTD.

STRAIGHT SHANK DRILLS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

D2107, D1107, D2105, DL105, D1105, D1125, D2104, D1121, DL109 SERIES

HSS, HSS-E & HSSCo8 COBALT DRILLS

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

ISO	VDI 3323	Material Description	Vc (m/min)	Parameter	Drill Diameter (mm) 2.0	3.0	4.0	6.0	8.0
P	1	Non-alloy steel	30	RPM	4770	3180	2390	1590	1190
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	2		25	RPM	3980	2650	1990	1330	990
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	3		20	RPM	3180	2120	1590	1060	800
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	4		20	RPM	3180	2120	1590	1060	800
				FEED	0.01~0.02	0.01~0.03	0.02~0.04	0.02~0.05	0.03~0.06
	5								
	6	Low alloy steel	25	RPM	3980	2650	1990	1330	990
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	7		20	RPM	3180	2120	1590	1060	800
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	8		20	RPM	3180	2120	1590	1060	800
				FEED	0.01~0.02	0.01~0.03	0.02~0.04	0.02~0.05	0.03~0.06
	9								
	10	High alloyed steel, and tool steel	15	RPM	2390	1590	1190	800	600
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	11								
M	12	Stainless steel	20	RPM	3180	2120	1590	1060	800
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	13		15	RPM	2390	1590	1190	800	600
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	14		10	RPM	1590	1060	800	530	400
				FEED	0.01~0.02	0.01~0.03	0.02~0.04	0.02~0.05	0.03~0.06
K	15	Grey cast iron	30	RPM	4770	3180	2390	1590	1190
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	16		25	RPM	3980	2650	1990	1330	990
				FEED	0.01~0.02	0.01~0.03	0.02~0.04	0.02~0.05	0.03~0.06
	17	Nodular cast iron	30	RPM	4770	3180	2390	1590	1190
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	18								
	19	Malleable cast iron	25	RPM	3980	2650	1990	1330	990
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	20								
N	21	Aluminum-wrought alloy	55	RPM	8750	5840	4380	2920	2190
				FEED	0.03~0.06	0.05~0.09	0.07~0.11	0.12~0.16	0.12~0.18
	22		55	RPM	8750	5840	4380	2920	2190
				FEED	0.03~0.06	0.05~0.09	0.07~0.11	0.12~0.16	0.12~0.18
	23	Aluminum-cast, alloyed	40	RPM	6370	4240	3180	2120	1590
				FEED	0.03~0.06	0.05~0.09	0.07~0.11	0.12~0.16	0.12~0.18
	24								
	25								
	26	Copper and Copper Alloys (Bronze / Brass)							
	27								
	28								
	29	Non Metallic Materials	20	RPM	3180	2120	1590	1060	800
				FEED	0.02~0.04	0.03~0.05	0.04~0.06	0.05~0.08	0.10~0.13
	30								
S	31	Heat Resistant Super Alloys							
	32								
	33								
	34								
	35								
	36	Titanium Alloys	10	RPM	1590	1060	800	530	400
				FEED	0.01~0.03	0.02~0.04	0.03~0.05	0.04~0.07	0.05~0.08
	37								
H	38	Hardened steel							
	39								
	40	Chilled Cast Iron							
	41	Hardened Cast Iron							

SELECTION GUIDE

YG HOLEMAKING TOOLS

SERIES	D2107	D1107	D2105
STANDARD	DIN1897	DIN1897	DIN338
LENGTH	STUB	STUB	JOBBER
SIZE MIN	D1.0	D1.0	D1.0
SIZE MAX	D31.0	D13.0	D20.0
PAGE	234	238	241
SURFACE TREATMENT	Gold Coloring	Steam Tempered	Gold Coloring

HSS, HSS-E & HSSCo8
STRAIGHT SHANK DRILLS

For General Purpose (Soft &Tough Materials)

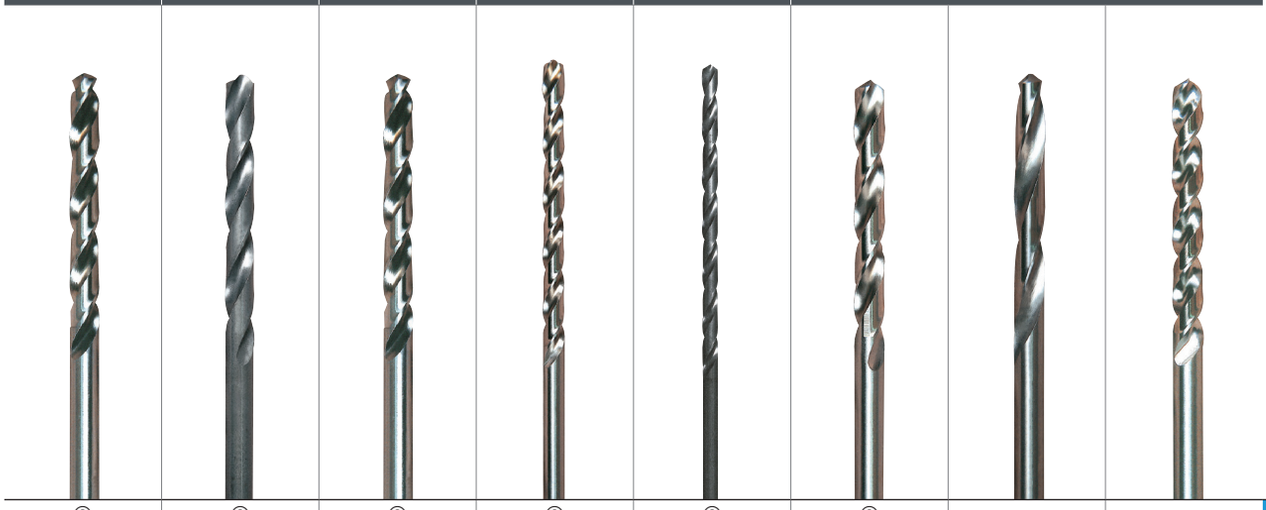
Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.276

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	D2107	D1107	D2105
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			

DL105	D1105	D1125	D2104	D1121	DL109	D1100	D1106
DIN338	DIN338	DIN338	DIN340	DIN1869/1	DIN338	DIN338	DIN338
JOBBER	JOBBER	JOBBER	LONG	EXTRA LONG	JOBBER	JOBBER	JOBBER
D1.0	D0.3	D2.0	D2.0	D2.0	D1.5	D1.5	D1.5
D20.0	D20.0	D20.0	D12.0	D13.0	D13.0	D13.0	D13.0
244	247	252	255	257	258	259	261
Gold Coloring	Steam Tempered	Bright	Gold Coloring	Steam Tempered	Bright		



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