

Y/G STRAIGHT SHANK DRILLS

D2104 SERIES

HSSCo8, STRAIGHT SHANK TWIST DRILLS

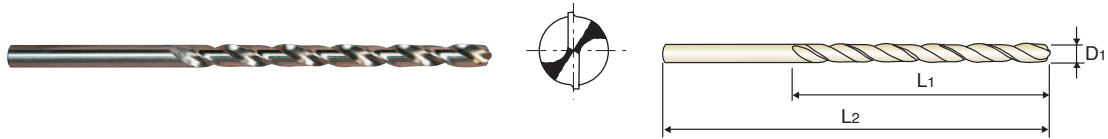
LONG

HSSCo8, SPIRALBOHRER mit ZYLINDERSCHAFT

LANG

- ▶ **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
N 33°
h8
135°
P.215

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
	D1	L1	L2		D1	L1	L2
D2104020	2.0	56	85	D2104047	4.7	82	126
D2104021	2.1	56	85	D2104048	4.8	87	132
D2104022	2.2	59	90	D2104049	4.9	87	132
D2104023	2.3	59	90	D2104050	5.0	87	132
D2104024	2.4	62	95	D2104051	5.1	87	132
D2104025	2.5	62	95	D2104052	5.2	87	132
D2104026	2.6	62	95	D2104053	5.3	87	132
D2104027	2.7	66	100	D2104054	5.4	91	139
D2104028	2.8	66	100	D2104055	5.5	91	139
D2104029	2.9	66	100	D2104056	5.6	91	139
D2104030	3.0	66	100	D2104057	5.7	91	139
D2104031	3.1	69	106	D2104058	5.8	91	139
D2104032	3.2	69	106	D2104059	5.9	91	139
D2104033	3.3	69	106	D2104060	6.0	91	139
D2104034	3.4	73	112	D2104061	6.1	97	148
D2104035	3.5	73	112	D2104062	6.2	97	148
D2104036	3.6	73	112	D2104063	6.3	97	148
D2104037	3.7	73	112	D2104064	6.4	97	148
D2104038	3.8	78	119	D2104065	6.5	97	148
D2104039	3.9	78	119	D2104066	6.6	97	148
D2104040	4.0	78	119	D2104067	6.7	97	148
D2104041	4.1	78	119	D2104068	6.8	102	156
D2104042	4.2	78	119	D2104069	6.9	102	156
D2104043	4.3	82	126	D2104070	7.0	102	156
D2104044	4.4	82	126	D2104071	7.1	102	156
D2104045	4.5	82	126	D2104072	7.2	102	156
D2104046	4.6	82	126	D2104073	7.3	102	156

- ▶ HSS-E(DL104) is available on your request.
- ▶ TiN(D4104), TiCN(D7104) and TiAlN(DQ104) are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze	CFRP
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~								
◎	◎				○	○	◎	○	○			



STRAIGHT SHANK DRILLS

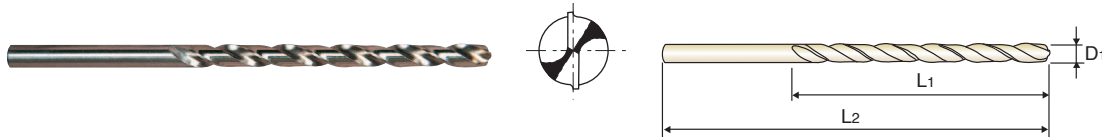
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EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
	D1	L1	L2		D1	L1	L2
D2104074	7.4	102	156	D2104092	9.2	115	175
D2104075	7.5	102	156	D2104093	9.3	115	175
D2104076	7.6	109	165	D2104094	9.4	115	175
D2104077	7.7	109	165	D2104095	9.5	115	175
D2104078	7.8	109	165	D2104096	9.6	121	184
D2104079	7.9	109	165	D2104097	9.7	121	184
D2104080	8.0	109	165	D2104098	9.8	121	184
D2104081	8.1	109	165	D2104099	9.9	121	184
D2104082	8.2	109	165	D2104100	10.0	121	184
D2104083	8.3	109	165	D2104102	10.2	121	184
D2104084	8.4	109	165	D2104105	10.5	121	184
D2104085	8.5	109	165	D2104108	10.8	128	195
D2104086	8.6	115	175	D2104110	11.0	128	195
D2104087	8.7	115	175	D2104112	11.2	128	195
D2104088	8.8	115	175	D2104115	11.5	128	195
D2104089	8.9	115	175	D2104118	11.8	128	195
D2104090	9.0	115	175	D2104120	12.0	134	205
D2104091	9.1	115	175				

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Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze	CFRP
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~								
◎	◎				○	○	◎	○	○			

CARBIDE

HSS

I-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL TYPE

DREAM DRILLS for HARDENED STEELS

GENERAL CARBIDE DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

TECHNICAL DATA



STRAIGHT SHANK DRILLS

RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN

HSS & HSS 8% COBALT DRILLS, DIN1897, DIN338, DIN340, DIN1869 HSS & HSSCo8 SPIRALBOHRER, DIN 1897, DIN 338, DIN 340, DIN 1869

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

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		TITANIUM ALLOYS	
	N	S	N	S	N	S	N	S	N	S	N	S	N	S
HARDNESS			~ HRc23		~ HRc23 ~ 28		HRc23 ~ 34		HRc34 ~ 38		HRc23			
STRENGTH	~ 570 N/mm ²		~ 830 N/mm ²		830 ~ 950 N/mm ²		830 ~ 1110 N/mm ²		1110 ~ 1260 N/mm ²		830 N/mm ²		410 N/mm ²	
DRILLING SPEED	22 ~ 27 m/min		15 ~ 20 m/min		10 ~ 15 m/min		15 ~ 20 m/min		8 ~ 12 m/min		15 ~ 20 m/min		8 ~ 12 m/min	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S	N	S
2.5	3380	0.025	2550	0.025	1900	0.015	2380	0.020	1400	0.015	2550	0.025	1400	0.020
3.0	2700	0.050	2000	0.050	1500	0.025	1880	0.050	1100	0.020	2000	0.050	1100	0.025
5.0	1700	0.063	1280	0.063	960	0.038	1190	0.063	700	0.025	1280	0.063	700	0.038
8.0	1050	0.130	780	0.130	590	0.076	730	0.130	430	0.038	780	0.130	430	0.076
11.0	750	0.150	560	0.150	425	0.076	520	0.180	310	0.050	560	0.150	430	0.076
19.0	440	0.230	330	0.230	255	0.130	300	0.230	180	0.050	330	0.230	180	0.130
31.0	260	0.280	195	0.280	145	0.180	180	0.280	107	0.076	195	0.280	107	0.180

WORK MATERIAL	TOOL STEELS		CAST IRON		ALUMINUM ALLOYS		MAGNESIUM ALLOYS		ZINC ALLOYS		PLASTICS	
	N	S	N	S	N	S	N	S	N	S	N	S
HARDNESS			~ HRc21									
STRENGTH	~ 270 N/mm ²		~ 800 N/mm ²									
DRILLING SPEED	20 ~ 25 m/min		15 ~ 20 m/min		45 ~ 50 m/min		55 ~ 65 m/min		40 ~ 50 m/min		20 ~ 25 m/min	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S
2.5	3180	0.042	2250	0.025	6400	0.038	8600	0.038	6400	0.038	3380	0.025
3.0	2500	0.050	2000	0.050	5000	0.063	6800	0.063	5000	0.063	2700	0.050
5.0	1590	0.063	1280	0.063	3200	0.076	4300	0.076	3200	0.076	1700	0.063
8.0	970	0.130	780	0.130	2000	0.180	2600	0.180	2000	0.180	1050	0.130
11.0	700	0.180	560	0.150	1400	0.200	1900	0.200	1400	0.200	750	0.150
19.0	440	0.230	330	0.230	820	0.300	1100	0.300	820	0.300	440	0.230
31.0	240	0.300	195	0.280	490	0.380	660	0.380	490	0.380	260	0.280

N = R.P.M
S = Feed per Revolution (mm/rev.)

HSS-E, TWIST DRILLS for HEAVY DUTY, DIN338 HSS-E, SPIRALBOHRER für HOHELEISTUNGEN, DIN 338

DL109 SERIES

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		CAST IRON	
	N	S	N	S	N	S	N	S	N	S	N	S	N	S
HARDNESS			~ HRc23		~ HRc23 ~ 28		HRc23 ~ 34		HRc34 ~ 38		HRc23		HRc21	
STRENGTH	~ 570 N/mm ²		~ 830 N/mm ²		830 ~ 950 N/mm ²		830 ~ 1110 N/mm ²		1110 ~ 1260 N/mm ²		830 N/mm ²		800 N/mm ²	
DRILLING SPEED	25 ~ 30 m/min		20 ~ 25 m/min		15 ~ 20 m/min		18 ~ 23 m/min		10 ~ 15 m/min		27 ~ 33 m/min		27 ~ 33 m/min	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S	N	S
2.0	5000	0.03	3750	0.03	2850	0.02	3500	0.02	2070	0.02	5000	0.03	5000	0.03
3.0	3750	0.04	2810	0.04	2150	0.02	2625	0.04	1560	0.02	3750	0.04	3750	0.04
4.0	2500	0.06	1870	0.06	1450	0.03	1750	0.06	1050	0.02	2500	0.06	2500	0.06
5.0	2085	0.07	1560	0.07	1205	0.04	1460	0.07	870	0.03	2085	0.07	2085	0.07
6.0	1670	0.08	1250	0.08	960	0.05	1170	0.09	690	0.03	1670	0.08	1670	0.08
7.0	1460	0.10	1095	0.10	840	0.06	1025	0.11	605	0.03	1460	0.10	1460	0.10
8.0	1250	0.13	940	0.13	720	0.08	880	0.13	520	0.04	1250	0.13	1250	0.13
9.0	1125	0.14	845	0.14	645	0.08	790	0.15	465	0.04	1125	0.14	1125	0.14
10.0	1000	0.14	750	0.14	570	0.08	700	0.16	410	0.05	1000	0.14	1000	0.14
11.0	925	0.15	685	0.15	525	0.08	640	0.18	380	0.05	925	0.15	925	0.15
12.0	850	0.16	620	0.16	480	0.08	580	0.19	350	0.05	850	0.16	850	0.16
13.0	785	0.17	575	0.17	445	0.09	540	0.20	325	0.05	785	0.17	785	0.17

N = R.P.M
S = Feed per Revolution (mm/rev.)