

# Y/G STRAIGHT SHANK DRILLS

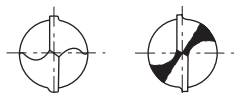
## DL105 SERIES

### HSS-E, STRAIGHT SHANK TWIST DRILLS HSS-E, SPIRALBOHRER mit ZYLINDERSCHAFT

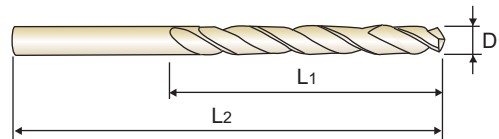
**JOBBER**  
**KURZ**

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

► **Oberflächenbehandlung** : Coloring(Goldfarbe)  
► **Verwendung** : Zum Bohren von rostfreien und austenitischen. Stählen, schwerzerspanbaren Werkstoffen wie Titan und Inconel.



up to 1.5mm      over 1.5mm



DIN 338
HSS-E
N 33°
h8
135°
P.188

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
	D1	L1	L2		D1	L1	L2
DL105010	1.0	12	34	DL105031	3.1	36	65
DL105011	1.1	14	36	DL105032	3.2	36	65
DL105012	1.2	16	38	DL105932	3.25	36	65
DL105912	1.25	16	38	DL105033	3.3	36	65
DL105013	1.3	16	38	DL105034	3.4	39	70
DL105014	1.4	18	40	DL105035	3.5	39	70
DL105015	1.5	18	40	DL105036	3.6	39	70
DL105016	1.6	20	43	DL105037	3.7	39	70
DL105017	1.7	20	43	DL105937	3.75	39	70
DL105917	1.75	22	46	DL105038	3.8	43	75
DL105018	1.8	22	46	DL105039	3.9	43	75
DL105019	1.9	22	46	DL105040	4.0	43	75
DL105020	2.0	24	49	DL105041	4.1	43	75
DL105021	2.1	24	49	DL105042	4.2	43	75
DL105022	2.2	27	53	DL105942	4.25	43	75
DL105922	2.25	27	53	DL105043	4.3	47	80
DL105023	2.3	27	53	DL105044	4.4	47	80
DL105024	2.4	30	57	DL105045	4.5	47	80
DL105025	2.5	30	57	DL105046	4.6	47	80
DL105026	2.6	30	57	DL105047	4.7	47	80
DL105027	2.7	33	61	DL105947	4.75	47	80
DL105927	2.75	33	61	DL105048	4.8	52	86
DL105028	2.8	33	61	DL105049	4.9	52	86
DL105029	2.9	33	61	DL105050	5.0	52	86
DL105030	3.0	33	61	DL105051	5.1	52	86

► TiN(DN105), TiCN(DX105) and TiAlN(DT105) 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
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~							
◎	◎				○	○	◎	○	○		



# 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

Unit : mm

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		TITANIUM ALLOYS	
	HARDNESS		~ HRc23		~ HRc23 ~ 28		HRc23 ~ 34		HRc34 ~ 38		HRc23			
STRENGTH	~ 570 N/mm <sup>2</sup>		~ 830 N/mm <sup>2</sup>		830 ~ 950 N/mm <sup>2</sup>		830 ~ 1110 N/mm <sup>2</sup>		1110 ~ 1260 N/mm <sup>2</sup>		830 N/mm <sup>2</sup>		410 N/mm <sup>2</sup>	
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	2700	0.050	2000	0.050	1500	0.025	1880	0.050	1100	0.020	2000	0.050	1100	0.025
5	1700	0.063	1280	0.063	960	0.038	1190	0.063	700	0.025	1280	0.063	700	0.038
8	1050	0.130	780	0.130	590	0.076	730	0.130	430	0.038	780	0.130	430	0.076
11	750	0.150	560	0.150	425	0.076	520	0.180	310	0.050	560	0.150	430	0.076
19	440	0.230	330	0.230	255	0.130	300	0.230	180	0.050	330	0.230	180	0.130
31	260	0.280	195	0.280	145	0.180	180	0.180	107	0.076	195	0.280	107	0.180

WORK MATERIAL	TOOL STEELS		CAST IRON		ALUMINUM ALLOYS		MAGNESIUM ALLOYS		ZINC ALLOYS		PLASTICS	
	HARDNESS		~ HRc21									
STRENGTH	~ 270 N/mm <sup>2</sup>		~ 800 N/mm <sup>2</sup>									
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	2500	0.050	2000	0.050	5000	0.063	6800	0.063	5000	0.063	2700	0.050
5	1590	0.063	1280	0.063	3200	0.076	4300	0.076	3200	0.076	1700	0.063
8	970	0.130	780	0.130	2000	0.180	2600	0.180	2000	0.180	1050	0.130
11	700	0.180	560	0.150	1400	0.200	1900	0.200	1400	0.200	750	0.150
19	440	0.230	330	0.230	820	0.300	1100	0.300	820	0.300	440	0.230
31	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

Unit : mm

WORK MATERIAL	CARBON STEELS		CARBON STEELS		CARBON STEELS		ALLOY STEELS		ALLOY STEELS		STAINLESS STEELS		CAST IRON	
	HARDNESS		~ HRc23		~ HRc23 ~ 28		HRc23 ~ 34		HRc34 ~ 38		HRc23		HRc21	
STRENGTH	~ 570 N/mm <sup>2</sup>		~ 830 N/mm <sup>2</sup>		830 ~ 950 N/mm <sup>2</sup>		830 ~ 1110 N/mm <sup>2</sup>		1110 ~ 1260 N/mm <sup>2</sup>		830 N/mm <sup>2</sup>		800 N/mm <sup>2</sup>	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S	N	S
2	5000	0.03	3750	0.03	2850	0.02	3500	0.02	2070	0.02	5000	0.03	5000	0.03
3	3750	0.04	2810	0.04	2150	0.02	2625	0.04	1560	0.02	3750	0.04	3750	0.04
4	2500	0.06	1870	0.06	1450	0.03	1750	0.06	1050	0.02	2500	0.06	2500	0.06
5	2085	0.07	1560	0.07	1205	0.04	1460	0.07	870	0.03	2085	0.07	2085	0.07
6	1670	0.08	1250	0.08	960	0.05	1170	0.09	690	0.03	1670	0.08	1670	0.08
7	1460	0.10	1095	0.10	840	0.06	1025	0.11	605	0.03	1460	0.10	1460	0.10
8	1250	0.13	940	0.13	720	0.08	880	0.13	520	0.04	1250	0.13	1250	0.13
9	1125	0.14	845	0.14	645	0.08	790	0.15	465	0.04	1125	0.14	1125	0.14
10	1000	0.14	750	0.14	570	0.08	700	0.16	410	0.05	1000	0.14	1000	0.14
11	925	0.15	685	0.15	525	0.08	640	0.18	380	0.05	925	0.15	925	0.15
12	850	0.16	620	0.16	480	0.08	580	0.19	350	0.05	850	0.16	850	0.16
13	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.)