



STRAIGHT SHANK DRILLS

DL510 SERIES

HSS-E, STRAIGHT SHANK TWIST DRILLS for DEEP HOLES *STUB*
HSS-E, SPIRALBOHRER für TIEFLOCH mit ZYLINDERSCHAFT *EXTRA KURZ*

► **Application** : Drilling deep holes in non alloy steels, alloy steels, grey cast iron, malleable cast iron, special aluminum or magnesium alloys.

► **Verwendung** : Zum Bohren von legiertem und unlegiertem stahl, Grauguß, Temperguß, Sphäroguß, Druckguß, Alu-Legierungen kurzspanend, Bronze, Messing zäh, Neusilber.



► **DH100 worm pattern drills**

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | EDP No. | Drill Diameter | Flute Length | Overall Length |
|----------|----------------|--------------|----------------|----------|----------------|--------------|----------------|
| | D1 | L1 | L2 | | D1 | L1 | L2 |
| DL510020 | 2.0 | 12 | 38 | DL510047 | 4.7 | 24 | 58 |
| DL510021 | 2.1 | 12 | 38 | DL510048 | 4.8 | 26 | 62 |
| DL510022 | 2.2 | 13 | 40 | DL510049 | 4.9 | 26 | 62 |
| DL510023 | 2.3 | 13 | 40 | DL510050 | 5.0 | 26 | 62 |
| DL510024 | 2.4 | 14 | 43 | DL510051 | 5.1 | 26 | 62 |
| DL510025 | 2.5 | 14 | 43 | DL510052 | 5.2 | 26 | 62 |
| DL510026 | 2.6 | 14 | 43 | DL510053 | 5.3 | 26 | 66 |
| DL510027 | 2.7 | 16 | 46 | DL510054 | 5.4 | 28 | 66 |
| DL510028 | 2.8 | 16 | 46 | DL510055 | 5.5 | 28 | 66 |
| DL510029 | 2.9 | 16 | 46 | DL510056 | 5.6 | 28 | 66 |
| DL510030 | 3.0 | 16 | 46 | DL510057 | 5.7 | 28 | 66 |
| DL510031 | 3.1 | 18 | 49 | DL510058 | 5.8 | 28 | 66 |
| DL510032 | 3.2 | 18 | 49 | DL510059 | 5.9 | 28 | 66 |
| DL510033 | 3.3 | 18 | 49 | DL510060 | 6.0 | 28 | 66 |
| DL510034 | 3.4 | 20 | 52 | DL510061 | 6.1 | 31 | 70 |
| DL510035 | 3.5 | 20 | 52 | DL510062 | 6.2 | 31 | 70 |
| DL510036 | 3.6 | 20 | 52 | DL510063 | 6.3 | 31 | 70 |
| DL510037 | 3.7 | 20 | 52 | DL510064 | 6.4 | 31 | 70 |
| DL510038 | 3.8 | 22 | 55 | DL510065 | 6.5 | 31 | 70 |
| DL510039 | 3.9 | 22 | 55 | DL510066 | 6.6 | 31 | 70 |
| DL510040 | 4.0 | 22 | 55 | DL510067 | 6.7 | 31 | 70 |
| DL510041 | 4.1 | 22 | 55 | DL510068 | 6.8 | 34 | 74 |
| DL510042 | 4.2 | 22 | 55 | DL510069 | 6.9 | 34 | 74 |
| DL510043 | 4.3 | 24 | 58 | DL510070 | 7.0 | 34 | 74 |
| DL510044 | 4.4 | 24 | 58 | DL510071 | 7.1 | 34 | 74 |
| DL510045 | 4.5 | 24 | 58 | DL510072 | 7.2 | 34 | 74 |
| DL510046 | 4.6 | 24 | 58 | DL510073 | 7.3 | 34 | 74 |

| 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~ | | | | | | | | |
| ◎ | ◎ | | | | ○ | ○ | | | ○ | | | |

◎ : Excellent ○ : Good



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DIN 1897

HSS-E

42°

h8

130°



P.217

► DH100 worm pattern drills

Unit : mm

| EDP No. | Drill Diameter | Flute Length | Overall Length | EDP No. | Drill Diameter | Flute Length | Overall Length |
|----------|----------------|--------------|----------------|----------|----------------|--------------|----------------|
| | D1 | L1 | L2 | | D1 | L1 | L2 |
| DL510074 | 7.4 | 34 | 74 | DL510100 | 10.0 | 43 | 89 |
| DL510075 | 7.5 | 34 | 74 | DL510102 | 10.2 | 43 | 89 |
| DL510076 | 7.6 | 37 | 79 | DL510105 | 10.5 | 43 | 89 |
| DL510077 | 7.7 | 37 | 79 | DL510108 | 10.8 | 47 | 95 |
| DL510078 | 7.8 | 37 | 79 | DL510110 | 11.0 | 47 | 95 |
| DL510079 | 7.9 | 37 | 79 | DL510112 | 11.2 | 47 | 95 |
| DL510080 | 8.0 | 37 | 79 | DL510115 | 11.5 | 47 | 95 |
| DL510081 | 8.1 | 37 | 79 | DL510118 | 11.8 | 47 | 95 |
| DL510082 | 8.2 | 37 | 79 | DL510120 | 12.0 | 51 | 102 |
| DL510083 | 8.3 | 37 | 79 | DL510125 | 12.5 | 51 | 102 |
| DL510084 | 8.4 | 37 | 79 | DL510130 | 13.0 | 51 | 102 |
| DL510085 | 8.5 | 37 | 79 | DL510135 | 13.5 | 54 | 107 |
| DL510086 | 8.6 | 40 | 84 | DL510140 | 14.0 | 54 | 107 |
| DL510087 | 8.7 | 40 | 84 | DL510145 | 14.5 | 56 | 111 |
| DL510088 | 8.8 | 40 | 84 | DL510150 | 15.0 | 56 | 111 |
| DL510089 | 8.9 | 40 | 84 | DL510155 | 15.5 | 58 | 115 |
| DL510090 | 9.0 | 40 | 84 | DL510160 | 16.0 | 58 | 115 |
| DL510091 | 9.1 | 40 | 84 | DL510165 | 16.5 | 60 | 119 |
| DL510092 | 9.2 | 40 | 84 | DL510170 | 17.0 | 60 | 119 |
| DL510093 | 9.3 | 40 | 84 | DL510175 | 17.5 | 62 | 123 |
| DL510094 | 9.4 | 40 | 84 | DL510180 | 18.0 | 62 | 123 |
| DL510095 | 9.5 | 40 | 84 | DL510185 | 18.5 | 64 | 127 |
| DL510096 | 9.6 | 43 | 89 | DL510190 | 19.0 | 64 | 127 |
| DL510097 | 9.7 | 43 | 89 | DL510195 | 19.5 | 66 | 131 |
| DL510098 | 9.8 | 43 | 89 | DL510200 | 20.0 | 66 | 131 |
| DL510099 | 9.9 | 43 | 89 | | | | |

◎ : 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~ | | | | | | | | |
| ◎ | ◎ | | | | ○ | ○ | | | ○ | | | |

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 EMPFOLHENE SCHNEIDKONDITIONEN

HSS-E, DH100 TYPE WORM PATTERN DRILLS, DIN1897, DIN338, DIN340, DIN1869, DIN341
HSS-E, DH100 TYPE WORM PATTERN SPIRALBOHRER, DIN1897, DIN 338, DIN 340, DIN 1869, DIN 341

DL510, DL508, DL509, DL505, DL504, DT600, DT692, DT693, DL608 SERIES

| WORK MATERIAL | CARBON STEELS ALLOY STEELS | | TOOL STEELS HARDENED STEELS | | SOFT GREY CAST IRON | | HARD GREY CAST IRON | |
|----------------|-------------------------------|------|--------------------------------|------|---------------------|------|---------------------|------|
| | HARDNESS | | HARDNESS | | | | | |
| HARDNESS | HRc15 ~ 30 | | HRc20 ~ 40 | | | | | |
| STRENGTH | 700 ~ 1000 N/mm ² | | 800 ~ 1200 N/mm ² | | | | | |
| DRILLING SPEED | 13 ~ 18 m/min | | 8 ~ 13 m/min | | 20 ~ 25 m/min | | 7 ~ 12 m/min | |
| DIAMETER | N | S | N | S | N | S | N | S |
| | 2.0 | 2630 | 0.03 | 2100 | 0.025 | 4200 | 0.06 | 1680 |
| 2.5 | 2100 | 0.04 | 1680 | 0.03 | 3300 | 0.08 | 1310 | 0.06 |
| 3.0 | 1680 | 0.05 | 1310 | 0.04 | 2630 | 0.10 | 1050 | 0.08 |
| 4.0 | 1310 | 0.06 | 1050 | 0.05 | 2100 | 0.13 | 840 | 0.10 |
| 5.0 | 1050 | 0.06 | 840 | 0.05 | 1680 | 0.13 | 660 | 0.10 |
| 6.0 | 840 | 0.08 | 660 | 0.06 | 1310 | 0.16 | 530 | 0.13 |
| 8.0 | 660 | 0.10 | 530 | 0.08 | 1050 | 0.20 | 420 | 0.17 |
| 10.0 | 530 | 0.13 | 420 | 0.10 | 840 | 0.25 | 330 | 0.21 |
| 13.0 | 420 | 0.13 | 330 | 0.10 | 660 | 0.25 | 260 | 0.21 |
| 16.0 | 330 | 0.15 | 260 | 0.13 | 530 | 0.30 | 210 | 0.25 |
| 20.0 | 260 | 0.20 | 210 | 0.15 | 420 | 0.40 | 170 | 0.30 |
| 25.0 | 210 | 0.25 | 170 | 0.20 | 330 | 0.50 | 130 | 0.50 |
| 30.0 | 170 | 0.25 | 130 | 0.20 | 260 | 0.50 | 110 | 0.50 |

N = R.P.M

S = Feed per Revolution (mm/rev.)

HSS-E, DH50 TYPE WORM PATTERN DRILLS
HSS-E, DH50 TYPE WORM PATTERN SPIRALBOHRER

DL507 SERIES

| WORK MATERIAL | CARBON STEELS ALLOY STEELS | | SOFT GREY CAST IRON | | ALUMINUM ALLOY | |
|----------------|-------------------------------|------|------------------------------|------|-------------------|------|
| | HARDNESS | | HARDNESS | | | |
| HARDNESS | HRc15 ~ 30 | | HRc20 ~ 40 | | | |
| STRENGTH | 700 ~ 1000 N/mm ² | | 800 ~ 1200 N/mm ² | | | |
| DRILLING SPEED | 13 ~ 18 m/min | | 25 ~ 30 m/min | | 45 ~ 55 m/min | |
| DIAMETER | N | S | N | S | N | S |
| | 2.0 | 2630 | 0.03 | 4200 | 0.06 | 8700 |
| 2.5 | 2100 | 0.04 | 3300 | 0.08 | 6950 | 0.05 |
| 3.0 | 1680 | 0.05 | 2630 | 0.10 | 5800 | 0.06 |
| 4.0 | 1310 | 0.06 | 2100 | 0.13 | 4300 | 0.08 |
| 5.0 | 1050 | 0.06 | 1680 | 0.13 | 3500 | 0.10 |
| 6.0 | 840 | 0.08 | 1310 | 0.16 | 2900 | 0.12 |
| 8.0 | 660 | 0.10 | 1050 | 0.20 | 2200 | 0.16 |
| 10.0 | 530 | 0.13 | 840 | 0.25 | 1750 | 0.20 |
| 13.0 | 420 | 0.13 | 660 | 0.25 | 1350 | 0.26 |

N = R.P.M

S = Feed per Revolution (mm/rev.)