# STRAIGHT SHANK DRILLS

## RECOMMENDED CUTTING CONDITIONS
## EMPFOHLENE SCHNEIDPARAMETER

## DL510, DL508, DL509, DL505, DL504, DL608 SERIES

## HSS-E, DH100 WORM PATTERN DRILLS

VC = M/MIN
RPM = rev./min.
FEED = mm/rev.

| ISO | VDI 3323 | Material Description | Vc | Parameter | Drill Diameter (mm) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2.0 | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 13.0 | 16.0 | 18.0 | 20.0 | 30.0 |
| P | 1 | Non-alloy steel | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.20 | 0.19~0.25 | 0.22~0.28 |
| | 2 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.20 | 0.19~0.25 | 0.22~0.28 |
| | 3 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.20 | 0.19~0.25 | 0.22~0.28 |
| | 4 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.01~0.02 | 0.01~0.03 | 0.02~0.04 | 0.02~0.05 | 0.03~0.06 | 0.03~0.06 | 0.04~0.10 | 0.06~0.12 | 0.08~0.14 | 0.10~0.16 | 0.12~0.18 |
| | 6 | Low alloy steel | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.2 | 0.19~0.25 | 0.22~0.28 |
| | 7 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.2 | 0.19~0.25 | 0.22~0.28 |
| | 8 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.01~0.02 | 0.01~0.03 | 0.02~0.04 | 0.02~0.05 | 0.03~0.06 | 0.03~0.06 | 0.04~0.10 | 0.06~0.12 | 0.08~0.14 | 0.10~0.16 | 0.12~0.18 |
| | 10 | High alloyed steel, and tool steel | 15 | RPM | 2390 | 1590 | 1190 | 800 | 600 | 480 | 370 | 300 | 270 | 240 | 160 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.20 | 0.19~0.25 | 0.22~0.28 |
| K | 15 | Grey cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.20 | 0.19~0.25 | 0.22~0.28 |
| | 16 | | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.01~0.02 | 0.01~0.03 | 0.02~0.04 | 0.02~0.05 | 0.03~0.06 | 0.03~0.06 | 0.04~0.10 | 0.06~0.12 | 0.08~0.14 | 0.10~0.16 | 0.12~0.18 |
| | 17 | Nodular cast iron | 30 | RPM | 4770 | 3180 | 2390 | 1590 | 1190 | 950 | 730 | 600 | 530 | 480 | 320 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.20 | 0.19~0.25 | 0.22~0.28 |
| | 18 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.01~0.02 | 0.01~0.03 | 0.02~0.04 | 0.02~0.05 | 0.03~0.06 | 0.03~0.06 | 0.04~0.10 | 0.06~0.12 | 0.08~0.14 | 0.10~0.16 | 0.12~0.18 |
| | 19 | Malleable cast iron | 25 | RPM | 3980 | 2650 | 1990 | 1330 | 990 | 800 | 610 | 500 | 440 | 400 | 270 |
| | | | | FEED | 0.02~0.04 | 0.03~0.05 | 0.04~0.06 | 0.05~0.08 | 0.10~0.13 | 0.11~0.15 | 0.11~0.17 | 0.12~0.18 | 0.14~0.20 | 0.19~0.25 | 0.22~0.28 |
| | 20 | | 20 | RPM | 3180 | 2120 | 1590 | 1060 | 800 | 640 | 490 | 400 | 350 | 320 | 210 |
| | | | | FEED | 0.01~0.02 | 0.01~0.03 | 0.02~0.04 | 0.02~0.05 | 0.03~0.06 | 0.03~0.06 | 0.04~0.10 | 0.06~0.12 | 0.08~0.14 | 0.10~0.16 | 0.12~0.18 |