# Contens

## JOBBER DRILLS


| Page | | Norm | Material | |
|---|---|---|---|---|
| 9 – 12 | | PN 2913, 2907<br>ČSN 221121<br>PN 221135, 238980 | HSS<br>HSS Co | Set of 7 – 50 drills |
| 13 – 14 | | ČSN 221121<br>DIN 338 RN | HSS | Jobber drills |
| 15 | | ČSN 221127<br>DIN 338 RN | HSS Co | Cobalt jobber drills |
| 15 | | ČSN 221131<br>DIN 338 LN | HSS | Jobber drills, left hand cutting |
| 16 | | PN 221135<br>DIN 338 RN | HSS | Jobber drills |
| 17 | | PN 221134<br>ANSI B 94.11 | HSS | Jobber drills, according to USAS |
| 18 | | PN 2907<br>DIN 338 RN | HSS Co | Cobalt jobber drills |
| 19 | | PN 2908<br>DIN 338 LN | HSS Co | Cobalt jobber drills, left hand cutting |
| 20 | | PN 2909<br>DIN 338 RW | HSS | Quick helix jobber drills |
| 21 | | PN 2910<br>DIN 338 LW | HSS | Quick helix jobber drills, left hand cutting |
| 22 | | PN 2911<br>DIN 338 RH | HSS | Slow helix jobber drills |
| 23 | | PN 2912<br>DIN 338 LH | HSS | Slow helix jobber drills, left hand cutting |
| 24 – 25 | | PN 2913<br>DIN 338 RN | HSS | Jobber drills |
| 26 | | PN 2913 T1000<br>DIN 338 RN GT 100 | HSS Co | Cobalt jobber drills |
| 27 | | PN 2914<br>DIN 338 LN | HSS | Jobber drills, left hand cutting |
| 28 | | PN 2931<br>DIN 338 RN | HSS | Jobber drills TiN coated |


## STUB DRILLS


| | | | | |
|---|---|---|---|---|
| 29 | | ČSN 221180<br>DIN 1897 LN | HSS | Stub drills, left hand cutting |
| 30 – 31 | | ČSN 221182<br>DIN 1897 RN | HSS | Stub drills |
| 32 | | PN 221187 | HSS | Silver and Demings drills |
| 33 | | PN 2904<br>DIN 1897 LN | HSS | Stub drills, left hand cutting |
| 34 | | PN 2905<br>DIN 1897 RN | HSS | Stub drills |
| 35 |  | ČSN 221191<br>DIN 1899A RN | HSS | Mikro drills |
| 36 |  | ČSN 221192<br>DIN 1899A LN | HSS | Mikro drills, left hand cutting |


## LONG SERIES STRAIGHT SHANK DRILLS


| | | | | |
|---|---|---|---|---|
| 37 – 38 | | ČSN 221125<br>DIN 340 RN | HSS | Long series straight shank drills |
| 39 | | PN 2915<br>DIN 340 RN | HSS Co | Cobalt long series straight shank drills |
| 40 | | PN 2916<br>DIN 340 RN | HSS | Long series straight shank drills |
| 41 | | PN 2916 T1000<br>DIN 340 RN GT 100 | HSS Co | Cobalt long series straight shank drills |
| 42 | | PN 2916 T 500<br>DIN 340 RN GT 50 | HSS | Jobber drills, left hand cutting |

# Contens

## JOBBER DRILLS


| Page | | Norm | Material | |
|---|---|---|---|---|
| 51 | | 30030. | HSS | Straight shank drills |
| 51 | | 30050. | HSS | Straight shank drills |
| 51 | | 30055. | HSSCo5 | Straight shank drills |
| 51 | | 30075. | HSSCo5 | Straight shank drills |
| 51 | | 40090. | HSS | Straight shank drills |
| 51 | | 50100. | HSS | Straight shank drills |
| 51 | | 50110. | HSS | Straight shank drills |


## TAPER SHANK DRILLS


| | | | | |
|---|---|---|---|---|
| 53 – 57 | | ČSN 221140<br>DIN 345 RN | HSS | Taper shank drills |
| 57 – 58 | | ČSN 221143<br>DIN 345 RN | HSS Co | Cobalt taper shank drills |
| 58 | | ZVSE 221146 | HSS Co 8 | Cobalt taper shank drills ( HSSCO8) |
| 59 – 61 | | PN 221155<br>DIN 345 RN | HSS | Taper shank drills |


## EXTRA LONG TAPER SHANK DRILLS


| | | | | |
|---|---|---|---|---|
| 61 – 62 |  | ZV 5001<br>DIN 341 RN<br>DIN 1870 RN | HSS | Extra long taper shank drills, series 1, 2, 3 |
| 63 | | ZV 5001 T1000<br>DIN 341 RN GT100<br>DIN 1870 RN GT100 | HSS Co | Cobalt extra long taper shank drills, series 1, 2 |


## SUBLAND DRILLS


| | | | | |
|---|---|---|---|---|
| 64 | | PN 221252<br>DIN 8376 | HSS | Straight shank subland drills for drilling clearence holes 180° |
| 65 | | PN 221254<br>DIN 8374 | HSS | Straight shank subland drills for drilling clearence holes 90° |
| 67 | | PN 221258<br>DIN 8378 | HSS | Straight shank subland drills for taping clearence holes 90° |
| 64 – 65 | | PN 221253<br>DIN 8377 | HSS | Taper shank subland drills for drilling clearence holes 180° |
| 66 | | PN 221255<br>DIN 8375 | HSS | Taper shank subland drills for drilling clearence holes 90° |
| 67 – 68 | | PN 221259<br>DIN 8379 | HSS | Taper shank subland drills for taping clearence holes 90° |

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## SPECIAL DRILLS


| Norm | Material | name | | Page |
|---|---|---|---|---|
| ČSN 221110 | | Center drils 60°, type A | | 69 |
| ČSN 221112 | | Center drils 60°, type B | | 69 |
| ČSN 221114 | | Center drils 60°, left hand cutting, type A | | 70 |
| ČSN 221116 | | V Center drils 60°, left hand cutting, type R | | 70 |
| ZVSE 221138.1 | HSS Co | Twist drills for welding spots | | 68 |
| ZVSE 221138.2<br>ZVSE 221138.3 | HSS Co | Twist drills for welding spots | | 71 |
| ZVSE 221137 | HSS | V Duble-ended body drills | | 72 |
| ZVSE 221270 | HSS | Drill saw | | 72 |
| ZVSE 221260 | HSS | Sheet and tupe drills | | 73 |
| 221260.1<br>221260.2<br>221260.3 | HSS | Conical peeling drills | | 73 – 74 |
| 221260.4 | HSS, HSS E | Steppedl peeling drills | | 74 |
| ZVSE 221313 A | SK | Forming drills for drilling tapping serie holes into the sheets and the section | | 75 |
| ZVSE 221313 B | SK | Forming drills for drilling tapping serie holes into the sheets and the section | | 75 |
| 238980 | HCS | Screw extractor No.1 - No.5 | | 76 |
| 231680 | HCS | Screw extractor No.6 | | 76 |


## WOOD MACHINING DRILLS


| | | | | |
|---|---|---|---|---|
| PN 225677 | HSS | Dowell drills | | 77 |
| ZVSE 225670 | HSS | Wood boring bits | | 77 |
| ZVSE 221188 B | HCS | Framework drills, reduced straght shank | | 78 |
| ZVSE 221188 A | HCS | Framework drills straght shank | | 79 |


## DRILLS WITH CARBIDE CUTTING


| | | | | |
|---|---|---|---|---|
| TP 320 | | Straght shank drills with carbide cutting | | 80 |
| TP 330 | | Taper shank drills with carbide cutting | | 81 |

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## CORE DRILLS


| Page | | Norm | Material | |
|---|---|---|---|---|
| 82 | | ČSN 221411<br>DIN 222 | HSS | Core drills with taper shank |
| 83 | | ČSN 221480<br>DIN 344 | HSS | Core drills with three flutes and straight shank |
| 84 | | ČSN 221482<br>DIN 343N | HSS | Core drills with three flutes and taper shank |
| 85 – 86 | | ČSN 221414<br>DIN 222N | HSS | Shell core drills |


## HAND REAMERS


| | | | | |
|---|---|---|---|---|
| 87 | | ZVSE 221420<br>DIN 206 Form A | HSS | Hand reamers with straight shank |
| 88 | | ČSN 221420<br>DIN 206 Form B | HSS | Hand reamers with straight shank |
| 89 | | ČSN 221421<br>DIN 859 Form A | HCS | Adjustable hand reamers |
| 86 | | ČSN 221460 | HSS | Hand taper reamers 1 : 10 |
| 90 | | ZVSE 221469<br>DIN 9 Form A | HSS | Hand taper reamers 1 : 50 |
| 90 | | ČSN 221469<br>DIN 9 Form B | HSS | Hand taper reamers 1 : 50 |


## MACHINE REAMERS


| | | | | |
|---|---|---|---|---|
| 91 | | ČSN 221430<br>DIN 212 Form B, D | HSS | Machine reamers with straight shank |
| 90 | | ČSN 221445<br>DIN 212 Form A, C | HSS | Machine reamers with straight shank |
| 91 | | ČSN 221429<br>DIN 212 Form E | HSS | Quick-spiral reamers with straight shank |
| 92 | | ČSN 221431<br>DIN 208 Form B | HSS | Machine reamers with taper shank spiral-fluted |
| 93 | | ČSN 221446<br>DIN 208 Form A | HSS | Machine reamers with taper shank straight fluted |
| 92 | | ČSN 221458<br>DIN 208 Form C | HSS | Quick-spiral reamers with taper shank |
| 93 | | ČSN 221452<br>DIN 311 | HSS | Machine bridge reamers with taper shank |
| 94 | | ČSN 221432<br>DIN 219 Form B | HSS | Shell reamers |
| 95 | | ČSN 221447<br>DIN 219 Form A | HSS | Shell reamers, straight fluted |

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## REAMERS


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|---|---|---|---|
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| 221417 | | Straight-fluted reamers for small holes | 97 |
| 221418 | | Spiral-fluted reamers for small holes | 97 |
| 221469 | | Taper pin reamers | 97 |
| 221494 | | Taper reamers for nozzies | 98 |
| 221495 | | Long hand reamers for small holes with taper 1:100 | 98 |
| 221496 | | Machine reamers for small holes with taper 1:100 | 99 |
| 221497 | | Finisching reamers for small holes with taper 1:100 | 99 |
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| 6310 | | Machine reamers with taper shank with carbide K10 cutting lips | 101 |
| 221424 | | Reamers without guide bush | 102 |
| 221426 | | Rreamers with guide bush | 103 |


## COUNTERBORES


| | | | |
|---|---|---|---|
| ČSN 221604<br>DIN 373 | HSS | Counterborers with straight shank and fixed pilot | 104 |
| ČSN 221606<br>DIN 375 | HSS | Counterborers with hole for detachable pilot and taper shank | 106 |
| ČSN 221608<br>DIN 1868 | HSS | Pilot for counterborers ČSN 221606 (DIN 375) | 107 |
| ČSN 221605<br>DIN 1866 | HSS | Countersinks with fixed pilot and straight shank | 104 |
| ČSN 221607<br>DIN 1867 | HSS | Countersinks with taper shank and fixed pilot | 105 |
| ČSN 221627<br>DIN 334, 335, 347 | HSS | Countersinks 60°, 90°, 120° with straight shank | 108 |
| ČSN 221628<br>DIN 334, 335, 347 | HSS | Countersinks 60°, 90°, 120° with taper shank | 108 |

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## COUNTERBORES


| Page | | Norm | Material | |
|---|---|---|---|---|
| 109 | | ZVSE 221623<br>DIN 334 C | HSS | Countersinks 60° with straight shank |
| 109 | | ZVSE 221624<br>DIN 334 D | HSS | Countersinks 60° with taper shank |
| 110 | | ZVSE 221625<br>DIN 335 C | HSS | Countersinks 90° with straight shank |
| 111 | | 221625.1<br>A 221625.2 | HSS | Countersinks |
| 112 | | ZVSE 221626<br>DIN 335 D | HSS | Countersinks 90° with taper shank |
| 111 | | 221625.3 | Hss | Deburrer countersink |
| 112 | | ČSN 221650 | HSS | Shell two-sided spot-facing tool |
| 113 | | ČSN 221655 | HSS | Counterboring cutters |
| 113 | | ČSN 221657 | HSS | Two-sided spot-facing cutters |


## CLMPING TOOLS


| | | | | |
|---|---|---|---|---|
| 114 | | ČSN 241210<br>DIN 217 | HCS | Arbors for shell core drills and reamers |
| 115 | | ČSN 241213 | HCS | Arbors for counterboring cutters |
| 116 | | ČSN 241214 | HCS | Guide bushes for holders for sinking cutters |
| 117 | | ČSN 241216 | HCS | Arbors for two-sided shell spot-facing tools |
| 118 | | ČSN 241217 | HCS | Arbors for facing cutters |

# Sets Drill

## SETS DRILLS

| Norma | Popis sady | According to | Contents of Set | Tool Material | |
|---|---|---|---|---|---|
| PN 2913, 2907<br>ČSN 221121 | Set of 7 Drills | DIN 338 RN | ∅1,5; 2,0; 3,0; 4,0;<br>5,0; 5,5; 6,0 | HSS<br>HSS Co | |
| PN 2913, 2907<br>ČSN 221121 | Set of 13 Drills | DIN 338 RN | ∅1,5; 2,0; 2,5; 3,0; 3,3; 3,5;<br>4,0; 4,2; 4,5; 5,0; 5,5;<br>6,0; 6,5 | HSS<br>HSS Co | |
| PN 2913, 2907<br>ČSN 221121 | Set of 19 Drills | DIN 338 RN | ∅1,0; 1,5; 2,0; 2,5; 3,0; 3,5;<br>4,0; 4,5; 5,0; 5,5; 6,0; 6,5;<br>7,0; 7,5; 8,0; 8,5; 9,0;<br>9,5; 10 | HSS<br>HSS Co | |
| PN 2913, 2907<br>ČSN 221121 | Set of 25 Drills | DIN 338 RN | ∅1,0; 1,5; 2,0; 2,5; 3,0; 3,5;<br>4,0; 4,5; 5,0; 5,5; 6,0; 6,5;<br>7,0; 7,5; 8,0; 8,5; 9,0;9,5;<br>10; 10,5; 11,0; 11,5;<br>12,0; 12,5; 13,0 | HSS<br>HSS Co | |
| PN 2913, 2907<br>ČSN 221121 | Set of 41 Drills | DIN 338 RN | ∅6,0; 6,1; 6,2; 6,3; 6,4; 6,5;<br>6,6; 6,7; 6,8; 6,9; 7,0; 7,1<br>7,2; 7,3; 7,4; 7,5; 7,6; 7,7;<br>7,8; 7,9; 8,0; 8,1; 8,2; 8,3;<br>8,4; 8,5; 8,6; 8,7; 8,8; 8,9;<br>9,0; 9,1; 9,2; 9,3; 9,4; 9,5;<br>9,6; 9,7; 9,8; 9,9; 10,0 | HSS<br>HSS Co | |

## SETS DRILLS

| | Norma | Popis sady | According to | Contents of Set | Tool Material |
|---|---|---|---|---|---|
| | PN 2913, 2907<br>ČSN 221121 | Set of 50 Drills | DIN 338 RN | ∅1,0; 1,1; 1,2; 1,3; 1,4; 1,5<br>1,6; 1,7; 1,8; 1,9; 2,0; 2,1;<br>2,2; 2,3; 2,4; 2,5; 2,6; 2,7;<br>2,8; 2,9; 3,0; 3,1; 3,2; 3,3;<br>3,4; 3,5; 3,6; 3,7; 3,8; 3,9;<br>4,0; 4,1; 4,2; 4,3; 4,4; 4,5;<br>4,6; 4,7; 4,8; 4,9; 5,0; 5,1;<br>5,2; 5,3; 5,4; 5,5; 5,6; 5,7;<br>5,8; 5,9 | HSS<br>HSS Co |
| | PN 221135 | Set of 7 Drills | DIN 338 RN | ∅1/16"; 3/32"; 1/8"; 5/32";<br>3/16"; 7/32"; 1/4" | HSS |
| | PN 221135 | Set of 10 Drills | DIN 338 RN | ∅1/16"; 5/64"; 3/32"; 7/64";<br>1/8"; 9/64"; 5/32"; 3/16";<br>7/32"; 1/4" | HSS |
| | PN 221135 | Set of 13 Drills | DIN 338 RN | ∅1/16"; 5/64"; 3/32"; 7/64";<br>1/8"; 9/64"; 5/32"; 11/64";<br>3/16"; 13/64"; 7/32";<br>15/64"; 1/4" | HSS |
| | PN 221135 | Set of 15 Drills | DIN 338 RN | ∅1/16"; 3/32"; 1/8"; 5/32";<br>3/16"; 7/32"; 1/4"; 9/32;<br>5/16"; 11/32"; 3/8";<br>13/32"; 7/16"; 15/32";<br>1/2" | HSS |

# Sets Drill

## SETS DRILLS

| Norma | Popis sady | According to | Contents of Set | Tool Material | |
|---|---|---|---|---|---|
| PN 221135 | Set of 21 Drills | DIN 338 RN | ∅1/16"; 5/64"; 3/32"; 7/64"; 1/8"; 9/64"; 5/32"; 11/64"; 3/16"; 13/64"; 7/32"; 15/64"; 1/4"; 17/64"; 9/32"; 19/64"; 5/16"; 21/64"; 11/32"; 23/64"; 3/8" | HSS | |
| PN 221135 | Set of 29 Drills | DIN 338 RN | ∅1/16"; 5/64"; 3/32"; 7/64"; 1/8"; 9/64"; 5/32"; 11/64"; 3/16"; 13/64"; 7/32"; 15/64"; 1/4"; 17/64"; 9/32"; 19/64"; 5/16"; 21/64"; 11/32";23/64"; 3/8"; 25/64"; 13/32"; 27/64"; 7/16"; 29/64"; 15/32"; 31/64"; 1/2" | HSS | |
| PN 22 5677 | Set of Wood-boring Drills | | ∅5,0; 6,0; 8,0; 10,0 | | |
| | Set of Screw Extractors | | M3,0÷M4,5 č. 1<br>M5,0÷M7,0 č. 2<br>M8,0÷M10,0 č. 3<br>M11,0÷M14,0 č. 4<br>M16,0÷M18,0 č. 5 | | |
| ČSN 221121 | Set of Screw Extractors with Drills | | M3,0÷M4,5 + ∅2,0 č. 1<br>M5,0÷M7,0 + ∅3,0 č. 2<br>M8,0÷M10,0 + ∅4,5 č. 3<br>M11,0÷M14,0 + ∅7,0 č. 4<br>M16,0÷M18,0 + ∅10,0 č. 5 | | |

# Conical peeling drils set

## CONICAL PEELING DRILLS SET

| Type | Popis sady | kg | a×b×c /mm/ |
|---|---|---|---|
| Typ - 1 | 1; 2; 3 | 0,22 | 73×17×133 |
| Typ - 2 | 1; 3 | 0,17 | 73×17×133 |
| Typ - 3 | 2; 3 | 0,20 | 73×17×133 |

| | | | |
|---|---|---|---|
| Typ - 1 HSS | 0,9; 1 | 0,11 | 73×17×133 |
| Typ - 1 HSS-E | 0,9; 1 | 0,11 | 73×17×133 |
| Typ - 2 HSS | 0,9; 2 | 0,26 | 73×17×133 |
| Typ - 2 HSS-E | 0,9; 2 | 0,26 | 73×17×133 |
| Typ - 3 HSS | 2; 3 | 0,46 | 77×44×133 |
| Typ - 3 HSS-E | 2; 3 | 0,46 | 77×44×133 |

## COUNTERSINKS SET

**HSS**

| Type | Popis sady | kg | a×b×c /mm/ |
|---|---|---|---|
| Typ - 1 | ∅6,3; 8; 10; 12 | 0,07 | 70×33×133 |
| Typ - 2 | ∅6,3; 8; 10; 16 | 0,08 | 70×33×133 |
| Typ - 3 | ∅6,3; 10; 12; 16 | 0,09 | 70×33×133 |
| Typ - 4 | ∅12; 16; 20 | 0,10 | 70×33×133 |

## DEBURRER COUNTERSINKS SET

**HSS**

| Type | Popis sady | kg | a×b×c /mm/ |
|---|---|---|---|
| Typ - 1 | ∅2/5; 5/10; 10/15 | 0,11 | 70×33×133 |

# Jobber Drills

## JOBBER DRILLS

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0002 | 1 |
| 1,10 | 36 | 14 | 0,0002 | 1,1 |
| 1,20 | 38 | 16 | 0,0003 | 1,2 |
| 1,25 | 38 | 16 | 0,0003 | 1,35 |
| 1,30 | 38 | 16 | 0,0003 | 1,3 |
| 1,40 | 40 | 18 | 0,0004 | 1,4 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,50 | 40 | 18 | 0,0004 | 1,5 |
| 1,60 | 43 | 20 | 0,0005 | 1,6 |
| 1,70 | 43 | 20 | 0,0005 | 1,7 |
| 1,75 | 46 | 22 | 0,0005 | 1,75 |
| 1,80 | 46 | 22 | 0,0006 | 1,8 |
| 1,90 | 46 | 22 | 0,0006 | 1,9 |

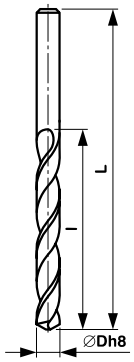
**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V

**Surface Treatment:** ●

**Grinding Mode:** Form N




## JOBBER DRILLS

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,00 | 49 | 24 | 0,0007 | 2 |
| 2,10 | 49 | 24 | 0,0008 | 2,1 |
| 2,20 | 53 | 27 | 0,0009 | 2,2 |
| 2,25 | 53 | 27 | 0,0009 | 2,25 |
| 2,30 | 53 | 27 | 0,0010 | 2,3 |
| 2,40 | 57 | 30 | 0,0012 | 2,4 |
| 2,50 | 57 | 30 | 0,0013 | 2,5 |
| 2,60 | 57 | 30 | 0,0014 | 2,6 |
| 2,70 | 61 | 33 | 0,0016 | 2,7 |
| 2,75 | 61 | 33 | 0,0017 | 2,75 |
| 2,80 | 61 | 33 | 0,0018 | 2,8 |
| 2,90 | 61 | 33 | 0,0019 | 2,9 |
| 3,00 | 61 | 33 | 0,0022 | 3 |
| 3,10 | 65 | 36 | 0,0026 | 3,1 |
| 3,20 | 65 | 36 | 0,0028 | 3,2 |
| (3,25) | 65 | 36 | 0,0029 | 3,25 |
| 3,30 | 65 | 36 | 0,003 | 3,3 |
| 3,40 | 70 | 39 | 0,0034 | 3,4 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 3,50 | 70 | 39 | 0,0025 | 3,5 |
| 3,60 | 70 | 39 | 0,0036 | 3,6 |
| 3,70 | 70 | 39 | 0,0038 | 3,7 |
| (3,75) | 70 | 39 | 0,0039 | 3,75 |
| 3,80 | 75 | 43 | 0,0042 | 3,8 |
| 3,90 | 75 | 43 | 0,0043 | 3,9 |
| 4,00 | 75 | 43 | 0,0044 | 4 |
| 4,10 | 75 | 43 | 0,0048 | 4,1 |
| 4,20 | 75 | 43 | 0,005 | 4,2 |
| (4,25) | 75 | 43 | 0,0055 | 4,25 |
| 4,30 | 80 | 47 | 0,0055 | 4,3 |
| 4,40 | 80 | 47 | 0,0055 | 4,4 |
| 4,50 | 80 | 47 | 0,006 | 4,5 |
| 4,60 | 80 | 47 | 0,007 | 4,6 |
| 4,70 | 80 | 47 | 0,007 | 4,7 |
| (4,75) | 80 | 47 | 0,008 | 4,75 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |

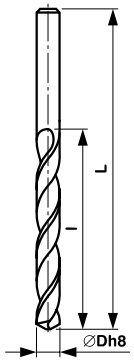
**Usability:**

Drills are recommended for usual drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** T

**Surface Treatment:** ●

**Grinding Mode:** Form N



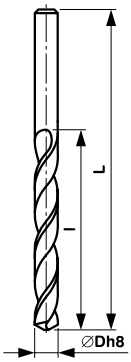
**JOBBER DRILLS**

**STANDARD**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5,00 | 86 | 52 | 0,0085 | 5 |
| 5,10 | 86 | 52 | 0,0085 | 5,1 |
| 5,20 | 86 | 52 | 0,009 | 5,2 |
| (5,25) | 86 | 52 | 0,009 | 5,25 |
| 5,30 | 86 | 52 | 0,009 | 5,3 |
| 5,40 | 93 | 57 | 0,009 | 5,4 |
| 5,50 | 93 | 57 | 0,010 | 5,5 |
| 5,60 | 93 | 57 | 0,010 | 5,6 |
| 5,70 | 93 | 57 | 0,010 | 5,7 |
| (5,75) | 93 | 57 | 0,011 | 5,75 |
| 5,80 | 93 | 57 | 0,012 | 5,8 |
| 5,90 | 93 | 57 | 0,012 | 5,9 |
| 6,00 | 93 | 57 | 0,013 | 6 |
| 6,10 | 101 | 63 | 0,013 | 6,1 |
| 6,20 | 101 | 63 | 0,014 | 6,2 |
| (6,25) | 101 | 63 | 0,014 | 6,25 |
| 6,30 | 101 | 63 | 0,015 | 6,3 |
| 6,40 | 101 | 63 | 0,016 | 6,4 |
| 6,50 | 101 | 63 | 0,017 | 6,5 |
| 6,60 | 101 | 63 | 0,018 | 6,6 |
| 6,70 | 101 | 63 | 0,019 | 6,7 |
| (6,75) | 109 | 69 | 0,019 | 6,75 |
| 6,80 | 109 | 69 | 0,0195 | 6,8 |
| 6,90 | 109 | 69 | 0,020 | 6,9 |
| 7,00 | 109 | 69 | 0,020 | 7 |
| 7,10 | 109 | 69 | 0,021 | 7,1 |
| 7,20 | 109 | 69 | 0,021 | 7,2 |
| (7,25) | 109 | 69 | 0,022 | 7,25 |
| 7,30 | 109 | 69 | 0,022 | 7,3 |
| 7,40 | 109 | 69 | 0,023 | 7,4 |
| 7,50 | 109 | 69 | 0,023 | 7,5 |
| 7,60 | 117 | 75 | 0,024 | 7,6 |
| 7,70 | 117 | 75 | 0,024 | 7,7 |
| (7,75) | 117 | 75 | 0,025 | 7,75 |
| 7,80 | 117 | 75 | 0,025 | 7,8 |
| 7,90 | 117 | 75 | 0,026 | 7,9 |
| 8,00 | 117 | 75 | 0,027 | 8 |
| 8,10 | 117 | 75 | 0,027 | 8,1 |
| 8,20 | 117 | 75 | 0,028 | 8,2 |
| (8,25) | 117 | 75 | 0,028 | 8,25 |
| 8,30 | 117 | 75 | 0,029 | 8,3 |
| 8,40 | 117 | 75 | 0,029 | 8,4 |
| 8,50 | 117 | 75 | 0,030 | 8,5 |
| 8,60 | 125 | 81 | 0,035 | 8,6 |
| 8,70 | 125 | 81 | 0,035 | 8,7 |
| (8,75) | 125 | 81 | 0,037 | 8,75 |
| 8,80 | 125 | 81 | 0,037 | 8,8 |
| 8,90 | 125 | 81 | 0,039 | 8,9 |
| 9,00 | 125 | 81 | 0,038 | 9 |
| 9,10 | 125 | 81 | 0,039 | 9,1 |
| 9,20 | 125 | 81 | 0,039 | 9,2 |
| (9,25) | 125 | 81 | 0,040 | 9,25 |
| 9,30 | 125 | 81 | 0,040 | 9,3 |
| 9,40 | 125 | 81 | 0,042 | 9,4 |
| 9,50 | 125 | 81 | 0,043 | 9,5 |
| 9,60 | 133 | 87 | 0,050 | 9,6 |
| 9,70 | 133 | 87 | 0,050 | 9,7 |
| (9,75) | 133 | 87 | 0,050 | 9,75 |
| 9,80 | 133 | 87 | 0,051 | 9,8 |
| 9,90 | 133 | 87 | 0,051 | 9,9 |
| 10,00 | 133 | 87 | 0,052 | 10 |
| 10,10 | 133 | 87 | 0,052 | 10,1 |
| 10,20 | 133 | 87 | 0,053 | 10,2 |
| (10,25) | 133 | 87 | 0,053 | 10,25 |
| 10,30 | 133 | 87 | 0,054 | 10,3 |
| 10,40 | 133 | 87 | 0,054 | 10,4 |
| 10,50 | 133 | 87 | 0,055 | 10,5 |
| 10,60 | 133 | 87 | 0,055 | 10,6 |
| 10,70 | 142 | 94 | 0,065 | 10,7 |
| (10,75) | 142 | 94 | 0,066 | 10,75 |
| 10,80 | 142 | 94 | 0,067 | 10,8 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 10,90 | 142 | 94 | 0,068 | 10,9 |
| 11,00 | 142 | 94 | 0,068 | 11 |
| 11,10 | 142 | 94 | 0,069 | 11,1 |
| 11,20 | 142 | 94 | 0,069 | 11,2 |
| (11,25) | 142 | 94 | 0,069 | 11,25 |
| 11,30 | 142 | 94 | 0,070 | 11,3 |
| 11,40 | 142 | 94 | 0,070 | 11,4 |
| 11,50 | 142 | 94 | 0,071 | 11,5 |
| 11,60 | 142 | 94 | 0,071 | 11,6 |
| 11,70 | 142 | 94 | 0,073 | 11,7 |
| (11,75) | 142 | 94 | 0,075 | 11,75 |
| 11,80 | 142 | 94 | 0,075 | 11,8 |
| 11,90 | 151 | 101 | 0,086 | 11,9 |
| 12,00 | 151 | 101 | 0,086 | 12 |
| 12,10 | 151 | 101 | 0,088 | 12,1 |
| 12,20 | 151 | 101 | 0,088 | 12,2 |
| (12,25) | 151 | 101 | 0,090 | 12,25 |
| 12,30 | 151 | 101 | 0,090 | 12,3 |
| 12,40 | 151 | 101 | 0,091 | 12,4 |
| 12,50 | 151 | 101 | 0,091 | 12,5 |
| 12,60 | 151 | 101 | 0,092 | 12,6 |
| 12,70 | 151 | 101 | 0,092 | 12,7 |
| (12,75) | 151 | 101 | 0,093 | 12,75 |
| 12,80 | 151 | 101 | 0,093 | 12,8 |
| 12,90 | 151 | 101 | 0,094 | 12,9 |
| 13,00 | 151 | 101 | 0,094 | 13 |
| 13,10 | 151 | 101 | 0,095 | 13,1 |
| 13,20 | 151 | 101 | 0,096 | 13,2 |
| (13,25) | 160 | 108 | 0,100 | 13,25 |
| 13,30 | 160 | 108 | 0,100 | 13,3 |
| 13,40 | 160 | 108 | 0,110 | 13,4 |
| 13,50 | 160 | 108 | 0,110 | 13,5 |
| 13,60 | 160 | 108 | 0,110 | 13,6 |
| 13,70 | 160 | 108 | 0,110 | 13,7 |
| (13,75) | 160 | 108 | 0,111 | 13,75 |
| 13,80 | 160 | 108 | 0,112 | 13,8 |
| 13,90 | 160 | 108 | 0,114 | 13,9 |
| 14,00 | 160 | 108 | 0,114 | 14 |
| (14,10) | 169 | 114 | 0,125 | 14,1 |
| (14,20) | 169 | 114 | 0,125 | 14,2 |
| 14,25 | 169 | 114 | 0,125 | 14,25 |
| (14,30) | 169 | 114 | 0,128 | 14,3 |
| (14,40) | 169 | 114 | 0,130 | 14,4 |
| 14,50 | 169 | 114 | 0,130 | 14,5 |
| (14,60) | 169 | 114 | 0,130 | 14,6 |
| (14,70) | 169 | 114 | 0,137 | 14,7 |
| 14,75 | 169 | 114 | 0,137 | 14,75 |
| (14,80) | 169 | 114 | 0,137 | 14,8 |
| (14,90) | 169 | 114 | 0,137 | 14,9 |
| 15,00 | 169 | 114 | 0,137 | 15 |
| 15,25 | 178 | 120 | 0,145 | 15,25 |
| 15,50 | 178 | 120 | 0,155 | 15,5 |
| 15,75 | 178 | 120 | 0,162 | 15,75 |
| 16,00 | 178 | 120 | 0,170 | 16 |
| 16,25 | 184 | 125 | 0,190 | 16,25 |
| 16,50 | 184 | 125 | 0,198 | 16,5 |
| 16,75 | 184 | 125 | 0,208 | 16,75 |
| 17,00 | 184 | 125 | 0,215 | 17 |
| 17,25 | 191 | 130 | 0,220 | 17,25 |
| 17,50 | 191 | 130 | 0,224 | 17,5 |
| 17,75 | 191 | 130 | 0,228 | 17,75 |
| 18,00 | 191 | 130 | 0,232 | 18 |
| 18,25 | 198 | 135 | 0,240 | 18,25 |
| 18,50 | 198 | 135 | 0,250 | 18,5 |
| 18,75 | 198 | 135 | 0,260 | 18,75 |
| 19,00 | 198 | 135 | 0,270 | 19 |
| 19,25 | 205 | 140 | 0,280 | 19,25 |
| 19,50 | 205 | 140 | 0,288 | 19,5 |
| 19,75 | 205 | 140 | 0,296 | 19,75 |
| 20,00 | 205 | 140 | 0,303 | 20 |

# Jobber Drills

## COBALT JOBBER DRILLS

PROFI

**HSSCo**

$\lambda = 25° \div 30°$

$\varepsilon = 128°$

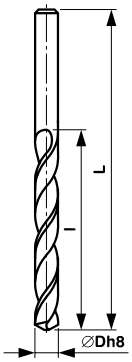
| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 14,5 | 169 | 114 | 0,123 | 14,5 |
| 15,0 | 169 | 114 | 0,140 | 15 |
| 15,5 | 178 | 120 | 0,177 | 15,5 |
| 16,0 | 178 | 120 | 0,177 | 16 |
| 16,5 | 184 | 125 | 0,200 | 16,5 |
| 17,0 | 184 | 125 | 0,200 | 17 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 17,5 | 191 | 130 | 0,220 | 17,5 |
| 18,0 | 191 | 130 | 0,220 | 18 |
| 18,5 | 198 | 135 | 0,252 | 18,5 |
| 19,0 | 198 | 135 | 0,252 | 19 |
| 19,5 | 205 | 140 | 0,285 | 19,5 |
| 20,0 | 205 | 140 | 0,285 | 20 |

**Usability:**

High-efficient drills with the higher thermal stress resistance are recommended for drilling of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for drilling of cold- or hot-work tool steel, rolls for rolling mills, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** F
**Surface Treatment:** ○
**Grinding Mode:** Form N




## JOBBER DRILLS, LEFT HAND CUTTING

PROFI

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

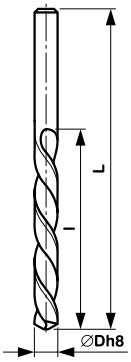
| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 14,25 | 169 | 114 | 0,139 | 14,25 |
| 14,50 | 169 | 114 | 0,141 | 14,5 |
| 14,75 | 169 | 114 | 0,142 | 14,75 |
| 15,00 | 169 | 114 | 0,145 | 15 |
| 15,25 | 178 | 120 | ,0155 | 15,25 |
| 15,50 | 178 | 120 | 0,163 | 15,5 |
| 15,75 | 178 | 120 | 0,173 | 15,75 |
| 16,00 | 178 | 120 | 0,185 | 16 |
| 16,25 | 184 | 125 | 0,195 | 16,25 |
| 16,50 | 184 | 125 | 0,210 | 16,5 |
| 16,75 | 184 | 125 | 0,216 | 16,75 |
| 17,00 | 184 | 125 | 0,220 | 17 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 17,25 | 191 | 130 | 0,230 | 17,25 |
| 17,50 | 191 | 130 | 0,235 | 17,5 |
| 17,75 | 191 | 130 | 0,240 | 17,75 |
| 18,00 | 191 | 130 | 0,245 | 18 |
| 18,25 | 198 | 135 | 0,255 | 18,25 |
| 18,50 | 198 | 135 | 0,260 | 18,5 |
| 18,75 | 198 | 135 | 0,268 | 18,75 |
| 19,00 | 198 | 135 | 0,278 | 19 |
| 19,25 | 205 | 140 | 0,288 | 19,25 |
| 19,50 | 205 | 140 | 0,300 | 19,5 |
| 19,75 | 205 | 140 | 0,310 | 19,75 |
| 20,00 | 205 | 140 | 0,320 | 20 |

**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** F
**Surface Treatment:** ●
**Grinding Mode:** Form N



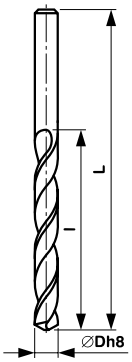
## JOBBER DRILLS

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$




**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm², grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V
**Surface Treatment:** ●
**Grinding Mode:** Form N

| ∅D (∅D) /mm (inch.)/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1/64 (0,397) | 20 | 5 | 0,0001 | 1/64 |
| 1/32 (0,794) | 30 | 10 | 0,0002 | 1/32 |
| 3/64 (1,191) | 38 | 16 | 0,0003 | 3/64 |
| 1/16 (1,588) | 43 | 20 | 0,0004 | 1/16 |

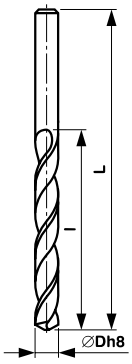
## JOBBER DRILLS

**STANDARD**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$




**Usability:**

Drills are recommended for usual drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm², grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** T
**Surface Treatment:** ◑
**Grinding Mode:** Form N

| ∅D (∅D) /mm (inch.)/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5/64 (1,984) | 49 | 24 | 0,0008 | 5/64 |
| 3/32 (2,381) | 57 | 30 | 0,0009 | 3/32 |
| 7/64 (2,778) | 61 | 33 | 0,001 | 7/64 |
| 1/8 (3,175) | 65 | 36 | 0,002 | 1/8 |
| 9/64 (3,572) | 70 | 39 | 0,003 | 9/64 |
| 5/32 (3,969) | 75 | 43 | 0,004 | 5/32 |
| 11/64 (4,366) | 80 | 47 | 0,005 | 11/64 |
| 3/16 (4,763) | 86 | 52 | 0,007 | 3/16 |
| 13/64 (5,159) | 86 | 52 | 0,010 | 13/64 |
| 7/32 (5,556) | 93 | 57 | 0,012 | 7/32 |
| 15/64 (5,953) | 93 | 57 | 0,014 | 15/64 |
| 1/4 (6,350) | 101 | 63 | 0,017 | 1/4 |
| 17/64 (6,747) | 109 | 69 | 0,020 | 17/64 |
| 9/32 (7,144) | 109 | 69 | 0,023 | 9/32 |
| 19/64 (7,541) | 117 | 75 | 0,026 | 19/64 |
| 5/16 (7,938) | 117 | 75 | 0,030 | 5/16 |
| 21/64 (8,335) | 117 | 75 | 0,036 | 21/64 |
| 11/32 (8,732) | 125 | 81 | 0,040 | 11/32 |
| 23/64 (9,128) | 125 | 81 | 0,043 | 23/64 |
| 3/8 (9,525) | 133 | 87 | 0,046 | 3/8 |
| 25/64 (9,922) | 133 | 87 | 0,052 | 25/64 |
| 13/32 (10,319) | 133 | 87 | 0,062 | 13/32 |
| 27/64 (10,716) | 142 | 94 | 0,067 | 27/64 |
| 7/16 (11,113) | 142 | 94 | 0,070 | 7/16 |
| 29/64 (11,510) | 142 | 94 | 0,076 | 29/64 |
| 15/32 (11,907) | 151 | 101 | 0,088 | 15/32 |
| 31/64 (12,304) | 151 | 101 | 0,095 | 31/64 |
| 1/2 (12,700) | 151 | 101 | 0,098 | 1/2 |
| 33/64 (13,097) | 151 | 101 | 0,104 | 33/64 |
| 17/32 (13,494) | 160 | 108 | 0,113 | 17/32 |
| 35/64 (13,891) | 160 | 108 | 0,121 | 25/64 |
| 9/16 (14,288) | 169 | 114 | 0,135 | 9/16 |
| 37/64 (14,685) | 169 | 114 | 0,148 | 37/64 |
| 19/32 (15,082) | 178 | 120 | 0,150 | 19/32 |
| 39/64 (15,479) | 178 | 120 | 0,169 | 39/64 |
| 5/8 (15,876) | 178 | 120 | 0,180 | 5/8 |
| 41/64 (16,272) | 184 | 125 | 0,185 | 41/64 |
| 21/32 (16,669) | 184 | 125 | 0,210 | 21/32 |
| 43/64 (17,066) | 191 | 130 | 0,217 | 46/64 |
| 11/16 (17,463) | 191 | 130 | 0,230 | 11/16 |
| 45/64 (17,860) | 191 | 130 | 0,248 | 45/64 |
| 23/32 (18,257) | 198 | 135 | 0,263 | 23/32 |
| 47/64 (18,654) | 198 | 135 | 0,269 | 47/64 |
| 3/4 (19,051) | 205 | 140 | 0,275 | 3/4 |
| 49/64 (19,448) | 205 | 140 | 0,298 | 49/64 |
| 25/32 (19,844) | 205 | 140 | 0,323 | 25/32 |
| 51/64 (20,241) | 210 | 145 | 0,331 | 51/64 |
| 13/16 (20,638) | 210 | 145 | 0,328 | 13/16 |
| 53/64 (21,035) | 210 | 145 | 0,337 | 53/64 |
| 27/32 (21,432) | 215 | 150 | 0,342 | 27/32 |
| 55/64 (21,829) | 215 | 150 | 0,348 | 55/64 |
| 7/8 (22,226) | 215 | 150 | 0,350 | 7/8 |
| 57/64 (22,623) | 220 | 155 | 0,355 | 57/64 |
| 29/32 (23,020) | 220 | 155 | 0,366 | 29/32 |
| 59/64 (23,416) | 220 | 155 | 0,380 | 59/64 |
| 15/16 (23,813) | 225 | 160 | 0,380 | 15/16 |
| 61/64 (24,210) | 225 | 160 | 0,385 | 61/64 |
| 31/32 (24,607) | 225 | 160 | 0,400 | 31/32 |
| 63/64 (25,004) | 225 | 160 | 0,408 | 63/64 |
| 1 (25,400) | 230 | 165 | 0,412 | 1 |

# Stub Drills

## JOBBER DRILLS, ACCORDING TO USAS

**STANDARD**

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D (∅D) /mm (inch.)/ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 1/64 (0,397) | 3/4 | 3/16 | 0,0001 | 1/64 |
| 1/32 (0,794) | 1 3/8 | 1/2 | 0,0002 | 1/32 |
| 3/64 (1,191) | 1 3/4 | 3/4 | 0,0003 | 3/64 |
| 1/16 (1,588) | 1 7/8 | 7/8 | 0,0004 | 1/16 |

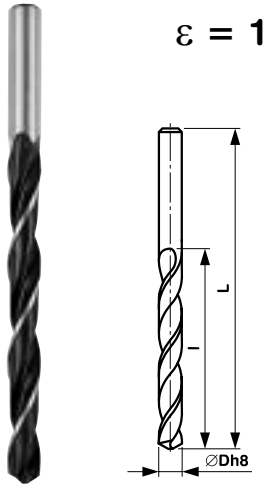
**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V

**Surface Treatment:** ◑

**Grinding Mode:** Form N




## JOBBER DRILLS, ACCORDING TO USAS

**STANDARD**

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D (∅D) /mm (inch.)/ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 5/64 (1,984) | 2 | 1 | 0,0008 | 5/64 |
| 3/32 (2,381) | 2 1/4 | 1 1/4 | 0,0009 | 3/32 |
| 7/64 (2,778) | 2 5/8 | 1 1/2 | 0,0010 | 7/64 |
| 1/8 (3,175) | 2 3/4 | 1 5/8 | 0,0020 | 1/8 |
| 9/64 (3,572) | 2 7/8 | 1 3/4 | 0,003 | 9/64 |
| 5/32 (3,969) | 3 1/8 | 2 | 0,004 | 5/32 |
| 11/64 (4,366) | 3 1/4 | 2 1/8 | 0,005 | 11/64 |
| 3/16 (4,763) | 3 1/2 | 2 5/16 | 0,007 | 3/16 |
| 13/64 (5,159) | 3 5/8 | 2 7/16 | 0,010 | 13/64 |
| 7/32 (5,556) | 3 3/4 | 2 1/2 | 0,012 | 7/32 |
| 15/64 (5,953) | 3 7/8 | 2 5/8 | 0,014 | 46/64 |
| 1/4 (6,350) | 4 | 2 3/4 | 0,017 | 1/4 |
| 17/64 (6,747) | 4 1/8 | 2 7/8 | 0,020 | 17/64 |
| 9/32 (7,144) | 4 1/4 | 2 15/16 | 0,023 | 9/32 |
| 19/64 (7,541) | 4 3/8 | 3 1/16 | 0,026 | 19/64 |
| 5/16 (7,938) | 4 1/2 | 3 3/16 | 0,030 | 5/16 |
| 21/64 (8,335) | 4 5/8 | 3 5/16 | 0,036 | 21/64 |
| 11/32 (8,732) | 4 3/4 | 3 7/16 | 0,040 | 11/32 |
| 23/64 (9,128) | 4 7/8 | 3 1/2 | 0,043 | 23/64 |
| 3/8 (9,525) | 5 | 3 5/8 | 0,046 | 3/8 |
| 25/64 (9,922) | 5 1/8 | 3 3/4 | 0,052 | 15/64 |
| 13/32 (10,319) | 5 1/4 | 3 7/8 | 0,062 | 13/32 |
| 27/64 (10,716) | 5 3/8 | 3 15/16 | 0,067 | 27/64 |
| 7/16 (11,113) | 5 1/2 | 4 1/16 | 0,070 | 7/16 |
| 29/64 (11,510) | 5 5/8 | 4 3/16 | 0,076 | 29/64 |
| 15/32 (11,907) | 5 3/4 | 4 5/16 | 0,088 | 15/32 |
| 31/64 (12,304) | 5 7/8 | 4 3/8 | 0,095 | 31/64 |
| 1/2 (12,700) | 6 | 4 1/2 | 0,098 | 1/2 |
| 33/64 (13,097) | 6 5/8 | 4 13/16 | 0,099 | 33/64 |
| 17/32 (13,494) | 6 5/8 | 4 13/16 | 0,101 | 17/32 |
| 35/64 (13,891) | 6 5/8 | 4 13/16 | 0,110 | 35/64 |
| 9/16 (14,288) | 6 5/8 | 4 13/16 | 0,125 | 9/16 |
| 37/64 (14,684) | 6 5/8 | 4 13/16 | 0,130 | 37/64 |
| 19/32 (15,081) | 7 1/8 | 5 3/16 | 0,141 | 19/32 |
| 39/64 (15,478) | 7 1/8 | 5 3/16 | 0,155 | 39/64 |
| 5/8 (15,875) | 7 1/8 | 5 3/16 | 0,169 | 5/8 |
| 41/64 (16,272) | 7 1/8 | 5 3/16 | 0,192 | 41/64 |
| 21/32 (16,669) | 7 1/8 | 5 3/16 | 0,201 | 21/32 |

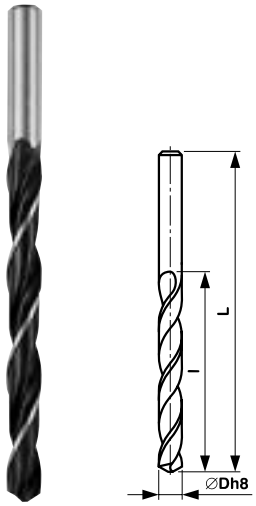
**Usability:**

Drills are recommended for usual drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** T

**Surface Treatment:** ●

**Grinding Mode:** Form N



## COBALT JOBBER DRILLS

**STANDARD**

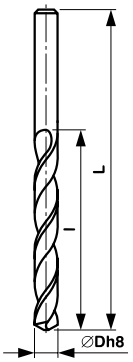
# HSSCo

$\lambda = 25° \div 30°$

$\varepsilon = 128°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0007 | 1 |
| 1,10 | 36 | 14 | 0,0007 | 1,1 |
| 1,20 | 38 | 16 | 0,0008 | 1,2 |
| 1,30 | 38 | 16 | 0,0008 | 1,3 |
| 1,40 | 40 | 18 | 0,0009 | 1,4 |
| 1,50 | 40 | 18 | 0,0009 | 1,5 |
| 1,60 | 43 | 20 | 0,0009 | 1,6 |
| 1,70 | 43 | 20 | 0,001 | 1,7 |
| 1,80 | 46 | 22 | 0,001 | 1,8 |
| 1,90 | 46 | 22 | 0,001 | 1,9 |
| 2,00 | 49 | 24 | 0,001 | 2 |
| 2,10 | 49 | 24 | 0,001 | 2,1 |
| 2,20 | 53 | 27 | 0,001 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,002 | 2,4 |
| 2,50 | 57 | 30 | 0,002 | 2,5 |
| 2,60 | 57 | 30 | 0,002 | 2,6 |
| 2,70 | 61 | 33 | 0,002 | 2,7 |
| 2,80 | 61 | 33 | 0,002 | 2,8 |
| 2,90 | 61 | 33 | 0,003 | 2,9 |
| 3,00 | 61 | 33 | 0,003 | 3 |
| 3,10 | 65 | 36 | 0,003 | 3,1 |
| 3,20 | 65 | 36 | 0,003 | 3,2 |
| 3,30 | 65 | 36 | 0,003 | 3,3 |
| 3,40 | 70 | 39 | 0,004 | 3,4 |
| 3,50 | 70 | 39 | 0,004 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,005 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,006 | 4,2 |
| 4,30 | 80 | 47 | 0,006 | 4,3 |
| 4,40 | 80 | 47 | 0,006 | 4,4 |
| 4,50 | 80 | 47 | 0,007 | 4,5 |
| 4,60 | 80 | 47 | 0,007 | 4,6 |
| 4,70 | 80 | 47 | 0,007 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,009 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,012 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,017 | 6,1 |
| 6,20 | 101 | 63 | 0,018 | 6,2 |
| 6,30 | 101 | 63 | 0,018 | 6,3 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,40 | 101 | 63 | 0,019 | 6,4 |
| 6,50 | 101 | 63 | 0,019 | 6,5 |
| 6,60 | 101 | 63 | 0,020 | 6,6 |
| 6,70 | 101 | 63 | 0,020 | 6,7 |
| 6,80 | 109 | 69 | 0,021 | 6,8 |
| 6,90 | 109 | 69 | 0,022 | 6,9 |
| 7,00 | 109 | 69 | 0,023 | 7 |
| 7,10 | 109 | 69 | 0,024 | 7,1 |
| 7,20 | 109 | 69 | 0,025 | 7,2 |
| 7,30 | 109 | 69 | 0,026 | 7,3 |
| 7,40 | 109 | 69 | 0,027 | 7,4 |
| 7,50 | 109 | 69 | 0,028 | 7,5 |
| 7,60 | 117 | 75 | 0,028 | 7,6 |
| 7,70 | 117 | 75 | 0,029 | 7,7 |
| 7,80 | 117 | 75 | 0,030 | 7,8 |
| 7,90 | 117 | 75 | 0,032 | 7,9 |
| 8,00 | 117 | 75 | 0,033 | 8 |
| 8,10 | 117 | 75 | 0,034 | 8,1 |
| 8,20 | 117 | 75 | 0,035 | 8,2 |
| 8,30 | 117 | 75 | 0,036 | 8,3 |
| 8,40 | 117 | 75 | 0,036 | 8,4 |
| 8,50 | 117 | 75 | 0,037 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,042 | 8,9 |
| 9,00 | 125 | 81 | 0,045 | 9 |
| 9,10 | 125 | 81 | 0,048 | 9,1 |
| 9,20 | 125 | 81 | 0,049 | 9,2 |
| 9,30 | 125 | 81 | 0,049 | 9,3 |
| 9,40 | 125 | 81 | 0,050 | 9,4 |
| 9,50 | 125 | 81 | 0,051 | 9,5 |
| 9,60 | 133 | 87 | 0,052 | 9,6 |
| 9,70 | 133 | 87 | 0,053 | 9,7 |
| 9,80 | 133 | 87 | 0,055 | 9,8 |
| 9,90 | 133 | 87 | 0,056 | 9,9 |
| 10,00 | 133 | 87 | 0,057 | 10 |
| 10,20 | 133 | 87 | 0,057 | 10,2 |
| 10,50 | 133 | 87 | 0,061 | 10,5 |
| 10,80 | 142 | 94 | 0,065 | 10,8 |
| 11,00 | 142 | 94 | 0,065 | 11 |
| 11,20 | 142 | 94 | 0,068 | 11,2 |
| 11,50 | 142 | 94 | 0,071 | 11,5 |
| 11,80 | 142 | 94 | 0,075 | 11,8 |
| 12,00 | 151 | 101 | 0,081 | 12 |
| 12,20 | 151 | 101 | 0,086 | 12,2 |
| 12,50 | 151 | 101 | 0,092 | 12,5 |
| 12,80 | 151 | 101 | 0,095 | 12,8 |
| 13,00 | 151 | 101 | 0,102 | 13 |
| 13,20 | 151 | 101 | 0,108 | 13,2 |
| 13,50 | 160 | 108 | 0,114 | 13,5 |
| 13,80 | 160 | 108 | 0,118 | 13,8 |
| 14,00 | 160 | 108 | 0,123 | 14 |




**Usability:**

High-efficient drills with the higher thermal stress resistance are recommended for drilling of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for drilling of cold- or hot-work tool steel, rolls for rolling mills, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** V

**Surface Treatment:** O

**Grinding Mode:** D<2 Form N

D≥2 Form C

# Jobber Drills

## COBALT JOBBER DRILLS, LEFT HAND CUTTING

**PROFI**

**HSSCo**

$\lambda = 25° \div 30°$

$\varepsilon = 128°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0007 | 1 |
| 1,10 | 36 | 14 | 0,0007 | 1,1 |
| 1,20 | 38 | 16 | 0,0008 | 1,2 |
| 1,30 | 38 | 16 | 0,0008 | 1,3 |
| 1,40 | 40 | 18 | 0,0009 | 1,4 |
| 1,50 | 40 | 18 | 0,0009 | 1,5 |
| 1,60 | 43 | 20 | 0,0009 | 1,6 |
| 1,70 | 43 | 20 | 0,001 | 1,7 |
| 1,80 | 46 | 22 | 0,001 | 1,8 |
| 1,90 | 46 | 22 | 0,001 | 1,9 |
| 2,00 | 49 | 24 | 0,001 | 2 |
| 2,10 | 49 | 24 | 0,001 | 2,1 |
| 2,20 | 53 | 27 | 0,001 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,002 | 2,4 |
| 2,50 | 57 | 30 | 0,002 | 2,5 |
| 2,60 | 57 | 30 | 0,002 | 2,6 |
| 2,70 | 61 | 33 | 0,002 | 2,7 |
| 2,80 | 61 | 33 | 0,002 | 2,8 |
| 2,90 | 61 | 33 | 0,003 | 2,9 |
| 3,00 | 61 | 33 | 0,003 | 3 |
| 3,10 | 65 | 36 | 0,003 | 3,1 |
| 3,20 | 65 | 36 | 0,003 | 3,2 |
| 3,30 | 65 | 36 | 0,003 | 3,3 |
| 3,40 | 70 | 39 | 0,004 | 3,4 |
| 3,50 | 70 | 39 | 0,004 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,005 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,006 | 4,2 |
| 4,30 | 80 | 47 | 0,006 | 4,3 |
| 4,40 | 80 | 47 | 0,006 | 4,4 |
| 4,50 | 80 | 47 | 0,007 | 4,5 |
| 4,60 | 80 | 47 | 0,007 | 4,6 |
| 4,70 | 80 | 47 | 0,007 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,009 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,012 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,017 | 6,1 |
| 6,20 | 101 | 63 | 0,018 | 6,2 |
| 6,30 | 101 | 63 | 0,018 | 6,3 |
| 6,40 | 101 | 63 | 0,019 | 6,4 |
| 6,50 | 101 | 63 | 0,019 | 6,5 |
| 6,60 | 101 | 63 | 0,020 | 6,6 |
| 6,70 | 101 | 63 | 0,020 | 6,7 |
| 6,80 | 109 | 69 | 0,021 | 6,8 |
| 6,90 | 109 | 69 | 0,022 | 6,9 |
| 7,00 | 109 | 69 | 0,023 | 7 |
| 7,10 | 109 | 69 | 0,024 | 7,1 |
| 7,20 | 109 | 69 | 0,025 | 7,2 |
| 7,30 | 109 | 69 | 0,026 | 7,3 |
| 7,40 | 109 | 69 | 0,027 | 7,4 |
| 7,50 | 109 | 69 | 0,028 | 7,5 |
| 7,60 | 117 | 75 | 0,028 | 7,6 |
| 7,70 | 117 | 75 | 0,029 | 7,7 |
| 7,80 | 117 | 75 | 0,030 | 7,8 |
| 7,90 | 117 | 75 | 0,032 | 7,9 |
| 8,00 | 117 | 75 | 0,033 | 8 |
| 8,10 | 117 | 75 | 0,034 | 8,1 |
| 8,20 | 117 | 75 | 0,035 | 8,2 |
| 8,30 | 117 | 75 | 0,036 | 8,3 |
| 8,40 | 117 | 75 | 0,036 | 8,4 |
| 8,50 | 117 | 75 | 0,037 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,042 | 8,9 |
| 9,00 | 125 | 81 | 0,045 | 9 |
| 9,10 | 125 | 81 | 0,048 | 9,1 |
| 9,20 | 125 | 81 | 0,049 | 9,2 |
| 9,30 | 125 | 81 | 0,049 | 9,3 |
| 9,40 | 125 | 81 | 0,050 | 9,4 |
| 9,50 | 125 | 81 | 0,051 | 9,5 |
| 9,60 | 133 | 87 | 0,052 | 9,6 |
| 9,70 | 133 | 87 | 0,053 | 9,7 |
| 9,80 | 133 | 87 | 0,055 | 9,8 |
| 9,90 | 133 | 87 | 0,056 | 9,9 |
| 10,00 | 133 | 87 | 0,057 | 10 |
| 10,20 | 133 | 87 | 0,057 | 10,2 |
| 10,50 | 133 | 87 | 0,061 | 10,5 |
| 10,80 | 142 | 94 | 0,065 | 10,8 |
| 11,00 | 142 | 94 | 0,065 | 11 |
| 11,20 | 142 | 94 | 0,068 | 11,2 |
| 11,50 | 142 | 94 | 0,071 | 11,5 |
| 11,80 | 142 | 94 | 0,075 | 11,8 |
| 12,00 | 151 | 101 | 0,081 | 12 |
| 12,20 | 151 | 101 | 0,086 | 12,2 |
| 12,50 | 151 | 101 | 0,092 | 12,5 |
| 12,80 | 151 | 101 | 0,095 | 12,8 |
| 13,00 | 151 | 101 | 0,102 | 13 |
| 13,20 | 151 | 101 | 0,108 | 13,2 |
| 13,50 | 160 | 108 | 0,114 | 13,5 |
| 13,80 | 160 | 108 | 0,118 | 13,8 |
| 14,00 | 160 | 108 | 0,123 | 14 |

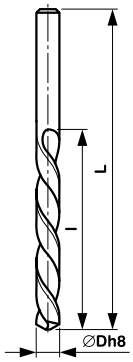
**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V

**Surface Treatment:** ●

**Grinding Mode:** Form N



## QUICK HELIX JOBBER DRILLS

**PROFI**

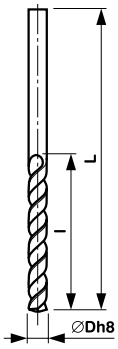
# HSS

$\lambda = 35° \div 40°$

$\varepsilon = 128°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0002 | 1 |
| 1,10 | 36 | 14 | 0,0002 | 1,1 |
| 1,20 | 38 | 16 | 0,0003 | 1,2 |
| 1,30 | 38 | 16 | 0,0003 | 1,3 |
| 1,40 | 40 | 18 | 0,0003 | 1,4 |
| 1,50 | 40 | 18 | 0,0004 | 1,5 |
| 1,60 | 43 | 20 | 0,0005 | 1,6 |
| 1,70 | 43 | 20 | 0,0006 | 1,7 |
| 1,80 | 46 | 22 | 0,0006 | 1,8 |
| 1,90 | 46 | 22 | 0,0007 | 1,9 |
| 2,00 | 49 | 24 | 0,0007 | 2 |
| 2,10 | 49 | 24 | 0,0007 | 2,1 |
| 2,20 | 53 | 27 | 0,0009 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,001 | 2,4 |
| 2,50 | 57 | 30 | 0,001 | 2,5 |
| 2,60 | 57 | 30 | 0,001 | 2,6 |
| 2,70 | 61 | 33 | 0,001 | 2,7 |
| 2,80 | 61 | 33 | 0,001 | 2,8 |
| 2,90 | 61 | 33 | 0,002 | 2,9 |
| 3,00 | 61 | 33 | 0,002 | 3 |
| 3,10 | 65 | 36 | 0,002 | 3,1 |
| 3,20 | 65 | 36 | 0,002 | 3,2 |
| 3,30 | 65 | 36 | 0,002 | 3,3 |
| 3,40 | 70 | 39 | 0,003 | 3,4 |
| 3,50 | 70 | 39 | 0,003 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,004 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,005 | 4,2 |
| 4,30 | 80 | 47 | 0,005 | 4,3 |
| 4,40 | 80 | 47 | 0,005 | 4,4 |
| 4,50 | 80 | 47 | 0,006 | 4,5 |
| 4,60 | 80 | 47 | 0,006 | 4,6 |
| 4,70 | 80 | 47 | 0,006 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,010 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,013 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,016 | 6,1 |
| 6,20 | 101 | 63 | 0,016 | 6,2 |
| 6,30 | 101 | 63 | 0,017 | 6,3 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,40 | 101 | 63 | 0,017 | 6,4 |
| 6,50 | 101 | 63 | 0,017 | 6,5 |
| 6,60 | 101 | 63 | 0,018 | 6,6 |
| 6,70 | 101 | 63 | 0,018 | 6,7 |
| 6,80 | 109 | 69 | 0,019 | 6,8 |
| 6,90 | 109 | 69 | 0,020 | 6,9 |
| 7,00 | 109 | 69 | 0,021 | 7 |
| 7,10 | 109 | 69 | 0,022 | 7,1 |
| 7,20 | 109 | 69 | 0,023 | 7,2 |
| 7,30 | 109 | 69 | 0,024 | 7,3 |
| 7,40 | 109 | 69 | 0,025 | 7,4 |
| 7,50 | 109 | 69 | 0,025 | 7,5 |
| 7,60 | 117 | 75 | 0,026 | 7,6 |
| 7,70 | 117 | 75 | 0,027 | 7,7 |
| 7,80 | 117 | 75 | 0,028 | 7,8 |
| 7,90 | 117 | 75 | 0,029 | 7,9 |
| 8,00 | 117 | 75 | 0,030 | 8 |
| 8,10 | 117 | 75 | 0,031 | 8,1 |
| 8,20 | 117 | 75 | 0,032 | 8,2 |
| 8,30 | 117 | 75 | 0,033 | 8,3 |
| 8,40 | 117 | 75 | 0,034 | 8,4 |
| 8,50 | 117 | 75 | 0,035 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,040 | 8,9 |
| 9,00 | 125 | 81 | 0,042 | 9 |
| 9,10 | 125 | 81 | 0,043 | 9,1 |
| 9,20 | 125 | 81 | 0,044 | 9,2 |
| 9,30 | 125 | 81 | 0,046 | 9,3 |
| 9,40 | 125 | 81 | 0,047 | 9,4 |
| 9,50 | 125 | 81 | 0,048 | 9,5 |
| 9,60 | 133 | 87 | 0,049 | 9,6 |
| 9,70 | 133 | 87 | 0,050 | 9,7 |
| 9,80 | 133 | 87 | 0,051 | 9,8 |
| 9,90 | 133 | 87 | 0,052 | 9,9 |
| 10,00 | 133 | 87 | 0,053 | 10 |
| 10,20 | 133 | 87 | 0,055 | 10,2 |
| 10,50 | 133 | 87 | 0,065 | 10,5 |
| 10,80 | 142 | 94 | 0,075 | 10,8 |
| 11,00 | 142 | 94 | 0,080 | 11 |
| 11,20 | 142 | 94 | 0,083 | 11,2 |
| 11,50 | 142 | 94 | 0,085 | 11,5 |
| 11,80 | 142 | 94 | 0,088 | 11,8 |
| 12,00 | 151 | 101 | 0,090 | 12 |
| 12,20 | 151 | 101 | 0,093 | 12,2 |
| 12,50 | 151 | 101 | 0,095 | 12,5 |
| 12,80 | 151 | 101 | 0,098 | 12,8 |
| 13,00 | 151 | 101 | 0,100 | 13 |
| 13,20 | 151 | 101 | 0,105 | 13,2 |
| 13,50 | 160 | 108 | 0,110 | 13,5 |
| 13,80 | 160 | 108 | 0,115 | 13,8 |
| 14,00 | 160 | 108 | 0,120 | 14 |




**Usability:**

Efficient drills are recommended for drilling of parts made of soft materials with continuous chip like aluminium, zinc, copper, silumin, electron, thermoplastics etc.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N

# Jobber Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0002 | 1 |
| 1,10 | 36 | 14 | 0,0002 | 1,1 |
| 1,20 | 38 | 16 | 0,0003 | 1,2 |
| 1,30 | 38 | 16 | 0,0003 | 1,3 |
| 1,40 | 40 | 18 | 0,0003 | 1,4 |
| 1,50 | 40 | 18 | 0,0004 | 1,5 |
| 1,60 | 43 | 20 | 0,0005 | 1,6 |
| 1,70 | 43 | 20 | 0,0006 | 1,7 |
| 1,80 | 46 | 22 | 0,0006 | 1,8 |
| 1,90 | 46 | 22 | 0,0007 | 1,9 |
| 2,00 | 49 | 24 | 0,0007 | 2 |
| 2,10 | 49 | 24 | 0,0007 | 2,1 |
| 2,20 | 53 | 27 | 0,0009 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,001 | 2,4 |
| 2,50 | 57 | 30 | 0,001 | 2,5 |
| 2,60 | 57 | 30 | 0,001 | 2,6 |
| 2,70 | 61 | 33 | 0,001 | 2,7 |
| 2,80 | 61 | 33 | 0,001 | 2,8 |
| 2,90 | 61 | 33 | 0,002 | 2,9 |
| 3,00 | 61 | 33 | 0,002 | 3 |
| 3,10 | 65 | 36 | 0,002 | 3,1 |
| 3,20 | 65 | 36 | 0,002 | 3,2 |
| 3,30 | 65 | 36 | 0,002 | 3,3 |
| 3,40 | 70 | 39 | 0,003 | 3,4 |
| 3,50 | 70 | 39 | 0,003 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,004 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,005 | 4,2 |
| 4,30 | 80 | 47 | 0,005 | 4,3 |
| 4,40 | 80 | 47 | 0,005 | 4,4 |
| 4,50 | 80 | 47 | 0,006 | 4,5 |
| 4,60 | 80 | 47 | 0,006 | 4,6 |
| 4,70 | 80 | 47 | 0,006 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,010 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,013 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,016 | 6,1 |
| 6,20 | 101 | 63 | 0,016 | 6,2 |
| 6,30 | 101 | 63 | 0,017 | 6,3 |
| 6,40 | 101 | 63 | 0,017 | 6,4 |
| 6,50 | 101 | 63 | 0,017 | 6,5 |
| 6,60 | 101 | 63 | 0,018 | 6,6 |
| 6,70 | 101 | 63 | 0,018 | 6,7 |
| 6,80 | 109 | 69 | 0,019 | 6,8 |
| 6,90 | 109 | 69 | 0,020 | 6,9 |
| 7,00 | 109 | 69 | 0,021 | 7 |
| 7,10 | 109 | 69 | 0,022 | 7,1 |
| 7,20 | 109 | 69 | 0,023 | 7,2 |
| 7,30 | 109 | 69 | 0,024 | 7,3 |
| 7,40 | 109 | 69 | 0,025 | 7,4 |
| 7,50 | 109 | 69 | 0,025 | 7,5 |
| 7,60 | 117 | 75 | 0,026 | 7,6 |
| 7,70 | 117 | 75 | 0,027 | 7,7 |
| 7,80 | 117 | 75 | 0,028 | 7,8 |
| 7,90 | 117 | 75 | 0,029 | 7,9 |
| 8,00 | 117 | 75 | 0,030 | 8 |
| 8,10 | 117 | 75 | 0,031 | 8,1 |
| 8,20 | 117 | 75 | 0,032 | 8,2 |
| 8,30 | 117 | 75 | 0,033 | 8,38 |
| 8,40 | 117 | 75 | 0,034 | 8,4 |
| 8,50 | 117 | 75 | 0,035 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,040 | 8,9 |
| 9,00 | 125 | 81 | 0,042 | 9 |
| 9,10 | 125 | 81 | 0,043 | 9,1 |
| 9,20 | 125 | 81 | 0,044 | 9,2 |
| 9,30 | 125 | 81 | 0,046 | 9,3 |
| 9,40 | 125 | 81 | 0,047 | 9,4 |
| 9,50 | 125 | 81 | 0,048 | 9,5 |
| 9,60 | 133 | 87 | 0,049 | 9,6 |
| 9,70 | 133 | 87 | 0,050 | 9,7 |
| 9,80 | 133 | 87 | 0,051 | 9,8 |
| 9,90 | 133 | 87 | 0,052 | 9,9 |
| 10,00 | 133 | 87 | 0,053 | 10 |
| 10,20 | 133 | 87 | 0,055 | 10,2 |
| 10,50 | 133 | 87 | 0,065 | 10,5 |
| 10,80 | 142 | 94 | 0,075 | 10,8 |
| 11,00 | 142 | 94 | 0,080 | 12 |
| 11,20 | 142 | 94 | 0,083 | 11,2 |
| 11,50 | 142 | 94 | 0,085 | 11,5 |
| 11,80 | 142 | 94 | 0,088 | 11,8 |
| 12,00 | 151 | 101 | 0,090 | 12 |
| 12,20 | 151 | 101 | 0,093 | 12,2 |
| 12,50 | 151 | 101 | 0,095 | 12,5 |
| 12,80 | 151 | 101 | 0,098 | 12,8 |
| 13,00 | 151 | 101 | 0,100 | 13 |
| 13,20 | 151 | 101 | 0,105 | 13,2 |
| 13,50 | 160 | 108 | 0,110 | 13,5 |
| 13,80 | 160 | 108 | 0,115 | 13,8 |
| 14,00 | 160 | 108 | 0,120 | 14 |

## QUICK HELIX JOBBER DRILLS, LEFT HAND CUTTING

**PROFI**

**HSS**

$\lambda = 35° \div 40°$

$\varepsilon = 128°$

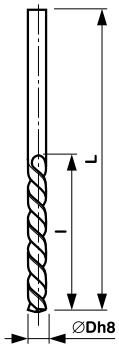
**Usability:**

Efficient drills are recommended for drilling of parts made of soft materials with continuous chip like aluminium, zinc, copper, silumin, electron, thermoplastics etc.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N



## SLOW HELIX JOBBER DRILLS

**PROFI**

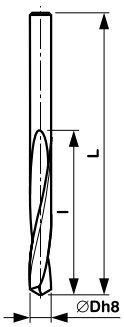
# HSS

$\lambda = 10° \div 15°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0002 | 1 |
| 1,10 | 36 | 14 | 0,0002 | 1,1 |
| 1,20 | 38 | 16 | 0,0003 | 1,2 |
| 1,30 | 38 | 16 | 0,0003 | 1,3 |
| 1,40 | 40 | 18 | 0,0003 | 1,4 |
| 1,50 | 40 | 18 | 0,0004 | 1,5 |
| 1,60 | 43 | 20 | 0,0005 | 1,6 |
| 1,70 | 43 | 20 | 0,0006 | 1,7 |
| 1,80 | 46 | 22 | 0,0006 | 1,8 |
| 1,90 | 46 | 22 | 0,0007 | 1,9 |
| 2,00 | 49 | 24 | 0,0007 | 2 |
| 2,10 | 49 | 24 | 0,0007 | 2,1 |
| 2,20 | 53 | 27 | 0,0009 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,001 | 2,4 |
| 2,50 | 57 | 30 | 0,001 | 2,5 |
| 2,60 | 57 | 30 | 0,001 | 2,6 |
| 2,70 | 61 | 33 | 0,001 | 2,7 |
| 2,80 | 61 | 33 | 0,001 | 2,8 |
| 2,90 | 61 | 33 | 0,002 | 2,9 |
| 3,00 | 61 | 33 | 0,002 | 3 |
| 3,10 | 65 | 36 | 0,002 | 3,1 |
| 3,20 | 65 | 36 | 0,002 | 3,1 |
| 3,30 | 65 | 36 | 0,002 | 3,3 |
| 3,40 | 70 | 39 | 0,003 | 3,4 |
| 3,50 | 70 | 39 | 0,003 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,004 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,005 | 4,2 |
| 4,30 | 80 | 47 | 0,005 | 4,3 |
| 4,40 | 80 | 47 | 0,005 | 4,4 |
| 4,50 | 80 | 47 | 0,006 | 4,5 |
| 4,60 | 80 | 47 | 0,006 | 4,6 |
| 4,70 | 80 | 47 | 0,006 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,010 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,013 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,016 | 6,1 |
| 6,20 | 101 | 63 | 0,016 | 6,2 |
| 6,30 | 101 | 63 | 0,017 | 6,3 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,40 | 101 | 63 | 0,017 | 6,4 |
| 6,50 | 101 | 63 | 0,017 | 6,5 |
| 6,60 | 101 | 63 | 0,018 | 6,6 |
| 6,70 | 101 | 63 | 0,018 | 6,7 |
| 6,80 | 109 | 69 | 0,019 | 6,8 |
| 6,90 | 109 | 69 | 0,020 | 6,9 |
| 7,00 | 109 | 69 | 0,021 | 7 |
| 7,10 | 109 | 69 | 0,022 | 7,1 |
| 7,20 | 109 | 69 | 0,023 | 7,2 |
| 7,30 | 109 | 69 | 0,024 | 7,3 |
| 7,40 | 109 | 69 | 0,025 | 7,4 |
| 7,50 | 109 | 69 | 0,025 | 7,5 |
| 7,60 | 117 | 75 | 0,026 | 7,6 |
| 7,70 | 117 | 75 | 0,027 | 7,7 |
| 7,80 | 117 | 75 | 0,028 | 7,8 |
| 7,90 | 117 | 75 | 0,029 | 7,9 |
| 8,00 | 117 | 75 | 0,030 | 8 |
| 8,10 | 117 | 75 | 0,031 | 8,1 |
| 8,20 | 117 | 75 | 0,032 | 8,2 |
| 8,30 | 117 | 75 | 0,033 | 8,3 |
| 8,40 | 117 | 75 | 0,034 | 8,4 |
| 8,50 | 117 | 75 | 0,035 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,040 | 8,9 |
| 9,00 | 125 | 81 | 0,042 | 9 |
| 9,10 | 125 | 81 | 0,043 | 9,1 |
| 9,20 | 125 | 81 | 0,044 | 9,2 |
| 9,30 | 125 | 81 | 0,046 | 9,3 |
| 9,40 | 125 | 81 | 0,047 | 9,4 |
| 9,50 | 125 | 81 | 0,048 | 9,5 |
| 9,60 | 133 | 87 | 0,049 | 9,6 |
| 9,70 | 133 | 87 | 0,050 | 9,7 |
| 9,80 | 133 | 87 | 0,051 | 9,8 |
| 9,90 | 133 | 87 | 0,052 | 9,9 |
| 10,00 | 133 | 87 | 0,053 | 10 |
| 10,20 | 133 | 87 | 0,055 | 10,2 |
| 10,50 | 133 | 87 | 0,065 | 10,5 |
| 10,80 | 142 | 94 | 0,075 | 10,8 |
| 11,00 | 142 | 94 | 0,080 | 11 |
| 11,20 | 142 | 94 | 0,083 | 11,2 |
| 11,50 | 142 | 94 | 0,085 | 11,5 |
| 11,80 | 142 | 94 | 0,088 | 11,8 |
| 12,00 | 151 | 101 | 0,090 | 12 |
| 12,20 | 151 | 101 | 0,093 | 12,2 |
| 12,50 | 151 | 101 | 0,095 | 12,5 |
| 12,80 | 151 | 101 | 0,098 | 12,8 |
| 13,00 | 151 | 101 | 0,100 | 13 |
| 13,20 | 151 | 101 | 0,105 | 13,2 |
| 13,50 | 160 | 108 | 0,110 | 13,5 |
| 13,80 | 160 | 108 | 0,115 | 13,8 |
| 14,00 | 160 | 108 | 0,120 | 14 |




**Usability:**

Efficient drills are recommended for drilling of parts made of-hard and brittle materials with sectional chip like non-ferrous metalls, plastics, synthetic resins, horn matter, asbestos slate, mica etc.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N

# Jobber Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0002 | 1 |
| 1,10 | 36 | 14 | 0,0002 | 1,1 |
| 1,20 | 38 | 16 | 0,0003 | 1,2 |
| 1,30 | 38 | 16 | 0,0003 | 1,3 |
| 1,40 | 40 | 18 | 0,0003 | 1,4 |
| 1,50 | 40 | 18 | 0,0004 | 1,5 |
| 1,60 | 43 | 20 | 0,0005 | 1,6 |
| 1,70 | 43 | 20 | 0,0006 | 1,7 |
| 1,80 | 46 | 22 | 0,0006 | 1,8 |
| 1,90 | 46 | 22 | 0,0007 | 1,9 |
| 2,00 | 49 | 24 | 0,0007 | 2 |
| 2,10 | 49 | 24 | 0,0007 | 2,1 |
| 2,20 | 53 | 27 | 0,0009 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,001 | 2,4 |
| 2,50 | 57 | 30 | 0,001 | 2,5 |
| 2,60 | 57 | 30 | 0,001 | 2,6 |
| 2,70 | 61 | 33 | 0,001 | 2,7 |
| 2,80 | 61 | 33 | 0,001 | 2,8 |
| 2,90 | 61 | 33 | 0,002 | 2,9 |
| 3,00 | 61 | 33 | 0,002 | 3 |
| 3,10 | 65 | 36 | 0,002 | 3,1 |
| 3,20 | 65 | 36 | 0,002 | 3,2 |
| 3,30 | 65 | 36 | 0,002 | 3,3 |
| 3,40 | 70 | 39 | 0,003 | 3,4 |
| 3,50 | 70 | 39 | 0,003 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,004 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,005 | 4,2 |
| 4,30 | 80 | 47 | 0,005 | 4,3 |
| 4,40 | 80 | 47 | 0,005 | 4,4 |
| 4,50 | 80 | 47 | 0,006 | 4,5 |
| 4,60 | 80 | 47 | 0,006 | 4,6 |
| 4,70 | 80 | 47 | 0,006 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,010 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,013 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,016 | 6,1 |
| 6,20 | 101 | 63 | 0,016 | 6,2 |
| 6,30 | 101 | 63 | 0,017 | 6,3 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,40 | 101 | 63 | 0,017 | 6,4 |
| 6,50 | 101 | 63 | 0,017 | 6,5 |
| 6,60 | 101 | 63 | 0,018 | 6,6 |
| 6,70 | 101 | 63 | 0,018 | 6,7 |
| 6,80 | 109 | 69 | 0,019 | 6,8 |
| 6,90 | 109 | 69 | 0,020 | 6,9 |
| 7,00 | 109 | 69 | 0,021 | 7 |
| 7,10 | 109 | 69 | 0,022 | 7,1 |
| 7,20 | 109 | 69 | 0,023 | 7,2 |
| 7,30 | 109 | 69 | 0,024 | 7,3 |
| 7,40 | 109 | 69 | 0,025 | 7,4 |
| 7,50 | 109 | 69 | 0,025 | 7,5 |
| 7,60 | 117 | 75 | 0,026 | 7,6 |
| 7,70 | 117 | 75 | 0,027 | 7,7 |
| 7,80 | 117 | 75 | 0,028 | 7,8 |
| 7,90 | 117 | 75 | 0,029 | 7,9 |
| 8,00 | 117 | 75 | 0,030 | 8 |
| 8,10 | 117 | 75 | 0,031 | 8,1 |
| 8,20 | 117 | 75 | 0,032 | 8,2 |
| 8,30 | 117 | 75 | 0,033 | 8,3 |
| 8,40 | 117 | 75 | 0,034 | 8,4 |
| 8,50 | 117 | 75 | 0,035 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,040 | 8,9 |
| 9,00 | 125 | 81 | 0,042 | 9 |
| 9,10 | 125 | 81 | 0,043 | 9,1 |
| 9,20 | 125 | 81 | 0,044 | 9,2 |
| 9,30 | 125 | 81 | 0,046 | 9,3 |
| 9,40 | 125 | 81 | 0,047 | 9,4 |
| 9,50 | 125 | 81 | 0,048 | 9,5 |
| 9,60 | 133 | 87 | 0,049 | 9,6 |
| 9,70 | 133 | 87 | 0,050 | 9,7 |
| 9,80 | 133 | 87 | 0,051 | 9,8 |
| 9,90 | 133 | 87 | 0,052 | 9,9 |
| 10,00 | 133 | 87 | 0,053 | 10 |
| 10,20 | 133 | 87 | 0,055 | 10,2 |
| 10,50 | 133 | 87 | 0,065 | 10,5 |
| 10,80 | 142 | 94 | 0,075 | 10,8 |
| 11,00 | 142 | 94 | 0,080 | 11 |
| 11,20 | 142 | 94 | 0,083 | 11,2 |
| 11,50 | 142 | 94 | 0,085 | 11,5 |
| 11,80 | 142 | 94 | 0,088 | 11,8 |
| 12,00 | 151 | 101 | 0,090 | 12 |
| 12,20 | 151 | 101 | 0,093 | 12,2 |
| 12,50 | 151 | 101 | 0,095 | 12,5 |
| 12,80 | 151 | 101 | 0,098 | 12,8 |
| 13,00 | 151 | 101 | 0,100 | 13 |
| 13,20 | 151 | 101 | 0,105 | 13,2 |
| 13,50 | 160 | 108 | 0,110 | 13,5 |
| 13,80 | 160 | 108 | 0,115 | 13,8 |
| 14,00 | 160 | 108 | 0,120 | 14 |

**SLOW HELIX JOBBER DRILLS,** LEFT HAND CUTTING

**PROFI**

**HSS**

$\lambda = 10° \div 15°$

$\varepsilon = 118°$

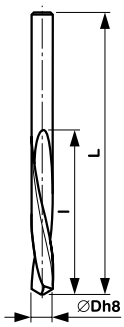
**Usability:**

Efficient drills are recommended for drilling of parts made of-hard and brittle materials with sectional chip like non-ferrous metalls, plastics, synthetic resins, horn matter, asbestos slate, mica etc..

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N



## JOBBER DRILLS

**PROFI**

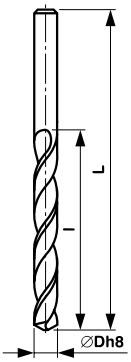
# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,30 | 19 | 4 | 0,0001 | 0,3 |
| 0,32 | 19 | 4 | 0,0001 | 0,32 |
| 0,35 | 19 | 4 | 0,0001 | 0,35 |
| 0,38 | 19 | 4 | 0,0001 | 0,38 |
| 0,40 | 20 | 5 | 0,0001 | 0,4 |
| 0,42 | 20 | 5 | 0,0001 | 0,42 |
| 0,45 | 20 | 5 | 0,0001 | 0,45 |
| 0,48 | 20 | 5 | 0,0001 | 0,48 |
| 0,50 | 22 | 6 | 0,0001 | 0,5 |
| 0,52 | 22 | 6 | 0,0001 | 0,52 |
| 0,55 | 24 | 7 | 0,0001 | 0,55 |
| 0,58 | 24 | 7 | 0,0001 | 0,58 |
| 0,60 | 24 | 7 | 0,0001 | 0,6 |
| 0,62 | 26 | 8 | 0,0001 | 0,62 |
| 0,65 | 26 | 8 | 0,0001 | 0,65 |
| 0,68 | 28 | 9 | 0,0001 | 0,68 |
| 0,70 | 28 | 9 | 0,0001 | 0,7 |
| 0,72 | 28 | 9 | 0,0001 | 0,72 |
| 0,75 | 28 | 9 | 0,0001 | 0,75 |
| 0,78 | 30 | 10 | 0,0001 | 0,78 |
| 0,80 | 30 | 10 | 0,0001 | 0,8 |
| 0,82 | 30 | 10 | 0,0001 | 0,82 |
| 0,85 | 30 | 10 | 0,0001 | 0,85 |
| 0,88 | 32 | 11 | 0,0001 | 0,88 |
| 0,90 | 32 | 11 | 0,0001 | 0,9 |
| 0,92 | 32 | 11 | 0,0001 | 0,92 |
| 0,95 | 32 | 11 | 0,0001 | 0,95 |
| 0,98 | 34 | 12 | 0,0002 | 0,98 |
| 1,00 | 34 | 12 | 0,0002 | 1 |
| 1,05 | 34 | 12 | 0,0002 | 1,05 |
| 1,10 | 36 | 14 | 0,0002 | 1,1 |
| 1,15 | 36 | 14 | 0,0002 | 1,15 |
| 1,20 | 38 | 16 | 0,0003 | 1,2 |
| 1,25 | 38 | 16 | 0,0003 | 1,25 |
| 1,30 | 38 | 16 | 0,0003 | 1,3 |
| 1,35 | 40 | 18 | 0,0004 | 1,35 |
| 1,40 | 40 | 18 | 0,0004 | 1,4 |
| 1,45 | 40 | 18 | 0,0004 | 1,45 |
| 1,50 | 40 | 18 | 0,0004 | 1,5 |
| 1,55 | 43 | 20 | 0,0005 | 1,55 |
| 1,60 | 43 | 20 | 0,0005 | 1,6 |
| 1,65 | 43 | 20 | 0,0005 | 1,65 |
| 1,70 | 43 | 20 | 0,0005 | 1,7 |
| 1,75 | 46 | 22 | 0,0005 | 1,75 |
| 1,80 | 46 | 22 | 0,0005 | 1,8 |
| 1,85 | 46 | 22 | 0,0006 | 1,85 |
| 1,90 | 46 | 22 | 0,0006 | 1,9 |
| 1,95 | 49 | 24 | 0,0007 | 1,95 |
| 2,00 | 49 | 24 | 0,0008 | 2 |
| 2,05 | 49 | 24 | 0,0008 | 2,05 |
| 2,10 | 49 | 24 | 0,0008 | 2,1 |
| 2,15 | 53 | 27 | 0,0008 | 2,15 |
| 2,20 | 53 | 27 | 0,0009 | 2,2 |
| 2,25 | 53 | 27 | 0,0009 | 2,25 |
| 2,30 | 53 | 27 | 0,0010 | 2,3 |
| 2,35 | 53 | 27 | 0,0010 | 2,35 |
| 2,40 | 57 | 30 | 0,0012 | 2,4 |
| 2,45 | 57 | 30 | 0,0012 | 2,45 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,50 | 57 | 30 | 0,0012 | 2,5 |
| 2,55 | 57 | 30 | 0,0015 | 2,55 |
| 2,60 | 57 | 30 | 0,0015 | 2,6 |
| 2,65 | 57 | 30 | 0,0015 | 2,65 |
| 2,70 | 61 | 33 | 0,0018 | 2,7 |
| 2,75 | 61 | 33 | 0,0018 | 2,75 |
| 2,80 | 61 | 33 | 0,0018 | 2,8 |
| 2,85 | 61 | 33 | 0,0020 | 2,85 |
| 2,90 | 61 | 33 | 0,0020 | 2,9 |
| 2,95 | 61 | 33 | 0,0025 | 2,95 |
| 3,00 | 61 | 33 | 0,0025 | 3 |
| 3,10 | 65 | 36 | 0,0028 | 3,1 |
| 3,20 | 65 | 36 | 0,0028 | 3,2 |
| 3,30 | 65 | 36 | 0,0030 | 3,3 |
| 3,40 | 70 | 39 | 0,0030 | 3,4 |
| 3,50 | 70 | 39 | 0,0035 | 3,5 |
| 3,60 | 70 | 39 | 0,0035 | 3,6 |
| 3,70 | 70 | 39 | 0,0035 | 3,7 |
| 3,80 | 75 | 43 | 0,0040 | 3,8 |
| 3,90 | 75 | 43 | 0,0040 | 3,9 |
| 4,00 | 75 | 43 | 0,0040 | 4 |
| 4,10 | 75 | 43 | 0,0050 | 4,1 |
| 4,20 | 75 | 43 | 0,0050 | 4,2 |
| 4,30 | 80 | 47 | 0,0055 | 4,3 |
| 4,40 | 80 | 47 | 0,0055 | 4,4 |
| 4,50 | 80 | 47 | 0,0060 | 4,5 |
| 4,60 | 80 | 47 | 0,0070 | 4,6 |
| 4,70 | 80 | 47 | 0,0070 | 4,7 |
| 4,80 | 86 | 52 | 0,0080 | 4,8 |
| 4,90 | 86 | 52 | 0,0080 | 4,9 |
| 5,00 | 86 | 52 | 0,0085 | 5 |
| 5,10 | 86 | 52 | 0,0085 | 5,1 |
| 5,20 | 86 | 52 | 0,0090 | 5,2 |
| 5,30 | 86 | 52 | 0,0090 | 5,3 |
| 5,40 | 93 | 57 | 0,0090 | 5,4 |
| 5,50 | 93 | 57 | 0,0100 | 5,5 |
| 5,60 | 93 | 57 | 0,0100 | 5,6 |
| 5,70 | 93 | 57 | 0,0110 | 5,7 |
| 5,80 | 93 | 57 | 0,0120 | 5,8 |
| 5,90 | 93 | 57 | 0,0120 | 5,9 |
| 6,00 | 93 | 57 | 0,0130 | 6 |
| 6,10 | 101 | 63 | 0,0130 | 6,1 |
| 6,20 | 101 | 63 | 0,0140 | 6,2 |
| 6,30 | 101 | 63 | 0,0150 | 6,3 |
| 6,40 | 101 | 63 | 0,0160 | 6,4 |
| 6,50 | 101 | 63 | 0,0170 | 6,5 |
| 6,60 | 101 | 63 | 0,0180 | 6,6 |
| 6,70 | 101 | 63 | 0,0180 | 6,7 |
| 6,80 | 109 | 69 | 0,0190 | 6,8 |
| 6,90 | 109 | 69 | 0,0200 | 6,9 |
| 7,00 | 109 | 69 | 0,0200 | 7,0 |
| 7,10 | 109 | 69 | 0,0210 | 7,1 |
| 7,20 | 109 | 69 | 0,0210 | 7,2 |
| 7,30 | 109 | 69 | 0,0220 | 7,3 |
| 7,40 | 109 | 69 | 0,0230 | 7,4 |
| 7,50 | 109 | 69 | 0,0230 | 7,5 |
| 7,60 | 117 | 75 | 0,0240 | 7,6 |
| 7,70 | 117 | 75 | 0,0240 | 7,7 |




**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 7,80 | 117 | 75 | 0,0250 | 7,8 |
| 7,90 | 117 | 75 | 0,0260 | 7,8 |
| 8,00 | 117 | 75 | 0,0270 | 8 |
| 8,10 | 117 | 75 | 0,0270 | 8,1 |
| 8,20 | 117 | 75 | 0,0280 | 8,2 |
| 8,30 | 117 | 75 | 0,0290 | 8,3 |
| 8,40 | 117 | 75 | 0,0290 | 8,4 |
| 8,50 | 117 | 75 | 0,0300 | 8,5 |
| 8,60 | 125 | 81 | 0,0350 | 8,6 |
| 8,70 | 125 | 81 | 0,0350 | 8,7 |
| 8,80 | 125 | 81 | 0,0370 | 8,8 |
| 8,90 | 125 | 81 | 0,0380 | 8,9 |
| 9,00 | 125 | 81 | 0,0380 | 9 |
| 9,10 | 125 | 81 | 0,0380 | 9,1 |
| 9,20 | 125 | 81 | 0,0390 | 9,2 |
| 9,30 | 125 | 81 | 0,0400 | 9,3 |
| 9,40 | 125 | 81 | 0,0420 | 9,4 |
| 9,50 | 125 | 81 | 0,0430 | 9,5 |
| 9,60 | 133 | 87 | 0,0500 | 9,6 |
| 9,70 | 133 | 87 | 0,0500 | 9,7 |
| 9,80 | 133 | 87 | 0,0510 | 9,8 |
| 9,90 | 133 | 87 | 0,0510 | 9,9 |
| 10,00 | 133 | 87 | 0,0520 | 10 |
| 10,10 | 133 | 87 | 0,0520 | 10,1 |
| 10,20 | 133 | 87 | 0,0530 | 10,2 |
| 10,30 | 133 | 87 | 0,0540 | 10,3 |
| 10,40 | 133 | 87 | 0,0540 | 10,4 |
| 10,50 | 133 | 87 | 0,0550 | 10,5 |
| 10,60 | 133 | 87 | 0,0550 | 10,6 |
| 10,70 | 142 | 94 | 0,0650 | 10,7 |
| 10,80 | 142 | 94 | 0,0670 | 10,8 |
| 10,90 | 142 | 94 | 0,0680 | 10,9 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 11,00 | 142 | 94 | 0,0680 | 11 |
| 11,10 | 142 | 94 | 0,0690 | 11,1 |
| 11,20 | 142 | 94 | 0,0690 | 11,2 |
| 11,30 | 142 | 94 | 0,0700 | 11,3 |
| 11,40 | 142 | 94 | 0,0700 | 11,4 |
| 11,50 | 142 | 94 | 0,0710 | 11,5 |
| 11,60 | 142 | 94 | 0,0710 | 11,6 |
| 11,70 | 142 | 94 | 0,0730 | 11,7 |
| 11,80 | 142 | 94 | 0,0750 | 11,8 |
| 11,90 | 151 | 101 | 0,0860 | 11,9 |
| 12,00 | 151 | 101 | 0,0860 | 12 |
| 12,10 | 151 | 101 | 0,0880 | 12,1 |
| 12,20 | 151 | 101 | 0,0880 | 12,2 |
| 12,30 | 151 | 101 | 0,0900 | 12,3 |
| 12,40 | 151 | 101 | 0,0910 | 12,4 |
| 12,50 | 151 | 101 | 0,0910 | 12,5 |
| 12,60 | 151 | 101 | 0,0920 | 12,6 |
| 12,70 | 151 | 101 | 0,0920 | 12,7 |
| 12,80 | 151 | 101 | 0,0930 | 12,8 |
| 12,90 | 151 | 101 | 0,0940 | 12,9 |
| 13,00 | 151 | 101 | 0,0940 | 13 |
| 13,10 | 151 | 101 | 0,0950 | 13,1 |
| 13,20 | 151 | 101 | 0,0960 | 13,2 |
| 13,30 | 160 | 108 | 0,1000 | 13,3 |
| 13,40 | 160 | 108 | 0,1100 | 13,4 |
| 13,50 | 160 | 108 | 0,1100 | 13,5 |
| 13,60 | 160 | 108 | 0,1110 | 13,6 |
| 13,70 | 160 | 108 | 0,1110 | 13,7 |
| 13,80 | 160 | 108 | 0,1120 | 13,8 |
| 13,90 | 160 | 108 | 0,1140 | 13,9 |
| 14,00 | 160 | 108 | 0,1150 | 14 |

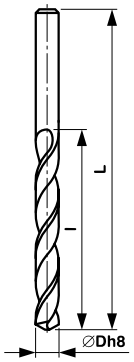
**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N



## COBALT JOBBER DRILLS

**PROFI**

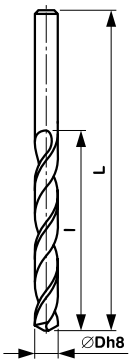
# HSSCo

$\lambda = 35° \div 40°$

$\varepsilon = 128°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,00 | 49 | 24 | 0,001 | 2 |
| 2,10 | 49 | 24 | 0,001 | 2,1 |
| 2,20 | 53 | 27 | 0,001 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,002 | 2,4 |
| 2,50 | 57 | 30 | 0,002 | 2,5 |
| 2,60 | 57 | 30 | 0,002 | 2,6 |
| 2,70 | 61 | 33 | 0,002 | 2,7 |
| 2,80 | 61 | 33 | 0,002 | 2,8 |
| 2,90 | 61 | 33 | 0,003 | 2,9 |
| 3,00 | 61 | 33 | 0,003 | 3 |
| 3,10 | 65 | 36 | 0,003 | 3,1 |
| 3,20 | 65 | 36 | 0,003 | 3,2 |
| 3,30 | 65 | 36 | 0,003 | 3,3 |
| 3,40 | 70 | 39 | 0,004 | 3,4 |
| 3,50 | 70 | 39 | 0,004 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,005 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,006 | 4,2 |
| 4,30 | 80 | 47 | 0,006 | 4,3 |
| 4,40 | 80 | 47 | 0,006 | 4,4 |
| 4,50 | 80 | 47 | 0,007 | 4,5 |
| 4,60 | 80 | 47 | 0,007 | 4,6 |
| 4,70 | 80 | 47 | 0,007 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,009 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,012 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,017 | 6,1 |
| 6,20 | 101 | 63 | 0,018 | 6,2 |
| 6,30 | 101 | 63 | 0,018 | 6,3 |
| 6,40 | 101 | 63 | 0,019 | 6,4 |
| 6,50 | 101 | 63 | 0,019 | 6,5 |
| 6,60 | 101 | 63 | 0,020 | 6,6 |
| 6,70 | 101 | 63 | 0,020 | 6,7 |
| 6,80 | 109 | 69 | 0,021 | 6,8 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,90 | 109 | 69 | 0,022 | 6,9 |
| 7,00 | 109 | 69 | 0,023 | 7 |
| 7,10 | 109 | 69 | 0,024 | 7,1 |
| 7,20 | 109 | 69 | 0,025 | 7,2 |
| 7,30 | 109 | 69 | 0,026 | 7,3 |
| 7,40 | 109 | 69 | 0,027 | 7,4 |
| 7,50 | 109 | 69 | 0,028 | 7,5 |
| 7,60 | 117 | 75 | 0,028 | 7,6 |
| 7,70 | 117 | 75 | 0,029 | 7,7 |
| 7,80 | 117 | 75 | 0,030 | 7,8 |
| 7,90 | 117 | 75 | 0,032 | 7,9 |
| 8,00 | 117 | 75 | 0,033 | 8 |
| 8,10 | 117 | 75 | 0,034 | 8,1 |
| 8,20 | 117 | 75 | 0,035 | 8,2 |
| 8,30 | 117 | 75 | 0,036 | 8,3 |
| 8,40 | 117 | 75 | 0,036 | 8,4 |
| 8,50 | 117 | 75 | 0,037 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,042 | 8,9 |
| 9,00 | 125 | 81 | 0,045 | 9 |
| 9,10 | 125 | 81 | 0,048 | 9,1 |
| 9,20 | 125 | 81 | 0,049 | 9,2 |
| 9,30 | 125 | 81 | 0,049 | 9,3 |
| 9,40 | 125 | 81 | 0,050 | 9,4 |
| 9,50 | 125 | 81 | 0,051 | 9,5 |
| 9,60 | 133 | 87 | 0,052 | 9,6 |
| 9,70 | 133 | 87 | 0,053 | 9,7 |
| 9,80 | 133 | 87 | 0,055 | 9,8 |
| 9,90 | 133 | 87 | 0,056 | 9,9 |
| 10,00 | 133 | 87 | 0,057 | 10 |
| 10,20 | 133 | 87 | 0,057 | 10,2 |
| 10,50 | 133 | 87 | 0,061 | 10,5 |
| 10,80 | 142 | 94 | 0,065 | 10,8 |
| 11,00 | 142 | 94 | 0,065 | 11 |
| 11,20 | 142 | 94 | 0,068 | 11,2 |
| 11,50 | 142 | 94 | 0,071 | 11,5 |
| 11,80 | 142 | 94 | 0,075 | 11,8 |
| 12,00 | 151 | 101 | 0,081 | 12 |
| 12,20 | 151 | 101 | 0,086 | 12,2 |
| 12,50 | 151 | 101 | 0,092 | 12,5 |
| 12,80 | 151 | 101 | 0,095 | 12,8 |
| 13,00 | 151 | 101 | 0,102 | 13 |
| 13,20 | 151 | 101 | 0,108 | 13,2 |
| 13,50 | 160 | 108 | 0,114 | 13,5 |
| 13,80 | 160 | 108 | 0,118 | 13,8 |
| 14,00 | 160 | 108 | 0,123 | 14 |




**Usability:**

High-efficient drills with the higher thermal stress resistance and special flute profile are recommended for drilling of parts made of alloyed steels, cast steel over 1000 N/mm$^2$, especially for drilling of cold- or hot-work tool steel, rolls for rolling mills, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form C

# Jobber Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,70 | 28 | 9 | 0,00007 | 0,7 |
| 0,80 | 30 | 10 | 0,00011 | 0,8 |
| 0,90 | 32 | 11 | 0,00014 | 0,9 |
| 1,00 | 34 | 12 | 0,00019 | 1 |
| 1,10 | 36 | 14 | 0,00022 | 1,1 |
| 1,20 | 38 | 16 | 0,00028 | 1,2 |
| 1,30 | 38 | 16 | 0,00036 | 1,3 |
| 1,40 | 40 | 18 | 0,00043 | 1,4 |
| 1,50 | 40 | 18 | 0,00051 | 1,5 |
| 1,60 | 43 | 20 | 0,00058 | 1,6 |
| 1,70 | 43 | 20 | 0,00064 | 1,7 |
| 1,80 | 46 | 22 | 0,00072 | 1,8 |
| 1,90 | 46 | 22 | 0,00084 | 1,9 |
| 2,00 | 49 | 24 | 0,00095 | 2 |
| 2,10 | 49 | 24 | 0,0011 | 2,1 |
| 2,20 | 53 | 27 | 0,0013 | 2,2 |
| 2,30 | 53 | 27 | 0,0014 | 2,3 |
| 2,40 | 57 | 30 | 0,0016 | 2,4 |
| 2,50 | 57 | 30 | 0,0017 | 2,5 |
| 2,60 | 57 | 30 | 0,0019 | 2,6 |
| 2,70 | 61 | 33 | 0,0021 | 2,7 |
| 2,80 | 61 | 33 | 0,0023 | 2,8 |
| 2,90 | 61 | 33 | 0,0025 | 2,9 |
| 3,00 | 61 | 33 | 0,0029 | 3 |
| 3,10 | 65 | 36 | 0,0031 | 3,1 |
| 3,20 | 65 | 36 | 0,0032 | 3,2 |
| 3,30 | 65 | 36 | 0,0034 | 3,3 |
| 3,40 | 70 | 39 | 0,0036 | 3,4 |
| 3,50 | 70 | 39 | 0,0039 | 3,5 |
| 3,60 | 70 | 39 | 0,0042 | 3,6 |
| 3,70 | 70 | 39 | 0,0045 | 3,7 |
| 3,80 | 75 | 43 | 0,0049 | 3,8 |
| 3,90 | 75 | 43 | 0,0053 | 3,9 |
| 4,00 | 75 | 43 | 0,0056 | 4 |
| 4,10 | 75 | 43 | 0,0059 | 4,1 |
| 4,20 | 75 | 43 | 0,0061 | 4,2 |
| 4,30 | 80 | 47 | 0,0066 | 4,3 |
| 4,40 | 80 | 47 | 0,0072 | 4,4 |
| 4,50 | 80 | 47 | 0,0075 | 4,5 |
| 4,60 | 80 | 47 | 0,0080 | 4,6 |
| 4,70 | 80 | 47 | 0,0085 | 4,7 |
| 4,80 | 86 | 52 | 0,0090 | 4,8 |
| 4,90 | 86 | 52 | 0,0095 | 4,9 |
| 5,00 | 86 | 52 | 0,010 | 5 |
| 5,10 | 86 | 52 | 0,011 | 5,1 |
| 5,20 | 86 | 52 | 0,011 | 5,2 |
| 5,30 | 86 | 52 | 0,012 | 5,3 |
| 5,40 | 93 | 57 | 0,012 | 5,4 |
| 5,50 | 93 | 57 | 0,013 | 5,5 |
| 5,60 | 93 | 57 | 0,013 | 5,6 |
| 5,70 | 93 | 57 | 0,014 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,016 | 6,1 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,20 | 101 | 63 | 0,017 | 6,2 |
| 6,30 | 101 | 63 | 0,017 | 6,3 |
| 6,40 | 101 | 63 | 0,018 | 6,4 |
| 6,50 | 101 | 63 | 0,018 | 6,5 |
| 6,60 | 101 | 63 | 0,019 | 6,6 |
| 6,70 | 101 | 63 | 0,019 | 6,7 |
| 6,80 | 109 | 69 | 0,020 | 6,8 |
| 6,90 | 109 | 69 | 0,021 | 6,9 |
| 7,00 | 109 | 69 | 0,022 | 7 |
| 7,10 | 109 | 69 | 0,023 | 7,1 |
| 7,20 | 109 | 69 | 0,024 | 7,2 |
| 7,30 | 109 | 69 | 0,025 | 7,3 |
| 7,40 | 109 | 69 | 0,026 | 7,4 |
| 7,50 | 109 | 69 | 0,028 | 7,5 |
| 7,60 | 117 | 75 | 0,029 | 7,6 |
| 7,70 | 117 | 75 | 0,030 | 7,7 |
| 7,80 | 117 | 75 | 0,031 | 7,8 |
| 7,90 | 117 | 75 | 0,032 | 7,9 |
| 8,00 | 117 | 75 | 0,034 | 8 |
| 8,10 | 117 | 75 | 0,036 | 8,1 |
| 8,20 | 117 | 75 | 0,037 | 8,2 |
| 8,30 | 117 | 75 | 0,038 | 8,3 |
| 8,40 | 117 | 75 | 0,039 | 8,4 |
| 8,50 | 117 | 75 | 0,040 | 8,5 |
| 8,60 | 125 | 81 | 0,041 | 8,6 |
| 8,70 | 125 | 81 | 0,042 | 8,7 |
| 8,80 | 125 | 81 | 0,043 | 8,8 |
| 8,90 | 125 | 81 | 0,044 | 8,9 |
| 9,00 | 125 | 81 | 0,045 | 9 |
| 9,10 | 125 | 81 | 0,046 | 9,1 |
| 9,20 | 125 | 81 | 0,047 | 9,2 |
| 9,30 | 125 | 81 | 0,048 | 9,3 |
| 9,40 | 125 | 81 | 0,049 | 9,4 |
| 9,50 | 125 | 81 | 0,050 | 9,5 |
| 9,60 | 133 | 87 | 0,052 | 9,6 |
| 9,70 | 133 | 87 | 0,054 | 9,7 |
| 9,80 | 133 | 87 | 0,055 | 9,8 |
| 9,90 | 133 | 87 | 0,056 | 9,9 |
| 10,00 | 133 | 87 | 0,058 | 10 |
| 10,20 | 133 | 87 | 0,061 | 10,2 |
| 10,50 | 133 | 87 | 0,064 | 10,5 |
| 10,80 | 142 | 94 | 0,070 | 10,8 |
| 11,00 | 142 | 94 | 0,072 | 111 |
| 11,20 | 142 | 94 | 0,074 | 11,2 |
| 11,50 | 142 | 94 | 0,077 | 11,5 |
| 11,80 | 142 | 94 | 0,080 | 11,8 |
| 12,00 | 151 | 101 | 0,085 | 12 |
| 12,20 | 151 | 101 | 0,091 | 12,2 |
| 12,50 | 151 | 101 | 0,099 | 12,5 |
| 12,80 | 151 | 101 | 0,104 | 12,8 |
| 13,00 | 151 | 101 | 0,108 | 13 |
| 13,20 | 151 | 101 | 0,112 | 13,2 |
| 13,50 | 160 | 108 | 0,117 | 13,5 |
| 13,80 | 160 | 108 | 0,129 | 13,8 |
| 14,00 | 160 | 108 | 0,133 | 14 |

**JOBBER DRILLS, LEFT HAND CUTTING**

**PROFI**

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

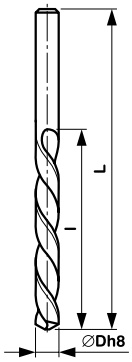
**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N



## JOBBER DRILLS, TiN COATED

**PROFI**

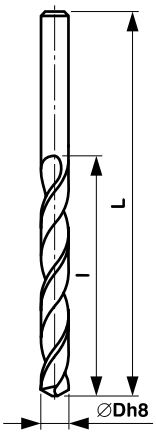
# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1,00 | 34 | 12 | 0,0007 | 1 |
| 1,10 | 36 | 14 | 0,0007 | 1,1 |
| 1,20 | 38 | 16 | 0,0008 | 1,2 |
| 1,30 | 38 | 16 | 0,0008 | 1,3 |
| 1,40 | 40 | 18 | 0,0009 | 1,4 |
| 1,50 | 40 | 18 | 0,0009 | 1,5 |
| 1,60 | 43 | 20 | 0,0009 | 1,6 |
| 1,70 | 43 | 20 | 0,001 | 1,7 |
| 1,80 | 46 | 22 | 0,001 | 1,8 |
| 1,90 | 46 | 22 | 0,001 | 1,9 |
| 2,00 | 49 | 24 | 0,001 | 2 |
| 2,10 | 49 | 24 | 0,001 | 2,1 |
| 2,20 | 53 | 27 | 0,001 | 2,2 |
| 2,30 | 53 | 27 | 0,001 | 2,3 |
| 2,40 | 57 | 30 | 0,002 | 2,4 |
| 2,50 | 57 | 30 | 0,002 | 2,5 |
| 2,60 | 57 | 30 | 0,002 | 2,6 |
| 2,70 | 61 | 33 | 0,002 | 2,7 |
| 2,80 | 61 | 33 | 0,002 | 2,8 |
| 2,90 | 61 | 33 | 0,003 | 2,9 |
| 3,00 | 61 | 33 | 0,003 | 3 |
| 3,10 | 65 | 36 | 0,003 | 3,1 |
| 3,20 | 65 | 36 | 0,003 | 3,2 |
| 3,30 | 65 | 36 | 0,003 | 3,3 |
| 3,40 | 70 | 39 | 0,004 | 3,4 |
| 3,50 | 70 | 39 | 0,004 | 3,5 |
| 3,60 | 70 | 39 | 0,004 | 3,6 |
| 3,70 | 70 | 39 | 0,004 | 3,7 |
| 3,80 | 75 | 43 | 0,004 | 3,8 |
| 3,90 | 75 | 43 | 0,005 | 3,9 |
| 4,00 | 75 | 43 | 0,005 | 4 |
| 4,10 | 75 | 43 | 0,005 | 4,1 |
| 4,20 | 75 | 43 | 0,006 | 4,2 |
| 4,30 | 80 | 47 | 0,006 | 4,3 |
| 4,40 | 80 | 47 | 0,006 | 4,4 |
| 4,50 | 80 | 47 | 0,007 | 4,5 |
| 4,60 | 80 | 47 | 0,007 | 4,6 |
| 4,70 | 80 | 47 | 0,007 | 4,7 |
| 4,80 | 86 | 52 | 0,008 | 4,8 |
| 4,90 | 86 | 52 | 0,008 | 4,9 |
| 5,00 | 86 | 52 | 0,009 | 5 |
| 5,10 | 86 | 52 | 0,009 | 5,1 |
| 5,20 | 86 | 52 | 0,010 | 5,2 |
| 5,30 | 86 | 52 | 0,010 | 5,3 |
| 5,40 | 93 | 57 | 0,011 | 5,4 |
| 5,50 | 93 | 57 | 0,012 | 5,5 |
| 5,60 | 93 | 57 | 0,012 | 5,6 |
| 5,70 | 93 | 57 | 0,013 | 5,7 |
| 5,80 | 93 | 57 | 0,014 | 5,8 |
| 5,90 | 93 | 57 | 0,015 | 5,9 |
| 6,00 | 93 | 57 | 0,016 | 6 |
| 6,10 | 101 | 63 | 0,017 | 6,1 |
| 6,20 | 101 | 63 | 0,018 | 6,2 |
| 6,30 | 101 | 63 | 0,018 | 6,3 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,40 | 101 | 63 | 0,019 | 6,4 |
| 6,50 | 101 | 63 | 0,019 | 6,5 |
| 6,60 | 101 | 63 | 0,020 | 6,6 |
| 6,70 | 101 | 63 | 0,020 | 6,7 |
| 6,80 | 109 | 69 | 0,021 | 6,8 |
| 6,90 | 109 | 69 | 0,022 | 6,9 |
| 7,00 | 109 | 69 | 0,023 | 7 |
| 7,10 | 109 | 69 | 0,024 | 7,1 |
| 7,20 | 109 | 69 | 0,025 | 7,2 |
| 7,30 | 109 | 69 | 0,026 | 7,3 |
| 7,40 | 109 | 69 | 0,027 | 7,4 |
| 7,50 | 109 | 69 | 0,028 | 7,5 |
| 7,60 | 117 | 75 | 0,028 | 7,6 |
| 7,70 | 117 | 75 | 0,029 | 7,7 |
| 7,80 | 117 | 75 | 0,030 | 7,8 |
| 7,90 | 117 | 75 | 0,032 | 7,9 |
| 8,00 | 117 | 75 | 0,033 | 8 |
| 8,10 | 117 | 75 | 0,034 | 8,1 |
| 8,20 | 117 | 75 | 0,035 | 8,28 |
| 8,30 | 117 | 75 | 0,036 | 8,3 |
| 8,40 | 117 | 75 | 0,036 | 8,4 |
| 8,50 | 117 | 75 | 0,037 | 8,5 |
| 8,60 | 125 | 81 | 0,037 | 8,6 |
| 8,70 | 125 | 81 | 0,038 | 8,7 |
| 8,80 | 125 | 81 | 0,039 | 8,8 |
| 8,90 | 125 | 81 | 0,042 | 8,9 |
| 9,00 | 125 | 81 | 0,045 | 9 |
| 9,10 | 125 | 81 | 0,048 | 9,1 |
| 9,20 | 125 | 81 | 0,049 | 9,2 |
| 9,30 | 125 | 81 | 0,049 | 9,3 |
| 9,40 | 125 | 81 | 0,050 | 9,4 |
| 9,50 | 125 | 81 | 0,051 | 9,5 |
| 9,60 | 133 | 87 | 0,052 | 9,6 |
| 9,70 | 133 | 87 | 0,053 | 9,7 |
| 9,80 | 133 | 87 | 0,055 | 9,8 |
| 9,90 | 133 | 87 | 0,056 | 9,9 |
| 10,00 | 133 | 87 | 0,057 | 10 |
| 10,20 | 133 | 87 | 0,057 | 10,2 |
| 10,50 | 133 | 87 | 0,061 | 10,5 |
| 10,80 | 142 | 94 | 0,065 | 10,8 |
| 11,00 | 142 | 94 | 0,065 | 11 |
| 11,20 | 142 | 94 | 0,068 | 11,2 |
| 11,50 | 142 | 94 | 0,071 | 11,5 |
| 11,80 | 142 | 94 | 0,075 | 11,8 |
| 12,00 | 151 | 101 | 0,081 | 12 |
| 12,20 | 151 | 101 | 0,086 | 12,2 |
| 12,50 | 151 | 101 | 0,092 | 12,5 |
| 12,80 | 151 | 101 | 0,095 | 12,8 |
| 13,00 | 151 | 101 | 0,102 | 13 |
| 13,20 | 151 | 101 | 0,108 | 13,2 |
| 13,50 | 160 | 108 | 0,114 | 13,5 |
| 13,80 | 160 | 108 | 0,118 | 13,8 |
| 14,00 | 160 | 108 | 0,123 | 14 |




**Usability:**

High-efficient, TiN coated drill are recommended for drilling of parts made of alloyed steel, cast steel at higher cutting conditions.

**Manufacturing Mode:** V

**Surface Treatment:** ◎

**Grinding Mode:** Form N

# Stub Drills

## STUB DRILLS, LEFT HAND CUTTING

**PROFI** **HSS**

$\lambda = 27° \div 32°$

$\varepsilon = 118°$

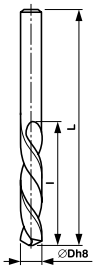
| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 14,25 | 111 | 56 | 0,120 | 14,25 |
| 14,50 | 111 | 56 | 1,125 | 14,5 |
| 14,75 | 111 | 56 | 0,128 | 14,75 |
| 15,00 | 111 | 56 | 0,130 | 15 |
| 15,25 | 115 | 58 | 0,132 | 15,25 |
| 15,50 | 115 | 58 | 0,135 | 15,5 |
| 15,75 | 115 | 58 | 0,138 | 15,75 |
| 16,00 | 115 | 58 | 0,140 | 16 |
| 16,25 | 119 | 60 | 0,145 | 16,25 |
| 16,50 | 119 | 60 | 0,148 | 16,5 |
| 16,75 | 119 | 60 | 0,150 | 16,75 |
| 17,00 | 119 | 60 | 0,155 | 17 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 17,25 | 123 | 62 | 0,160 | 17,25 |
| 17,50 | 123 | 62 | 0,163 | 17,5 |
| 17,75 | 123 | 62 | 0,165 | 17,75 |
| 18,00 | 123 | 62 | 0,170 | 18 |
| 18,25 | 127 | 64 | 0,175 | 18,25 |
| 18,50 | 127 | 64 | 0,180 | 18,5 |
| 18,75 | 127 | 64 | 0,185 | 18,75 |
| 19,00 | 127 | 64 | 0,190 | 19 |
| 19,25 | 131 | 66 | 0,200 | 19,25 |
| 19,50 | 131 | 66 | 0,210 | 19,5 |
| 19,75 | 131 | 66 | 0,220 | 19,75 |
| 20,00 | 131 | 66 | 0,230 | 20 |

**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** F
**Surface Treatment:** ●
**Grinding Mode:** Form N




## STUB DRILLS, LEFT HAND CUTTING

**PROFI** **HSS**

$\lambda = 27° \div 32°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 20,50 | 135 | 70 | 0,235 | 20,5 |
| 21,00 | 135 | 70 | 0,240 | 21 |
| 21,50 | 135 | 70 | 0,250 | 21,5 |
| 22,00 | 135 | 70 | 0,260 | 22 |
| 22,50 | 135 | 70 | 0,270 | 22,5 |
| 23,00 | 135 | 70 | 0,280 | 23 |
| 23,50 | 135 | 70 | 0,290 | 23,5 |
| 24,00 | 135 | 70 | 0,300 | 24 |
| 24,50 | 135 | 70 | 0,320 | 24,5 |
| 25,00 | 135 | 70 | 0,340 | 25 |
| 25,50 | 135 | 70 | 0,360 | 25,5 |
| 26,00 | 135 | 70 | 0,380 | 26 |
| 26,50 | 135 | 70 | 0,400 | 26,5 |
| 27,00 | 135 | 70 | 0,420 | 27 |
| 27,50 | 135 | 70 | 0,430 | 27,5 |

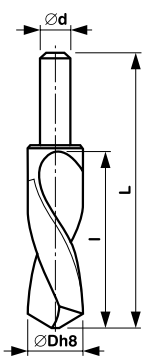
| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 28,00 | 135 | 70 | 0,440 | 28 |
| 28,50 | 135 | 70 | 0,450 | 28,5 |
| 29,00 | 135 | 70 | 0,460 | 29 |
| 29,50 | 135 | 70 | 0,470 | 29,5 |
| 30,00 | 135 | 70 | 0,480 | 30 |
| 31,00 | 135 | 70 | 0,490 | 31 |
| 32,00 | 135 | 70 | 0,500 | 32 |
| 33,00 | 135 | 70 | 0,510 | 33 |
| 34,00 | 135 | 70 | 0,520 | 34 |
| 35,00 | 135 | 70 | 0,530 | 35 |
| 36,00 | 135 | 70 | 0,540 | 36 |
| 37,00 | 135 | 70 | 0,550 | 37 |
| 38,00 | 135 | 70 | 0,570 | 38 |
| 39,00 | 135 | 70 | 0,590 | 39 |
| 40,00 | 135 | 70 | 0,600 | 40 |

**∅D ≤ 25 mm ~ ∅d=20 mm**
**∅D > 25 mm ~ ∅d=25 mm**

**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** F
**Surface Treatment:** ●
**Grinding Mode:** Form N



## STUB DRILLS

**PROFI**

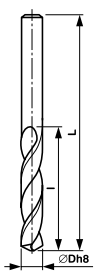
# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,70 | 23 | 4,5 | 0,00010 | 0,7 |
| 0,80 | 24 | 5 | 0,00010 | 0,8 |
| 0,90 | 25 | 5,5 | 0,00012 | 0,9 |
| 1,00 | 26 | 6 | 0,00015 | 1 |
| 1,10 | 28 | 7 | 0,00020 | 1,1 |
| 1,20 | 30 | 8 | 0,00025 | 1,2 |
| 1,30 | 30 | 8 | 0,00030 | 1,3 |
| 1,40 | 32 | 9 | 0,00035 | 1,4 |
| 1,50 | 32 | 9 | 0,00039 | 1,5 |
| 1,60 | 34 | 10 | 0,00045 | 1,6 |
| 1,70 | 34 | 10 | 0,00055 | 1,7 |
| 1,80 | 36 | 11 | 0,00066 | 1,8 |
| 1,90 | 36 | 11 | 0,00077 | 1,9 |
| 2,00 | 38 | 12 | 0,00088 | 2 |
| 2,10 | 38 | 12 | 0,00099 | 2,1 |
| 2,20 | 40 | 13 | 0,0011 | 2,2 |
| 2,30 | 40 | 13 | 0,0012 | 2,3 |
| 2,40 | 43 | 14 | 0,0013 | 2,4 |
| 2,50 | 43 | 14 | 0,0014 | 2,5 |
| 2,60 | 43 | 14 | 0,0016 | 2,6 |
| 2,70 | 46 | 16 | 0,0018 | 2,7 |
| 2,80 | 46 | 16 | 0,0020 | 2,8 |
| 2,90 | 46 | 16 | 0,0021 | 2,9 |
| 3,00 | 46 | 16 | 0,0022 | 3 |
| 3,10 | 49 | 18 | 0,0024 | 3,1 |
| 3,20 | 49 | 18 | 0,0026 | 3,2 |
| 3,30 | 49 | 18 | 0,0029 | 3,3 |
| 3,40 | 52 | 20 | 0,0033 | 3,4 |
| 3,50 | 52 | 20 | 0,0036 | 3,5 |
| 3,60 | 52 | 20 | 0,0039 | 3,6 |
| 3,70 | 52 | 20 | 0,0042 | 3,7 |
| 3,80 | 55 | 22 | 0,0046 | 3,8 |
| 3,90 | 55 | 22 | 0,0048 | 3,9 |
| 4,00 | 55 | 22 | 0,0050 | 4 |
| 4,10 | 55 | 22 | 0,0053 | 4,1 |
| 4,20 | 55 | 22 | 0,0055 | 4,2 |
| 4,30 | 58 | 24 | 0,0057 | 4,3 |
| 4,40 | 58 | 24 | 0,0059 | 4,4 |
| 4,50 | 58 | 24 | 0,0061 | 4,5 |
| 4,60 | 58 | 24 | 0,0063 | 4,6 |
| 4,70 | 58 | 24 | 0,0067 | 4,7 |
| 4,80 | 62 | 26 | 0,0082 | 4,8 |
| 4,90 | 62 | 26 | 0,0085 | 4,9 |
| 5,00 | 62 | 26 | 0,0090 | 5 |
| 5,10 | 62 | 26 | 0,0095 | 5,1 |
| 5,20 | 62 | 26 | 0,0100 | 5,2 |
| 5,30 | 62 | 26 | 0,0103 | 5,3 |
| 5,40 | 66 | 28 | 0,0106 | 5,4 |
| 5,50 | 66 | 28 | 0,0110 | 5,5 |
| 5,60 | 66 | 28 | 0,0112 | 5,6 |
| 5,70 | 66 | 28 | 0,0113 | 5,7 |
| 5,80 | 66 | 28 | 0,0115 | 5,8 |
| 5,90 | 66 | 28 | 0,0118 | 5,9 |
| 6,00 | 66 | 28 | 0,0120 | 6 |
| 6,10 | 70 | 31 | 0,0130 | 6,1 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,20 | 70 | 31 | 0,0140 | 6,2 |
| 6,30 | 70 | 31 | 0,0145 | 6,3 |
| 6,40 | 70 | 31 | 0,0152 | 6,4 |
| 6,50 | 70 | 31 | 0,0160 | 6,5 |
| 6,60 | 70 | 31 | 0,0170 | 6,6 |
| 6,70 | 70 | 31 | 0,0180 | 6,7 |
| 6,80 | 74 | 34 | 0,0190 | 6,8 |
| 6,90 | 74 | 34 | 0,0193 | 6,9 |
| 7,00 | 74 | 34 | 0,0195 | 7 |
| 7,10 | 74 | 34 | 0,0198 | 7,1 |
| 7,20 | 74 | 34 | 0,0200 | 7,2 |
| 7,30 | 74 | 34 | 0,0202 | 7,3 |
| 7,40 | 74 | 34 | 0,0203 | 7,4 |
| 7,50 | 74 | 34 | 0,0205 | 7,5 |
| 7,60 | 79 | 37 | 0,0207 | 7,6 |
| 7,70 | 79 | 37 | 0,0209 | 7,7 |
| 7,80 | 79 | 37 | 0,0211 | 7,8 |
| 7,90 | 79 | 37 | 0,0213 | 7,8 |
| 8,00 | 79 | 37 | 0,0215 | 8 |
| 8,10 | 79 | 37 | 0,0218 | 8,1 |
| 8,20 | 79 | 37 | 0,0220 | 8,2 |
| 8,30 | 79 | 37 | 0,0222 | 8,3 |
| 8,40 | 79 | 37 | 0,0223 | 8,4 |
| 8,50 | 79 | 37 | 0,0225 | 8,5 |
| 8,60 | 84 | 40 | 0,0227 | 8,6 |
| 8,70 | 84 | 40 | 0,0229 | 8,7 |
| 8,80 | 84 | 40 | 0,0230 | 8,8 |
| 8,90 | 84 | 40 | 0,0232 | 8,9 |
| 9,00 | 84 | 40 | 0,0235 | 9 |
| 9,10 | 84 | 40 | 0,0238 | 9,1 |
| 9,20 | 84 | 40 | 0,0240 | 9,2 |
| 9,30 | 84 | 40 | 0,0260 | 9,3 |
| 9,40 | 84 | 40 | 0,0280 | 9,4 |
| 9,50 | 84 | 40 | 0,0300 | 9,5 |
| 9,60 | 89 | 43 | 0,0315 | 9,6 |
| 9,70 | 89 | 43 | 0,0330 | 9,7 |
| 9,80 | 89 | 43 | 0,0350 | 9,8 |
| 9,90 | 89 | 43 | 0,0380 | 9,9 |
| 10,00 | 89 | 43 | 0,0390 | 10 |
| 10,20 | 89 | 43 | 0,0400 | 10,2 |
| 10,50 | 89 | 43 | 0,0450 | 10,5 |
| 10,80 | 95 | 47 | 0,0550 | 10,8 |
| 11,00 | 95 | 47 | 0,0560 | 11 |
| 11,20 | 95 | 47 | 0,0580 | 11,2 |
| 11,50 | 95 | 47 | 0,0600 | 11,5 |
| 11,80 | 95 | 47 | 0,0650 | 11,8 |
| 12,00 | 102 | 51 | 0,0720 | 12 |
| 12,20 | 102 | 51 | 0,0750 | 12,2 |
| 12,50 | 102 | 51 | 0,0800 | 12,5 |
| 12,80 | 102 | 51 | 0,0850 | 12,8 |
| 13,00 | 102 | 51 | 0,0900 | 13 |
| 13,20 | 102 | 51 | 0,0950 | 13,2 |
| 13,50 | 107 | 54 | 0,1000 | 13,5 |
| 13,80 | 107 | 54 | 0,1150 | 13,8 |
| 14,00 | 107 | 54 | 0,1180 | 14 |




**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** V

**Surface Treatment:** ●

**Grinding Mode:** Form N

# Stub Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 14,25 | 111 | 56 | 0,120 | 14,25 |
| 14,50 | 111 | 56 | 1,125 | 14,5 |
| 14,75 | 111 | 56 | 0,128 | 14,75 |
| 15,00 | 111 | 56 | 0,130 | 15 |
| 15,25 | 115 | 58 | 0,132 | 15,25 |
| 15,50 | 115 | 58 | 0,135 | 15,5 |
| 15,75 | 115 | 58 | 0,138 | 15,75 |
| 16,00 | 115 | 58 | 0,140 | 16 |
| 16,25 | 119 | 60 | 0,145 | 16,25 |
| 16,50 | 119 | 60 | 0,148 | 16,5 |
| 16,75 | 119 | 60 | 0,150 | 16,75 |
| 17,00 | 119 | 60 | 0,155 | 17 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 17,25 | 123 | 62 | 0,160 | 17,25 |
| 17,50 | 123 | 62 | 0,163 | 17,5 |
| 17,75 | 123 | 62 | 0,165 | 17,75 |
| 18,00 | 123 | 62 | 0,170 | 18 |
| 18,25 | 127 | 64 | 0,175 | 18,25 |
| 18,50 | 127 | 64 | 0,180 | 18,5 |
| 18,75 | 127 | 64 | 0,185 | 18,75 |
| 19,00 | 127 | 64 | 0,190 | 19 |
| 19,25 | 131 | 66 | 0,200 | 19,25 |
| 19,50 | 131 | 66 | 0,210 | 19,5 |
| 19,75 | 131 | 66 | 0,220 | 19,75 |
| 20,00 | 131 | 66 | 0,230 | 20 |

## STUB DRILLS

**PROFI**

**HSS**

**λ = 27°÷32°**

**ε = 118°**

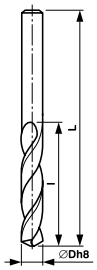
**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** F

**Surface Treatment:** ●

**Grinding Mode:** Form N




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 20,50 | 135 | 70 | 0,235 | 20,5 |
| 21,00 | 135 | 70 | 0,240 | 21 |
| 21,50 | 135 | 70 | 0,250 | 21,5 |
| 22,00 | 135 | 70 | 0,260 | 22 |
| 22,50 | 135 | 70 | 0,270 | 22,5 |
| 23,00 | 135 | 70 | 0,280 | 23 |
| 23,50 | 135 | 70 | 0,290 | 23,5 |
| 24,00 | 135 | 70 | 0,300 | 24 |
| 24,50 | 135 | 70 | 0,320 | 24,5 |
| 25,00 | 135 | 70 | 0,340 | 25 |
| 25,50 | 135 | 70 | 0,360 | 25,5 |
| 26,00 | 135 | 70 | 0,380 | 26 |
| 26,50 | 135 | 70 | 0,400 | 26,5 |
| 27,00 | 135 | 70 | 0,420 | 27 |
| 27,50 | 135 | 70 | 0,430 | 27,5 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 28,00 | 135 | 70 | 0,440 | 28, |
| 28,50 | 135 | 70 | 0,450 | 28,5 |
| 29,00 | 135 | 70 | 0,460 | 29, |
| 29,50 | 135 | 70 | 0,470 | 29,5 |
| 30,00 | 135 | 70 | 0,480 | 30 |
| 31,00 | 135 | 70 | 0,490 | 31 |
| 32,00 | 135 | 70 | 0,500 | 32 |
| 33,00 | 135 | 70 | 0,510 | 33 |
| 34,00 | 135 | 70 | 0,520 | 34 |
| 35,00 | 135 | 70 | 0,530 | 35 |
| 36,00 | 135 | 70 | 0,540 | 36 |
| 37,00 | 135 | 70 | 0,550 | 37 |
| 38,00 | 135 | 70 | 0,570 | 38 |
| 39,00 | 135 | 70 | 0,590 | 39 |
| 40,00 | 135 | 70 | 0,600 | 40 |

## STUB DRILLS

**PROFI**

**HSS**

**λ = 27°÷32°**

**ε = 118°**

**∅D ≤ 25 mm ~ ∅d=20 mm**

**∅D > 25 mm ~ ∅d=25 mm**

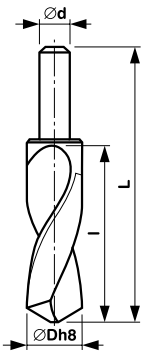
**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** F

**Surface Treatment:** ●

**Grinding Mode:** Form N



## SILVER AND DEMINGS DRILLS

**PROFI**

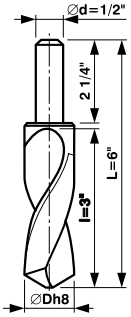
**HSS**

$\lambda = 27° \div 32°$

$\varepsilon = 118°$

| ∅D /inch./ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 17/32 | 13,494 | 6 | 0,13 | 17/32 |
| 9/16 | 14,288 | 6 | 0,14 | 9/16 |
| 19/32 | 15,081 | 6 | 0,14 | 19/32 |
| 5/8 | 15,875 | 6 | 0,15 | 5/8 |
| 21/32 | 16,669 | 6 | 0,16 | 21/32 |
| 11/16 | 17,463 | 6 | 0,17 | 11/16 |
| 23/32 | 18,256 | 6 | 0,18 | 23/32 |
| 3/4 | 19,050 | 6 | 0,19 | 3/4 |
| 25/32 | 19,844 | 6 | 0,21 | 15/32 |
| 13/16 | 20,638 | 6 | 0,22 | 13/16 |
| 27/32 | 21,431 | 6 | 0,23 | 27/32 |

| ∅D /inch./ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 7/8 | 22,225 | 6 | 0,24 | 7/8 |
| 29/32 | 23,019 | 6 | 0,26 | 29/32 |
| 15/16 | 23,813 | 6 | 0,27 | 15/16 |
| 31/32 | 24,606 | 6 | 0,29 | 31/32 |
| 1 | 25,400 | 6 | 0,30 | 1 |
| 1 1/16 | 26,988 | 6 | 0,33 | 1 1/16 |
| 1 1/8 | 28,575 | 6 | 0,36 | 1 1/8 |
| 1 3/16 | 30,163 | 6 | 0,40 | 1/ 3/16 |
| 1 1/4 | 31,750 | 6 | 0,44 | 1 1/4 |
| 1 3/8 | 34,925 | 6 | 0,52 | 1 3/8 |
| 1 1/2 | 38,100 | 6 | 0,60 | 1 1/2 |




**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** F

**Surface Treatment:** ◑

**Grinding Mode:** Form N

## SILVER AND DEMINGS DRILLS, METRIC

**PROFI**

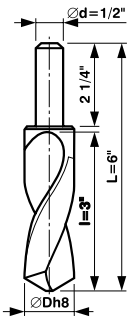
**HSS**

$\lambda = 27° \div 32°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 13,0 | 152,4 | 76,2 | 0,13 | 13 |
| 13,5 | 152,4 | 76,2 | 0,13 | 13,5 |
| 14,0 | 152,4 | 76,2 | 0,14 | 14 |
| 14,5 | 152,4 | 76,2 | 0,14 | 14,5 |
| 15,0 | 152,4 | 76,2 | 0,14 | 15 |
| 15,5 | 152,4 | 76,2 | 0,15 | 15,5 |
| 16,0 | 152,4 | 76,2 | 0,15 | 16 |
| 16,5 | 152,4 | 76,2 | 0,16 | 16,5 |
| 17,0 | 152,4 | 76,2 | 0,17 | 17 |
| 17,5 | 152,4 | 76,2 | 0,17 | 17,5 |
| 18, | 152,4 | 76,2 | 0,18 | 18 |
| 18,5 | 152,4 | 76,2 | 0,19 | 18,5 |
| 19,0 | 152,4 | 76,2 | 0,19 | 19 |
| 19,5 | 152,4 | 76,2 | 0,21 | 19,5 |
| 20,0 | 152,4 | 76,2 | 0,21 | 20 |
| 20,5 | 152,4 | 76,2 | 0,22 | 20,5 |
| 21,0 | 152,4 | 76,2 | 0,22 | 21 |
| 21,5 | 152,4 | 76,2 | 0,23 | 21,5 |
| 22,0 | 152,4 | 76,2 | 0,24 | 22 |
| 22,5 | 152,4 | 76,2 | 0,25 | 22,5 |
| 23,0 | 152,4 | 76,2 | 0,26 | 23 |
| 23,5 | 152,4 | 76,2 | 0,27 | 23,5 |
| 24,0 | 152,4 | 76,2 | 0,28 | 24 |
| 24,5 | 152,4 | 76,2 | 0,29 | 24,5 |
| 25,0 | 152,4 | 76,2 | 0,29 | 25 |
| 25,5 | 152,4 | 76,2 | 0,30 | 25,5 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 26,0 | 152,4 | 76,2 | 0,31 | 26 |
| 26,5 | 152,4 | 76,2 | 0,32 | 26,5 |
| 27,0 | 152,4 | 76,2 | 0,33 | 27 |
| 27,5 | 152,4 | 76,2 | 0,34 | 27,5 |
| 28,0 | 152,4 | 76,2 | 0,35 | 28 |
| 28,5 | 152,4 | 76,2 | 0,36 | 28,5 |
| 29,0 | 152,4 | 76,2 | 0,37 | 29 |
| 29,5 | 152,4 | 76,2 | 0,38 | 29,5 |
| 30,0 | 152,4 | 76,2 | 0,39 | 30 |
| 30,5 | 152,4 | 76,2 | 0,41 | 30,5 |
| 31,0 | 152,4 | 76,2 | 0,42 | 31 |
| 31,5 | 152,4 | 76,2 | 0,43 | 31,5 |
| 32,0 | 152,4 | 76,2 | 0,45 | 32 |
| 32,5 | 152,4 | 76,2 | 0,46 | 32,5 |
| 33,0 | 152,4 | 76,2 | 0,47 | 33 |
| 33,5 | 152,4 | 76,2 | 0,49 | 33,5 |
| 34,0 | 152,4 | 76,2 | 0,50 | 34 |
| 34,5 | 152,4 | 76,2 | 0,51 | 34,5 |
| 35,0 | 152,4 | 76,2 | 0,52 | 35 |
| 35,5 | 152,4 | 76,2 | 0,53 | 35,5 |
| 36,0 | 152,4 | 76,2 | 0,54 | 36 |
| 36,5 | 152,4 | 76,2 | 0,56 | 36,5 |
| 37,0 | 152,4 | 76,2 | 0,57 | 37 |
| 37,5 | 152,4 | 76,2 | 0,58 | 37,5 |
| 38,0 | 152,4 | 76,2 | 0,59 | 38 |




**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** F

**Surface Treatment:** ●

**Grinding Mode:** Form N

# Stub Drills

## STUB DRILLS, LEFT HAND CUTTING

**PROFI**

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,70 | 23 | 4,5 | 0,00010 | 0,7 |
| 0,80 | 24 | 5 | 0,00010 | 0,8 |
| 0,90 | 25 | 5,5 | 0,00012 | 0,9 |
| 1,00 | 26 | 6 | 0,00015 | 1 |
| 1,10 | 28 | 7 | 0,00020 | 1,1 |
| 1,20 | 30 | 8 | 0,00025 | 1,2 |
| 1,30 | 30 | 8 | 0,00030 | 1,3 |
| 1,40 | 32 | 9 | 0,00035 | 1,4 |
| 1,50 | 32 | 9 | 0,00039 | 1,5 |
| 1,60 | 34 | 10 | 0,00045 | 1,6 |
| 1,70 | 34 | 10 | 0,00055 | 1,7 |
| 1,80 | 36 | 11 | 0,00066 | 1,8 |
| 1,90 | 36 | 11 | 0,00077 | 1,9 |
| 2,00 | 38 | 12 | 0,00088 | 2 |
| 2,10 | 38 | 12 | 0,00099 | 2,1 |
| 2,20 | 40 | 13 | 0,0011 | 2,2 |
| 2,30 | 40 | 13 | 0,0012 | 2,3 |
| 2,40 | 43 | 14 | 0,0013 | 2,4 |
| 2,50 | 43 | 14 | 0,0014 | 2,5 |
| 2,60 | 43 | 14 | 0,0016 | 2,6 |
| 2,70 | 46 | 16 | 0,0018 | 2,7 |
| 2,80 | 46 | 16 | 0,0020 | 2,8 |
| 2,90 | 46 | 16 | 0,0021 | 2,9 |
| 3,00 | 46 | 16 | 0,0022 | 3 |
| 3,10 | 49 | 18 | 0,0024 | 3,1 |
| 3,20 | 49 | 18 | 0,0026 | 3,2 |
| 3,30 | 49 | 18 | 0,0029 | 3,3 |
| 3,40 | 52 | 20 | 0,0033 | 3,4 |
| 3,50 | 52 | 20 | 0,0036 | 3,5 |
| 3,60 | 52 | 20 | 0,0039 | 3,6 |
| 3,70 | 52 | 20 | 0,0042 | 3,7 |
| 3,80 | 55 | 22 | 0,0046 | 3,8 |
| 3,90 | 55 | 22 | 0,0048 | 3,9 |
| 4,00 | 55 | 22 | 0,0050 | 4 |
| 4,10 | 55 | 22 | 0,0053 | 4,1 |
| 4,20 | 55 | 22 | 0,0055 | 4,2 |
| 4,30 | 58 | 24 | 0,0057 | 4,3 |
| 4,40 | 58 | 24 | 0,0059 | 4,4 |
| 4,50 | 58 | 24 | 0,0061 | 4,5 |
| 4,60 | 58 | 24 | 0,0063 | 4,6 |
| 4,70 | 58 | 24 | 0,0067 | 4,7 |
| 4,80 | 62 | 26 | 0,0082 | 4,8 |
| 4,90 | 62 | 26 | 0,0085 | 4,9 |
| 5,00 | 62 | 26 | 0,0090 | 5 |
| 5,10 | 62 | 26 | 0,0095 | 5,1 |
| 5,20 | 62 | 26 | 0,0100 | 5,2 |
| 5,30 | 62 | 26 | 0,0103 | 5,3 |
| 5,40 | 66 | 28 | 0,0106 | 5,4 |
| 5,50 | 66 | 28 | 0,0110 | 5,5 |
| 5,60 | 66 | 28 | 0,0112 | 5,6 |
| 5,70 | 66 | 28 | 0,0113 | 5,7 |
| 5,80 | 66 | 28 | 0,0115 | 5,8 |
| 5,90 | 66 | 28 | 0,0118 | 5,9 |
| 6,00 | 66 | 28 | 0,0120 | 6 |
| 6,10 | 70 | 31 | 0,0130 | 6,1 |
| 6,20 | 70 | 31 | 0,0140 | 6,2 |
| 6,30 | 70 | 31 | 0,0145 | 6,3 |
| 6,40 | 70 | 31 | 0,0152 | 6,4 |
| 6,50 | 70 | 31 | 0,0160 | 6,5 |
| 6,60 | 70 | 31 | 0,0170 | 6,6 |
| 6,70 | 70 | 31 | 0,0180 | 6,7 |
| 6,80 | 74 | 34 | 0,0190 | 6,8 |
| 6,90 | 74 | 34 | 0,0193 | 6,9 |
| 7,00 | 74 | 34 | 0,0195 | 7 |
| 7,10 | 74 | 34 | 0,0198 | 7,1 |
| 7,20 | 74 | 34 | 0,0200 | 7,2 |
| 7,30 | 74 | 34 | 0,0202 | 7,3 |
| 7,40 | 74 | 34 | 0,0203 | 7,4 |
| 7,50 | 74 | 34 | 0,0205 | 7,5 |
| 7,60 | 79 | 37 | 0,0207 | 7,6 |
| 7,70 | 79 | 37 | 0,0209 | 7,7 |
| 7,80 | 79 | 37 | 0,0211 | 7,8 |
| 7,90 | 79 | 37 | 0,0213 | 7,9 |
| 8,00 | 79 | 37 | 0,0215 | 8 |
| 8,10 | 79 | 37 | 0,0218 | 8,1 |
| 8,20 | 79 | 37 | 0,0220 | 8,2 |
| 8,30 | 79 | 37 | 0,0222 | 8,3 |
| 8,40 | 79 | 37 | 0,0223 | 8,4 |
| 8,50 | 79 | 37 | 0,0225 | 8,5 |
| 8,60 | 84 | 40 | 0,0227 | 8,6 |
| 8,70 | 84 | 40 | 0,0229 | 8,7 |
| 8,80 | 84 | 40 | 0,0230 | 8,8 |
| 8,90 | 84 | 40 | 0,0232 | 8,9 |
| 9,00 | 84 | 40 | 0,0235 | 9 |
| 9,10 | 84 | 40 | 0,0238 | 9,1 |
| 9,20 | 84 | 40 | 0,0240 | 9,2 |
| 9,30 | 84 | 40 | 0,0260 | 9,3 |
| 9,40 | 84 | 40 | 0,0280 | 9,4 |
| 9,50 | 84 | 40 | 0,0300 | 9,5 |
| 9,60 | 89 | 43 | 0,0315 | 9,6 |
| 9,70 | 89 | 43 | 0,0330 | 9,7 |
| 9,80 | 89 | 43 | 0,0350 | 9,8 |
| 9,90 | 89 | 43 | 0,0380 | 9,9 |
| 10,00 | 89 | 43 | 0,0390 | 10 |
| 10,20 | 89 | 43 | 0,0400 | 10,2 |
| 10,50 | 89 | 43 | 0,0450 | 10,5 |
| 10,80 | 95 | 47 | 0,0550 | 10,8 |
| 11,00 | 95 | 47 | 0,0560 | 11 |
| 11,20 | 95 | 47 | 0,0580 | 11,2 |
| 11,50 | 95 | 47 | 0,0600 | 11,5 |
| 11,80 | 95 | 47 | 0,0650 | 11,8 |
| 12,00 | 102 | 51 | 0,0720 | 12 |
| 12,20 | 102 | 51 | 0,0750 | 12,2 |
| 12,50 | 102 | 51 | 0,0800 | 12,5 |
| 12,80 | 102 | 51 | 0,0850 | 12,8 |
| 13,00 | 102 | 51 | 0,0900 | 13 |
| 13,20 | 102 | 51 | 0,0950 | 13,2 |
| 13,50 | 107 | 54 | 0,1000 | 13,5 |
| 13,80 | 107 | 54 | 0,1150 | 13,8 |
| 14,00 | 107 | 54 | 0,1180 | 14 |

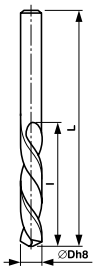
**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N



## STUB DRILLS

**PROFI**

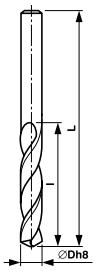
# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,70 | 23 | 4,5 | 0,00010 | 0,7 |
| 0,80 | 24 | 5 | 0,00010 | 0,8 |
| 0,90 | 25 | 5,5 | 0,00012 | 0,9 |
| 1,00 | 26 | 6 | 0,00015 | 1 |
| 1,10 | 28 | 7 | 0,00020 | 1,1 |
| 1,20 | 30 | 8 | 0,00025 | 1,2 |
| 1,30 | 30 | 8 | 0,00030 | 1,3 |
| 1,40 | 32 | 9 | 0,00035 | 1,4 |
| 1,50 | 32 | 9 | 0,00039 | 1,5 |
| 1,60 | 34 | 10 | 0,00045 | 1,6 |
| 1,70 | 34 | 10 | 0,00055 | 1,7 |
| 1,80 | 36 | 11 | 0,00066 | 1,8 |
| 1,90 | 36 | 11 | 0,00077 | 1,9 |
| 2,00 | 38 | 12 | 0,00088 | 2 |
| 2,10 | 38 | 12 | 0,00099 | 2,1 |
| 2,20 | 40 | 13 | 0,0011 | 2,2 |
| 2,30 | 40 | 13 | 0,0012 | 2,3 |
| 2,40 | 43 | 14 | 0,0013 | 2,4 |
| 2,50 | 43 | 14 | 0,0014 | 2,5 |
| 2,60 | 43 | 14 | 0,0016 | 2,6 |
| 2,70 | 46 | 16 | 0,0018 | 2,7 |
| 2,80 | 46 | 16 | 0,0020 | 2,8 |
| 2,90 | 46 | 16 | 0,0021 | 2,9 |
| 3,00 | 46 | 16 | 0,0022 | 3 |
| 3,10 | 49 | 18 | 0,0024 | 3,1 |
| 3,20 | 49 | 18 | 0,0026 | 3,2 |
| 3,30 | 49 | 18 | 0,0029 | 3,3 |
| 3,40 | 52 | 20 | 0,0033 | 3,4 |
| 3,50 | 52 | 20 | 0,0036 | 3,5 |
| 3,60 | 52 | 20 | 0,0039 | 3,6 |
| 3,70 | 52 | 20 | 0,0042 | 3,7 |
| 3,80 | 55 | 22 | 0,0046 | 3,8 |
| 3,90 | 55 | 22 | 0,0048 | 3,9 |
| 4,00 | 55 | 22 | 0,0050 | 4 |
| 4,10 | 55 | 22 | 0,0053 | 4,1 |
| 4,20 | 55 | 22 | 0,0055 | 4,2 |
| 4,30 | 58 | 24 | 0,0057 | 4,3 |
| 4,40 | 58 | 24 | 0,0059 | 4,4 |
| 4,50 | 58 | 24 | 0,0061 | 4,5 |
| 4,60 | 58 | 24 | 0,0063 | 4,6 |
| 4,70 | 58 | 24 | 0,0067 | 4,7 |
| 4,80 | 62 | 26 | 0,0082 | 4,8 |
| 4,90 | 62 | 26 | 0,0085 | 4,9 |
| 5,00 | 62 | 26 | 0,0090 | 5 |
| 5,10 | 62 | 26 | 0,0095 | 5,1 |
| 5,20 | 62 | 26 | 0,0100 | 5,2 |
| 5,30 | 62 | 26 | 0,0103 | 5,3 |
| 5,40 | 66 | 28 | 0,0106 | 5,4 |
| 5,50 | 66 | 28 | 0,0110 | 5,5 |
| 5,60 | 66 | 28 | 0,0112 | 5,6 |
| 5,70 | 66 | 28 | 0,0113 | 5,7 |
| 5,80 | 66 | 28 | 0,0115 | 5,8 |
| 5,90 | 66 | 28 | 0,0118 | 5,9 |
| 6,00 | 66 | 28 | 0,0120 | 6 |
| 6,10 | 70 | 31 | 0,0130 | 6,1 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6,20 | 70 | 31 | 0,0140 | 6,2 |
| 6,30 | 70 | 31 | 0,0145 | 6,3 |
| 6,40 | 70 | 31 | 0,0152 | 6,4 |
| 6,50 | 70 | 31 | 0,0160 | 6,5 |
| 6,60 | 70 | 31 | 0,0170 | 6,6 |
| 6,70 | 70 | 31 | 0,0180 | 6,7 |
| 6,80 | 74 | 34 | 0,0190 | 6,8 |
| 6,90 | 74 | 34 | 0,0193 | 6,9 |
| 7,00 | 74 | 34 | 0,0195 | 7 |
| 7,10 | 74 | 34 | 0,0198 | 7,1 |
| 7,20 | 74 | 34 | 0,0200 | 7,2 |
| 7,30 | 74 | 34 | 0,0202 | 7,3 |
| 7,40 | 74 | 34 | 0,0203 | 7,4 |
| 7,50 | 74 | 34 | 0,0205 | 7,5 |
| 7,60 | 79 | 37 | 0,0207 | 7,6 |
| 7,70 | 79 | 37 | 0,0209 | 7,7 |
| 7,80 | 79 | 37 | 0,0211 | 7,8 |
| 7,90 | 79 | 37 | 0,0213 | 7,9 |
| 8,00 | 79 | 37 | 0,0215 | 8 |
| 8,10 | 79 | 37 | 0,0218 | 8,1 |
| 8,20 | 79 | 37 | 0,0220 | 8,2 |
| 8,30 | 79 | 37 | 0,0222 | 8,3 |
| 8,40 | 79 | 37 | 0,0223 | 8,4 |
| 8,50 | 79 | 37 | 0,0225 | 8,5 |
| 8,60 | 84 | 40 | 0,0227 | 8,6 |
| 8,70 | 84 | 40 | 0,0229 | 8,7 |
| 8,80 | 84 | 40 | 0,0230 | 8,8 |
| 8,90 | 84 | 40 | 0,0232 | 8,9 |
| 9,00 | 84 | 40 | 0,0235 | 9 |
| 9,10 | 84 | 40 | 0,0238 | 9,1 |
| 9,20 | 84 | 40 | 0,0240 | 9,2 |
| 9,30 | 84 | 40 | 0,0260 | 9,3 |
| 9,40 | 84 | 40 | 0,0280 | 9,4 |
| 9,50 | 84 | 40 | 0,0300 | 9,5 |
| 9,60 | 89 | 43 | 0,0315 | 9,6 |
| 9,70 | 89 | 43 | 0,0330 | 9,7 |
| 9,80 | 89 | 43 | 0,0350 | 9,8 |
| 9,90 | 89 | 43 | 0,0380 | 9,9 |
| 10,00 | 89 | 43 | 0,0390 | 10 |
| 10,20 | 89 | 43 | 0,0400 | 10,2 |
| 10,50 | 89 | 43 | 0,0450 | 10,5 |
| 10,80 | 95 | 47 | 0,0550 | 10,8 |
| 11,00 | 95 | 47 | 0,0560 | 11 |
| 11,20 | 95 | 47 | 0,0580 | 11,2 |
| 11,50 | 95 | 47 | 0,0600 | 11,5 |
| 11,80 | 95 | 47 | 0,0650 | 11,8 |
| 12,00 | 102 | 51 | 0,0720 | 12 |
| 12,20 | 102 | 51 | 0,0750 | 12,2 |
| 12,50 | 102 | 51 | 0,0800 | 12,5 |
| 12,80 | 102 | 51 | 0,0850 | 12,8 |
| 13,00 | 102 | 51 | 0,0900 | 13 |
| 13,20 | 102 | 51 | 0,0950 | 13,2 |
| 13,50 | 107 | 54 | 0,1000 | 13,5 |
| 13,80 | 107 | 54 | 0,1150 | 13,8 |
| 14,00 | 107 | 54 | 0,1180 | 14 |




**Usability:**

Efficient drills are recommended for usual drilling on automatic and turrer lathes of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc. There are especially suitable for drilling of thin-walled materials.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** D<2 Form N

D≥2 Form C

# Stub Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,25 | 25 | 1,8 | 0,0001 | 0,25 |
| 0,26 | 25 | 1,8 | 0,0001 | 0,26 |
| 0,27 | 25 | 1,8 | 0,0001 | 0,27 |
| 0,28 | 25 | 2,0 | 0,0001 | 0,28 |
| 0,29 | 25 | 2,0 | 0,0001 | 0,29 |
| 0,30 | 25 | 2,0 | 0,0001 | 0,3 |
| 0,31 | 25 | 2,4 | 0,0001 | 0,31 |
| 0,32 | 25 | 2,4 | 0,0001 | 0,32 |
| 0,33 | 25 | 2,4 | 0,0001 | 0,33 |
| 0,34 | 25 | 2,8 | 0,0001 | 0,34 |
| 0,35 | 25 | 2,8 | 0,0001 | 0,35 |
| 0,36 | 25 | 2,8 | 0,0001 | 0,36 |
| 0,37 | 25 | 3,1 | 0,0001 | 0,37 |
| 0,38 | 25 | 3,1 | 0,0001 | 0,38 |
| 0,39 | 25 | 3,1 | 0,0001 | 0,39 |
| 0,40 | 25 | 3,1 | 0,0001 | 0,4 |
| 0,41 | 25 | 3,5 | 0,0001 | 0,41 |
| 0,42 | 25 | 3,5 | 0,0001 | 0,42 |
| 0,43 | 25 | 3,5 | 0,0001 | 0,43 |
| 0,44 | 25 | 3,5 | 0,0001 | 0,44 |
| 0,45 | 25 | 3,8 | 0,0001 | 0,45 |
| 0,46 | 25 | 3,8 | 0,0001 | 0,46 |
| 0,47 | 25 | 3,8 | 0,0001 | 0,47 |
| 0,48 | 25 | 3,8 | 0,0001 | 0,48 |
| 0,49 | 25 | 3,8 | 0,0001 | 0,49 |
| 0,50 | 25 | 4,0 | 0,0001 | 0,5 |
| 0,51 | 25 | 4,0 | 0,0001 | 0,51 |
| 0,52 | 25 | 4,0 | 0,0001 | 5,52 |
| 0,53 | 25 | 4,0 | 0,0001 | 0,53 |
| 0,54 | 25 | 4,0 | 0,0001 | 0,54 |
| 0,55 | 25 | 4,3 | 0,0001 | 0,55 |
| 0,56 | 25 | 4,3 | 0,0001 | 0,56 |
| 0,57 | 25 | 4,3 | 0,0001 | 0,57 |
| 0,58 | 25 | 4,3 | 0,0001 | 0,58 |
| 0,59 | 25 | 4,3 | 0,0001 | 0,59 |
| 0,60 | 25 | 4,5 | 0,0001 | 0,6 |
| 0,61 | 25 | 4,5 | 0,0001 | 0,61 |
| 0,62 | 25 | 4,5 | 0,0001 | 0,62 |
| 0,63 | 25 | 4,5 | 0,0001 | 0,63 |
| 0,64 | 25 | 4,5 | 0,0001 | 0,64 |
| 0,65 | 25 | 4,8 | 0,0001 | 0,65 |
| 0,66 | 25 | 4,8 | 0,0001 | 0,66 |
| 0,67 | 25 | 4,8 | 0,0001 | 0,67 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,68 | 25 | 4,8 | 0,0001 | 0,68 |
| 0,69 | 25 | 4,8 | 0,0001 | 0,69 |
| 0,70 | 25 | 5,0 | 0,0001 | 0,7 |
| 0,71 | 25 | 5,0 | 0,0001 | 0,71 |
| 0,72 | 25 | 5,0 | 0,0001 | 0,72 |
| 0,73 | 25 | 5,0 | 0,0001 | 0,73 |
| 0,74 | 25 | 5,0 | 0,0001 | 0,74 |
| 0,75 | 25 | 5,5 | 0,0001 | 0,75 |
| 0,76 | 25 | 5,5 | 0,0001 | 0,76 |
| 0,77 | 25 | 5,5 | 0,0001 | 0,77 |
| 0,78 | 25 | 5,5 | 0,0001 | 0,78 |
| 0,79 | 25 | 5,5 | 0,0001 | 0,79 |
| 0,80 | 25 | 6,0 | 0,0003 | 0,8 |
| 0,81 | 25 | 6,0 | 0,0003 | 0,81 |
| 0,82 | 25 | 6,0 | 0,0003 | 0,82 |
| 0,83 | 25 | 6,0 | 0,0003 | 0,83 |
| 0,84 | 25 | 6,0 | 0,0003 | 0,84 |
| 0,85 | 25 | 6,0 | 0,0003 | 0,85 |
| 0,86 | 25 | 6,0 | 0,0003 | 0,86 |
| 0,87 | 25 | 6,0 | 0,0003 | 0,87 |
| 0,88 | 25 | 6,0 | 0,0003 | 0,88 |
| 0,89 | 25 | 6,0 | 0,0003 | 0,89 |
| 0,90 | 25 | 6,0 | 0,0003 | 0,9 |
| 0,91 | 25 | 6,0 | 0,0003 | 0,91 |
| 0,92 | 25 | 6,0 | 0,0003 | 0,92 |
| 0,93 | 25 | 6,0 | 0,0003 | 0,93 |
| 0,94 | 25 | 6,0 | 0,0003 | 0,94 |
| 0,95 | 25 | 6,0 | 0,0003 | 0,95 |
| 0,96 | 25 | 6,0 | 0,0003 | 0,96 |
| 0,97 | 25 | 6,0 | 0,0003 | 0,97 |
| 0,98 | 25 | 6,0 | 0,0003 | 0,98 |
| 0,99 | 25 | 6,0 | 0,0003 | 0,99 |
| 1,00 | 25 | 9,0 | 0,0003 | 1 |
| 1,05 | 25 | 9,0 | 0,0003 | 1,05 |
| 1,10 | 25 | 9,0 | 0,0003 | 1,1 |
| 1,15 | 25 | 9,0 | 0,0003 | 1,15 |
| 1,20 | 25 | 9,0 | 0,0003 | 1,2 |
| 1,25 | 25 | 9,0 | 0,0003 | 1,25 |
| 1,30 | 25 | 9,0 | 0,0003 | 1,3 |
| 1,35 | 25 | 9,0 | 0,0003 | 1,35 |
| 1,40 | 25 | 9,0 | 0,0003 | 1,4 |
| 1,45 | 25 | 9,0 | 0,0003 | 1,45 |

## MIKRO DRILLS

**PROFI**

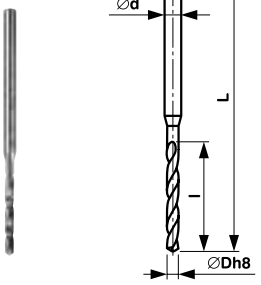
**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

**∅D < 0,8 mm ~ ∅d=1,0 mm**

**∅D ≥ 0,8 mm ~ ∅d=1,5 mm**




**Usability:**

Drills with shoulder straight shank are recommended for drilling in usual metallic or non-metallic materials. These drills are determined for the fine mechanics, modelling etc. Especially effective is the universal drill clamping, because only two collets of ∅ 1 mm and 1,5 mm are necessary.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form M

## MIKRO DRILLS, LEFT HAND CUTTING

**PROFI**

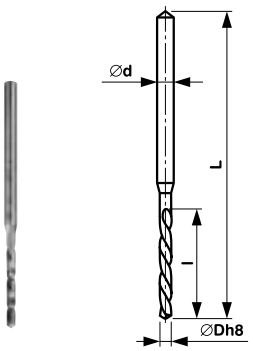
# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

**∅D < 0,8 mm ~ ∅d=1,0 mm**

**∅D ≥ 0,8 mm ~ ∅d=1,5 mm**




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,25 | 25 | 1,8 | 0,0001 | 0,25 |
| 0,26 | 25 | 1,8 | 0,0001 | 0,26 |
| 0,27 | 25 | 1,8 | 0,0001 | 0,27 |
| 0,28 | 25 | 2,0 | 0,0001 | 0,28 |
| 0,29 | 25 | 2,0 | 0,0001 | 0,29 |
| 0,30 | 25 | 2,0 | 0,0001 | 0,3 |
| 0,31 | 25 | 2,4 | 0,0001 | 0,31 |
| 0,32 | 25 | 2,4 | 0,0001 | 0,32 |
| 0,33 | 25 | 2,4 | 0,0001 | 0,33 |
| 0,34 | 25 | 2,8 | 0,0001 | 0,34 |
| 0,35 | 25 | 2,8 | 0,0001 | 0,35 |
| 0,36 | 25 | 2,8 | 0,0001 | 0,36 |
| 0,37 | 25 | 3,1 | 0,0001 | 0,37 |
| 0,38 | 25 | 3,1 | 0,0001 | 0,38 |
| 0,39 | 25 | 3,1 | 0,0001 | 0,39 |
| 0,40 | 25 | 3,1 | 0,0001 | 0,4 |
| 0,41 | 25 | 3,5 | 0,0001 | 0,41 |
| 0,42 | 25 | 3,5 | 0,0001 | 0,42 |
| 0,43 | 25 | 3,5 | 0,0001 | 0,43 |
| 0,44 | 25 | 3,5 | 0,0001 | 0,44 |
| 0,45 | 25 | 3,8 | 0,0001 | 0,45 |
| 0,46 | 25 | 3,8 | 0,0001 | 0,46 |
| 0,47 | 25 | 3,8 | 0,0001 | 0,47 |
| 0,48 | 25 | 3,8 | 0,0001 | 0,48 |
| 0,49 | 25 | 3,8 | 0,0001 | 0,49 |
| 0,50 | 25 | 4,0 | 0,0001 | 0,5 |
| 0,51 | 25 | 4,0 | 0,0001 | 0,51 |
| 0,52 | 25 | 4,0 | 0,0001 | 0,52 |
| 0,53 | 25 | 4,0 | 0,0001 | 0,53 |
| 0,54 | 25 | 4,0 | 0,0001 | 0,54 |
| 0,55 | 25 | 4,3 | 0,0001 | 0,55 |
| 0,56 | 25 | 4,3 | 0,0001 | 0,56 |
| 0,57 | 25 | 4,3 | 0,0001 | 0,57 |
| 0,58 | 25 | 4,3 | 0,0001 | 0,58 |
| 0,59 | 25 | 4,3 | 0,0001 | 0,59 |
| 0,60 | 25 | 4,5 | 0,0001 | 0,6 |
| 0,61 | 25 | 4,5 | 0,0001 | 0,61 |
| 0,62 | 25 | 4,5 | 0,0001 | 0,62 |
| 0,63 | 25 | 4,5 | 0,0001 | 0,63 |
| 0,64 | 25 | 4,5 | 0,0001 | 0,64 |
| 0,65 | 25 | 4,8 | 0,0001 | 0,65 |
| 0,66 | 25 | 4,8 | 0,0001 | 0,66 |
| 0,67 | 25 | 4,8 | 0,0001 | 0,67 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,68 | 25 | 4,8 | 0,0001 | 0,68 |
| 0,69 | 25 | 4,8 | 0,0001 | 0,69 |
| 0,70 | 25 | 5,0 | 0,0001 | 0,7 |
| 0,71 | 25 | 5,0 | 0,0001 | 0,71 |
| 0,72 | 25 | 5,0 | 0,0001 | 0,72 |
| 0,73 | 25 | 5,0 | 0,0001 | 0,73 |
| 0,74 | 25 | 5,0 | 0,0001 | 0,74 |
| 0,75 | 25 | 5,5 | 0,0001 | 0,75 |
| 0,76 | 25 | 5,5 | 0,0001 | 0,76 |
| 0,77 | 25 | 5,5 | 0,0001 | 0,77 |
| 0,78 | 25 | 5,5 | 0,0001 | 0,78 |
| 0,79 | 25 | 5,5 | 0,0001 | 0,79 |
| 0,80 | 25 | 6,0 | 0,0003 | 0,8 |
| 0,81 | 25 | 6,0 | 0,0003 | 0,81 |
| 0,82 | 25 | 6,0 | 0,0003 | 0,82 |
| 0,83 | 25 | 6,0 | 0,0003 | 0,83 |
| 0,84 | 25 | 6,0 | 0,0003 | 0,84 |
| 0,85 | 25 | 6,0 | 0,0003 | 0,85 |
| 0,86 | 25 | 6,0 | 0,0003 | 0,86 |
| 0,87 | 25 | 6,0 | 0,0003 | 0,87 |
| 0,88 | 25 | 6,0 | 0,0003 | 0,88 |
| 0,89 | 25 | 6,0 | 0,0003 | 0,89 |
| 0,90 | 25 | 6,0 | 0,0003 | 0,9 |
| 0,91 | 25 | 6,0 | 0,0003 | 0,91 |
| 0,92 | 25 | 6,0 | 0,0003 | 0,92 |
| 0,93 | 25 | 6,0 | 0,0003 | 0,93 |
| 0,94 | 25 | 6,0 | 0,0003 | 0,94 |
| 0,95 | 25 | 6,0 | 0,0003 | 0,95 |
| 0,96 | 25 | 6,0 | 0,0003 | 0,96 |
| 0,97 | 25 | 6,0 | 0,0003 | 0,97 |
| 0,98 | 25 | 6,0 | 0,0003 | 0,98 |
| 0,99 | 25 | 6,0 | 0,0003 | 0,99 |
| 1,00 | 25 | 9,0 | 0,0003 | 1 |
| 1,05 | 25 | 9,0 | 0,0003 | 1,05 |
| 1,10 | 25 | 9,0 | 0,0003 | 1,1 |
| 1,15 | 25 | 9,0 | 0,0003 | 1,15 |
| 1,20 | 25 | 9,0 | 0,0003 | 1,2 |
| 1,25 | 25 | 9,0 | 0,0003 | 1,25 |
| 1,30 | 25 | 9,0 | 0,0003 | 1,3 |
| 1,35 | 25 | 9,0 | 0,0003 | 1,35 |
| 1,40 | 25 | 9,0 | 0,0003 | 1,4 |
| 1,45 | 25 | 9,0 | 0,0003 | 1,45 |

**Usability:**

Drills with shoulder straight shank are recommended for drilling in usual metallic or non-metallic materials. These drills are determined for the fine mechanics, modelling etc. Especially effective is the universal drill clamping, because only two collets of ∅ 1 mm and 1,5 mm are necessary.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form M

# Long Series Straight Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,90 | 52 | 30 | 0,001 | 0,9 |
| 1,00 | 56 | 33 | 0,001 | 1 |
| 1,10 | 60 | 37 | 0,001 | 1,1 |
| 1,20 | 65 | 41 | 0,001 | 1,2 |
| 1,30 | 65 | 41 | 0,001 | 1,3 |
| 1,40 | 70 | 45 | 0,001 | 1,4 |
| 1,50 | 70 | 45 | 0,001 | 1,5 |
| 1,60 | 76 | 50 | 0,002 | 1,6 |
| 1,70 | 76 | 50 | 0,002 | 1,7 |
| 1,80 | 80 | 53 | 0,002 | 1,8 |
| 1,90 | 80 | 53 | 0,002 | 1,9 |
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |

**LONG SERIES STRAIGHT SHANK DRILLS**

**STANDARD** **HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

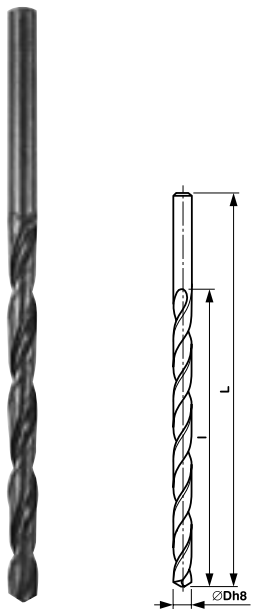
**Usability:**

Efficient drills are recommended for deep-hole drilling of-parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass.

**Manufacturing Mode:** V

**Surface Treatment:** ●

**Grinding Mode:** Form N



## LONG SERIES STRAIGHT SHANK DRILLS

**STANDARD**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

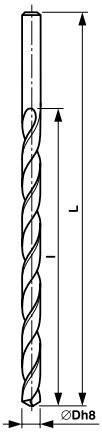
**Usability:**

Drills are recommended for deep-hole drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm², grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** T

**Surface Treatment:** ●

**Grinding Mode:** Form N




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 4,00 | 119 | 78 | 0,008 | 4 |
| 4,10 | 119 | 78 | 0,009 | 4,1 |
| 4,20 | 119 | 78 | 0,009 | 4,2 |
| (4,25) | 119 | 78 | 0,009 | 4,25 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,010 | 4,4 |
| 4,50 | 126 | 82 | 0,011 | 4,5 |
| 4,60 | 126 | 82 | 0,011 | 4,6 |
| 4,70 | 126 | 82 | 0,012 | 4,7 |
| (4,75) | 126 | 82 | 0,012 | 4,75 |
| 4,80 | 132 | 87 | 0,013 | 4,8 |
| 4,90 | 132 | 87 | 0,014 | 4,9 |
| 5,00 | 132 | 87 | 0,015 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| (5,25) | 132 | 87 | 0,017 | 5,25 |
| 5,30 | 132 | 87 | 0,018 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| (5,75) | 139 | 91 | 0,021 | 5,75 |
| 5,80 | 139 | 91 | 0,022 | 5,8 |
| 5,90 | 139 | 91 | 0,023 | 5,9 |
| 6,00 | 139 | 91 | 0,024 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| (6,25) | 148 | 97 | 0,026 | 6,25 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,030 | 6,7 |
| (6,75) | 156 | 102 | 0,032 | 6,75 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| (7,25) | 156 | 102 | 0,036 | 7,25 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| (7,75) | 165 | 109 | 0,042 | 7,75 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| (8,25) | 165 | 109 | 0,046 | 8,25 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| (8,75) | 175 | 115 | 0,057 | 8,75 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| (9,25) | 175 | 115 | 0,066 | 9,25 |
| 9,30 | 175 | 115 | 0,067 | 9,3 |
| 9,40 | 175 | 115 | 0,068 | 9,4 |
| 9,50 | 175 | 115 | 0,069 | 9,5 |
| 9,60 | 184 | 121 | 0,070 | 9,6 |
| 9,70 | 184 | 121 | 0,071 | 9,7 |
| (9,75) | 184 | 121 | 0,072 | 9,75 |
| 9,80 | 184 | 121 | 0,074 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| (10,25) | 184 | 121 | 0,080 | 10,25 |
| 10,30 | 184 | 121 | 0,081 | 10,3 |
| 10,40 | 184 | 121 | 0,082 | 10,4 |
| 10,50 | 184 | 121 | 0,083 | 10,5 |
| 10,60 | 184 | 121 | 0,084 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| (10,75) | 195 | 128 | 0,086 | 10,75 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| (11,25) | 195 | 128 | 0,099 | 11,25 |
| 11,30 | 195 | 128 | 0,102 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,118 | 11,7 |
| (11,75) | 195 | 128 | 0,120 | 11,75 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| (12,25) | 205 | 134 | 0,137 | 12,25 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| (12,75) | 205 | 134 | 0,147 | 12,75 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| (13,25) | 214 | 140 | 0,160 | 13,25 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| (13,75) | 214 | 140 | 0,178 | 13,75 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |
| 14,25 | 220 | 144 | 0,190 | 14,25 |
| 14,50 | 220 | 144 | 0,192 | 14,5 |
| 14,75 | 220 | 144 | 0,195 | 14,75 |
| 15,00 | 220 | 144 | 0,197 | 15 |
| 15,25 | 227 | 149 | 0,210 | 15,25 |
| 15,50 | 227 | 149 | 0,220 | 15,5 |
| 15,75 | 227 | 149 | 0,225 | 15,75 |
| 16,00 | 227 | 149 | 0,230 | 16 |
| 16,25 | 235 | 154 | 0,240 | 16,25 |
| 16,50 | 235 | 154 | 0,245 | 16,5 |
| 16,75 | 235 | 154 | 0,250 | 16,75 |
| 17,00 | 235 | 154 | 0,255 | 17 |
| 17,25 | 241 | 158 | 0,280 | 17,25 |
| 17,50 | 241 | 158 | 0,290 | 17,5 |
| 17,75 | 241 | 158 | 0,300 | 17,75 |
| 18,00 | 241 | 158 | 0,310 | 18 |
| 18,25 | 247 | 162 | 0,320 | 18,25 |
| 18,50 | 247 | 162 | 0,330 | 18,5 |
| 18,75 | 247 | 162 | 0,340 | 18,75 |
| 19,00 | 247 | 162 | 0,350 | 19 |
| 19,25 | 254 | 166 | 0,370 | 19,25 |
| 19,50 | 254 | 166 | 0,380 | 19,5 |
| 19,75 | 254 | 166 | 0,385 | 19,75 |
| 20,00 | 254 | 166 | 0,390 | 20 |

# Long Series Straight Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,90 | 52 | 30 | 0,001 | 0,9 |
| 1,00 | 56 | 33 | 0,001 | 1 |
| 1,10 | 60 | 37 | 0,001 | 1,1 |
| 1,20 | 65 | 41 | 0,001 | 1,2 |
| 1,30 | 65 | 41 | 0,001 | 1,3 |
| 1,40 | 70 | 45 | 0,001 | 1,4 |
| 1,50 | 70 | 45 | 0,001 | 1,5 |
| 1,60 | 76 | 50 | 0,002 | 1,6 |
| 1,70 | 76 | 50 | 0,002 | 1,7 |
| 1,80 | 80 | 53 | 0,002 | 1,8 |
| 1,90 | 80 | 53 | 0,002 | 1,9 |
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |
| 4,00 | 119 | 78 | 0,0085 | 4 |
| 4,10 | 119 | 78 | 0,0090 | 4,1 |
| 4,20 | 119 | 78 | 0,0095 | 4,2 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,011 | 4,4 |
| 4,50 | 126 | 82 | 0,012 | 4,5 |
| 4,60 | 126 | 82 | 0,013 | 4,6 |
| 4,70 | 126 | 82 | 0,014 | 4,7 |
| 4,80 | 132 | 87 | 0,015 | 4,8 |
| 4,90 | 132 | 87 | 0,015 | 4,9 |
| 5,00 | 132 | 87 | 0,016 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| 5,30 | 132 | 87 | 0,017 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| 5,80 | 139 | 91 | 0,021 | 5,8 |
| 5,90 | 139 | 91 | 0,022 | 5,9 |
| 6,00 | 139 | 91 | 0,023 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,031 | 6,7 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| 9,30 | 175 | 115 | 0,066 | 9,3 |
| 9,40 | 175 | 115 | 0,067 | 9,4 |
| 9,50 | 175 | 115 | 0,068 | 9,5 |
| 9,60 | 184 | 121 | 0,069 | 9,6 |
| 9,70 | 184 | 121 | 0,070 | 9,7 |
| 9,80 | 184 | 121 | 0,075 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| 10,30 | 184 | 121 | 0,080 | 10,3 |
| 10,40 | 184 | 121 | 0,081 | 10,4 |
| 10,50 | 184 | 121 | 0,082 | 10,5 |
| 10,60 | 184 | 121 | 0,083 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| 11,30 | 195 | 128 | 0,100 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,120 | 11,7 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |

## COBALT LONG SERIES STRAIGHT SHANK DRILLS

**PROFI**

# HSSCo

$\lambda = 25° \div 30°$

$\varepsilon = 128°$

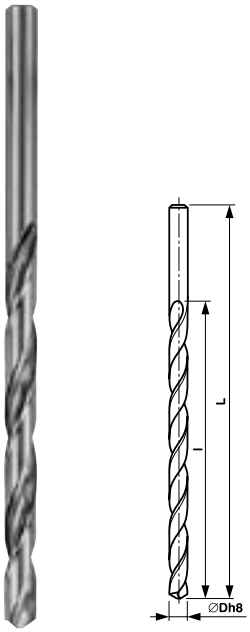
**Usability:**

Efficient drills are recommended for deep-hole drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass.

**Manufacturing Mode:** V

**Surface Treatment:** ●

**Grinding Mode:** Form N



## LONG SERIES STRAIGHT SHANK DRILLS

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

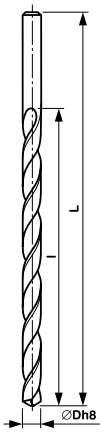
**Usability:**

Efficient drills are recommended for deep-hole drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** V

**Surface Treatment:** O

**Grinding Mode:** Form N




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,90 | 52 | 30 | 0,001 | 0,9 |
| 1,00 | 56 | 33 | 0,001 | 1 |
| 1,10 | 60 | 37 | 0,001 | 1,1 |
| 1,20 | 65 | 41 | 0,001 | 1,2 |
| 1,30 | 65 | 41 | 0,001 | 1,3 |
| 1,40 | 70 | 45 | 0,001 | 1,4 |
| 1,50 | 70 | 45 | 0,001 | 1,5 |
| 1,60 | 76 | 50 | 0,002 | 1,6 |
| 1,70 | 76 | 50 | 0,002 | 1,7 |
| 1,80 | 80 | 53 | 0,002 | 1,8 |
| 1,90 | 80 | 53 | 0,002 | 1,9 |
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |
| 4,00 | 119 | 78 | 0,0085 | 4 |
| 4,10 | 119 | 78 | 0,0090 | 4,1 |
| 4,20 | 119 | 78 | 0,0095 | 4,2 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,011 | 4,4 |
| 4,50 | 126 | 82 | 0,012 | 4,5 |
| 4,60 | 126 | 82 | 0,013 | 4,6 |
| 4,70 | 126 | 82 | 0,014 | 4,7 |
| 4,80 | 132 | 87 | 0,015 | 4,8 |
| 4,90 | 132 | 87 | 0,015 | 4,9 |
| 5,00 | 132 | 87 | 0,016 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| 5,30 | 132 | 87 | 0,017 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| 5,80 | 139 | 91 | 0,021 | 5,8 |
| 5,90 | 139 | 91 | 0,022 | 5,9 |
| 6,00 | 139 | 91 | 0,023 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,031 | 6,7 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| 9,30 | 175 | 115 | 0,066 | 9,3 |
| 9,40 | 175 | 115 | 0,067 | 9,4 |
| 9,50 | 175 | 115 | 0,068 | 9,5 |
| 9,60 | 184 | 121 | 0,069 | 9,6 |
| 9,70 | 184 | 121 | 0,070 | 9,7 |
| 9,80 | 184 | 121 | 0,075 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| 10,30 | 184 | 121 | 0,080 | 10,3 |
| 10,40 | 184 | 121 | 0,081 | 10,4 |
| 10,50 | 184 | 121 | 0,082 | 10,5 |
| 10,60 | 184 | 121 | 0,083 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| 11,30 | 195 | 128 | 0,100 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,120 | 11,7 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |

# Long Series Straight Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |
| 4,00 | 119 | 78 | 0,0085 | 4 |
| 4,10 | 119 | 78 | 0,0090 | 4,1 |
| 4,20 | 119 | 78 | 0,0095 | 4,2 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,011 | 4,4 |
| 4,50 | 126 | 82 | 0,012 | 4,5 |
| 4,60 | 126 | 82 | 0,013 | 4,6 |
| 4,70 | 126 | 82 | 0,014 | 4,7 |
| 4,80 | 132 | 87 | 0,015 | 4,8 |
| 4,90 | 132 | 87 | 0,015 | 4,9 |
| 5,00 | 132 | 87 | 0,016 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| 5,30 | 132 | 87 | 0,017 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| 5,80 | 139 | 91 | 0,021 | 5,8 |
| 5,90 | 139 | 91 | 0,022 | 5,9 |
| 6,00 | 139 | 91 | 0,023 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,031 | 6,7 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| 9,30 | 175 | 115 | 0,066 | 9,3 |
| 9,40 | 175 | 115 | 0,067 | 9,4 |
| 9,50 | 175 | 115 | 0,068 | 9,5 |
| 9,60 | 184 | 121 | 0,069 | 9,6 |
| 9,70 | 184 | 121 | 0,070 | 9,7 |
| 9,80 | 184 | 121 | 0,075 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| 10,30 | 184 | 121 | 0,080 | 10,3 |
| 10,40 | 184 | 121 | 0,081 | 10,4 |
| 10,50 | 184 | 121 | 0,082 | 10,5 |
| 10,60 | 184 | 121 | 0,083 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| 11,30 | 195 | 128 | 0,100 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,120 | 11,7 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |

## COBALT LONG SERIES STRAIGHT SHANK DRILLS

**PROFI**

# HSSCo

$\lambda = 35° \div 40°$

$\varepsilon = 128°$

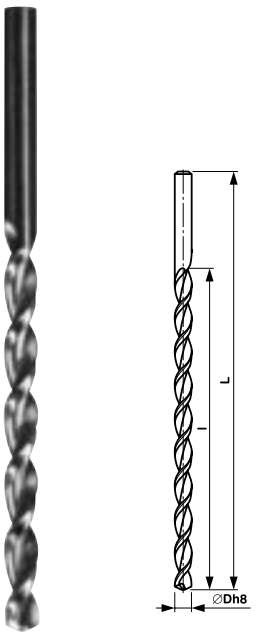
**Usability:**

Stable, long drills with the higher thermal stress resistance, erlarged flute profile by keeping drill rigidity are recommended for deep-hole drilling of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for drilling of cold- or hot-work tool steel, crankshafts, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form C



## LONG SERIES STRAIGHT SHANK DRILLS

**PROFI**

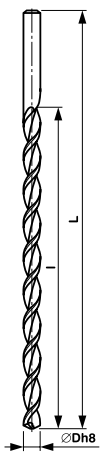
# HSS

$\lambda = 35° \div 40°$

$\varepsilon = 128°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |
| 4,00 | 119 | 78 | 0,0085 | 4 |
| 4,10 | 119 | 78 | 0,0090 | 4,1 |
| 4,20 | 119 | 78 | 0,0095 | 4,2 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,011 | 4,4 |
| 4,50 | 126 | 82 | 0,012 | 4,5 |
| 4,60 | 126 | 82 | 0,013 | 4,6 |
| 4,70 | 126 | 82 | 0,014 | 4,7 |
| 4,80 | 132 | 87 | 0,015 | 4,8 |
| 4,90 | 132 | 87 | 0,015 | 4,9 |
| 5,00 | 132 | 87 | 0,016 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| 5,30 | 132 | 87 | 0,017 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| 5,80 | 139 | 91 | 0,021 | 5,8 |
| 5,90 | 139 | 91 | 0,022 | 5,9 |
| 6,00 | 139 | 91 | 0,023 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,031 | 6,7 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| 9,30 | 175 | 115 | 0,066 | 9,3 |
| 9,40 | 175 | 115 | 0,067 | 9,4 |
| 9,50 | 175 | 115 | 0,068 | 9,5 |
| 9,60 | 184 | 121 | 0,069 | 9,6 |
| 9,70 | 184 | 121 | 0,070 | 9,7 |
| 9,80 | 184 | 121 | 0,075 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| 10,30 | 184 | 121 | 0,080 | 10,3 |
| 10,40 | 184 | 121 | 0,081 | 10,4 |
| 10,50 | 184 | 121 | 0,082 | 10,5 |
| 10,60 | 184 | 121 | 0,083 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| 11,30 | 195 | 128 | 0,100 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,120 | 11,7 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |




**Usability:**

Efficient drills are recommended for deep-hole drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N

# Long Series Straight Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |
| 4,00 | 119 | 78 | 0,0085 | 4 |
| 4,10 | 119 | 78 | 0,0090 | 4,1 |
| 4,20 | 119 | 78 | 0,0095 | 4,2 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,011 | 4,4 |
| 4,50 | 126 | 82 | 0,012 | 4,5 |
| 4,60 | 126 | 82 | 0,013 | 4,6 |
| 4,70 | 126 | 82 | 0,014 | 4,7 |
| 4,80 | 132 | 87 | 0,015 | 4,8 |
| 4,90 | 132 | 87 | 0,015 | 4,9 |
| 5,00 | 132 | 87 | 0,016 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| 5,30 | 132 | 87 | 0,017 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| 5,80 | 139 | 91 | 0,021 | 5,8 |
| 5,90 | 139 | 91 | 0,022 | 5,9 |
| 6,00 | 139 | 91 | 0,023 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,031 | 6,7 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| 9,30 | 175 | 115 | 0,066 | 9,3 |
| 9,40 | 175 | 115 | 0,067 | 9,4 |
| 9,50 | 175 | 115 | 0,068 | 9,5 |
| 9,60 | 184 | 121 | 0,069 | 9,6 |
| 9,70 | 184 | 121 | 0,070 | 9,7 |
| 9,80 | 184 | 121 | 0,075 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| 10,30 | 184 | 121 | 0,080 | 10,3 |
| 10,40 | 184 | 121 | 0,081 | 10,4 |
| 10,50 | 184 | 121 | 0,082 | 10,5 |
| 10,60 | 184 | 121 | 0,083 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| 11,30 | 195 | 128 | 0,100 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,120 | 11,7 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |

**Usability:**

Efficient drills are recommended for usual deep-hole drilling of parts made of soft materials with continuous chip like aluminium, zinc, copper, silumin, electron, thermoplastics etc.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form N

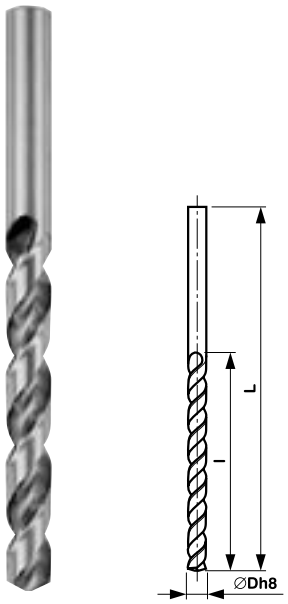
**QUICK SERIES STRAIGHT SHANK DRILLS**

**PROFI**

**HSS**

$\lambda = 35° \div 40°$

$\varepsilon = 128°$



## COBALT LONG SERIES STRAIGHT SHANK DRILLS, LEFT HAND CUTTING

**PROFI**

# HSSCo

$\lambda = 25° \div 30°$

$\varepsilon = 128°$

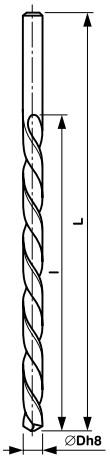
**Usability:**

High-efficient drills with the higher thermal stress resistance are recommended for difficult deep-hole drilling of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for drilling of cold- or hot-work tool steel, rolls for rolling mills, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form N




| ⌀D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,90 | 52 | 30 | 0,001 | 0,9 |
| 1,00 | 56 | 33 | 0,001 | 1 |
| 1,10 | 60 | 37 | 0,001 | 1,1 |
| 1,20 | 65 | 41 | 0,001 | 1,2 |
| 1,30 | 65 | 41 | 0,001 | 1,3 |
| 1,40 | 70 | 45 | 0,001 | 1,4 |
| 1,50 | 70 | 45 | 0,001 | 1,5 |
| 1,60 | 76 | 50 | 0,002 | 1,6 |
| 1,70 | 76 | 50 | 0,002 | 1,7 |
| 1,80 | 80 | 53 | 0,002 | 1,8 |
| 1,90 | 80 | 53 | 0,002 | 1,9 |
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |
| 4,00 | 119 | 78 | 0,0085 | 4 |
| 4,10 | 119 | 78 | 0,0090 | 4,1 |
| 4,20 | 119 | 78 | 0,0095 | 4,2 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,011 | 4,4 |
| 4,50 | 126 | 82 | 0,012 | 4,5 |
| 4,60 | 126 | 82 | 0,013 | 4,6 |
| 4,70 | 126 | 82 | 0,014 | 4,7 |
| 4,80 | 132 | 87 | 0,015 | 4,8 |
| 4,90 | 132 | 87 | 0,015 | 4,9 |
| 5,00 | 132 | 87 | 0,016 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| 5,30 | 132 | 87 | 0,017 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| 5,80 | 139 | 91 | 0,021 | 5,8 |
| 5,90 | 139 | 91 | 0,022 | 5,9 |
| 6,00 | 139 | 91 | 0,023 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,031 | 6,7 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| 9,30 | 175 | 115 | 0,066 | 9,3 |
| 9,40 | 175 | 115 | 0,067 | 9,4 |
| 9,50 | 175 | 115 | 0,068 | 9,5 |
| 9,60 | 184 | 121 | 0,069 | 9,6 |
| 9,70 | 184 | 121 | 0,070 | 9,7 |
| 9,80 | 184 | 121 | 0,075 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| 10,30 | 184 | 121 | 0,080 | 10,3 |
| 10,40 | 184 | 121 | 0,081 | 10,4 |
| 10,50 | 184 | 121 | 0,082 | 10,5 |
| 10,60 | 184 | 121 | 0,083 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| 11,30 | 195 | 128 | 0,100 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,120 | 11,7 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |

# Long Series Straight Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 0,90 | 52 | 30 | 0,001 | 0,9 |
| 1,00 | 56 | 33 | 0,001 | 1 |
| 1,10 | 60 | 37 | 0,001 | 1,1 |
| 1,20 | 65 | 41 | 0,001 | 1,2 |
| 1,30 | 65 | 41 | 0,001 | 1,3 |
| 1,40 | 70 | 45 | 0,001 | 1,4 |
| 1,50 | 70 | 45 | 0,001 | 1,5 |
| 1,60 | 76 | 50 | 0,002 | 1,6 |
| 1,70 | 76 | 50 | 0,002 | 1,7 |
| 1,80 | 80 | 53 | 0,002 | 1,8 |
| 1,90 | 80 | 53 | 0,002 | 1,9 |
| 2,00 | 85 | 56 | 0,002 | 2 |
| 2,10 | 85 | 56 | 0,002 | 2,1 |
| 2,20 | 90 | 59 | 0,002 | 2,2 |
| 2,30 | 90 | 59 | 0,002 | 2,3 |
| 2,40 | 95 | 62 | 0,0025 | 2,4 |
| 2,50 | 95 | 62 | 0,0025 | 2,5 |
| 2,60 | 95 | 62 | 0,0025 | 2,6 |
| 2,70 | 100 | 66 | 0,0030 | 2,7 |
| 2,80 | 100 | 66 | 0,0030 | 2,8 |
| 2,90 | 100 | 66 | 0,0035 | 2,9 |
| 3,00 | 100 | 66 | 0,0035 | 3 |
| 3,10 | 106 | 69 | 0,0040 | 3,1 |
| 3,20 | 106 | 69 | 0,0045 | 3,2 |
| 3,30 | 106 | 69 | 0,0050 | 3,3 |
| 3,40 | 112 | 73 | 0,0055 | 3,4 |
| 3,50 | 112 | 73 | 0,0060 | 3,5 |
| 3,60 | 112 | 73 | 0,0065 | 3,6 |
| 3,70 | 112 | 73 | 0,0070 | 3,7 |
| 3,80 | 119 | 78 | 0,0075 | 3,8 |
| 3,90 | 119 | 78 | 0,0080 | 3,9 |
| 4,00 | 119 | 78 | 0,0085 | 4 |
| 4,10 | 119 | 78 | 0,0090 | 4,1 |
| 4,20 | 119 | 78 | 0,0095 | 4,2 |
| 4,30 | 126 | 82 | 0,010 | 4,3 |
| 4,40 | 126 | 82 | 0,011 | 4,4 |
| 4,50 | 126 | 82 | 0,012 | 4,5 |
| 4,60 | 126 | 82 | 0,013 | 4,6 |
| 4,70 | 126 | 82 | 0,014 | 4,7 |
| 4,80 | 132 | 87 | 0,015 | 4,8 |
| 4,90 | 132 | 87 | 0,015 | 4,9 |
| 5,00 | 132 | 87 | 0,016 | 5 |
| 5,10 | 132 | 87 | 0,016 | 5,1 |
| 5,20 | 132 | 87 | 0,017 | 5,2 |
| 5,30 | 132 | 87 | 0,017 | 5,3 |
| 5,40 | 139 | 91 | 0,018 | 5,4 |
| 5,50 | 139 | 91 | 0,019 | 5,5 |
| 5,60 | 139 | 91 | 0,020 | 5,6 |
| 5,70 | 139 | 91 | 0,021 | 5,7 |
| 5,80 | 139 | 91 | 0,021 | 5,8 |
| 5,90 | 139 | 91 | 0,022 | 5,9 |
| 6,00 | 139 | 91 | 0,023 | 6 |
| 6,10 | 148 | 97 | 0,025 | 6,1 |
| 6,20 | 148 | 97 | 0,026 | 6,2 |
| 6,30 | 148 | 97 | 0,027 | 6,3 |
| 6,40 | 148 | 97 | 0,028 | 6,4 |
| 6,50 | 148 | 97 | 0,029 | 6,5 |
| 6,60 | 148 | 97 | 0,030 | 6,6 |
| 6,70 | 148 | 97 | 0,031 | 6,7 |
| 6,80 | 156 | 102 | 0,032 | 6,8 |
| 6,90 | 156 | 102 | 0,033 | 6,9 |
| 7,00 | 156 | 102 | 0,034 | 7 |
| 7,10 | 156 | 102 | 0,035 | 7,1 |
| 7,20 | 156 | 102 | 0,036 | 7,2 |
| 7,30 | 156 | 102 | 0,037 | 7,3 |
| 7,40 | 156 | 102 | 0,038 | 7,4 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 7,50 | 156 | 102 | 0,039 | 7,5 |
| 7,60 | 165 | 109 | 0,040 | 7,6 |
| 7,70 | 165 | 109 | 0,041 | 7,7 |
| 7,80 | 165 | 109 | 0,042 | 7,8 |
| 7,90 | 165 | 109 | 0,043 | 7,9 |
| 8,00 | 165 | 109 | 0,044 | 8 |
| 8,10 | 165 | 109 | 0,045 | 8,1 |
| 8,20 | 165 | 109 | 0,046 | 8,2 |
| 8,30 | 165 | 109 | 0,047 | 8,3 |
| 8,40 | 165 | 109 | 0,048 | 8,4 |
| 8,50 | 165 | 109 | 0,049 | 8,5 |
| 8,60 | 175 | 115 | 0,053 | 8,6 |
| 8,70 | 175 | 115 | 0,055 | 8,7 |
| 8,80 | 175 | 115 | 0,060 | 8,8 |
| 8,90 | 175 | 115 | 0,061 | 8,9 |
| 9,00 | 175 | 115 | 0,063 | 9 |
| 9,10 | 175 | 115 | 0,064 | 9,1 |
| 9,20 | 175 | 115 | 0,065 | 9,2 |
| 9,30 | 175 | 115 | 0,066 | 9,3 |
| 9,40 | 175 | 115 | 0,067 | 9,4 |
| 9,50 | 175 | 115 | 0,068 | 9,5 |
| 9,60 | 184 | 121 | 0,069 | 9,6 |
| 9,70 | 184 | 121 | 0,070 | 9,7 |
| 9,80 | 184 | 121 | 0,075 | 9,8 |
| 9,90 | 184 | 121 | 0,076 | 9,9 |
| 10,00 | 184 | 121 | 0,077 | 10 |
| 10,10 | 184 | 121 | 0,078 | 10,1 |
| 10,20 | 184 | 121 | 0,079 | 10,2 |
| 10,30 | 184 | 121 | 0,080 | 10,3 |
| 10,40 | 184 | 121 | 0,081 | 10,4 |
| 10,50 | 184 | 121 | 0,082 | 10,5 |
| 10,60 | 184 | 121 | 0,083 | 10,6 |
| 10,70 | 195 | 128 | 0,085 | 10,7 |
| 10,80 | 195 | 128 | 0,088 | 10,8 |
| 10,90 | 195 | 128 | 0,090 | 10,9 |
| 11,00 | 195 | 128 | 0,093 | 11 |
| 11,10 | 195 | 128 | 0,095 | 11,1 |
| 11,20 | 195 | 128 | 0,098 | 11,2 |
| 11,30 | 195 | 128 | 0,100 | 11,3 |
| 11,40 | 195 | 128 | 0,105 | 11,4 |
| 11,50 | 195 | 128 | 0,111 | 11,5 |
| 11,60 | 195 | 128 | 0,115 | 11,6 |
| 11,70 | 195 | 128 | 0,120 | 11,7 |
| 11,80 | 195 | 128 | 0,125 | 11,8 |
| 11,90 | 205 | 134 | 0,130 | 11,9 |
| 12,00 | 205 | 134 | 0,132 | 12 |
| 12,10 | 205 | 134 | 0,134 | 12,1 |
| 12,20 | 205 | 134 | 0,136 | 12,2 |
| 12,30 | 205 | 134 | 0,138 | 12,3 |
| 12,40 | 205 | 134 | 0,140 | 12,4 |
| 12,50 | 205 | 134 | 0,142 | 12,5 |
| 12,60 | 205 | 134 | 0,144 | 12,6 |
| 12,70 | 205 | 134 | 0,146 | 12,7 |
| 12,80 | 205 | 134 | 0,148 | 12,8 |
| 12,90 | 205 | 134 | 0,150 | 12,9 |
| 13,00 | 205 | 134 | 0,152 | 13 |
| 13,10 | 205 | 134 | 0,154 | 13,1 |
| 13,20 | 205 | 134 | 0,155 | 13,2 |
| 13,30 | 214 | 140 | 0,165 | 13,3 |
| 13,40 | 214 | 140 | 0,168 | 13,4 |
| 13,50 | 214 | 140 | 0,172 | 13,5 |
| 13,60 | 214 | 140 | 0,175 | 13,6 |
| 13,70 | 214 | 140 | 0,177 | 13,7 |
| 13,80 | 214 | 140 | 0,180 | 13,8 |
| 13,90 | 214 | 140 | 0,183 | 13,9 |
| 14,00 | 214 | 140 | 0,185 | 14 |

## LONG SERIES STRAIGHT SHANK DRILLS, LEFT HAND CUTTING

**PROFI**

**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

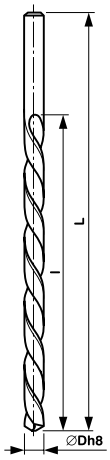
**Usability:**

Efficient drills are recommended for deep-hole drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** V

**Surface Treatment:** O

**Grinding Mode:** Form N



**EXTRA LONG STRAIGHT SHANK DRILLS, SERIES 1, 2, 3**

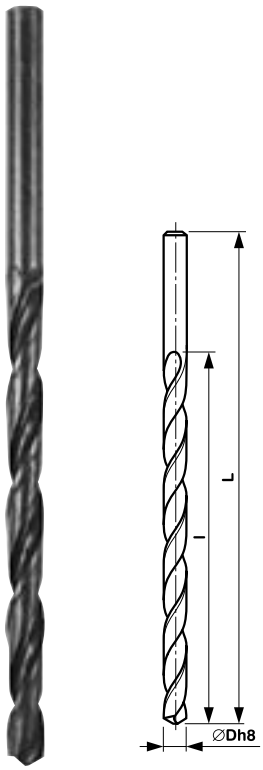
**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | | L | l | kg | | L | l | kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,0 | 125 | 85 | 0,002 | 2×125/85 | | | | | | | | |
| (2,1) | 125 | 85 | 0,002 | 2,1×125/85 | | | | | | | | |
| (2,2) | 135 | 90 | 0,002 | 2,2×135/90 | | | | | | | | |
| (2,3) | 135 | 90 | 0,002 | 2,3×135/90 | | | | | | | | |
| (2,4) | 140 | 95 | 0,002 | 2,4×140/95 | | | | | | | | |
| 2,5 | 140 | 95 | 0,004 | 2,5×140/95 | | | | | | | | |
| (2,6) | 140 | 95 | 0,004 | 2,6×140/95 | | | | | | | | |
| (2,7) | 150 | 100 | 0,004 | 2,7×150/100 | 190 | 130 | 0,005 | 2,7×190/130 | | | | |
| (2,8) | 150 | 100 | 0,004 | 2,8×150/100 | 190 | 130 | 0,005 | 2,8×190/130 | | | | |
| (2,9) | 150 | 100 | 0,004 | 2,9×150/100 | 190 | 130 | 0,005 | 2,9×190/130 | | | | |
| 3,0 | 150 | 100 | 0,006 | 3×150/100 | 190 | 130 | 0,007 | 3×190/130 | | | | |
| (3,1) | 155 | 105 | 0,006 | 3,1×155/105 | 200 | 135 | 0,007 | 3,1×200/135 | | | | |
| (3,2) | 155 | 105 | 0,006 | 3,2×155/105 | 200 | 135 | 0,007 | 3,2×200/135 | | | | |
| (3,3) | 155 | 105 | 0,006 | 3,3×155/105 | 200 | 135 | 0,007 | 3,3×200/135 | | | | |
| (3,4) | 165 | 115 | 0,006 | 3,4×165/115 | 210 | 145 | 0,007 | 3,4×210/145 | 265 | 180 | 0,013 | 3,4×265/180 |
| 3,5 | 165 | 115 | 0,008 | 3,5×165/115 | 210 | 145 | 0,01 | 3,5×210/145 | 265 | 180 | 0,013 | 3,5×265/180 |
| (3,6) | 165 | 115 | 0,008 | 3,6×165/115 | 210 | 145 | 0,01 | 3,6×210/145 | 265 | 180 | 0,013 | 3,6×265/180 |
| (3,7) | 165 | 115 | 0,008 | 3,7×165/115 | 210 | 145 | 0,01 | 3,7×210/145 | 265 | 180 | 0,013 | 3,7×265/180 |
| (3,8) | 175 | 120 | 0,008 | 3,8×175/120 | 220 | 150 | 0,01 | 3,8×220/150 | 280 | 190 | 0,013 | 3,8×280/190 |
| (3,9) | 175 | 120 | 0,008 | 3,9×175/120 | 220 | 150 | 0,01 | 3,9×220/150 | 280 | 190 | 0,013 | 3,9×280/190 |
| 4,0 | 175 | 120 | 0,011 | 4×175/120 | 220 | 150 | 0,014 | 4×220/150 | 280 | 190 | 0,019 | 4×280/190 |
| (4,1) | 175 | 120 | 0,011 | 4,1×175/120 | 220 | 150 | 0,014 | 4,1×220/150 | 280 | 190 | 0,019 | 4,1×280/190 |
| (4,2) | 175 | 120 | 0,011 | 4,2×175/120 | 220 | 150 | 0,014 | 4,2×220/150 | 280 | 190 | 0,019 | 4,2×280/190 |
| (4,3) | 185 | 125 | 0,011 | 4,3×185/125 | 235 | 160 | 0,014 | 4,3×235/160 | 295 | 200 | 0,019 | 4,3×295/200 |
| (4,4) | 185 | 125 | 0,011 | 4,4×185/125 | 235 | 160 | 0,014 | 4,4×235/160 | 295 | 200 | 0,019 | 4,4×295/200 |
| 4,5 | 185 | 125 | 0,016 | 4,5×185/125 | 235 | 160 | 0,02 | 4,5×235/160 | 295 | 200 | 0,025 | 4,5×295/200 |
| (4,6) | 185 | 125 | 0,016 | 4,6×185/125 | 235 | 160 | 0,02 | 4,6×235/160 | 295 | 200 | 0,025 | 4,6×295/200 |
| (4,7) | 185 | 125 | 0,016 | 4,7×185/125 | 235 | 160 | 0,02 | 4,7×235/160 | 295 | 200 | 0,025 | 4,7×295/200 |
| (4,8) | 195 | 135 | 0,016 | 4,8×195/135 | 245 | 170 | 0,02 | 4,8×245/170 | 315 | 210 | 0,025 | 4,8×315/210 |
| (4,9) | 195 | 135 | 0,016 | 4,9×195/135 | 245 | 170 | 0,02 | 4,9×245/170 | 315 | 210 | 0,025 | 4,9×315/210 |
| 5,0 | 195 | 135 | 0,02 | 5×195/135 | 245 | 170 | 0,025 | 5×245/170 | 315 | 210 | 0,033 | 5×315/210 |
| (5,1) | 195 | 135 | 0,02 | 5,1×195/135 | 245 | 170 | 0,025 | 5,1×245/170 | 315 | 210 | 0,033 | 5,1×315/210 |
| (5,2) | 195 | 135 | 0,02 | 5,2×195/135 | 245 | 170 | 0,025 | 5,2×245/170 | 315 | 210 | 0,033 | 5,2×315/210 |
| (5,3) | 195 | 135 | 0,02 | 5,3×195/135 | 245 | 170 | 0,025 | 5,3×245/170 | 315 | 210 | 0,033 | 5,3×315/210 |
| (5,4) | 205 | 140 | 0,02 | 5,4×205/140 | 260 | 180 | 0,025 | 5,4×260/180 | 330 | 225 | 0,033 | 5,4×330/225 |
| 5,5 | 205 | 140 | 0,026 | 5,5×205/140 | 260 | 180 | 0,033 | 5,5×260/180 | 330 | 225 | 0,042 | 5,5×330/225 |
| (5,6) | 205 | 140 | 0,026 | 5,6×205/140 | 260 | 180 | 0,033 | 5,6×260/180 | 330 | 225 | 0,042 | 5,6×330/225 |
| (5,7) | 205 | 140 | 0,026 | 5,7×205/140 | 260 | 180 | 0,033 | 5,7×260/180 | 330 | 225 | 0,042 | 5,7×330/225 |
| (5,8) | 205 | 140 | 0,026 | 5,8×205/140 | 260 | 180 | 0,033 | 5,8×260/180 | 330 | 225 | 0,042 | 5,8×330/225 |
| (5,9) | 205 | 140 | 0,026 | 5,9×205/140 | 260 | 180 | 0,033 | 5,9×260/180 | 330 | 225 | 0,042 | 5,9×330/225 |
| 6,0 | 205 | 140 | 0,031 | 6×205/140 | 260 | 180 | 0,039 | 6×260/180 | 330 | 225 | 0,05 | 6×330/225 |
| (6,1) | 215 | 150 | 0,031 | 6,1×215/150 | 275 | 190 | 0,039 | 6,1×275/190 | 350 | 235 | 0,05 | 6,1×350/235 |
| (6,2) | 215 | 150 | 0,031 | 6,2×215/150 | 275 | 190 | 0,039 | 6,2×275/190 | 350 | 235 | 0,05 | 6,2×350/235 |
| (6,3) | 215 | 150 | 0,031 | 6,3×215/150 | 275 | 190 | 0,039 | 6,3×275/190 | 350 | 235 | 0,05 | 6,3×350/235 |
| (6,4) | 215 | 150 | 0,031 | 6,4×215/150 | 275 | 190 | 0,039 | 6,4×275/190 | 350 | 235 | 0,05 | 6,4×350/235 |
| 6,5 | 215 | 150 | 0,038 | 6,5×215/150 | 275 | 190 | 0,049 | 6,5×275/190 | 350 | 235 | 0,063 | 6,5×350/235 |
| (6,6) | 215 | 150 | 0,038 | 6,6×215/150 | 275 | 190 | 0,049 | 6,6×275/190 | 350 | 235 | 0,063 | 6,6×350/235 |
| (6,7) | 215 | 150 | 0,038 | 6,7×215/150 | 275 | 190 | 0,049 | 6,7×275/190 | 350 | 235 | 0,063 | 6,7×350/235 |
| (6,8) | 225 | 155 | 0,038 | 6,8×225/155 | 290 | 200 | 0,049 | 6,8×290/200 | 370 | 250 | 0,063 | 6,8×370/250 |
| (6,9) | 225 | 155 | 0,038 | 6,9×225/155 | 290 | 200 | 0,049 | 6,9×290/200 | 370 | 250 | 0,063 | 6,9×370/250 |
| 7,0 | 225 | 155 | 0,046 | 7×225/155 | 290 | 200 | 0,06 | 7×290/200 | 370 | 250 | 0,077 | 7×370/250 |
| (7,1) | 225 | 155 | 0,046 | 7,1×225/155 | 290 | 200 | 0,06 | 7,1×290/200 | 370 | 250 | 0,077 | 7,1×370/250 |
| (7,2) | 225 | 155 | 0,046 | 7,2×225/155 | 290 | 200 | 0,06 | 7,2×290/200 | 370 | 250 | 0,077 | 7,2×370/250 |
| (7,3) | 225 | 155 | 0,046 | 7,3×225/155 | 290 | 200 | 0,06 | 7,3×290/200 | 370 | 250 | 0,077 | 7,3×370/250 |
| (7,4) | 225 | 155 | 0,046 | 7,4×225/155 | 290 | 200 | 0,06 | 7,4×290/200 | 370 | 250 | 0,077 | 7,4×370/250 |
| 7,5 | 225 | 155 | 0,053 | 7,5×225/155 | 290 | 200 | 0,068 | 7,5×290/200 | 370 | 250 | 0,088 | 7,5×370/250 |




**Usability:**

Extra long drills are recommended for deep-hole drilling by means of jig bushes of parts made of unalloyed or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel etc. It is necessary to prevent from flute-stopping by frequent withdrawing the drill. It is necessary to reduce the recommended cutting conditions regarding to the insufficient supply of the cutting fluid.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form C

# Extra Long Straight Shank Drills

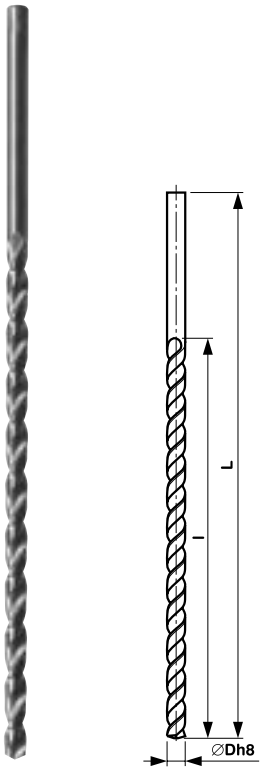
| ∅D /mm/ | L /mm/ | l /mm/ | kg | | L | l | kg | | L | l | kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (7,6) | 240 | 165 | 0,053 | 7,6×240/165 | 305 | 210 | 0,068 | 7,6×305/210 | 390 | 265 | 0,088 | 7,6×390/265 |
| (7,7) | 240 | 165 | 0,053 | 7,7×240/165 | 305 | 210 | 0,068 | 7,7×305/210 | 390 | 265 | 0,088 | 7,7×390/265 |
| (7,8) | 240 | 165 | 0,053 | 7,8×240/165 | 305 | 210 | 0,068 | 7,8×305/210 | 390 | 265 | 0,088 | 7,8×390/265 |
| (7,9) | 240 | 165 | 0,053 | 7,9×240/165 | 305 | 210 | 0,068 | 7,9×305/210 | 390 | 265 | 0,088 | 7,9×390/265 |
| 8,0 | 240 | 165 | 0,064 | 8×240/165 | 305 | 210 | 0,082 | 8×305/210 | 390 | 265 | 0,106 | 8×390/265 |
| (8,1) | 240 | 165 | 0,064 | 8,1×240/165 | 305 | 210 | 0,082 | 8,1×305/210 | 390 | 265 | 0,106 | 8,1×390/265 |
| (8,2) | 240 | 165 | 0,064 | 8,2×240/165 | 305 | 210 | 0,082 | 8,2×305/210 | 390 | 265 | 0,106 | 8,2×390/265 |
| (8,3) | 240 | 165 | 0,064 | 8,3×240/165 | 305 | 210 | 0,082 | 8,3×305/210 | 390 | 265 | 0,106 | 8,3×390/265 |
| (8,4) | 240 | 165 | 0,064 | 8,4×240/165 | 305 | 210 | 0,082 | 8,4×305/210 | 390 | 265 | 0,106 | 8,4×390/265 |
| 8,5 | 240 | 165 | 0,073 | 8,5×240/165 | 305 | 210 | 0,093 | 8,5×305/210 | 390 | 265 | 0,119 | 8,5×390/265 |
| (8,6) | 250 | 175 | 0,073 | 8,6×250/175 | 320 | 220 | 0,093 | 8,6×320/220 | 410 | 280 | 0,119 | 8,6×410/280 |
| (8,7) | 250 | 175 | 0,073 | 8,7×250/175 | 320 | 220 | 0,093 | 8,7×320/220 | 410 | 280 | 0,119 | 8,7×410/280 |
| (8,8) | 250 | 175 | 0,073 | 8,8×250/175 | 320 | 220 | 0,093 | 8,8×320/220 | 410 | 280 | 0,119 | 8,8×410/280 |
| (8,9) | 250 | 175 | 0,073 | 8,9×250/175 | 320 | 220 | 0,093 | 8,9×320/220 | 410 | 280 | 0,119 | 8,9×410/280 |
| 9,0 | 250 | 175 | 0,084 | 9×250/175 | 320 | 220 | 0,122 | 9×320/220 | 410 | 280 | 0,14 | 9×410/280 |
| (9,1) | 250 | 175 | 0,084 | 9,1×250/175 | 320 | 220 | 0,122 | 9,1×320/220 | 410 | 280 | 0,14 | 9,1×410/280 |
| (9,2) | 250 | 175 | 0,084 | 9,2×250/175 | 320 | 220 | 0,122 | 9,2×320/220 | 410 | 280 | 0,14 | 9,2×410/280 |
| (9,3) | 250 | 175 | 0,084 | 9,3×250/175 | 320 | 220 | 0,122 | 9,3×320/220 | 410 | 280 | 0,14 | 9,3×410/280 |
| (9,4) | 250 | 175 | 0,084 | 9,4×250/175 | 320 | 220 | 0,122 | 9,4×320/220 | 410 | 280 | 0,14 | 9,4×410/280 |
| 9,5 | 250 | 175 | 0,094 | 9,5×250/175 | 320 | 220 | 0,130 | 9,5×320/220 | 410 | 280 | 0,157 | 9,5×410/280 |
| (9,6) | 265 | 185 | 0,094 | 9,6×265/185 | 340 | 235 | 0,130 | 9,6×340/235 | 430 | 295 | 0,157 | 9,6×430/295 |
| (9,7) | 265 | 185 | 0,094 | 9,7×265/185 | 340 | 235 | 0,130 | 9,7×340/235 | 430 | 295 | 0,157 | 9,7×430/295 |
| (9,8) | 265 | 185 | 0,094 | 9,8×265/185 | 340 | 235 | 0,130 | 9,8×340/235 | 430 | 295 | 0,157 | 9,8×430/295 |
| (9,9) | 265 | 185 | 0,094 | 9,9×265/185 | 340 | 235 | 0,130 | 9,9×340/235 | 430 | 295 | 0,157 | 9,9×430/295 |
| 10,0 | 265 | 185 | 0,111 | 10×265/185 | 340 | 235 | 0,143 | 10×340/235 | 430 | 295 | 0,18 | 10,×430/295 |
| (10,1) | 265 | 185 | 0,111 | 10,1×265/185 | 340 | 235 | 0,143 | 10,1×340/235 | 430 | 295 | 0,18 | 10,1×430/295 |
| (10,2) | 265 | 185 | 0,111 | 10,2×265/1855 | 340 | 235 | 0,143 | 10,2×340/235 | 430 | 295 | 0,18 | 10,2×430/295 |
| (10,3) | 265 | 185 | 0,111 | 10,3×265/185 | 340 | 235 | 0,143 | 10,3×340/235 | 430 | 295 | 0,18 | 10,3×430/295 |
| (10,4) | 265 | 185 | 0,111 | 10,4×265/185 | 340 | 235 | 0,143 | 10,4×340/235 | 430 | 295 | 0,18 | 10,4×430/295 |
| 10,5 | 265 | 185 | 0,122 | 10,5×265/185 | 340 | 235 | 0,158 | 10,5×340/235 | 430 | 295 | 0,2 | 10,5×430/295 |
| (10,6) | 265 | 185 | 0,122 | 10,6×265/185 | 340 | 235 | 0,158 | 10,6×340/235 | 430 | 295 | 0,2 | 10,6×430/295 |
| (10,7) | 280 | 195 | 0,122 | 10,7×280/195 | 365 | 250 | 0,158 | 10,7×365/250 | 455 | 310 | 0,2 | 10,7×455/310 |
| (10,8) | 280 | 195 | 0,122 | 10,8×280/195 | 365 | 250 | 0,158 | 10,8×365/250 | 455 | 310 | 0,2 | 10,8×455/310 |
| (10,9) | 280 | 195 | 0,122 | 10,9×280/195 | 365 | 250 | 0,158 | 10,9×365/250 | 455 | 310 | 0,2 | 10,9×455/310 |
| 11,0 | 280 | 195 | 0,142 | 11×280/195 | 365 | 250 | 0,187 | 11×365/250 | 455 | 310 | 0,233 | 11×455/310 |
| (11,1) | 280 | 195 | 0,142 | 11,1×280/195 | 365 | 250 | 0,187 | 11,1×365/250 | 455 | 310 | 0,233 | 11,1×455/310 |
| (11,2) | 280 | 195 | 0,142 | 11,2×280/195 | 365 | 250 | 0,187 | 11,2×365/250 | 455 | 310 | 0,233 | 11,2×455/310 |
| (11,3) | 280 | 195 | 0,142 | 11,3×280/195 | 365 | 250 | 0,187 | 11,3×365/250 | 455 | 310 | 0,233 | 11,3×455/310 |
| (11,4) | 280 | 195 | 0,142 | 11,4×280/195 | 365 | 250 | 0,187 | 11,4×365/250 | 455 | 310 | 0,233 | 11,4×455/310 |
| 11,5 | 280 | 195 | 0,155 | 11,5×280/195 | 365 | 250 | 0,204 | 11,5×365/250 | 455 | 310 | 0,255 | 11,5×455/310 |
| (11,6) | 280 | 195 | 0,155 | 11,6×280/195 | 365 | 250 | 0,204 | 11,6×365/250 | 455 | 310 | 0,255 | 11,6×455/310 |
| (11,7) | 280 | 195 | 0,155 | 11,7×280/195 | 365 | 250 | 0,204 | 11,7×365/250 | 455 | 310 | 0,255 | 11,7×455/310 |
| (11,8) | 280 | 195 | 0,155 | 11,8×280/195 | 365 | 250 | 0,204 | 11,8×365/250 | 455 | 310 | 0,255 | 11,8×455/310 |
| (11,9) | 295 | 205 | 0,155 | 11,9×295/205 | 375 | 260 | 0,204 | 11,9×375/260 | 480 | 315 | 0,255 | 11,9×480/315 |
| 12,0 | 295 | 205 | 0,178 | 12×295/205 | 375 | 260 | 0,227 | 12×375/260 | 480 | 315 | 0,292 | 12×480/315 |
| (12,1) | 295 | 205 | 0,178 | 12,1×295/205 | 375 | 260 | 0,227 | 12,1×375/260 | 480 | 315 | 0,292 | 12,1×480/315 |
| (12,2) | 295 | 205 | 0,178 | 12,2×295/205 | 375 | 260 | 0,227 | 12,2×375/260 | 480 | 315 | 0,292 | 12,2×480/315 |
| (12,3) | 295 | 205 | 0,178 | 12,3×295/205 | 375 | 260 | 0,227 | 12,3×375/260 | 480 | 315 | 0,292 | 12,3×480/315 |
| (12,4) | 295 | 205 | 0,178 | 12,4×295/205 | 375 | 260 | 0,227 | 12,4×375/260 | 480 | 315 | 0,292 | 12,4×480/315 |
| 12,5 | 295 | 205 | 0,193 | 12,5×295/205 | 375 | 260 | 0,246 | 12,5×375/260 | 480 | 315 | 0,316 | 12,5×480/315 |
| (12,6) | 295 | 205 | 0,193 | 12,6×295/205 | 375 | 260 | 0,246 | 12,6×375/260 | 480 | 315 | 0,316 | 12,6×480/315 |
| (12,7) | 295 | 205 | 0,193 | 12,7×295/205 | 375 | 260 | 0,246 | 12,7×375/260 | 480 | 315 | 0,316 | 12,7×480/315 |
| (12,8) | 295 | 205 | 0,193 | 12,8×295/205 | 375 | 260 | 0,246 | 12,8×375/260 | 480 | 315 | 0,316 | 12,8×480/315 |
| (12,9) | 295 | 205 | 0,193 | 12,9×295/205 | 375 | 260 | 0,246 | 12,9×375/260 | 480 | 315 | 0,316 | 12,9×480/315 |
| 13,0 | 295 | 205 | 0,209 | 13×295/205 | 375 | 260 | 0,266 | 13×375/260 | 480 | 315 | 0,342 | 13×480/315 |

**EXTRA LONG STRAIGHT SHANK DRILLS, SERIES 1, 2, 3**

**PROFI** **HSS**

$\lambda = 27° \div 32°$

$\varepsilon = 118°$




**Usability:**

Extra long drills are recommended for deep-hole drilling by means of jig bushes of parts made of unalloyed or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel etc. It is necessary to prevent from flute-stopping by frequent withdrawing the drill. It is necessary to reduce the recommended cutting conditions regarding to the insufficient supply of the cutting fluid.

**Manufacturing Mode:** V

**Surface Treatment:** O

**Grinding Mode:** Form C

# Extra Long Straight Shank Drills

## COBALT EXTRA LONG STRAIGHT DRILLS

**PROFI**

**HSSCo**

$\lambda = 35° \div 40°$

$\varepsilon = 128°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2 | 125 | 80 | 0,002 | 2 |
| 2,2 | 125 | 80 | 0,002 | 2,2 |
| 2,4 | 125 | 80 | 0,002 | 2,4 |
| 2,5 | 125 | 80 | 0,004 | 2,5 |
| 2,6 | 125 | 80 | 0,004 | 2,6 |
| 2,8 | 160 | 100 | 0,004 | 2,8 |
| 3 | 160 | 100 | 0,006 | 3 |
| 3,2 | 160 | 100 | 0,006 | 3,2 |
| 3,4 | 160 | 100 | 0,006 | 3,4 |
| 3,5 | 160 | 100 | 0,008 | 3,5 |
| 3,6 | 160 | 100 | 0,008 | 3,6 |
| 3,8 | 160 | 100 | 0,008 | 3,8 |
| 4 | 160 | 100 | 0,011 | 4 |
| 4,2 | 160 | 100 | 0,011 | 4,2 |
| 4,4 | 200 | 125 | 0,011 | 4,1 |
| 4,5 | 200 | 125 | 0,015 | 4,5 |
| 4,6 | 200 | 125 | 0,015 | 4,6 |
| 4,8 | 200 | 125 | 0,015 | 4,8 |
| 5 | 200 | 125 | 0,02 | 5 |
| 5,2 | 200 | 125 | 0,02 | 5,2 |
| 5,4 | 200 | 125 | 0,02 | 5,4 |
| 5,5 | 200 | 125 | 0,026 | 5,5 |
| 5,6 | 200 | 125 | 0,026 | 5,6 |
| 5,8 | 200 | 125 | 0,026 | 5,8 |
| 6¨,0 | 200 | 125 | 0,031 | 6 |
| 6,2 | 200 | 125 | 0,031 | 6,2 |
| 6,4 | 200 | 125 | 0,031 | 6,4 |
| 6,5 | 200 | 125 | 0,038 | 6,5 |
| 6,6 | 200 | 125 | 0,038 | 6,6 |
| 6,8 | 250 | 160 | 0,038 | 6,8 |
| 7 | 250 | 160 | 0,046 | 7 |
| 7,2 | 250 | 160 | 0,046 | 7,2 |
| 7,4 | 250 | 160 | 0,046 | 7,4 |
| 7,5 | 250 | 160 | 0,053 | 7,5 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 7,6 | 250 | 160 | 0,053 | 7,6 |
| 7,8 | 250 | 160 | 0,053 | 7,8 |
| 8 | 250 | 160 | 0,064 | 8 |
| 8,2 | 250 | 160 | 0,064 | 8,2 |
| 8,4 | 250 | 160 | 0,064 | 8,4 |
| 8,5 | 250 | 160 | 0,073 | 8,5 |
| 8,6 | 250 | 160 | 0,073 | 8,6 |
| 8,8 | 250 | 160 | 0,073 | 8,8 |
| 9 | 250 | 160 | 0,084 | 9 |
| 9,2 | 250 | 160 | 0,084 | 9,2 |
| 9,4 | 250 | 160 | 0,084 | 9,4 |
| 9,5 | 250 | 160 | 0,0946 | 9,5 |
| 9,6 | 250 | 160 | 0,0946 | 9,6 |
| 9,8 | 250 | 160 | 0,0946 | 9,8 |
| 10 | 250 | 160 | 0,111 | 10 |
| 10,2 | 250 | 160 | 0,111 | 10,2 |
| 10,4 | 250 | 160 | 0,111 | 10,4 |
| 10,5 | 250 | 160 | 0,122 | 10,5 |
| 10,6 | 250 | 160 | 0,122 | 10,6 |
| 10,8 | 315 | 200 | 0,122 | 10,8 |
| 11 | 315 | 200 | 0,143 | 11 |
| 11,2 | 315 | 200 | 0,143 | 11,2 |
| 11,4 | 315 | 200 | 0,143 | 11,4 |
| 11,5 | 315 | 200 | 0,156 | 11,5 |
| 11,6 | 315 | 200 | 0,156 | 11,6 |
| 11,8 | 315 | 200 | 0,156 | 11,8 |
| 12 | 315 | 200 | 0,178 | 12 |
| 12,2 | 315 | 200 | 0,178 | 12,2 |
| 12,4 | 315 | 200 | 0,178 | 12,4 |
| 12,5 | 315 | 200 | 0,193 | 112,5 |
| 12,6 | 315 | 200 | 0,193 | 12,6 |
| 12,8 | 315 | 200 | 0,193 | 12,8 |
| 13 | 315 | 200 | 0,205 | 13 |

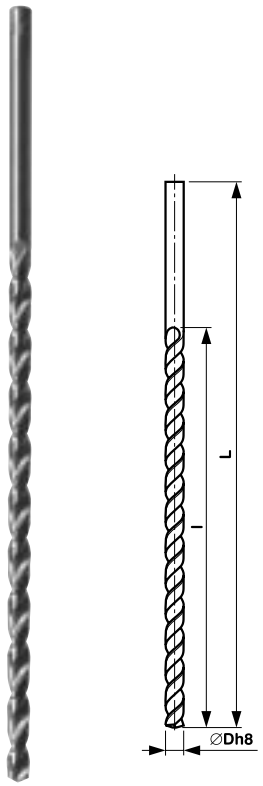
**Usability:**

High-efficient long drills with the higher thermal stress resistance, special flute profile by keeping the drill rigidity, are recommended for deep-hole drilling by means of jig bushes of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for drilling of cold- or hot-work tool steel, crankshafts, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form C



# Straight Shank Drills

## SPIRAL DRILLS WITH STRAIGHT SHANK

| | DIN | Typ | Materiál | | |
|---|---|---|---|---|---|
| 10010. | 338 | N | HSS | 1,0 ÷ 16,0 | 10010XX |
| ✸ 10015. | 338 | N | HSSCo5 | 1,0 ÷ 16,0 | 10015XX |
| ✸ 20010. | 340 | N | HSS | 1,0 ÷ 14,0 | 20010XX |

## SPIRAL DRILLS WITH STRAIGHT SHANK

| | DIN | Typ | Materiál | | |
|---|---|---|---|---|---|
| ✸ 10020. | 338 | H | HSS | 1,0 ÷ 16,0 | 10020XX |
| ✸ 10030. | 338 | W | HSS | 1,0 ÷ 16,0 | 10030XX |
| ✸ 10040. | 338 | GT 100 | HSS | 2,0 ÷ 16,0 | 10040XX |
| ✸ 10045. | 338 | GT 100 | HSSCo5 | 2,0 ÷ 16,0 | 10045XX |
| ✸ 10060. | 338 | GT 50 | HSS | 2,0 ÷ 16,0 | 10060XX |

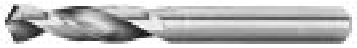
## SPIRAL DRILLS WITH STRAIGHT SHANK - CONTINUE

| | DIN | Typ | Materiál | | |
|---|---|---|---|---|---|
| | ✸ 10065. | 338 | GT 50 | HSSCo5 | 2,0 ÷ 16,0 | 10065XX |
| | 10085. | 338 | Ti | HSSCo5 | 2,0 ÷ 16,0 | 10085XX |
| | ✸ 20015. | 340 | N | HSSCo5 | 1,5 ÷ 16,0 | 20015XX |
| | ✸ 20020. | 340 | H | HSS | 2,0 ÷ 16,0 | 20020XX |
| | ✸ 20030. | 340 | W | HSS | 2,0 ÷ 16,0 | 20030XX |
| | ✸ 20040. | 340 | GT 100 | HSS | 2,0 ÷ 16,0 | 20040XX |
| | ✸ 20045. | 340 | GT 100 | HSSCo5 | 2,0 ÷ 16,0 | 20045XX |
| | ✸ 20060. | 340 | GT 50 | HSS | 2,0 ÷ 16,0 | 20060XX |
| | ✸ 20065. | 340 | GT 50 | HSSCo5 | 2,0 ÷ 16,0 | 20065XX |
| | ✸ 20085. | 340 | Ti | HSSCo5 | 2,0 ÷ 16,0 | 20085XX |
| | ✸ 30010. | 1897 | N | HSS | 1,5 ÷ 16,0 | 30010XX |

# Straight Shank Drills

## SPIRAL DRILLS WITH STRAIGHT SHANK

| | DIN | Typ | Materiál | | |
|---|---|---|---|---|---|
| ✸ 30015. | 1897 | N | HSSCo5 | 2,0 ÷ 16,0 | 30015XX |
| ✸ 30020. | 1897 | H | HSS | 2,0 ÷ 16,0 | 30020XX |
| ✸ 30030. | 1897 | W | HSS | 2,0 ÷ 16,0 | 30030XX |
| ✸ 30050. | 1897 | GT 80 | HSS | 2,0 ÷ 13,0 | 30050XX |
| ✸ 30055. | 1897 | GT 80 | HSSCo5 | 2,0 ÷ 13,0 | 30055XX |
| ✸ 30075. | 1897 | VA | HSSCo5 | 2,0 ÷ 13,0 | 30075XX |
| ✸ 40090. | - | KV | HSS | 2,0 ÷ 10,5 | 40090XX |
| ✸ 50100. | - | NC120 | HSS | 3,0 ÷ 14,0 | 50100XX |
| ✸ 50110. | - | NC90 | HSS | 3,0 ÷ 14,0 | 50110XX |



# Taper Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 10,00 | 168 | 87 | 0,086 | 10 |
| (10,10) | 168 | 87 | 0,087 | 10,1 |
| 10,20 | 168 | 87 | 0,088 | 10,2 |
| (10,25) | 168 | 87 | 0,088 | 10,25 |
| (10,30) | 168 | 87 | 0,089 | 10,3 |
| (10,40) | 168 | 87 | 0,089 | 10,4 |
| 10,50 | 168 | 87 | 0,090 | 10,5 |
| (10,60) | 168 | 87 | 0,091 | 10,6 |
| (10,70) | 175 | 94 | 0,092 | 10,7 |
| (10,75) | 175 | 94 | 0,093 | 10,75 |
| 10,80 | 175 | 94 | 0,094 | 10,8 |
| (10,90) | 175 | 94 | 0,095 | 10,9 |
| 11,00 | 175 | 94 | 0,096 | 11 |
| (11,10) | 175 | 94 | 0,096 | 11,1 |
| 11,20 | 175 | 94 | 0,098 | 11,2 |
| (11,30) | 175 | 94 | 0,100 | 11,3 |
| (11,40) | 175 | 94 | 0,103 | 11,4 |
| 11,50 | 175 | 94 | 0,105 | 11,5 |
| (11,60) | 175 | 94 | 0,106 | 11,6 |
| (11,70) | 175 | 94 | 0,107 | 11,7 |
| (11,75) | 175 | 94 | 0,107 | 11,75 |
| 11,80 | 175 | 94 | 0,108 | 11,8 |
| (11,90) | 182 | 101 | 0,110 | 11,9 |
| 12,00 | 182 | 101 | 0,112 | 12 |
| (12,10) | 182 | 101 | 0,113 | 12,1 |
| 12,20 | 182 | 101 | 0,115 | 12,2 |
| (12,30) | 182 | 101 | 0,116 | 12,3 |
| (12,40) | 182 | 101 | 0,117 | 12,4 |
| 12,50 | 182 | 101 | 0,118 | 12,5 |
| (12,60) | 182 | 101 | 0,119 | 12,6 |
| (12,70) | 182 | 101 | 0,120 | 12,7 |
| (12,75) | 182 | 101 | 0,120 | 12,75 |
| 12,80 | 182 | 101 | 0,120 | 12,8 |
| (12,90) | 182 | 101 | 0,122 | 12,9 |
| 13,00 | 182 | 101 | 0,124 | 13 |
| (13,10) | 182 | 101 | 0,122 | 13,1 |
| 13,20 | 182 | 101 | 0,125 | 13,2 |
| (13,25) | 189 | 108 | 0,126 | 13,25 |
| (13,30) | 189 | 108 | 0,128 | 13,3 |
| (13,40) | 189 | 108 | 0,129 | 13,4 |
| 13,50 | 189 | 108 | 0,130 | 13,5 |
| (13,60) | 189 | 108 | 0,131 | 13,6 |
| (13,70) | 189 | 108 | 0,132 | 13,7 |
| (13,75) | 189 | 108 | 0,133 | 13,75 |
| 13,80 | 189 | 108 | 0,134 | 13,8 |
| (13,90) | 189 | 108 | 0,135 | 13,9 |
| 14,00 | 189 | 108 | 0,136 | 14 |
| 14,25 | 212 | 114 | 0,139 | 14,25 |
| 14,50 | 212 | 114 | 0,142 | 14,5 |
| 14,75 | 212 | 114 | 0,149 | 14,75 |
| 15,00 | 212 | 114 | 0,160 | 15 |
| 15,25 | 218 | 120 | 0,170 | 15,25 |
| 15,50 | 218 | 120 | 0,180 | 15,5 |
| 15,75 | 218 | 120 | 0,190 | 15,75 |
| 16,00 | 218 | 120 | 0,210 | 16 |
| 16,25 | 223 | 125 | 0,235 | 16,25 |
| 16,50 | 223 | 125 | 0,247 | 16,5 |
| 16,75 | 223 | 125 | 0,258 | 16,75 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 17,00 | 223 | 125 | 0,269 | 17 |
| 17,25 | 228 | 130 | 0,285 | 17,25 |
| 17,50 | 228 | 130 | 0,291 | 17,5 |
| 17,75 | 228 | 130 | 0,295 | 17,75 |
| 18,00 | 228 | 130 | 0,300 | 18 |
| 18,25 | 233 | 135 | 0,306 | 18,25 |
| 18,50 | 233 | 135 | 0,312 | 18,5 |
| 18,75 | 233 | 135 | 0,316 | 18,75 |
| 19,00 | 233 | 135 | 0,320 | 19 |
| 19,25 | 238 | 140 | 0,325 | 19,25 |
| 19,50 | 238 | 140 | 0,334 | 19,5 |
| 19,75 | 238 | 140 | 0,345 | 19,75 |
| 20,00 | 238 | 140 | 0,350 | 20 |
| 20,25 | 243 | 145 | 0,360 | 20,25 |
| 20,50 | 243 | 145 | 0,380 | 20,5 |
| 20,75 | 243 | 145 | 0,395 | 2075 |
| 21,00 | 243 | 145 | 0,415 | 21 |
| 21,25 | 248 | 150 | 0,419 | 21,25 |
| 20,50 | 248 | 150 | 0,424 | 21,5 |
| 21,75 | 248 | 150 | 0,430 | 21,75 |
| 22,00 | 248 | 150 | 0,455 | 22 |
| 22,25 | 248 | 150 | 0,480 | 22,25 |
| 22,50 | 253 | 155 | 0,495 | 22,5 |
| 22,75 | 253 | 155 | 0,520 | 22,75 |
| 23,00 | 253 | 155 | 0,560 | 23 |
| 23,25 | 276 | 155 | 0,600 | 23,25 |
| 23,50 | 276 | 155 | 0,620 | 23,5 |
| 23,75 | 281 | 160 | 0,640 | 23,75 |
| 24,00 | 281 | 160 | 0,660 | 24 |
| 24,25 | 281 | 160 | 0,684 | 24,25 |
| 24,50 | 281 | 160 | 0,695 | 24,5 |
| 24,75 | 281 | 160 | 0,705 | 24,75 |
| 25,00 | 281 | 160 | 0,715 | 25 |
| 25,25 | 286 | 165 | 0,719 | 25,25 |
| 25,50 | 286 | 165 | 0,722 | 25,5 |
| 25,75 | 286 | 165 | 0,727 | 25,75 |
| 26,00 | 286 | 165 | 0,736 | 26 |
| 26,25 | 286 | 165 | 0,740 | 26,25 |
| 26,50 | 286 | 165 | 0,755 | 26,5 |
| 26,75 | 291 | 170 | 0,765 | 26,75 |
| 27,00 | 291 | 170 | 0,775 | 27 |
| 27,25 | 291 | 170 | 0,788 | 27,25 |
| 27,50 | 291 | 170 | 0,796 | 27,5 |
| 27,75 | 291 | 170 | 0,710 | 27,75 |
| 28,00 | 291 | 170 | 0,820 | 28 |
| 28,25 | 296 | 175 | 0,830 | 28,25 |
| 28,50 | 296 | 175 | 0,850 | 28,5 |
| 28,75 | 296 | 175 | 0,865 | 28,75 |
| 29,00 | 296 | 175 | 0,880 | 29 |
| 29,25 | 296 | 175 | 0,895 | 29,25 |
| 29,50 | 296 | 175 | 0,915 | 29,5 |
| 29,75 | 296 | 175 | 0,925 | 29,75 |
| 30,00 | 296 | 175 | 0,935 | 30 |
| 30,25 | 301 | 180 | 0,945 | 30,25 |
| 30,50 | 301 | 180 | 0,955 | 30,5 |
| 30,75 | 301 | 180 | 0,968 | 30,75 |
| 31,00 | 301 | 180 | 1,005 | 31 |
| 31,25 | 301 | 180 | 1,015 | 31,25 |

## TAPER SHANK DRILLS

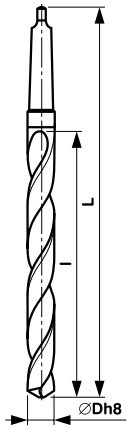
**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

**∅D=10,00÷14,00 ~ MORSE 1**
**∅D=14,25÷23,00 ~ MORSE 2**
**∅D=23,25÷31,75 ~ MORSE 3**
**∅D=32,00÷50,50 ~ MORSE 4**
**∅D=51,00÷76,00 ~ MORSE 5**
**∅D=77,00÷90,00 ~ MORSE 6**




**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or-nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** F

**Surface Treatment:** ●

**Grinding Mode:** D<14,0 Form N
D≥14,1 Form A
D≥51,0 Form N

## TAPER SHANK DRILLS

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 31,50 | 301 | 180 | 1,025 | 31,5 |
| 31,75 | 306 | 185 | 1,038 | 31,75 |
| 32,00 | 334 | 185 | 1,070 | 32 |
| 32,50 | 334 | 185 | 1,095 | 32,5 |
| 33,00 | 334 | 185 | 1,195 | 33 |
| 33,50 | 334 | 185 | 1,230 | 33,5 |
| 34,00 | 339 | 190 | 1,320 | 34 |
| 34,50 | 339 | 190 | 1,465 | 34,5 |
| 35,00 | 339 | 190 | 1,510 | 35 |
| 35,50 | 339 | 190 | 1,560 | 35,5 |
| 36,00 | 344 | 195 | 1,610 | 36 |
| 36,50 | 344 | 195 | 1,670 | 36,5 |
| 37,00 | 344 | 195 | 1,710 | 37 |
| 37,50 | 344 | 195 | 1,760 | 37,5 |
| 38,00 | 349 | 200 | 1,790 | 38 |
| 38,50 | 349 | 200 | 1,820 | 38,5 |
| 39,00 | 349 | 200 | 1,840 | 39 |
| 39,50 | 349 | 200 | 1,860 | 39,5 |
| 40,00 | 349 | 200 | 1,880 | 40 |
| 40,50 | 354 | 205 | 1,890 | 41,5 |
| 41,00 | 354 | 205 | 1,900 | 41 |
| 41,50 | 354 | 205 | 2,030 | 41,5 |
| 42,00 | 354 | 205 | 2,095 | 42 |
| 42,50 | 354 | 205 | 2,140 | 42,5 |
| 43,00 | 359 | 210 | 2,190 | 43 |
| 43,50 | 359 | 210 | 2,210 | 43,5 |
| 44,00 | 359 | 210 | 2,230 | 44 |
| 44,50 | 359 | 210 | 2,250 | 44,5 |
| 45,00 | 359 | 210 | 2,300 | 45 |
| 45,50 | 364 | 215 | 2,350 | 45,5 |
| 46,00 | 364 | 215 | 2,410 | 46 |
| 46,50 | 364 | 215 | 2,498 | 46,5 |
| 47,00 | 364 | 215 | 2,580 | 47 |
| 47,50 | 364 | 215 | 2,650 | 47,5 |
| 48,00 | 369 | 220 | 2,695 | 48 |
| 48,50 | 369 | 220 | 2,778 | 48,5 |
| 49,00 | 369 | 220 | 2,850 | 49 |
| 49,50 | 369 | 220 | 2,910 | 49,5 |
| 50,00 | 369 | 220 | 3,250 | 50 |
| 50,50 | 374 | 225 | 3,480 | 50,5 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 51,00 | 412 | 225 | 3,850 | 51 |
| 52,00 | 412 | 225 | 4,250 | 52 |
| 53,00 | 412 | 225 | 4,295 | 53 |
| 54,00 | 417 | 230 | 4,320 | 54 |
| 55,00 | 417 | 230 | 4,380 | 55 |
| 56,00 | 417 | 230 | 4,415 | 56 |
| 57,00 | 422 | 235 | 4,550 | 57 |
| 58,00 | 422 | 235 | 4,645 | 58 |
| 59,00 | 422 | 235 | 4,760 | 59 |
| 60,00 | 422 | 240 | 4,995 | 60 |
| 61,00 | 427 | 240 | 5,300 | 61 |
| 62,00 | 427 | 240 | 5,360 | 62 |
| 63,00 | 427 | 240 | 5,410 | 63 |
| 64,00 | 432 | 245 | 5,510 | 64 |
| 65,00 | 432 | 245 | 5,595 | 65 |
| 66,00 | 432 | 245 | 5,720 | 66 |
| 67,00 | 432 | 245 | 5,850 | 67 |
| 68,00 | 437 | 250 | 5,980 | 68 |
| 69,00 | 437 | 250 | 6,120 | 69 |
| 70,00 | 437 | 250 | 6,215 | 70 |
| 71,00 | 437 | 250 | 6,305 | 71 |
| 72,00 | 442 | 255 | 6,610 | 72 |
| 73,00 | 442 | 255 | 6,645 | 73 |
| 74,00 | 442 | 255 | 6,780 | 74 |
| 75,00 | 442 | 255 | 6,910 | 75 |
| 76,00 | 447 | 260 | 7,100 | 76 |
| 77,00 | 514 | 260 | 7,850 | 77 |
| 78,00 | 514 | 260 | 8,450 | 78 |
| 79,00 | 514 | 260 | 8,620 | 79 |
| 80,00 | 514 | 260 | 8,880 | 80 |
| 81,00 | 519 | 265 | 8,950 | 81 |
| 82,00 | 519 | 265 | 9,110 | 82 |
| 83,00 | 519 | 265 | 9,300 | 83 |
| 84,00 | 519 | 265 | 9,320 | 84 |
| 85,00 | 519 | 265 | 9,340 | 85 |
| 86,00 | 524 | 270 | 9,360 | 86 |
| 87,00 | 524 | 270 | 9,380 | 87 |
| 88,00 | 524 | 270 | 10,400 | 88 |
| 89,00 | 524 | 270 | 10,420 | 89 |
| 90,00 | 524 | 270 | 10,460 | 90 |

**∅D=10,00÷14,00 ~ MORSE 1**
**∅D=14,25÷23,00 ~ MORSE 2**
**∅D=23,25÷31,75 ~ MORSE 3**
**∅D=32,00÷50,50 ~ MORSE 4**
**∅D=51,00÷76,00 ~ MORSE 5**
**∅D=77,00÷90,00 ~ MORSE 6**

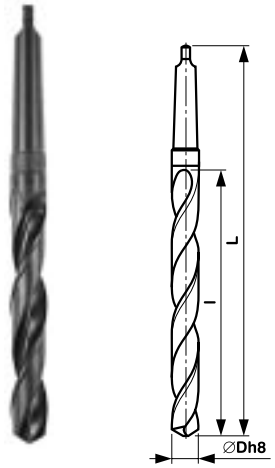
**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** **F**

**Surface Treatment:** ●

**Grinding Mode:** **D<14,0 Form N**
**D≥14,1 Form A**
**D≥51,0 Form N**



# Taper Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| (6,75) | 150 | 69 | 0,063 | 6,75 |
| 6,80 | 150 | 69 | 0,063 | 6,8 |
| (6,90) | 150 | 69 | 0,064 | 8,9 |
| 7,00 | 150 | 69 | 0,064 | 7 |
| (7,10) | 150 | 69 | 0,065 | 7,1 |
| 7,20 | 150 | 69 | 0,065 | 7,2 |
| (7,25) | 150 | 69 | 0,066 | 7,25 |
| (7,30) | 150 | 69 | 0,067 | 7,3 |
| (7,40) | 150 | 69 | 0,067 | 7,4 |
| 7,50 | 150 | 69 | 0,067 | 7,5 |
| (7,60) | 156 | 75 | 0,067 | 7,6 |
| (7,70) | 156 | 75 | 0,067 | 7,7 |
| (7,75) | 156 | 75 | 0,067 | 7,75 |
| 7,80 | 156 | 75 | 0,068 | 7,8 |
| (7,90) | 156 | 75 | 0,068 | 7,9 |
| 8,00 | 156 | 75 | 0,068 | 8 |
| (8,10) | 156 | 75 | 0,069 | 8,1 |
| 8,20 | 156 | 75 | 0,069 | 8,2 |
| (8,25) | 156 | 75 | 0,069 | 8,25 |
| (8,30) | 156 | 75 | 0,069 | 8,3 |
| (8,40) | 156 | 75 | 0,069 | 8,4 |
| 8,50 | 156 | 75 | 0,070 | 8,5 |
| (8,60) | 162 | 81 | 0,070 | 8,6 |
| (8,70) | 162 | 81 | 0,071 | 8,7 |
| (8,75) | 162 | 81 | 0,072 | 8,75 |
| 8,80 | 162 | 81 | 0,073 | 8,8 |
| (8,90) | 162 | 81 | 0,074 | 8,9 |
| 9,00 | 162 | 81 | 0,075 | 9 |
| (9,10) | 162 | 81 | 0,076 | 9,1 |
| 9,20 | 162 | 81 | 0,076 | 9,2 |
| (9,25) | 162 | 81 | 0,077 | 9,25 |
| (9,30) | 162 | 81 | 0,077 | 9,3 |
| (9,40) | 162 | 81 | 0,078 | 9,4 |
| 9,50 | 162 | 81 | 0,079 | 9,5 |
| (9,60) | 168 | 87 | 0,080 | 9,6 |
| (9,70) | 168 | 87 | 0,081 | 9,7 |
| (9,75) | 168 | 87 | 0,082 | 9,75 |
| 9,80 | 168 | 87 | 0,083 | 9,8 |
| (9,90) | 168 | 87 | 0,085 | 9,9 |
| 10,00 | 168 | 87 | 0,086 | 10 |
| (10,10) | 168 | 87 | 0,087 | 10,1 |
| 10,20 | 168 | 87 | 0,088 | 10,2 |
| (10,25) | 168 | 87 | 0,088 | 10,25 |
| (10,30) | 168 | 87 | 0,089 | 10,3 |
| (10,40) | 168 | 87 | 0,089 | 10,4 |
| 10,50 | 168 | 87 | 0,090 | 10,5 |
| (10,60) | 168 | 87 | 0,091 | 10,6 |
| (10,70) | 175 | 94 | 0,092 | 10,7 |
| (10,75) | 175 | 94 | 0,093 | 10,75 |
| 10,80 | 175 | 94 | 0,094 | 10,8 |
| (10,90) | 175 | 94 | 0,095 | 10,9 |
| 11,00 | 175 | 94 | 0,096 | 11 |
| (11,10) | 175 | 94 | 0,096 | 11,1 |
| 11,20 | 175 | 94 | 0,098 | 11,2 |
| (11,30) | 175 | 94 | 0,100 | 11,3 |
| (11,40) | 175 | 94 | 0,103 | 11,4 |
| 11,50 | 175 | 94 | 0,105 | 11,5 |
| (11,60) | 175 | 94 | 0,106 | 11,6 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| (11,70) | 175 | 94 | 0,107 | 11,7 |
| (11,75) | 175 | 94 | 0,107 | 11,75 |
| 11,80 | 175 | 94 | 0,108 | 11,8 |
| (11,90) | 182 | 101 | 0,110 | 11,9 |
| 12,00 | 182 | 101 | 0,112 | 12 |
| (12,10) | 182 | 101 | 0,113 | 12,1 |
| 12,20 | 182 | 101 | 0,115 | 12,2 |
| (12,30) | 182 | 101 | 0,116 | 12,3 |
| (12,40) | 182 | 101 | 0,117 | 12,4 |
| 12,50 | 182 | 101 | 0,118 | 12,5 |
| (12,60) | 182 | 101 | 0,119 | 12,6 |
| (12,70) | 182 | 101 | 0,120 | 12,7 |
| (12,75) | 182 | 101 | 0,120 | 12,75 |
| 12,80 | 182 | 101 | 0,120 | 12,8 |
| (12,90) | 182 | 101 | 0,122 | 12,9 |
| 13,00 | 182 | 101 | 0,124 | 13 |
| (13,10) | 182 | 101 | 0,122 | 13,1 |
| 13,20 | 182 | 101 | 0,125 | 13,2 |
| (13,25) | 189 | 108 | 0,126 | 13,25 |
| (13,30) | 189 | 108 | 0,128 | 13,3 |
| (13,40) | 189 | 108 | 0,129 | 13,4 |
| 13,50 | 189 | 108 | 0,130 | 13,5 |
| (13,60) | 189 | 108 | 0,131 | 13,9 |
| (13,70) | 189 | 108 | 0,132 | 13,7 |
| (13,75) | 189 | 108 | 0,133 | 13,75 |
| 13,80 | 189 | 108 | 0,134 | 13,8 |
| (13,90) | 189 | 108 | 0,135 | 13,9 |
| 14,00 | 189 | 108 | 0,136 | 14 |
| 14,25 | 212 | 114 | 0,139 | 14,25 |
| 14,50 | 212 | 114 | 0,142 | 14,5 |
| 14,75 | 212 | 114 | 0,149 | 14,75 |
| 15,00 | 212 | 114 | 0,160 | 15 |
| 15,25 | 218 | 120 | 0,170 | 15,25 |
| 15,50 | 218 | 120 | 0,180 | 15,5 |
| 15,75 | 218 | 120 | 0,190 | 15,75 |
| 16,00 | 218 | 120 | 0,210 | 16 |
| 16,25 | 223 | 125 | 0,235 | 16,25 |
| 16,50 | 223 | 125 | 0,247 | 16,5 |
| 16,75 | 223 | 125 | 0,258 | 16,75 |
| 17,00 | 223 | 125 | 0,269 | 17 |
| 17,25 | 228 | 130 | 0,285 | 17,25 |
| 17,50 | 228 | 130 | 0,291 | 17,5 |
| 17,75 | 228 | 130 | 0,295 | 17,75 |
| 18,00 | 228 | 130 | 0,300 | 18 |
| 18,25 | 233 | 135 | 0,306 | 18,25 |
| 18,50 | 233 | 135 | 0,312 | 18,5 |
| 18,75 | 233 | 135 | 0,316 | 18,75 |
| 19,00 | 233 | 135 | 0,320 | 19 |
| 19,25 | 238 | 140 | 0,325 | 19,25 |
| 19,50 | 238 | 140 | 0,334 | 19,5 |
| 19,75 | 238 | 140 | 0,345 | 19,75 |
| 20,00 | 238 | 140 | 0,350 | 20 |
| 20,25 | 243 | 145 | 0,360 | 20,25 |
| 20,50 | 243 | 145 | 0,380 | 20,5 |
| 20,75 | 243 | 145 | 0,395 | 20,75 |
| 21,00 | 243 | 145 | 0,415 | 21 |
| 21,25 | 248 | 150 | 0,419 | 21,25 |
| 21,50 | 248 | 150 | 0,424 | 21,5 |

## TAPER SHANK DRILLS

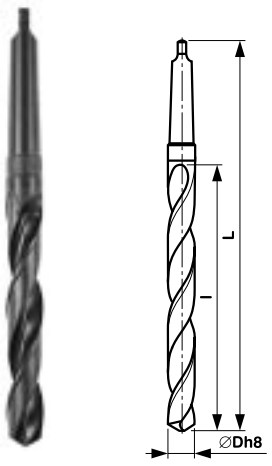
**STANDARD**

**HSS**

**$\lambda = 25° \div 30°$**

**$\varepsilon = 118°$**

**∅D= 6,75÷14,00 ~ MORSE 1**
**∅D=14,25÷23,00 ~ MORSE 2**
**∅D=23,25÷31,75 ~ MORSE 3**
**∅D=32,00÷45,00 ~ MORSE 4**




**Usability:**

Drills are recommended for usual drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** T

**Surface Treatment:** ●

**Grinding Mode:** D<23,0 Form N
D≥23,25 Form A

## TAPER SHANK DRILLS

**STANDARD**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 21,75 | 248 | 150 | 0,430 | 21,75 |
| 22,00 | 248 | 150 | 0,455 | 22 |
| 22,25 | 248 | 150 | 0,480 | 22,25 |
| 22,50 | 253 | 155 | 0,495 | 22,5 |
| 22,75 | 253 | 155 | 0,520 | 22,75 |
| 23,00 | 253 | 155 | 0,560 | 23 |
| 23,25 | 276 | 155 | 0,600 | 23,25 |
| 23,50 | 276 | 155 | 0,620 | 23,5 |
| 23,75 | 281 | 160 | 0,640 | 23,75 |
| 24,00 | 281 | 160 | 0,660 | 24 |
| 24,25 | 281 | 160 | 0,684 | 24,25 |
| 24,50 | 281 | 160 | 0,695 | 24,5 |
| 24,75 | 281 | 160 | 0,705 | 24,75 |
| 25,00 | 281 | 160 | 0,715 | 25 |
| 25,25 | 286 | 165 | 0,719 | 25,25 |
| 25,50 | 286 | 165 | 0,722 | 25,5 |
| 25,75 | 286 | 165 | 0,727 | 25,75 |
| 26,00 | 286 | 165 | 0,736 | 26 |
| 26,25 | 286 | 165 | 0,740 | 26,25 |
| 26,50 | 286 | 165 | 0,755 | 26,5 |
| 26,75 | 291 | 170 | 0,765 | 26,75 |
| 27,00 | 291 | 170 | 0,775 | 27 |
| 27,25 | 291 | 170 | 0,788 | 27,25 |
| 27,50 | 291 | 170 | 0,796 | 27,5 |
| 27,75 | 291 | 170 | 0,710 | 27,75 |
| 28,00 | 291 | 170 | 0,820 | 28 |
| 28,25 | 296 | 175 | 0,830 | 28,25 |
| 28,50 | 296 | 175 | 0,850 | 28,5 |
| 28,75 | 296 | 175 | 0,865 | 28,75 |
| 29,00 | 296 | 175 | 0,880 | 29 |
| 29,25 | 296 | 175 | 0,895 | 29,25 |
| 29,50 | 296 | 175 | 0,915 | 29,5 |
| 29,75 | 296 | 175 | 0,925 | 29,75 |
| 30,00 | 296 | 175 | 0,935 | 30 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 30,25 | 301 | 180 | 0,945 | 30,25 |
| 30,50 | 301 | 180 | 0,955 | 30,5 |
| 30,75 | 301 | 180 | 0,968 | 30,75 |
| 31,00 | 301 | 180 | 1,005 | 31 |
| 31,25 | 301 | 180 | 1,015 | 31,25 |
| 31,50 | 301 | 180 | 1,025 | 31,5 |
| 31,75 | 306 | 185 | 1,038 | 31,75 |
| 32,00 | 334 | 185 | 1,070 | 32 |
| 32,50 | 334 | 185 | 1,095 | 32,5 |
| 33,00 | 334 | 185 | 1,195 | 33 |
| 33,50 | 334 | 185 | 1,230 | 33,5 |
| 34,00 | 339 | 190 | 1,320 | 34 |
| 34,50 | 339 | 190 | 1,465 | 34,5 |
| 35,00 | 339 | 190 | 1,510 | 35 |
| 35,50 | 339 | 190 | 1,560 | 35,5 |
| 36,00 | 344 | 195 | 1,610 | 36 |
| 36,50 | 344 | 195 | 1,670 | 36,5 |
| 37,00 | 344 | 195 | 1,710 | 37 |
| 37,50 | 344 | 195 | 1,760 | 37,5 |
| 38,00 | 349 | 200 | 1,790 | 38 |
| 38,50 | 349 | 200 | 1,820 | 38,5 |
| 39,00 | 349 | 200 | 1,840 | 39 |
| 39,50 | 349 | 200 | 1,860 | 39,5 |
| 40,00 | 349 | 200 | 1,880 | 40 |
| 40,50 | 354 | 205 | 1,890 | 40,5 |
| 41,00 | 354 | 205 | 1,900 | 41 |
| 41,50 | 354 | 205 | 2,030 | 41,5 |
| 42,00 | 354 | 205 | 2,095 | 42 |
| 42,50 | 354 | 205 | 2,140 | 42,5 |
| 43,00 | 359 | 210 | 2,190 | 43 |
| 43,50 | 359 | 210 | 2,210 | 43,5 |
| 44,00 | 359 | 210 | 2,230 | 44 |
| 44,50 | 359 | 210 | 2,250 | 44,5 |
| 45,00 | 359 | 210 | 2,300 | 45 |

**∅D= 6,75÷14,00 ~ MORSE 1**
**∅D=14,25÷23,00 ~ MORSE 2**
**∅D=23,25÷31,75 ~ MORSE 3**
**∅D=32,00÷45,00 ~ MORSE 4**

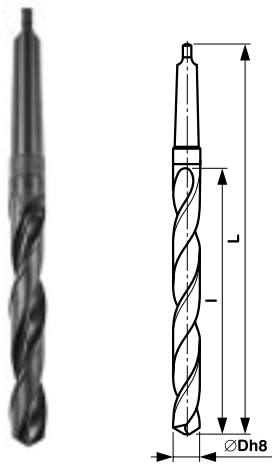
**Usability:**

Drills are recommended for usual drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm², grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** **T**

**Surface Treatment:** ●

**Grinding Mode:** **D<23,0 Form N**
**D≥23,25 Form A**



# Taper Shank Drills

## TAPER SHANK DRILLS

**PROFI** **HSS**

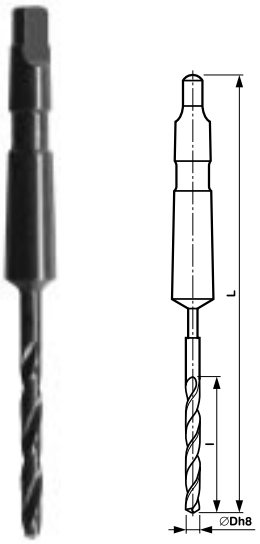
$\lambda = 25° \div 30°$

$\varepsilon = 118°$

**∅D= 5,00÷14,00 ~ MORSE 1**

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5,00 | 133 | 52 | 0,055 | 5 |
| 5,20 | 133 | 52 | 0,056 | 5,2 |
| 5,50 | 138 | 57 | 0,057 | 5,5 |
| 5,80 | 138 | 57 | 0,058 | 5,8 |
| 6,00 | 138 | 57 | 0,059 | 6 |
| 6,20 | 144 | 63 | 0,060 | 6,2 |
| 6,50 | 144 | 63 | 0,062 | 6,5 |
| 6,80 | 150 | 69 | 0,063 | 6,8 |
| 7,00 | 150 | 69 | 0,064 | 7 |
| 7,20 | 150 | 69 | 0,065 | 7,2 |
| 7,50 | 150 | 69 | 0,066 | 7,5 |
| 7,80 | 156 | 75 | 0,066 | 7,8 |
| 8,00 | 156 | 75 | 0,067 | 8 |
| 8,20 | 156 | 75 | 0,068 | 8,2 |
| 8,50 | 156 | 75 | 0,070 | 8,5 |
| 8,80 | 162 | 81 | 0,073 | 8,8 |
| 9,00 | 162 | 81 | 0,075 | 9 |
| 9,20 | 162 | 81 | 0,076 | 9,2 |
| 9,50 | 162 | 81 | 0,079 | 9,5 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 9,80 | 168 | 87 | 0,083 | 9,8 |
| 10,00 | 168 | 87 | 0,085 | 10 |
| 10,20 | 168 | 87 | 0,088 | 10,2 |
| 10,50 | 168 | 87 | 0,090 | 10,5 |
| 10,80 | 175 | 94 | 0,093 | 10,8 |
| 11,00 | 175 | 94 | 0,095 | 11 |
| 11,20 | 175 | 94 | 0,098 | 11,2 |
| 11,50 | 175 | 94 | 0,105 | 11,5 |
| 11,80 | 175 | 94 | 0,108 | 11,8 |
| 12,00 | 182 | 101 | 0,112 | 12 |
| 12,20 | 182 | 101 | 0,115 | 12,2 |
| 12,50 | 182 | 101 | 0,118 | 12,5 |
| 12,80 | 182 | 101 | 0,120 | 12,8 |
| 13,00 | 182 | 101 | 0,124 | 13 |
| 13,20 | 182 | 101 | 0,128 | 13,2 |
| 13,50 | 189 | 108 | 0,130 | 13,5 |
| 13,80 | 189 | 108 | 0,133 | 13,8 |
| 14,00 | 189 | 108 | 0,134 | 14 |




**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form N

## COBALT TAPER SHANK DRILLS

**PROFI** **HSSCo**

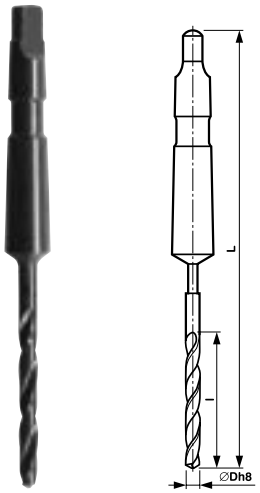
$\lambda = 25° \div 30°$

$\varepsilon = 128°$

**∅D= 5,00÷14,00 ~ MORSE 1**

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5,0 | 133 | 52 | 0,052 | 5 |
| 5,5 | 138 | 57 | 0,055 | 5,5 |
| 6,0 | 138 | 57 | 0,057 | 6 |
| 6,5 | 144 | 63 | 0,060 | 6,5 |
| 7,0 | 150 | 69 | 0,064 | 7 |
| 7,5 | 150 | 69 | 0,067 | 7,5 |
| 8,0 | 156 | 75 | 0,068 | 8 |
| 8,5 | 156 | 75 | 0,070 | 8,5 |
| 9,0 | 162 | 81 | 0,075 | 9 |
| 9,5 | 162 | 81 | 0,081 | 9,5 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 10,00 | 168 | 87 | 0,088 | 10 |
| (10,50) | 168 | 87 | 0,092 | 10,5 |
| 11,00 | 175 | 94 | 0,099 | 11 |
| (11,50) | 175 | 94 | 0,105 | 11,5 |
| 12,00 | 182 | 101 | 0,110 | 12 |
| (12,50) | 182 | 101 | 0,140 | 12,5 |
| 13,00 | 182 | 101 | 0,180 | 13 |
| (13,50) | 189 | 108 | 0,195 | 13,5 |
| 14,00 | 189 | 108 | 0,210 | 14 |




**Usability:**

High-efficient drills with the higher thermal stress resistance are recommended for drilling of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for drilling of cold- or hot-work tool steel, rolls for rolling mills, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form C

## COBALT TAPER SHANK DRILLS

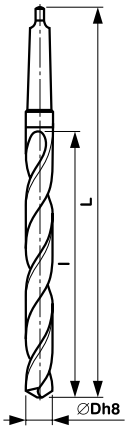
**PROFI**

# HSSCo

$\lambda = 25° \div 30°$

$\varepsilon = 128°$

**∅D=14,00 ~ MORSE 1**
**∅D=14,50÷23,00 ~ MORSE 2**
**∅D=23,50÷31,50 ~ MORSE 3**
**∅D=32,00÷40,00 ~ MORSE 4**




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 14,00 | 189 | 108 | 0,210 | 14 |
| (14,50) | 212 | 114 | 0,290 | 14,5 |
| 15,00 | 212 | 114 | 0,350 | 15 |
| (15,50) | 218 | 120 | 0,370 | 15,5 |
| 16,00 | 218 | 120 | 0,380 | 16 |
| (16,50) | 223 | 125 | 0,400 | 16,5 |
| 17,00 | 223 | 125 | 0,420 | 17 |
| (17,50) | 228 | 130 | 0,435 | 17,5 |
| 18,00 | 228 | 130 | 0,450 | 18 |
| (18,50) | 233 | 135 | 0,500 | 18,5 |
| 19,00 | 233 | 135 | 0,560 | 19 |
| (19,50) | 238 | 140 | 0,570 | 19,5 |
| 20,00 | 238 | 140 | 0,580 | 20 |
| (20,50) | 243 | 145 | 0,590 | 20,5 |
| 21,00 | 243 | 145 | 0,600 | 21 |
| (21,50) | 248 | 150 | 0,610 | 21,5 |
| 22,00 | 248 | 150 | 0,620 | 22 |
| (22,50) | 253 | 155 | 0,635 | 22,5 |
| 23,00 | 253 | 155 | 0,650 | 23 |
| (23,50) | 276 | 155 | 0,660 | 23,5 |
| 24,00 | 281 | 160 | 0,666 | 24 |
| (24,50) | 281 | 160 | 0,690 | 24,5 |
| 25,00 | 281 | 160 | 0,710 | 25 |
| (25,50) | 286 | 165 | 0,725 | 25,5 |
| 26,00 | 286 | 165 | 0,740 | 26 |
| (26,50) | 286 | 165 | 0,760 | 26,5 |
| 27,00 | 291 | 170 | 0,850 | 27 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| (27,50) | 291 | 170 | 0,870 | 27,5 |
| 28,00 | 291 | 170 | 0,890 | 28 |
| (28,50) | 296 | 175 | 0,910 | 28,5 |
| 29,00 | 296 | 175 | 0,930 | 29 |
| (29,50) | 296 | 175 | 0,950 | 29,5 |
| 30,00 | 296 | 175 | 0,975 | 30 |
| (30,50) | 301 | 180 | 1,100 | 30,5 |
| (31,00) | 301 | 180 | 1,130 | 31 |
| (31,50) | 301 | 180 | 1,160 | 31,5 |
| (32,00) | 334 | 185 | 1,310 | 32 |
| (32,50) | 334 | 185 | 1,335 | 32,5 |
| (33,00) | 334 | 185 | 1,360 | 33 |
| (33,50) | 334 | 185 | 1,385 | 33,5 |
| (34,00) | 339 | 190 | 1,430 | 34 |
| (34,50) | 339 | 190 | 1,160 | 34,5 |
| (35,00) | 339 | 190 | 1,190 | 35 |
| (35,50) | 339 | 190 | 1,520 | 35,5 |
| (36,00) | 344 | 195 | 1,580 | 36 |
| (36,50) | 344 | 195 | 1,720 | 36,5 |
| (37,00) | 344 | 195 | 1,760 | 37 |
| (37,50) | 344 | 195 | 1,800 | 37,5 |
| (38,00) | 349 | 200 | 1,950 | 38 |
| (38,50) | 349 | 200 | 1,980 | 38,5 |
| (39,00) | 349 | 200 | 2,210 | 39 |
| (39,50) | 349 | 200 | 2,240 | 39,5 |
| (40,00) | 349 | 200 | 2,270 | 40 |

**Usability:**

High-efficient drills with the higher thermal stress resistance are recommended for drilling of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for-drilling of cold- or hot-work tool steel, rolls for rolling mills, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** F
**Surface Treatment:** ○
**Grinding Mode:** Form N

## COBALT TAPER SHANK DRILLS (HSCO8)

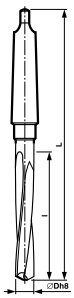
**PROFI**

# HSSCo8

$\lambda = 10° \div 15°$

$\varepsilon = 128°$

**∅D=10,00÷18,00 ~ MORSE 2**
**∅D=19,00÷26,00 ~ MORSE 3**
**∅D=27,00÷40,00 ~ MORSE 4**




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 10 | 190 | 90 | 0,17 | 10 |
| 11 | 190 | 90 | 0,18 | 11 |
| 12 | 190 | 90 | 0,19 | 12 |
| 13 | 190 | 90 | 0,2 | 13 |
| 14 | 190 | 90 | 0,21 | 14 |
| 15 | 190 | 90 | 0,215 | 15 |
| 16 | 190 | 90 | 0,235 | 16 |
| 17 | 190 | 90 | 0,25 | 17 |
| 18 | 190 | 90 | 0,265 | 18 |
| 19 | 225 | 105 | 0,46 | 19 |
| 20 | 225 | 105 | 0,48 | 20 |
| 21 | 225 | 105 | 0,5 | 21 |
| 22 | 225 | 105 | 0,52 | 22 |
| 23 | 225 | 105 | 0,54 | 23 |
| 24 | 225 | 105 | 0,56 | 24 |
| 25 | 225 | 105 | 0,58 | 25 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 26 | 225 | 105 | 0,6 | 26 |
| 27 | 265 | 120 | 0,95 | 27 |
| 28 | 265 | 120 | 1 | 28 |
| 29 | 265 | 120 | 1,03 | 29 |
| 30 | 265 | 120 | 1,07 | 30 |
| 31 | 265 | 120 | 1,1 | 31 |
| 32 | 265 | 120 | 1,13 | 32 |
| 33 | 265 | 120 | 1,17 | 33 |
| 34 | 265 | 120 | 1,2 | 34 |
| 35 | 265 | 120 | 1,23 | 35 |
| 36 | 265 | 120 | 1,27 | 36 |
| 37 | 265 | 120 | 1,3 | 37 |
| 38 | 265 | 120 | 1,34 | 38 |
| 39 | 265 | 120 | 1,47 | 39 |
| 40 | 265 | 120 | 1,41 | 40 |

**Usability:**

High-efficient drills with the high thermal stress resistance, higher Co content (8 %), steep helix and gread web thickness with special cutting edge are less break-sensitive. These drills are recommended for drilling of hard-to-machine materials like sheets HARDOX 400 and 500 and armour plates.

**Manufacturing Mode:** F
**Surface Treatment:** ○
**Grinding Mode:** Form S

# Taper Shank Drills

| ∅D (∅D) /mm (inch.)/ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 13/32 (10,319) | 6 5/8 | 3 7/16 | 0,085 | 13/32 |
| 27/64 (10,716) | 6 7/8 | 3 11/16 | 0,090 | 27/64 |
| 7/16 (11,113) | 6 7/8 | 3 11/16 | 0,097 | 7/16 |
| 29/64 (11,510) | 6 7/8 | 3 11/16 | 0,100 | 29/64 |
| 15/32 (11,907) | 7 5/32 | 3 31/32 | 0,106 | 15/32 |
| 31/64 (12,304) | 7 5/32 | 3 31/32 | 0,110 | 31/64 |
| 1/2 (12,700) | 7 5/32 | 3 31/32 | 0,114 | 1/2 |
| 33/64 (13,097) | 7 5/32 | 3 31/32 | 0,123 | 33/64 |
| 17/32 (13,494) | 7 7/16 | 4 1/4 | 0,127 | 17/32 |
| 35/64 (13,891) | 7 7/16 | 4 1/4 | 0,133 | 35/64 |
| 9/16 (14,288) | 8 3/8 | 4 1/2 | 0,138 | 9/16 |
| 37/64 (14,685) | 8 3/8 | 4 1/2 | 0,142 | 37/64 |
| 19/32 (15,082) | 8 5/8 | 4 3/4 | 0,147 | 19/32 |
| 39/64 (16,479) | 8 5/8 | 4 3/4 | 0,172 | 39/64 |
| 5/8 (15,876) | 8 5/8 | 4 3/4 | 0,191 | 5/8 |
| 41/64 (16,272) | 8 3/4 | 4 7/8 | 0,234 | 41/64 |
| 21/32 (16,669) | 8 3/4 | 4 7/8 | 0,257 | 21/32 |
| 43/64 (17,068) | 9 | 5 1/8 | 0,275 | 43/64 |
| 11/16 (17,463) | 9 | 5 1/8 | 0,286 | 11/16 |
| 45/64 (17,860) | 9 | 5 1/8 | 0,297 | 45/64 |
| 23/32 (18,257) | 9 1/8 | 5 1/4 | 0,305 | 23/32 |
| 47/64 (18,654) | 9 1/8 | 5 1/4 | 0,313 | 47/64 |
| 3/4 (19,051) | 9 3/8 | 5 1/2 | 0,320 | 3/4 |
| 49/64 (19,448) | 9 3/8 | 5 1/2 | 0,331 | 49/64 |
| 25/32 (19,844) | 9 3/8 | 5 1/2 | 0,334 | 25/32 |
| 51/64 (20,241) | 9 5/8 | 5 3/4 | 0,365 | 51/64 |
| 13/16 (20,638) | 9 5/8 | 5 3/4 | 0,387 | 13/16 |
| 53/64 (21,035) | 9 3/4 | 5 3/4 | 0,394 | 53/64 |
| 27/32 (21,432) | 9 3/4 | 5 7/8 | 0,406 | 27/32 |
| 55/64 (21,829) | 9 3/4 | 5 7/8 | 0,416 | 55/64 |
| 7/8 (22,226) | 9 3/4 | 5 7/8 | 0,448 | 7/8 |
| 57/64 (22,623) | 10 | 6 1/8 | 0,520 | 57/64 |
| 29/32 (23,020) | 10 | 6 1/8 | 0,565 | 29/32 |
| 59/64 (23,416) | 10 7/8 | 6 1/8 | 0,605 | 59/64 |
| 15/16 (24,813) | 11 | 6 1/4 | 0,618 | 15/16 |
| 61/64 (24,210) | 11 | 6 1/4 | 0,640 | 61/64 |
| 31/32 (24,607) | 11 | 6 1/4 | 0,650 | 31/32 |
| 63/64 (25,004) | 11 1/4 | 6 1/2 | 0,670 | 63/64 |
| 1 (25,400) | 11 1/4 | 6 1/2 | 0,680 | 1 |
| 1 1/64 (25,798) | 11 1/4 | 6 1/2 | 0,714 | 1 1/64 |
| 1 1/32 (26,195) | 11 1/4 | 6 1/2 | 0,714 | 1 1/32 |
| 1 3/64 (26,591) | 11 3/8 | 6 5/8 | 0,734 | 1 3/64 |
| 1 1/16 (26,989) | 11 3/8 | 6 5/8 | 0,760 | 1 1/16 |
| 1 5/64 (27,385) | 11 3/8 | 6 5/8 | 0,775 | 1 5/64 |
| 1 3/32 (27,782) | 11 3/8 | 6 5/8 | 0,813 | 1 3/32 |
| 1 7/64 (28,179) | 11 5/8 | 6 7/8 | 0,830 | 1 7/64 |
| 1 1/8 (28,576) | 11 5/8 | 6 7/8 | 0,853 | 1 1/8 |
| 1 9/64 (28,973) | 11 5/8 | 6 7/8 | 0,874 | 1 9/64 |
| 1 5/32 (29,370) | 11 5/8 | 6 7/8 | 0,885 | 1 5/32 |
| 1 11/64 (29,767) | 11 5/8 | 6 7/8 | 0,910 | 1 11/64 |
| 1 3/16 (30,164) | 11 7/8 | 7 1/8 | 0,918 | 1 3/16 |
| 1 13/64 (30,560) | 11 7/8 | 7 1/8 | 0,940 | 1 16/64 |
| 1 7/32 (30,957) | 11 7/8 | 7 1/8 | 0,950 | 1 7/32 |
| 1 15/64 (31,354) | 11 7/8 | 7 1/8 | 0,974 | 1 15/64 |
| 1 1/4 (31,751) | 12 | 7 1/4 | 1,038 | 1 1/4 |
| 1 17/64 (32,148) | 13 1/8 | 7 1/4 | 1,070 | 1 17/64 |
| 1 9/32 (32,545) | 13 1/8 | 7 1/4 | 1,160 | 1 9/32 |
| 1 19/64 (32,942) | 13 1/8 | 7 1/4 | 1,205 | 1 19/64 |
| 1 5/16 (33,339) | 13 1/8 | 7 1/4 | 1,285 | 1 5/16 |
| 1 21/64 (33,936) | 13 3/8 | 7 1/2 | 1,360 | 1 21/64 |
| 1 11/32 (34,133) | 13 3/8 | 7 1/2 | 1,400 | 1 11/32 |
| 1 23/64 (34,529) | 13 3/8 | 7 1/2 | 1,460 | 1 13/64 |
| 1 3/8 (34,926) | 13 3/8 | 7 1/2 | 1,520 | 1 3/8 |
| 1 25/64 (35,323) | 13 3/8 | 7 1/2 | 1,545 | 1 25/64 |
| 1 13/32 (35,720) | 13 1/2 | 7 5/8 | 1,600 | 1 13/32 |
| 1 27/64 (36,117) | 13 1/2 | 7 5/8 | 1,630 | 1 27/64 |
| 1 7/16 (36,514) | 13 1/2 | 7 5/8 | 1,660 | 1 7/16 |
| 1 29/32 (36,911) | 13 1/2 | 7 5/8 | 1,700 | 1 29/32 |
| 1 15/32 (37,308) | 13 1/2 | 7 5/8 | 1,720 | 1 15/32 |
| 1 31/64 (37,705) | 13 3/4 | 7 7/8 | 1,760 | 1 31/64 |

| ∅D (∅D) /mm (inch.)/ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 1 1/2 (38,101) | 13 3/4 | 7 7/8 | 1,780 | 1 1/2 |
| 1 33/64 (38,498) | 13 3/4 | 7 7/8 | 1,810 | 1 22/64 |
| 1 17/32 (38,895) | 13 3/4 | 7 7/8 | 1,855 | 1 17/32 |
| 1 35/64 (39,292) | 13 3/4 | 7 7/8 | 1,860 | 1 35/64 |
| 1 9/16 (39,689) | 13 3/4 | 7 7/8 | 1,870 | 1 9/16 |
| 1 37/64 (40,086) | 14 | 8 1/8 | 1,910 | 1 37/64 |
| 1 19/32 (40,483) | 14 | 8 1/8 | 1,950 | 1 19/32 |
| 1 39/64 (40,880) | 14 | 8 1/8 | 1,990 | 1 39/64 |
| 1 5/8 (41,227) | 14 | 8 1/8 | 1,990 | 1 5/8 |
| 1 41/64 (41,673) | 14 | 8 1/8 | 2,030 | 1 41/64 |
| 1 21/32 (42,070) | 14 | 8 1/8 | 2,070 | 1 21/32 |
| 1 43/64 (42,467) | 14 | 8 1/8 | 2,110 | 1 43/64 |
| 1 11/16 (42,864) | 14 1/8 | 8 1/4 | 2,130 | 1 11/16 |
| 1 45/64 (43,261) | 14 1/8 | 8 1/4 | 2,150 | 1 45/64 |
| 1 23/32 (43,658) | 14 1/8 | 8 1/4 | 2,190 | 1 23/32 |
| 1 47/64 (44,055) | 14 1/8 | 8 1/4 | 2,230 | 1 47/64 |
| 1 3/4 (44,452) | 14 1/8 | 8 1/4 | 2,270 | 1 3/4 |
| 1 49/64 (44,849) | 14 1/8 | 8 1/4 | 2,320 | 1 49/64 |
| 1 25/32 (45,245) | 14 3/8 | 8 1/2 | 2,320 | 1 25/32 |
| 1 51/64 (45,642) | 14 3/8 | 8 1/2 | 2,370 | 1 51/64 |
| 1 13/16 (46,039) | 14 3/8 | 8 1/2 | 2,420 | 1 13/16 |
| 1 53/64 ( 46,436) | 14 3/8 | 8 1/2 | 2,480 | 1 53/64 |
| 1 27/32 (46,833) | 14 3/8 | 8 1/2 | 2,550 | 1 27/32 |
| 1 55/64 (47,230) | 14 3/8 | 8 1/2 | 2,580 | 1 55/64 |
| 1 7/8 (47,628) | 14 1/2 | 8 5/8 | 2,625 | 1 7/8 |
| 1 57/64 (48,024) | 14 1/2 | 8 5/8 | 2,700 | 1 57/64 |
| 1 29/32 (48,421) | 14 1/2 | 8 5/8 | 2,825 | 1 29/32 |
| 1 59/64 (48,871) | 14 1/2 | 8 5/8 | 2,950 | 1 59/64 |
| 1 15/16 (49,214) | 14 1/2 | 8 5/8 | 2,980 | 1 15/16 |
| 1 61/64 (49,611) | 14 1/2 | 8 5/8 | 3,100 | 1 61/64 |
| 1 31/32 (50,008) | 14 3/4 | 8 7/8 | 3,250 | 1 31/32 |
| 1 63/64 (50,405) | 14 3/4 | 8 7/8 | 3,480 | 1 63/64 |
| 2 (50,800) | 14 3/4 | 8 7/8 | 4,220 | 2 |
| 2 1/32 (51,596) | 16 1/4 | 8 7/8 | 4,230 | 2 1/32 |
| 2 1/16 (52,387) | 16 1/4 | 8 7/8 | 4,240 | 2 1/16 |
| 2 3/32 (53,183) | 16 3/8 | 9 | 4,280 | 2 3/32 |
| 2 1/6 (53,977) | 16 3/8 | 9 | 4,300 | 2 1/6 |
| 2 5/32 (54,771) | 16 3/8 | 9 | 4,330 | 2 5/32 |
| 2 3/16 (55,565) | 16 3/8 | 9 | 4,370 | 2 3/16 |
| 2 7/32 (56,358) | 16 5/8 | 9 1/4 | 4,480 | 2 7/32 |
| 2 1/4 (57,152) | 16 5/8 | 9 1/4 | 4,730 | 2 1/4 |
| 2 9/32 (57,946) | 16 5/8 | 9 1/4 | 4,840 | 2 9/32 |
| 2 5/16 (58,740) | 16 5/8 | 9 1/4 | 5,060 | 2 5/16 |
| 2 11/32 (59,533) | 16 5/8 | 9 1/4 | 5,090 | 2 11/32 |
| 2 3/8 (60,327) | 16 7/8 | 9 1/2 | 5,160 | 2 3/8 |
| 2 13/32 (61,121) | 16 7/8 | 9 1/2 | 5,180 | 2 13/32 |
| 2 7/16 (61,915) | 16 7/8 | 9 1/2 | 5,260 | 2 7/16 |
| 2 15/32 (62,708) | 16 7/8 | 9 1/2 | 5,420 | 2 15/32 |
| 2 1/2 (63,502) | 17 | 9 5/8 | 5,430 | 2 1/2 |
| 2 17/32 (64,296) | 17 | 9 5/8 | 5,450 | 2 17/32 |
| 2 9/16 (65,090) | 17 | 9 5/8 | 5,570 | 2 9/16 |
| 2 19/32 (65,884) | 17 | 9 5/8 | 5,700 | 2 19/32 |
| 2 5/8 (66,667) | 17 | 9 5/8 | 5,720 | 2 5/8 |
| 2 21/32 (67,471) | 17 1/4 | 9 7/8 | 5,740 | 2 21/32 |
| 2 11/16 (68,265) | 17 1/4 | 9 7/8 | 5,940 | 2 11/16 |
| 2 23/32 (69,056) | 17 1/4 | 9 7/8 | 6,090 | 2 23/32 |
| 2 3/4 (69,853) | 17 1/4 | 9 7/8 | 6,220 | 2 3/4 |
| 2 25/32 (70,646) | 17 1/4 | 9 7/8 | 6,250 | 2 25/32 |
| 2 13/16 (71,440) | 17 3/8 | 10 | 6,300 | 2 13/16 |
| 2 27/32 (72,234) | 17 3/8 | 10 | 6,390 | 2 27/32 |
| 2 7/8 (73,028) | 17 3/8 | 10 | 6,410 | 2 7/8 |
| 2 29/32 (73,821) | 17 3/8 | 10 | 6,500 | 2 19/32 |
| 2 15/16 (74,615) | 17 3/8 | 10 | 6,600 | 2 15/16 |
| 2 31/32 (75,409) | 17 5/8 | 10 1/4 | 6,900 | 2 31/32 |
| 3 (76,200) | 17 5/8 | 10 1/4 | 7,100 | 3 |
| 3 1/8 (79,375) | 20 1/4 | 10 1/4 | 8,700 | 3 1/8 |
| 3 1/4 (82,550) | 20 1/2 | 10 1/2 | 9,100 | 3 1/4 |
| 3 3/8 (85,725) | 20 5/8 | 10 5/8 | 9,700 | 3 3/8 |
| 3 1/2 (88,900) | 20 5/8 | 10 5/8 | 10,550 | 3 1/2 |

## TAPER SHANK DRILLS

**PROFI**

# HSS

$\lambda = 27° \div 32°$

$\varepsilon = 118°$

**Usability:**

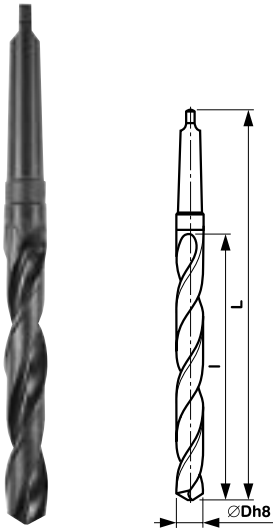
Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm², grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** F

**Surface Treatment:** ●

**Grinding Mode:** D<34/64" Form N
D≥9/16" Form A
D≥2" Form N

∅D=13/32"÷35/64" ~ MORSE 1
∅D=9/16"÷29/32" ~ MORSE 2
∅D=59/64"÷1 1/4" ~ MORSE 3
∅D=1 17/64"÷2" ~ MORSE 4
∅D=2 1/32"÷3" ~ MORSE 5
∅D=3 1/8"÷3 1/2" ~ MORSE 6



## TAPER SHANK DRILLS

**STANDARD**

# HSS

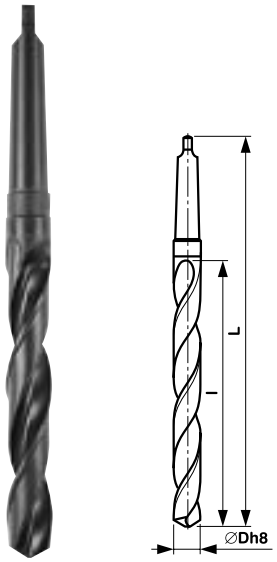
$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D (∅D) /mm (inch.)/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 17/64 (6,747) | 5 29/37 | 2 23/32 | 0,061 | 17/64 |
| 9/32 (7,144) | 5 29/32 | 2 23/32 | 0,063 | 9/32 |
| 19/64 (7,541) | 6 1/8 | 2 15/16 | 0,064 | 19/64 |
| 5/16 (7,938) | 6 1/8 | 2 15/16 | 0,065 | 5/16 |
| 21/64 (8,335) | 6 1/8 | 2 15/16 | 0,067 | 21/64 |
| 11/32 (8,732) | 6 3/8 | 3 3/16 | 0,071 | 11/32 |
| 23/64 (9,128) | 6 3/8 | 3 3/16 | 0,075 | 23/64 |
| 3/8 (9,525) | 6 5/8 | 3 7/16 | 0,077 | 3/8 |
| 25/64 (9,922) | 6 5/8 | 3 7/16 | 0,081 | 25/64 |
| 13/32 (10,319) | 6 5/8 | 3 7/16 | 0,085 | 13/32 |
| 27/64 (10,716) | 6 7/8 | 3 11/16 | 0,090 | 27/64 |
| 7/16 (11,113) | 6 7/8 | 3 11/16 | 0,097 | 7/16 |
| 29/64 (11,510) | 6 7/8 | 3 11/16 | 0,100 | 29/64 |
| 15/32 (11,907) | 7 5/32 | 3 31/32 | 0,106 | 15/32 |
| 31/64 (12,304) | 7 5/32 | 3 31/32 | 0,110 | 31/64 |
| 1/2 (12,700) | 7 5/32 | 3 31/32 | 0,114 | 1/2 |
| 33/64 (13,097) | 7 5/32 | 3 31/32 | 0,123 | 33/64 |
| 17/32 (13,494) | 7 7/16 | 4 1/4 | 0,127 | 17/32 |
| 35/64 (13,891) | 7 7/16 | 4 1/4 | 0,133 | 35/64 |
| 9/16 (14,288) | 8 3/8 | 4 1/2 | 0,138 | 9/16 |
| 37/64 (14,685) | 8 3/8 | 4 1/2 | 0,142 | 37/64 |
| 19/32 (15,082) | 8 5/8 | 4 3/4 | 0,147 | 19/32 |
| 39/64 (16,479) | 8 5/8 | 4 3/4 | 0,172 | 39/64 |
| 5/8 (15,876) | 8 5/8 | 4 3/4 | 0,191 | 5/8 |
| 41/64 (16,272) | 8 3/4 | 4 7/8 | 0,234 | 41/64 |
| 21/32 (16,669) | 8 3/4 | 4 7/8 | 0,257 | 21/32 |
| 43/64 (17,068) | 9 | 5 1/8 | 0,275 | 43/64 |
| 11/16 (17,463) | 9 | 5 1/8 | 0,286 | 11/16 |
| 45/64 (17,860) | 9 | 5 1/8 | 0,297 | 45/64 |
| 23/32 (18,257) | 9 1/8 | 5 1/4 | 0,305 | 23/32 |
| 47/64 (18,654) | 9 1/8 | 5 1/4 | 0,313 | 47/64 |
| 3/4 (19,051) | 9 3/8 | 5 1/2 | 0,320 | 3/4 |
| 49/64 (19,448) | 9 3/8 | 5 1/2 | 0,331 | 49/64 |
| 25/32 (19,844) | 9 3/8 | 5 1/2 | 0,334 | 25/32 |
| 51/64 (20,241) | 9 5/8 | 5 3/4 | 0,365 | 51/64 |
| 13/16 (20,638) | 9 5/8 | 5 3/4 | 0,387 | 13/16 |
| 53/64 (21,035) | 9 3/4 | 5 3/4 | 0,394 | 53/64 |
| 27/32 (21,432) | 9 3/4 | 5 7/8 | 0,406 | 27/32 |
| 55/64 (21,829 | 9 3/4 | 5 7/8 | 0,416 | 55/64 |
| 7/8 (22,226) | 9 3/4 | 5 7/8 | 0,448 | 7/8 |
| 57/64 (22,623) | 10 | 6 1/8 | 0,520 | 57/64 |
| 29/32 (23,020) | 10 | 6 1/8 | 0,565 | 29/32 |
| 59/64 (23,416) | 10 7/8 | 6 1/8 | 0,605 | 59/64 |
| 15/16 (24,813) | 11 | 6 1/4 | 0,618 | 15/16 |
| 61/64 (24,210) | 11 | 6 1/4 | 0,640 | 61/64 |
| 31/32 (24,607) | 11 | 6 1/4 | 0,650 | 31/32 |
| 63/64 (25,004) | 11 1/4 | 6 1/2 | 0,670 | 63/64 |
| 1 (25,400) | 11 1/4 | 6 1/2 | 0,680 | 1 |
| 1 1/64 (25,798) | 11 1/4 | 6 1/2 | 0,714 | 1 1/64 |

| ∅D (∅D) /mm (inch.)/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 1 1/32 (26,195) | 11 1/4 | 6 1/2 | 0,714 | 1 1/32 |
| 1 3/64 (26,591) | 11 3/8 | 6 5/8 | 0,734 | 1 3/64 |
| 1 1/16 (26,989) | 11 3/8 | 6 5/8 | 0,760 | 1 1/16 |
| 1 5/64 (27,385) | 11 3/8 | 6 5/8 | 0,775 | 1 5/64 |
| 1 3/32 (27,782) | 11 3/8 | 6 5/8 | 0,813 | 1 3/32 |
| 1 7/64 (28,179) | 11 5/8 | 6 7/8 | 0,830 | 1 7/64 |
| 1 1/8 (28,576) | 11 5/8 | 6 7/8 | 0,853 | 1 1/8 |
| 1 9/64 (28,973) | 11 5/8 | 6 7/8 | 0,874 | 1 9/64 |
| 1 5/32 (29,370) | 11 5/8 | 6 7/8 | 0,885 | 1 5/32 |
| 1 11/64 (29,767) | 11 5/8 | 6 7/8 | 0,910 | 1 11/64 |
| 1 3/16 (30,164) | 11 7/8 | 7 1/8 | 0,918 | 1 3/16 |
| 1 13/64 (30,560) | 11 7/8 | 7 1/8 | 0,940 | 1 13/64 |
| 1 7/32 (30,957) | 11 7/8 | 7 1/8 | 0,950 | 1 7/32 |
| 1 15/64 (31,354) | 11 7/8 | 7 1/8 | 0,974 | 1 15/64 |
| 1 1/4 (31,751) | 12 | 7 1/4 | 1,038 | 1 1/4 |
| 1 17/64 (32,148) | 13 1/8 | 7 1/4 | 1,070 | 1 17/64 |
| 1 9/32 (32,545) | 13 1/8 | 7 1/4 | 1,160 | 1 9/32 |
| 1 19/64 (32,942) | 13 1/8 | 7 1/4 | 1,205 | 1 19/64 |
| 1 5/16 (33,339) | 13 1/8 | 7 1/4 | 1,285 | 1 5/16 |
| 1 21/64 (33,936) | 13 3/8 | 7 1/2 | 1,360 | 1 21/64 |
| 1 11/32 (34,133) | 13 3/8 | 7 1/2 | 1,400 | 1 11/32 |
| 1 23/64 (34,529) | 13 3/8 | 7 1/2 | 1,460 | 1 23/64 |
| 1 3/8 (34,926) | 13 3/8 | 7 1/2 | 1,520 | 1 3/8 |
| 1 25/64 (35,323) | 13 3/8 | 7 1/2 | 1,545 | 1 25/64 |
| 1 13/32 (35,720 | 13 1/2 | 7 5/8 | 1,600 | 1 13/32 |
| 1 27/64 (36,117) | 13 1/2 | 7 5/8 | 1,630 | 1 27/64 |
| 1 7/16 (36,514) | 13 1/2 | 7 5/8 | 1,660 | 1 7/16 |
| 1 29/32 (36,911) | 13 1/2 | 7 5/8 | 1,700 | 1 29/32 |
| 1 15/32 (37,308) | 13 1/2 | 7 5/8 | 1,720 | 1 15/32 |
| 1 31/64 (37,705) | 13 3/4 | 7 7/8 | 1,760 | 1 31/64 |
| 1 1/2 (38,101) | 13 3/4 | 7 7/8 | 1,780 | 1 1/2 |
| 1 33/64 (38,498) | 13 3/4 | 7 7/8 | 1,810 | 1 33/64 |
| 1 17/32 (38,895) | 13 3/4 | 7 7/8 | 1,855 | 1 17/32 |
| 1 35/64 (39,292) | 13 3/4 | 7 7/8 | 1,860 | 1 35/64 |
| 1 9/16 (39,689) | 13 3/4 | 7 7/8 | 1,870 | 1 9/16 |
| 1 37/64 (40,086) | 14 | 8 1/8 | 1,910 | 1 37/64 |
| 1 19/32 (40,483) | 14 | 8 1/8 | 1,950 | 1 19/32 |
| 1 39/64 (40,880) | 14 | 8 1/8 | 1,990 | 1 39/64 |
| 1 5/8 (41,227) | 14 | 8 1/8 | 1,990 | 1 5/8 |
| 1 41/64 (41,673) | 14 | 8 1/8 | 2,030 | 1 41/64 |
| 1 21/32 (42,070) | 14 | 8 1/8 | 2,070 | 1 21/32 |
| 1 43/64 (42,467) | 14 | 8 1/8 | 2,110 | 1 43/64 |
| 1 11/16 (42,864) | 14 1/8 | 8 1/4 | 2,130 | 1 11/16 |
| 1 45/64 (43,261) | 14 1/8 | 8 1/4 | 2,150 | 1 45/64 |
| 1 23/32 (43,658) | 14 1/8 | 8 1/4 | 2,190 | 1 23/32 |
| 1 47/64 (44,055) | 14 1/8 | 8 1/4 | 2,230 | 1 47/64 |
| 1 3/4 (44,452) | 14 1/8 | 8 1/4 | 2,270 | 1 3/4 |
| 1 49/64 (44,849) | 14 1/8 | 8 1/4 | 2,320 | 1 49/64 |

**∅D=17/64"÷35/64" ~ MORSE 1**
**∅D=9/16"÷29/32" ~ MORSE 2**
**∅D=59/64"÷1 1/4" ~ MORSE 3**
**∅D=1 17/64"÷1 39/64"~ MORSE 4**




**Usability:**

Drills are recommended for usual drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze, tough brass etc.

**Manufacturing Mode:** T
**Surface Treatment:** ●
**Grinding Mode:** Form N

# Taper Shank Drills

| ∅D (∅D) /mm (inch.)/ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 13/64 (5,169) | 5 1/4 | 2 1/16 | 0,056 | 13/64 |
| 7/32 (5,556) | 5 7/16 | 2 1/4 | 0,058 | 7/32 |
| 15/64 (5,953) | 5 7/16 | 2 1/4 | 0,058 | 15/64 |
| 1/4 (6,350) | 5 11/16 | 2 1/2 | 0,059 | 1/4 |
| 17/64 (6,747) | 5 29/37 | 2 23/32 | 0,061 | 17/64 |
| 9/32 (7,144) | 5 29/32 | 2 23/32 | 0,063 | 9/32 |
| 19/64 (7,541) | 6 1/8 | 2 15/16 | 0,064 | 19/64 |
| 5/16 (7,938) | 6 1/8 | 2 15/16 | 0,065 | 5/16 |
| 21/64 (8,335) | 6 1/8 | 2 15/16 | 0,067 | 21/64 |
| 11/32 (8,732) | 6 3/8 | 3 3/16 | 0,071 | 11/32 |
| 23/64 (9,128) | 6 3/8 | 3 3/16 | 0,075 | 23/64 |
| 3/8 (9,525) | 6 5/8 | 3 7/16 | 0,077 | 3/8 |

| ∅D (∅D) /mm (inch.)/ | L /inch./ | l /inch./ | kg | |
|---|---|---|---|---|
| 25/64 (9,922) | 6 5/8 | 3 7/16 | 0,081 | 25/64 |
| 13/32 (10,319) | 6 5/8 | 3 7/16 | 0,085 | 13/32 |
| 7/16 (11,113) | 6 7/8 | 3 11/16 | 0,097 | 7/16 |
| 29/64 (11,510) | 6 7/8 | 3 11/16 | 0,100 | 29/64 |
| 27/64 (10,716) | 6 7/8 | 3 11/16 | 0,090 | 27/64 |
| 15/32 (11,907) | 7 5/32 | 3 31/32 | 0,106 | 15/32 |
| 31/64 (12,304) | 7 5/32 | 3 31/32 | 0,110 | 31/64 |
| 1/2 (12,700) | 7 5/32 | 3 31/32 | 0,114 | 1/2 |
| 33/64 (13,097) | 7 5/32 | 3 31/32 | 0,123 | 33/64 |
| 17/32 (13,494) | 7 7/16 | 4 1/4 | 0,127 | 17/32 |
| 35/64 (13,891) | 7 7/16 | 4 1/4 | 0,133 | 35/64 |

**Usability:**

Efficient drills are recommended for drilling of parts made of unalloyed steel or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel, Al-alloys with discontinuous chip, bronze.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form C

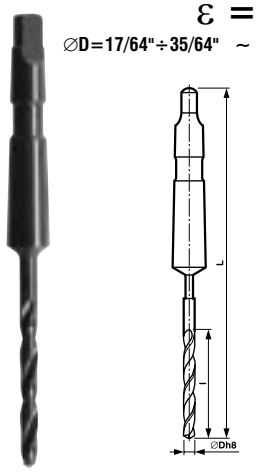
## TAPER SHANK DRILLS

**PROFI** **HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

**∅D=17/64"÷35/64" ~ MORSE 1**




| ∅D /mm/ | L /mm/ | l /mm/ | kg | | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|---|---|---|---|
| 8 | 181 | 100 | 0,087 | 8×181/100 | 265 | 165 | 0,093 | 8×265/165 |
| 8,5 | 181 | 100 | 0,090 | 8,5×181/100 | 265 | 165 | 0,095 | 8,5×265/165 |
| 9 | 188 | 107 | 0,093 | 9×188/107 | 275 | 175 | 0,102 | 9×275/175 |
| 9,5 | 188 | 107 | 0,096 | 9,5×188/107 | 275 | 175 | 0,107 | 9,5×275/175 |
| 10 | 197 | 116 | 0,099 | 10×197/116 | 285 | 185 | 0,117 | 10×285/185 |
| 10,5 | 197 | 116 | 0,100 | 10,5×197/116 | 285 | 185 | 0,124 | 10,5×285/185 |
| 11 | 206 | 125 | 0,109 | 11×206/125 | 300 | 195 | 0,136 | 11×300/195 |
| 11,5 | 206 | 125 | 0,115 | 11,5×206/125 | 300 | 195 | 0,145 | 11,5×300/195 |
| 12 | 215 | 134 | 0,125 | 12×215/134 | 310 | 205 | 0,158 | 12×310/205 |
| 12,5 | 215 | 134 | 0,132 | 12,5×215/134 | 310 | 205 | 0,158 | 12,5×310/205 |
| 13 | 215 | 134 | 0,139 | 13×215/134 | 310 | 205 | 0,178 | 13×310/205 |
| 13,5 | 223 | 142 | 0,151 | 13,5×223/142 | 325 | 220 | 0,197 | 13,5×325/220 |
| 14 | 223 | 142 | 0,159 | 14×223/142 | 325 | 220 | 0,209 | 14×325/220 |

**Usability:**

Extra long drills are recommended for deep-hole drilling by means of jig bushes of parts made of unalloyed or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel etc. It is necessary to prevent from flute-stopping by frequent withdrawing the drill. It is necessary to reduce the recommended cutting conditions regarding to the insufficient supply of the cutting fluid.

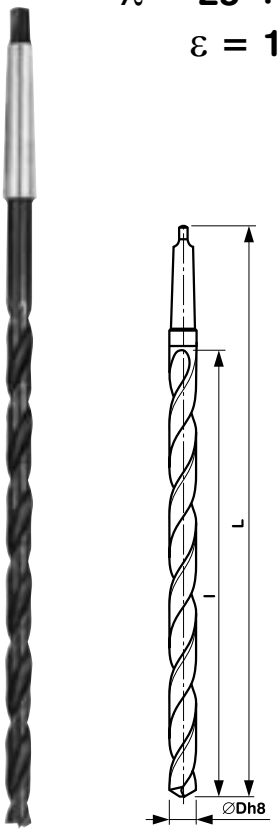
**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form C

## EXTRA LONG TAPER SHANK DRILLS

**PROFI** **HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$



## EXTRA LONG TAPER SHANK DRILLS

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | | L /mm/ | l /mm/ | kg | | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 197 | 116 | 0,099 | 10×197/116 | 285 | 185 | 0,093 | 10×285/185 | 360 | 235 | 0,133 | 10×360/235 |
| 10,5 | 197 | 116 | 0,100 | 10,5×197/116 | 285 | 185 | 0,095 | 10,5×285/185 | 360 | 235 | 0,142 | 10,5×360/235 |
| 11 | 206 | 125 | 0,109 | 11×206/125 | 300 | 195 | 0,102 | 11×300/195 | 375 | 250 | 0,158 | 11×375/250 |
| 11,5 | 206 | 125 | 0,115 | 11,5×206/125 | 300 | 195 | 0,107 | 11,5×300/195 | 375 | 250 | 0,168 | 11,5×375/250 |
| 12 | 215 | 134 | 0,125 | 12×215/134 | 310 | 205 | 0,117 | 12×310/205 | 395 | 260 | 0,184 | 12×395/260 |
| 12,5 | 215 | 134 | 0,132 | 12,5×215/134 | 310 | 205 | 0,124 | 12,5×310/205 | 395 | 260 | 0,195 | 12,5×395/260 |
| 13 | 215 | 134 | 0,139 | 13×215/134 | 310 | 205 | 0,136 | 13×310/205 | 395 | 260 | 0,208 | 13×395/260 |
| 13,5 | 223 | 142 | 0,151 | 13,5×223/142 | 325 | 220 | 0,197 | 13,5×325/220 | 410 | 275 | 0,229 | 13,5×410/275 |
| 14 | 223 | 142 | 0,159 | 14×223/142 | 325 | 220 | 0,209 | 14×325/220 | 410 | 275 | 0,234 | 14×410/275 |
| 14,5 | 245 | 147 | 0,25 | 14,5×245/147 | 340 | 220 | 0,3 | 14,5×340/220 | 425 | 275 | 0,337 | 14,5×425/275 |
| 15 | 245 | 147 | 0,259 | 15×245/147 | 340 | 220 | 0,312 | 15×340/220 | 425 | 275 | 0,352 | 15×425/275 |
| 15,5 | 251 | 153 | 0,273 | 15,5×251/153 | 355 | 230 | 0,332 | 15,5×355/230 | 445 | 295 | 0,383 | 15,5×445/295 |
| 16 | 251 | 153 | 0,238 | 16×251/153 | 355 | 230 | 0,346 | 16×355/230 | 445 | 295 | 0,400 | 16×445/295 |
| 16,5 | 257 | 159 | 0,257 | 16,5×257/159 | 355 | 230 | 0,360 | 16,5×355/230 | 445 | 295 | 0,417 | 16,5×445/295 |
| 17 | 257 | 159 | 0,309 | 17×257/159 | 355 | 230 | 0,375 | 17×355/230 | 445 | 295 | 0,435 | 17×445/295 |
| 17,5 | 263 | 165 | 0,326 | 17,5×263/165 | 370 | 245 | 0,405 | 17,5×370/245 | 465 | 310 | 0,469 | 17,5×465/310 |
| 18 | 263 | 165 | 0,337 | 18×263/165 | 370 | 245 | 0,421 | 18×370/245 | 465 | 310 | 0,489 | 17×465/310 |
| 18,5 | 269 | 171 | 0,356 | 18,5×269/171 | 370 | 245 | 0,437 | 18,5×370/245 | 465 | 310 | 0,465 | 18,5×465/310 |
| 19 | 269 | 171 | 0,369 | 19×269/171 | 370 | 245 | 0,455 | 19×370/245 | 465 | 310 | 0,53 | 19×465/310 |
| 19,5 | 275 | 177 | 0,389 | 19,5×275/177 | 385 | 260 | 0,491 | 19,5×385/260 | 490 | 325 | 0,57 | 19,5×490/325 |
| 20 | 275 | 177 | 0,403 | 20×275/177 | 385 | 260 | 0,510 | 20×385/260 | 490 | 325 | 0,594 | 20×490/325 |
| 20,5 | 282 | 184 | 0,427 | 20,5×282/184 | 385 | 260 | 0,529 | 20,5×385/260 | 490 | 325 | 0,617 | 20,5×490/325 |
| 21 | 282 | 184 | 0,442 | 21×282/184 | 385 | 260 | 0,550 | 21×385/260 | 490 | 325 | 0,642 | 21×490/325 |
| 21,5 | 289 | 191 | 0,467 | 21,5×289/191 | 405 | 270 | 0,585 | 21,5×405/270 | 515 | 345 | 0,696 | 21,5×515/345 |
| 22 | 289 | 191 | 0,484 | 22×289/191 | 405 | 270 | 0,607 | 22×405/270 | 515 | 345 | 0,724 | 22×515/345 |
| 22,5 | 296 | 198 | 0,511 | 22,5×296/198 | 405 | 270 | 0,629 | 22,5×405/270 | 515 | 345 | 0,751 | 22,5×515/345 |
| 23 | 296 | 198 | 0,529 | 23×296/198 | 405 | 270 | 0,652 | 23×405/270 | 515 | 345 | 0,779 | 23×515/345 |
| 23,5 | 319 | 198 | 0,687 | 23,5×319/198 | 425 | 270 | 0,815 | 23,5×425/270 | 535 | 345 | 0,948 | 23,5×535/345 |
| 24 | 327 | 206 | 0,720 | 24×327/206 | 440 | 290 | 0,875 | 24×440/290 | 555 | 365 | 1,015 | 24×555/365 |
| 24,5 | 327 | 206 | 0,739 | 24,5×327/206 | 440 | 290 | 0,901 | 24,5×440/290 | 555 | 365 | 1,046 | 24,5×555/365 |
| 25 | 327 | 206 | 0,759 | 25×327/206 | 440 | 290 | 0,928 | 25×440/290 | 555 | 365 | 1,079 | 25×555/365 |
| 25,5 | 335 | 214 | 0,795 | 25,5×335/214 | 440 | 290 | 0,954 | 25,5×440/290 | 555 | 365 | 1,117 | 25,5×555/365 |
| 26 | 335 | 214 | 0,816 | 26×335/214 | 440 | 290 | 0,982 | 26×440/290 | 555 | 365 | 1,145 | 26×555/365 |
| 26,5 | 335 | 214 | 0,838 | 26,5×335/214 | 440 | 290 | 1,009 | 26,5×440/290 | 555 | 365 | 1,179 | 26,5×555/365 |
| 27 | 343 | 222 | 0,879 | 27×343/222 | 460 | 305 | 1,073 | 27×460/305 | 580 | 385 | 1,261 | 27×580/385 |
| 27,5 | 343 | 222 | 0,901 | 27,5×343/222 | 460 | 305 | 1,103 | 27,5×460/305 | 580 | 385 | 1,298 | 27,5×580/385 |
| 28 | 343 | 222 | 0,925 | 28×343/222 | 460 | 305 | 1,135 | 28×460/305 | 580 | 385 | 1,337 | 28×580/385 |
| 28,5 | 351 | 230 | 0,969 | 28,5×351/230 | 460 | 305 | 1,166 | 28,5×460/305 | 580 | 385 | 1,375 | 28,5×580/385 |
| 29 | 351 | 230 | 0,995 | 29×351/230 | 460 | 305 | 1,198 | 29×460/305 | 580 | 385 | 1,145 | 29×580/385 |
| 29,5 | 351 | 230 | 1,020 | 29,5×351/230 | 460 | 305 | 1,230 | 29,5×460/305 | 580 | 385 | 1,454 | 29,5×580/385 |
| 30 | 351 | 230 | 1,046 | 30×351/230 | 460 | 305 | 1,263 | 30×460/305 | 580 | 385 | 1,495 | 30×580/385 |
| 31 | 360 | 239 | 1,127 | 31×360/239 | 480 | 320 | 1,378 | 31×480/320 | 610 | 410 | 1,656 | 31×610/410 |
| 32 | 397 | 248 | 1,435 | 32×397/248 | 505 | 320 | 1,673 | 32×505/320 | 635 | 410 | 1,969 | 32×635/410 |
| 33 | 397 | 248 | 1,495 | 33×397/248 | 505 | 320 | 1,748 | 33×505/320 | 635 | 410 | 2,064 | 33×635/410 |
| 34 | 406 | 257 | 1,591 | 34×406/257 | 530 | 340 | 1,900 | 34×530/340 | 665 | 430 | 2,235 | 34×665/430 |
| 35 | 406 | 257 | 1,657 | 35×406/257 | 530 | 340 | 1,985 | 35×530/340 | 665 | 430 | 2,340 | 35×665/430 |
| 36 | 416 | 257 | 1,767 | 36×416/257 | 530 | 340 | 2,071 | 36×530/340 | 665 | 430 | 2,447 | 36×665/430 |
| 37 | 416 | 257 | 1,839 | 37×416/257 | 530 | 340 | 2,161 | 37×530/340 | 665 | 430 | 2,557 | 37×665/430 |
| 38 | 426 | 277 | 1,960 | 38×426/277 | 555 | 360 | 2,346 | 38×555/360 | 695 | 460 | 2,811 | 38×695/460 |
| 39 | 426 | 277 | 2,038 | 39×426/277 | 555 | 360 | 2,445 | 39×555/360 | 695 | 460 | 2,934 | 39×695/460 |
| 40 | 426 | 277 | 2,119 | 40×426/277 | 555 | 360 | 2,547 | 40×555/360 | 695 | 460 | 3,062 | 40×695/460 |
| 41 | 436 | 287 | 2,256 | 41×436/287 | 555 | 360 | 2,651 | 41×555/360 | 695 | 460 | 3,192 | 41×695/460 |
| 42 | 436 | 287 | 2,343 | 42×436/287 | 555 | 360 | 2,758 | 42×555/360 | 695 | 460 | 3,326 | 42×695/460 |
| 43 | 447 | 298 | 2,498 | 43×447/298 | 585 | 385 | 3,016 | 43×585/385 | 735 | 490 | 3,641 | 43×735/490 |
| 44 | 447 | 298 | 2,593 | 44×447/298 | 585 | 385 | 3,136 | 44×585/385 | 735 | 490 | 3,790 | 44×735/490 |
| 45 | 447 | 298 | 2,69 | 45×447/298 | 585 | 385 | 3,257 | 45×585/385 | 735 | 490 | 3,942 | 45×735/490 |
| 46 | 459 | 310 | 2,87 | 46×459/310 | 585 | 385 | 3,382 | 46×585/385 | 735 | 490 | 4,097 | 46×735/490 |
| 47 | 459 | 310 | 2,975 | 47×459/310 | 585 | 385 | 3,509 | 47×585/385 | 735 | 490 | 4,255 | 47×735/490 |
| 48 | 470 | 321 | 3,082 | 48×470/321 | 605 | 405 | 3,787 | 48×605/405 | 765 | 510 | 4,64 | 48×765/510 |
| 49 | 470 | 321 | 3,277 | 49×470/321 | 605 | 405 | 3,926 | 49×605/405 | 765 | 510 | 4,815 | 49×765/510 |
| 50 | 470 | 321 | 3,397 | 50×470/321 | 605 | 405 | 4,075 | 50×605/405 | 765 | 510 | 5,002 | 51×765/510 |

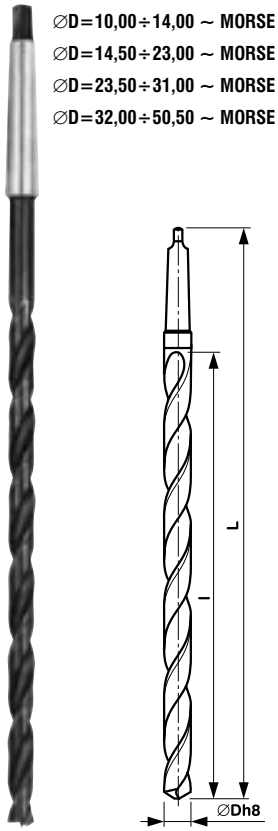
**Usability:**

Extra long drills are recommended for deep-hole drilling by means of jig bushes of parts made of unalloyed or alloyed steel, cast steel up to 900 N/mm$^2$, grey-, malleable- or nodular cast iron, sintered steel etc. It is necessary to prevent from flute-stopping by frequent withdrawing the drill. It is necessary to reduce the recommended cutting conditions regarding to the insufficient supply of the cutting fluid.

**Manufacturing Mode:** F

**Surface Treatment:** ○

**Grinding Mode:** Form C




**∅D=10,00÷14,00 ~ MORSE 1**

**∅D=14,50÷23,00 ~ MORSE 2**

**∅D=23,50÷31,00 ~ MORSE 3**

**∅D=32,00÷50,50 ~ MORSE 4**

# Extra Long Taper Shank Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|---|---|---|---|
| 8 | 181 | 100 | 0,087 | 8×181/100 | 265 | 165 | 0,093 | 8×265/165 |
| 8,5 | 181 | 100 | 009 | 8,5×181/100 | 265 | 165 | 0,095 | 8,5×265/165 |
| 9 | 188 | 107 | 0,093 | 9×188/107 | 275 | 175 | 0,102 | 9×275/175 |
| 9,5 | 188 | 107 | 0,096 | 9,5×188/107 | 275 | 175 | 0,107 | 9,5×275/175 |
| 10 | 197 | 116 | 0,099 | 10×197/116 | 285 | 185 | 0,117 | 10×285/185 |
| 10,5 | 197 | 116 | 0,1 | 10,5×197/116 | 285 | 185 | 0,124 | 10,5×285/185 |
| 11 | 206 | 125 | 0,109 | 11×206/125 | 300 | 195 | 0,136 | 11×300/195 |
| 11,5 | 206 | 125 | 0,115 | 11,5×206/125 | 300 | 195 | 0,145 | 11,5×300/195 |
| 12 | 215 | 134 | 0,125 | 12×215/134 | 310 | 205 | 0,158 | 12×310/205 |
| 12,5 | 215 | 134 | 0,132 | 12,5×215/134 | 310 | 205 | 0,158 | 12,5×310/205 |
| 13 | 215 | 134 | 0,139 | 13×215/134 | 310 | 205 | 0,178 | 13×310/205 |
| 13,5 | 223 | 142 | 0,151 | 13,5×223/142 | 325 | 220 | 0,197 | 13,5×325/220 |
| 14 | 223 | 142 | 0,159 | 14×223/142 | 325 | 220 | 0,209 | 14×325/220 |

## COBALT EXTRA LONG TAPER SHANK DRILLS

**PROFI**

**HSSCo**

$\lambda = 27° \div 32°$

$\varepsilon = 118°$

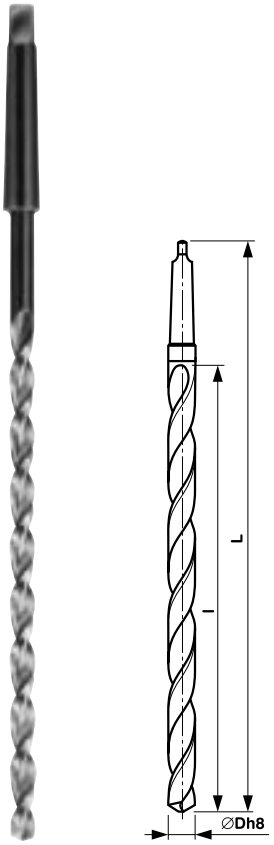
**Usability:**

High-efficient extra long drills with the higher thermal stress resistance, special flute profile increasing the drill rigidity, are recommended for deep-hole drilling by means of jig bushes of parts made of hard-to-machine materials, alloyed steel and cast steel, especially for drilling of cold- or hot-work tool steel, crankshafts, heat-treatable or carburizing steel, stainless steel.

**Manufacturing Mode:** V

**Surface Treatment:** ○

**Grinding Mode:** Form C



## STRAIGHT SHANK SUBLAND DRILLS,
**FOR DRILLING CLEARENCE HOLES, 180°**

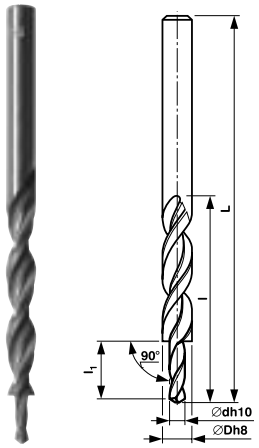
| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 8,0 | 4,3 | 117 | 75 | 11 | M4 | 0,0,27 | 8×4,3 M4-180 |
| 10,0 | 5,3 | 133 | 87 | 13 | M5 | 0,052 | 10×5,3 M5-180 |
| 11,0 | 6,4 | 142 | 94 | 15 | M6 | 0,068 | 11×6,4 M6-180 |
| 15,0 | 8,4 | 169 | 114 | 19 | M8 | 0,137 | 15×8,4 M8-180 |

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°/180°$




**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

**Manufacturing Mode:** V
**Surface Treatment:** O
**Grinding Mode:** Form N

## TAPER SHANK SUBLAND DRILLS,
**FOR DRILLING CLEARENCE HOLES, 180°**

| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 10,0 | 5,3 | 168 | 87 | 13 | M5 | 0,086 | 10×5,3 |
| 11,0 | 6,4 | 175 | 94 | 15 | M6 | 0,096 | 11×6,4 |
| 15,0 | 8,4 | 212 | 114 | 19 | M8 | 0,1 | 15×8,4 |

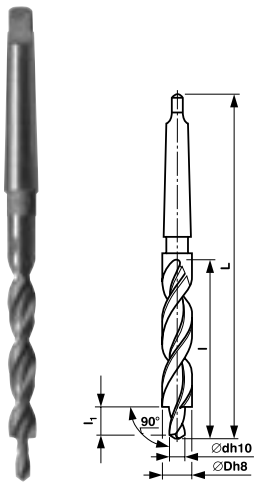
**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°/180°$

**∅D=10,00÷11,00 ~ MORSE 1**
**∅D=15,00 ~ MORSE 2**




**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800-N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

**Manufacturing Mode:** V
**Surface Treatment:** O
**Grinding Mode:** Form N

# Subland Drills

| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 18,0 | 10,5 | 228 | 130 | 23 | M10 | 0,3 | 18×10,5 |
| 20,0 | 13,0 | 238 | 140 | 27 | M12 | 0,35 | 20×13 |
| (24,0) | (15,0) | 281 | 160 | 31 | (M14) | 0,66 | 24×15 |
| 26,0 | 17,0 | 286 | 165 | 35 | M16 | 0,736 | 26×17 |
| (30,0) | (19,0) | 296 | 175 | 39 | (M18) | 0,935 | 30×19 |
| 34,0 | 21,0 | 339 | 190 | 43 | M20 | 1,32 | 34×21 |

## TAPER SHANK SUBLAND DRILLS, FOR DRILLING CLEARENCE HOLES, 180°

**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

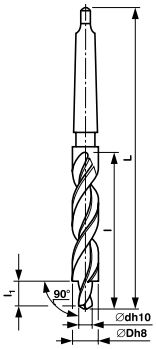
**Manufacturing Mode:** F
**Surface Treatment:** ○
**Grinding Mode:** Form N

**PROFI** **HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°/180°$

**∅D=18,00÷20,00 ~ MORSE 2**
**∅D=24,00÷30,00 ~ MORSE 3**
**∅D=34,00 ~ MORSE 4**




| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 7,8 | 4,3 | 117 | 75 | 11 | M4 | 0,025 | 7,8×4,3 M4-90 |
| 9,5 | 5,3 | 125 | 81 | 13 | M5 | 0,04 | 9,5×5,3 M5-90 |
| 11,4 | 6,4 | 142 | 94 | 15 | M6 | 0,07 | 11,4×6,4 M6-90 |
| 15,4 | 8,4 | 178 | 120 | 19 | M8 | 0,15 | 15,4×8,4 M8-90 |

## STRAIGHT SHANK SUBLAND DRILLS, FOR DRILLING CLEARENCE HOLES, 90°

**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

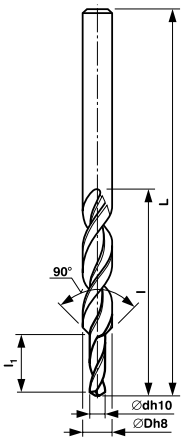
It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form N

**PROFI** **HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°/90°$



## TAPER SHANK SUBLAND DRILLS,
**FOR DRILLING CLEARENCE HOLES, 90°**

| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 9,5 | 5,3 | 162 | 81 | 13 | M5 | 0,077 | 9,5×5,3 |
| 11,4 | 6,4 | 175 | 94 | 15 | M6 | 0,103 | 11,4×6,4 |
| 15,4 | 8,4 | 218 | 120 | 19 | M8 | 0,18 | 15,4×8,4 |

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°/90°$

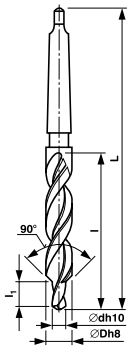
**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form N

**∅D= 9,50÷11,40 ~ MORSE 1**
**∅D=15,40 ~ MORSE 2**




## TAPER SHANK SUBLAND DRILLS,
**FOR DRILLING CLEARENCE HOLES, 90°**

| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 18,5 | 10,5 | 233 | 135 | 23 | M10 | 0,314 | 18,5×10,5 |
| 22,5 | 13,0 | 253 | 155 | 27 | M12 | 0,56 | 22,5×13 |
| (25,0) | (15,0) | 281 | 160 | 31 | (M14) | 0,715 | 25×15 |
| 28,0 | 17,0 | 291 | 170 | 35 | M16 | 0,82 | 25×17 |
| (33,0) | (19,0) | 334 | 185 | 39 | (M18) | 1,195 | 33×19 |
| 37,0 | 21,0 | 344 | 195 | 43 | M20 | 1,71 | 37×21 |

**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°/90°$

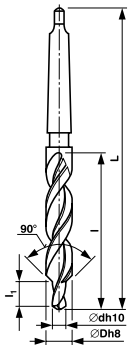
**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously countersinking in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cuttting conditions for drilling than the guidelines for usual drilling declare.

**Herstellungsart:** F
**Oberflächenbehandlung:** ●
**Anschliffart:** Form N

**∅D=18,50÷22,50 ~ MORSE 2**
**∅D=25,00÷28,00 ~ MORSE 3**
**∅D=33,00÷37,00 ~ MORSE 4**



# Subland Drills

| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 4,5 | 3,3 | 80 | 47 | 12 | M4 | 0,006 | 4,5×3,3 |
| 5,5 | 4,2 | 93 | 57 | 14,5 | M5 | 0,01 | 5,5×4,2 |
| 6,6 | 5,0 | 101 | 63 | 17 | M6 | 0,018 | 6,6×5 |
| 9,0 | 6,8 | 125 | 81 | 21,5 | M8 | 0,038 | 9×6,8 |
| 11,0 | 8,5 | 142 | 94 | 26 | M10 | 0,068 | 11×8,5 |
| 14,0 | 10,2 | 160 | 108 | 30,5 | M12 | 0,125 | 14×10,2 |
| (16,0) | (12,0) | 178 | 120 | 35 | (M14) | 0,17 | 16×12 |

## STRAIGHT SHANK SUBLAND DRILLS, FOR DRILLING CLEARENCE HOLES, 90°

**PROFI** **HSS**

$\lambda = 25° \div 30°$

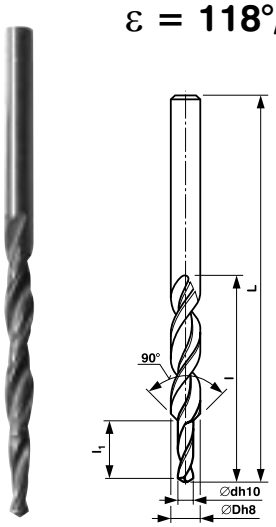
$\varepsilon = 118°/90°$

**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

**Manufacturing Mode:** F
**Surface Treatment:** O
**Grinding Mode:** Form N




| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| 9,0 | 6,8 | 162 | 81 | 21,5 | M8 | 0,075 | 9×6,8 |
| 11,0 | 8,5 | 175 | 94 | 26 | M10 | 0,096 | 11×8,5 |
| 14,0 | 10,2 | 189 | 108 | 30,5 | M12 | 0,136 | 14×10,2 |

## TAPER SHANK SUBLAND DRILLS, FOR DRILLING CLEARENCE HOLES, 90°

**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm$^2$, grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

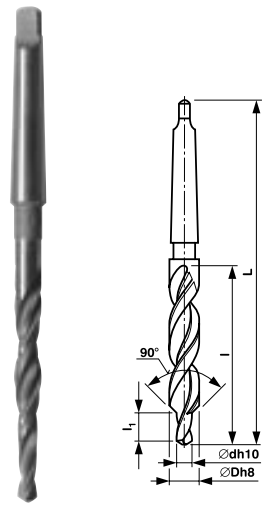
**Manufacturing Mode:** V
**Surface Treatment:** O
**Grinding Mode:** Form N

**PROFI** **HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°/90°$

**∅D= 9,00÷14,00 ~ MORSE 1**



## TAPER SHANK SUBLAND DRILLS,
**FOR DRILLING CLEARENCE HOLES, 90°**

| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | l1 /mm/ | | kg | |
|---|---|---|---|---|---|---|---|
| (16,0) | (12,0) | 218 | 120 | 35 | (M14) | 0,21 | 16×12 |
| 18,0 | 14,0 | 228 | 130 | 39 | M16 | 0,3 | 18×14 |
| (20,0) | (15,5) | 238 | 140 | 44 | (M18) | 0,35 | 20×15,5 |
| 22,0 | 17,5 | 248 | 140 | 48 | M20 | 0,455 | 22×17,5 |

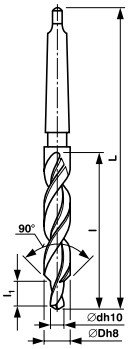
**PROFI**

# HSS

$\lambda = 25° \div 30°$

$\varepsilon = 118°/90°$

**∅D= 16,00÷22,00 ~ MORSE 2**




**Usability:**

Subland drills with four lands are recommended for drilling of clearing holes and simultaneously counterboring in parts made of unalloyed or alloyed steel, cast steel up to 800 N/mm², grey-, malleable- or nodular cast iron, Al-alloys etc.

It is necessary to choose the lower cutting conditions for drilling than the guidelines for usual drilling declare.

**Manufacturing Mode:** F
**Surface Treatment:** ○
**Grinding Mode:** Form N

## TWIST DRILLS FOR WELDING SPOTS

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5 | 62 | 20 | 0,009 | 5×62/20 |
| 6 | 66 | 22 | 0,012 | 6×66/22 |
| 8 | 79 | 27 | 0,0215 | 8×79/27 |
| 10 | 89 | 30 | 0,039 | 10×89/30 |

**PROFI**

# HSSCo

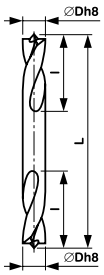
$\lambda = 25° \div 30°$

$\varepsilon = 180°$

**Usability:**

High-efficient double-end drills with short helix and centering point are recommended for spot weld drilling

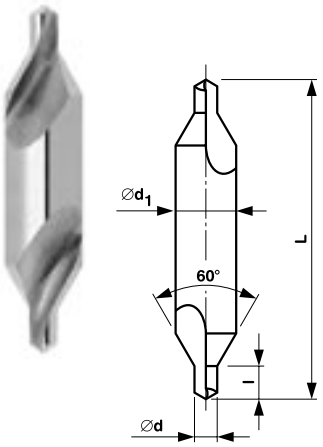
**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form E



# Special Drills

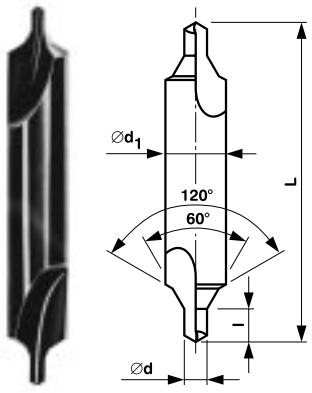
## CENTER DRILLS 60°

| ∅d /mm/ | ∅$d_1$ /mm/ | L max. /mm/ | L min. /mm/ | l max. /mm/ | l min. /mm/ | $l_1$ /mm/ | |
|---|---|---|---|---|---|---|---|
| 1,0 | 3,15 | 33,5 | 29,5 | 1,9 | 1,3 | 0,9 | 1 |
| 1,25 | 3,15 | 33,5 | 29,5 | 2,2 | 1,6 | 1,1 | 1,25 |
| 1,6 | 4 | 37,5 | 33,5 | 2,8 | 2 | 1,4 | 1,6 |
| 2,0 | 5 | 42 | 38 | 3,3 | 2,5 | 1,8 | 2 |
| 2,5 | 6,3 | 47 | 43 | 4,1 | 3,1 | 2,2 | 2,5 |
| 3,15 | 8 | 52 | 48 | 4,9 | 3,9 | 2,8 | 3,15 |
| 4,0 | 10 | 59 | 53 | 6,2 | 5 | 3,5 | 4 |
| 5,0 | 12,5 | 66 | 60 | 7,5 | 6,3 | 4,4 | 5 |
| 6,3 | 16 | 74 | 68 | 9,2 | 8 | 5,5 | 6,3 |
| 8,0 | 20 | 83 | 77 | 11,5 | 10,1 | 7 | 8 |



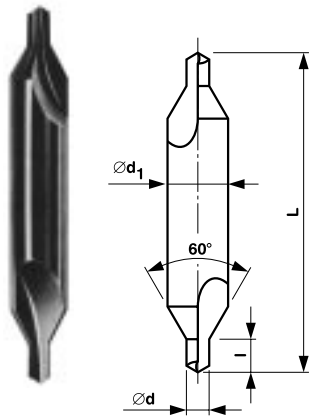

## CENTER DRILLS 60°

| ∅d /mm/ | ∅$d_1$ /mm/ | ∅$d_2$ /mm/ | L max. /mm/ | L min. /mm/ | l max. /mm/ | l min. /mm/ | $l_1$ /mm/ | |
|---|---|---|---|---|---|---|---|---|
| 1,0 | 4 | 2,12 | 37,5 | 33,5 | 1,9 | 1,3 | 0,9 | 1 |
| 1,25 | 5 | 2,65 | 42 | 38 | 2,2 | 1,6 | 1,1 | 1,25 |
| 1,6 | 6,3 | 3,35 | 47 | 43 | 2,8 | 2 | 1,4 | 1,6 |
| 2,0 | 8 | 4,25 | 52 | 48 | 3,3 | 2,5 | 1,8 | 2 |
| 2,5 | 10 | 5,3 | 59 | 53 | 4,1 | 3,1 | 2,2 | 2,5 |
| 3,15 | 11,2 | 6,7 | 63 | 57 | 4,9 | 3,9 | 2,8 | 3,15 |
| 4,0 | 14 | 8,5 | 70 | 64 | 6,2 | 5 | 3,5 | 4 |
| 5,0 | 18 | 10,6 | 78 | 72 | 7,5 | 6,3 | 4,4 | 5 |
| 6,3 | 20 | 13,2 | 83 | 77 | 9,2 | 8 | 5,5 | 6,3 |
| 8,0 | 25 | 17,0 | 103 | 97 | 11,5 | - | - | 8 |



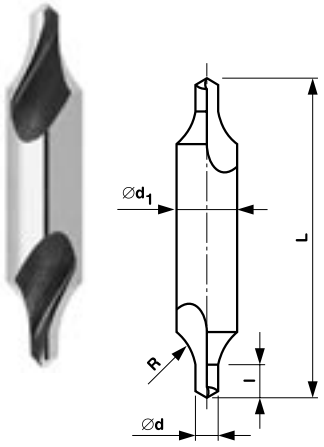
## CENTER DRILLS 60°

| ∅d /mm/ | ∅$d_1$ /mm/ | L max. /mm/ | L min. /mm/ | l max. /mm/ | l min. /mm/ | $l_1$ /mm/ | |
|---|---|---|---|---|---|---|---|
| 1,0 | 3,15 | 33,5 | 29,5 | 1,9 | 1,3 | 0,9 | 1 |
| 1,25 | 3,15 | 33,5 | 29,5 | 2,2 | 1,6 | 1,1 | 1,25 |
| 1,6 | 4 | 37,5 | 33,5 | 2,8 | 2 | 1,4 | 1,6 |
| 2,0 | 5 | 42 | 38 | 3,3 | 2,5 | 1,8 | 2 |
| 2,5 | 6,3 | 47 | 43 | 4,1 | 3,1 | 2,2 | 2,5 |
| 3,15 | 8 | 52 | 48 | 4,9 | 3,9 | 2,8 | 3,15 |
| 4,0 | 10 | 59 | 53 | 6,2 | 5 | 3,5 | 4 |
| 5,0 | 12,5 | 66 | 60 | 7,5 | 6,3 | 4,4 | 5 |
| 6,3 | 16 | 74 | 68 | 9,2 | 8 | 5,5 | 6,3 |
| 8,0 | 20 | 83 | 77 | 11,5 | 10,1 | 7 | 8 |




## CENTER DRILLS 60°

| ∅d /mm/ | ∅$d_1$ /mm/ | L max. /mm/ | L min. /mm/ | l /mm/ | R max. /mm/ | R min. /mm/ | |
|---|---|---|---|---|---|---|---|
| 1,0 | 3,15 | 33,5 | 29,5 | 3 | 3,15 | 2,5 | 1 |
| 1,25 | 3,15 | 33,5 | 29,5 | 3,35 | 4 | 3,15 | 1,25 |
| 1,6 | 4 | 37,5 | 33,5 | 4,25 | 5 | 4 | 1,6 |
| 2,0 | 5 | 42 | 38 | 5,3 | 6,3 | 5 | 2 |
| 2,5 | 6,3 | 47 | 43 | 6,7 | 8 | 6,3 | 2,5 |
| 3,15 | 8 | 52 | 48 | 8,5 | 10 | 8 | 3,15 |
| 4,0 | 10 | 59 | 53 | 10,6 | 12,5 | 10 | 4 |
| 5,0 | 12,5 | 66 | 60 | 13,2 | 16 | 12,5 | 5 |
| 6,3 | 16 | 74 | 68 | 17 | 20 | 16 | 6,3 |
| 8,0 | 20 | 83 | 77 | 21,2 | 25 | 20 | 8 |



# Special Drills

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5 | 62 | 26 | 0,009 | 5×62/26 |
| 6 | 66 | 28 | 0,012 | 6×66/28 |
| 8 | 79 | 37 | 0,0215 | 8×79/37 |
| 10 | 89 | 43 | 0,039 | 10×89/43 |

## TWIST DRILLS FOR WELDING SPOTS

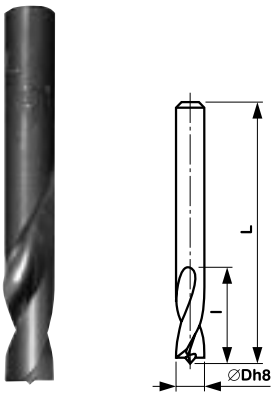
**PROFI** **HSSCo**

$\lambda = 25° \div 30°$

$\varepsilon = 180°$

**Usability:**
High-efficient single-end drill with short helix and centering point is recommended for spot weld drilling.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form E




| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5 | 86 | 52 | 0,009 | 5×86/52 |
| 6 | 93 | 57 | 0,016 | 6×93/57 |
| 8 | 117 | 75 | 0,033 | 8×117/75 |
| 10 | 133 | 87 | 0,057 | 10×133/87 |

## TWIST DRILLS FOR WELDING SPOTS

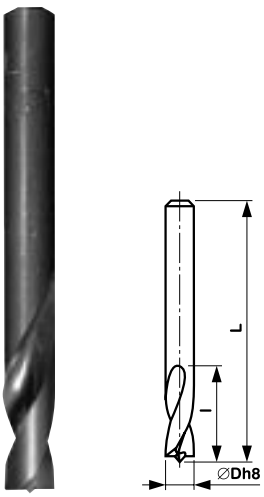
**PROFI** **HSSCo**

$\lambda = 25° \div 30°$

$\varepsilon = 180°$

**Usability:**
High-efficient single-end drill with short helix and centering point is recommended for spot weld drilling.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form E



## DOUBLE-ENDED BODY DRILLS

**PROFI**

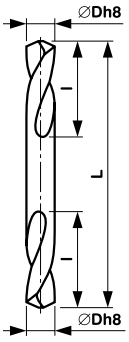
**HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,5 | 43 | 9,5 | 0,0014 | 2,5 |
| 2,6 | 43 | 9,5 | 0,00158 | 2,6 |
| 2,7 | 46 | 10,6 | 0,00168 | 2,7 |
| 2,8 | 46 | 10,6 | 0,002 | 2,8 |
| 2,9 | 46 | 10,6 | 0,0021 | 2,9 |
| 3 | 46 | 10,6 | 0,0022 | 3 |
| 3,1 | 49 | 11,2 | 0,0024 | 3,1 |
| 3,2 | 49 | 11,2 | 0,0026 | 3,2 |
| 3,25 | 49 | 11,2 | 0,0029 | 3,25 |
| 3,3 | 49 | 11,2 | 0,0032 | 3,3 |
| 3,4 | 52 | 12,5 | 0,0034 | 3,4 |
| 3,5 | 52 | 12,5 | 0,0036 | 3,5 |
| 3,6 | 52 | 12,5 | 0,0039 | 3,6 |
| 3,7 | 52 | 12,5 | 0,0041 | 3,7 |
| 3,8 | 55 | 14 | 0,0046 | 3,8 |
| 3,9 | 55 | 14 | 0,0048 | 3,9 |
| 4 | 55 | 14 | 0,005 | 4 |
| 4,1 | 55 | 14 | 0,0053 | 4,1 |
| 4,2 | 55 | 14 | 0,0055 | 4,2 |
| 4,3 | 58 | 15,5 | 0,0058 | 4,3 |
| 4,4 | 58 | 15,5 | 0,0059 | 4,4 |
| 4,5 | 58 | 15,5 | 0,0063 | 4,5 |
| 4,6 | 58 | 15,5 | 0,0068 | 4,6 |
| 4,7 | 58 | 15,5 | 0,0073 | 4,7 |
| 4,8 | 62 | 17 | 0,0082 | 4,8 |
| 4,9 | 62 | 17 | 0,0086 | 4,9 |
| 5 | 62 | 17 | 0,009 | 5 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5,1 | 62 | 17 | 0,0095 | 5,1 |
| 5,2 | 62 | 17 | 0,01 | 5,2 |
| 5,3 | 62 | 17 | 0,0105 | 5,3 |
| 5,4 | 66 | 19 | 0,0107 | 5,4 |
| 5,5 | 66 | 19 | 0,011 | 5,5 |
| 5,6 | 66 | 19 | 0,0111 | 5,6 |
| 5,7 | 66 | 19 | 0,0113 | 5,7 |
| 5,8 | 66 | 19 | 0,0115 | 5,8 |
| 5,9 | 66 | 19 | 0,0117 | 5,9 |
| 6 | 66 | 19 | 0,012 | 6 |
| 6,1 | 70 | 24 | 0,013 | 6,1 |
| 6,2 | 70 | 24 | 0,014 | 6,2 |
| 6,3 | 70 | 24 | 0,0145 | 6,3 |
| 6,4 | 70 | 24 | 0,0152 | 6,4 |
| 6,5 | 70 | 24 | 0,016 | 6,5 |
| 6,8 | 74 | 24 | 0,019 | 6,8 |
| 7 | 74 | 24 | 0,0195 | 7 |
| 7,1 | 74 | 24 | 0,0198 | 7,1 |
| 7,5 | 74 | 24 | 0,0205 | 7,5 |
| 8 | 79 | 25 | 0,0215 | 8 |
| 8,5 | 79 | 25 | 0,0225 | 8,5 |
| 8,6 | 84 | 25 | 0,0226 | 8,6 |
| 9 | 84 | 25 | 0,0235 | 9 |
| 9,5 | 84 | 25 | 0,03 | 9,5 |
| 10 | 89 | 25 | 0,039 | 10 |
| 10,5 | 89 | 25 | 0,045 | 10,5 |




**Usability:**

Short, double-end drills with short helix and self-centering cutting edge are recommended for drilling of thin-walled materials, especially the sheet. These drills are applied for riveting and body (carosserie) building.

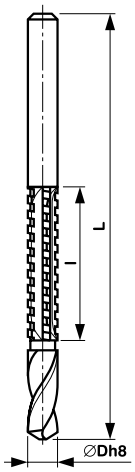
**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form C

## DRILL SAW

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 6 | 86 | 31 | 0,012 | 6 |
| 8 | 86 | 31 | 0,0215 | 8 |

**PROFI**

**HSS**




**Usability:**

Combined tool, drill with slot cutter, is recommended for slot milling of thin-walled materials like sheet, plastic, acrylic plates etc.

**Manufacturing Mode:** V
**Surface Treatment:** ○
**Grinding Mode:** Form N

# Special Drills

## SHEEL AND TUPE DRILLS

| ∅D /mm/ | ∅$d_1$ /mm/ | ∅d /mm/ | L /mm/ | kg | |
|---|---|---|---|---|---|
| 14 | 3 | 6 | 55 | 0,018 | 1/3-14/ |
| 20 | 6 | 8 | 65 | 0,045 | 2/6-20/ |
| 30,5 | 15 | 10 | 80 | 0,135 | 3/15-30,5/ |

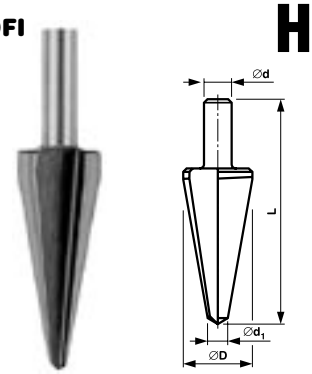
**Usability:**

Drills with the conical cutting part and straight shank are deter-mined for drilling of holes of various diameters in thin-walled materials, especially sheets. Working range is specified by minimum and maximum diameter of the tool.

**Manufacturing Mode:** F

**Surface Treatment:** O

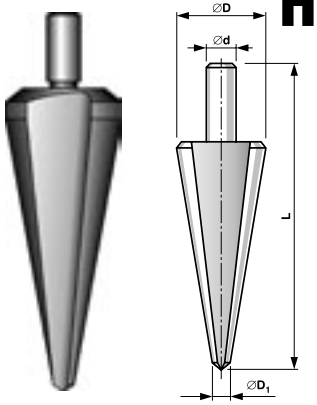
**PROFI** **HSS**




## CONICAL PEELING DRILLS

| Velikost /mm/ | ∅D /mm/ | ∅$D_1$ /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|---|---|
| 1 | 14 | 3,5 | 6 | 58 | 1/3,5-14/ |
| 2 | 20 | 6 | 8 | 66 | 2/6-20/ |
| 2A | 22,5 | 3,5 | 8 | 72 | 2A/3,5-22,5/ |
| L | 30 | 6 | 10 | 103 | L/3-30/ |

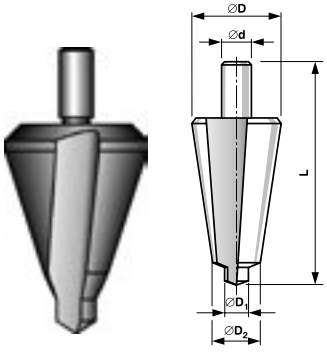
**HSS**




## CONICAL PEELING DRILLS

| Size | ∅D /mm/ | ∅$D_1$ /mm/ | ∅$D_2$ /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|---|---|---|
| 3 | 30 | 8 | 16 | 10 | 75 | 3/80-30/ |
| 4 | 40 | 10 | 26 | 12 | 85 | 4/10-40/ |

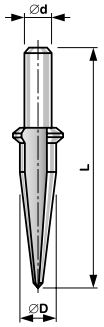
**HSS**



## CONICAL PEELING DRILLS

| Size | ∅D /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|---|
| 1 /7,8 | 7,8 | 6 | 49 | 1/7,8 |
| 2/10,2 | 10,2 | 6 | 53 | 2/10,2 |

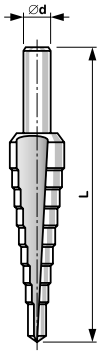
**HSS**




## STEPPED PEELING DRILLS

| Size | ∅D /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|---|
| 0/5 | 4; 6; 8; 10; 12 | 6 | 65 | 0/5 |
| 0/9 | 4; 5; 6; 7; 8; 9; 10; 11; 12; | 6 | 65 | 0/9 |
| 1 | 4; 6; 8; 10; 12; 14; 16; 18; 20 | 8 | 75 | 1 |
| 2 | 6; 8; 10; 12; 14; 16; 18; 20; 22; 24; 26; 28; 30 | 10 | 100 | 2 |
| 3 | 6; 9; 13; 16; 19; 21; 23; 26 29; 32; 35; 38 | | | 3 |

**Co, HSS**

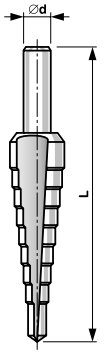



| Size | ∅D /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|---|
| 0/5 | 4; 6; 8; 10; 12 | 6 | 65 | 0/5Co |
| 0/9 | 4; 5; 6; 7; 8; 9; 10; 11; 12; | 6 | 65 | 0/9Co |
| 1 | 4; 6; 8; 10; 12; 14; 16; 18; 20 | 8 | 75 | 1Co |
| 2 | 6; 8; 10; 12; 14; 16; 18; 20; 22; 24; 26; 28; 30 | 10 | 100 | 2Co |
| 3 | 6; 9; 13; 16; 19; 21; 23; 26 29; 32; 35; 38 | | | 3Co |

## STEPPED PEELING DRILLS PG

| Size | ∅D /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|---|
| PG 1 | 6; 9; 11,4; 14; 17,25; 19; 21,25; 26,25 | 10 | 77 | PG1 |
| PG 2 | 6; 9; 12,5; 15,2; 18,6; 20,4; 22,5; 28,3 | 10 | 77 | PG2 |
| PG 3 | 6; 9; 11,4; 14; 17,25; 19; 21,25 24; 26,75; 30; 33; 35,7 | 10 | 100 | PG3 |
| PG 4 | 6; 9; 12,5; 15,2; 18,6; 20,4; 22,5 26; 28,3; 30,5; 34; 37 | 10 | 100 | PG4 |

**HSS**



# Special Drills

| ∅D /mm/ | L /mm/ | ⟐ /min$^{-1}$/ | kg | |
|---|---|---|---|---|
| M 3 | 2,5 | 2500-4800 | 0,0053 | M3 |
| M 4 | 3,3 | 2200-4200 | 0,0125 | M4 |
| M 5 | 4,2 | 1800-4000 | 0,013 | M5 |

⟐ operating speed

| ∅D /mm/ | L /mm/ | ⟐ /min$^{-1}$/ | kg | |
|---|---|---|---|---|
| M 6 | 5 | 1600-3500 | 0,016 | M6 |
| M 8 | 6,8 | 1200-3000 | 0,028 | M8 |
| M 10 | 8,5 | 1000-2500 | 0,04 | M10 |

⟐ operating speed

**FORMING DRILLS**

**Usability:**

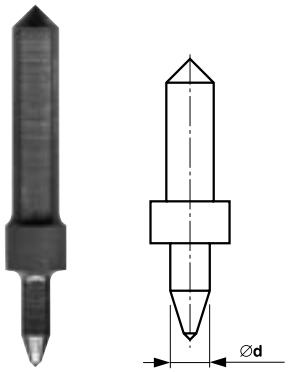
The drills are used to bore holes in thin-wall metal materials or artificieal materials with a thickness of up to 8 mm. For thicker materials, we recommend preboring. The use of cooling and lubricating materials is recommended. The drill must be removed from the cut when moving to prevent damage of the sharp edges.

**PROFI**

**SK**

**Manufacturing Mode:** **F**

**Surface Treatment:** O





| ∅D /mm/ | L /mm/ | ⟐ /min$^{-1}$/ | kg | |
|---|---|---|---|---|
| M 3 | 2,5 | 2500-4800 | 0,0053 | M3 |
| M 4 | 3,3 | 2200-4200 | 0,0125 | M4 |
| M 5 | 4,2 | 1800-4000 | 0,013 | M5 |

⟐ operating speed

| ∅D /mm/ | L /mm/ | ⟐ /min$^{-1}$/ | kg | |
|---|---|---|---|---|
| M 6 | 5 | 1600-3500 | 0,016 | M6 |
| M 8 | 6,8 | 1200-3000 | 0,028 | M8 |
| M 10 | 8,5 | 1000-2500 | 0,04 | M10 |

⟐ operating speed

**FORMING DRILLS**

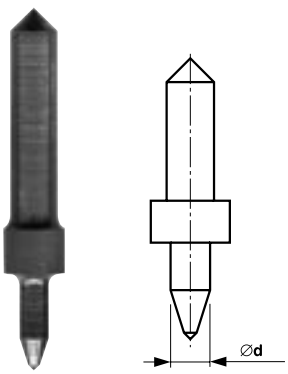
**Usability:**

The drills are used to bore holes in thin-wall metal materials or artificieal materials with a thickness of up to 8 mm. For thicker materials, we recommend preboring. The use of cooling and lubricating materials is recommended. The drill must be removed from the cut when moving to prevent damage of the sharp edges.

**SK**

**Manufacturing Mode:** **F**

**Surface Treatment:** O

## SCREW EXTRACTOR, No. 1÷5

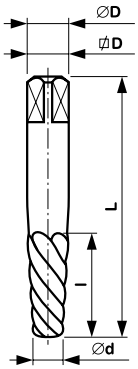
**PROFI** **HCS**

| /mm/ | /mm/ | /inch./ | ∅d /mm/ | l /mm/ | L /mm/ | ∅D /mm/ | ⌗D /mm/ | /mm/ | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3÷4,5 | 1/8"÷3/16" | 1,75 | 17,5 | 40 | 3,5 | 2,8 | 2 | 1 |
| 2 | 5÷7 | 1/4" | 2,65 | 18,5 | 46 | 4,5 | 3,55 | 3 | 2 |
| 3 | 8÷10 | 5/16"÷3/8" | 4,2 | 23 | 53 | 9,6 | 5 | 4,5 | 3 |
| 4 | 11÷14 | 7/16"÷9/16" | 6,5 | 25 | 63 | 9,0 | 7 | 7 | 4 |
| 5 | 15÷18 | 5/8"÷3/4" | 9,2 | 28 | 75 | 12,0 | 10 | 10 | 5 |

*) No.
**) screw
***) rough-drilled.hole

**Usability:**
The screw extractor are used for loosing broken bolts out of the holes

**Manufacturing Mode:** T
**Surface Treatment:** Zinc




## SCREW EXTRACTOR, No. 6

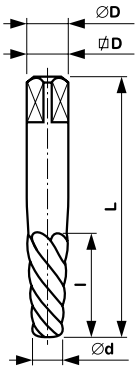
| /mm/ | /mm/ | /inch./ | ∅d /mm/ | l /mm/ | L /mm/ | ∅D /mm/ | ⌗D /mm/ | /mm/ | |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 20÷30 | 7/8"÷1 1/8" | 12,5 | 33 | 90 | 15,5 | 12,5 | 13 | 6 |

*) No.
**) screw
***) rough-drilled.hole

**PROFI** **HCS**

**Usability:**
The screw extractor are used for loosing broken bolts out of the holes

**Manufacturing Mode:** T
**Surface Treatment:** Zinc



# Wood Machining Drills

## DOWELL DRILLS

**PROFI** **HSS**

$\lambda = 25° \div 30°$

$\varepsilon = 180°$

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 5 | 86 | 52 | 0,0085 | 5 |
| 6 | 93 | 57 | 0,013 | 6 |
| 7 | 109 | 69 | 0,02 | 7 |
| 8 | 117 | 75 | 0,027 | 8 |

| D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 9 | 125 | 81 | 0,038 | 9 |
| 10 | 133 | 87 | 0,052 | 10 |
| 11 | 142 | 94 | 0,068 | 11 |
| 12 | 151 | 101 | 0,086 | 12 |

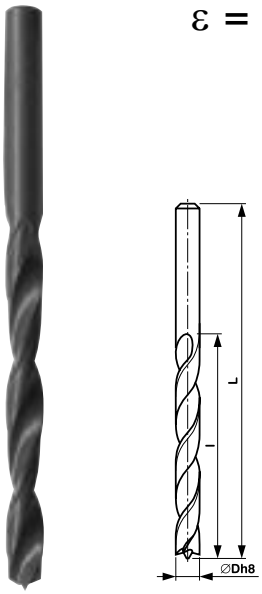
**Usability:**

Drills with the centring point and special cutting edge geometry are recommended for drilling of wood, plastics, plastic plates etc. Drills are made of high-speed steel.

**Manufacturing Mode:** T

**Surface Treatment:** ●

**Grinding Mode:** Form E




## WOOD BORING DITS

**PROFI** **HSS**

$\lambda = 60°$

$\varepsilon = 180°$

**∅D = 14 mm ~-∅d=10 mm**

**∅D ≥ 16 mm ~-∅d=16 mm**

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 14 | 210 | 120 | 0,1 | 14 |
| 16 | 230 | 150 | 0,16 | 16 |
| 18 | 260 | 160 | 0,22 | 18 |
| 20 | 260 | 160 | 0,28 | 20 |
| 22 | 260 | 160 | 0,34 | 22 |

| ∅D /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 24 | 260 | 160 | 0,37 | 24 |
| 26 | 260 | 160 | 0,41 | 26 |
| 28 | 260 | 160 | 0,47 | 28 |
| 30 | 260 | 160 | 0,55 | 30 |

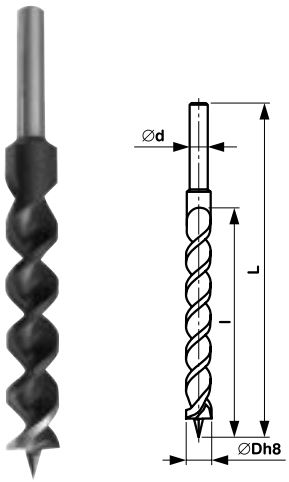
**Usability:**

Special drills are recommended for deep-hole drilling of wood without the necessity of drill withdrawal. Enlarged helix flute facilitates the perfect chip flow. The centring point makes easy to put the drill to the hole centre.

**Manufacturing Mode:** F

**Surface Treatment:** ◑

**Grinding Mode:** S



## FRAMEWORK DRILLS, STRAIGHT SHANK

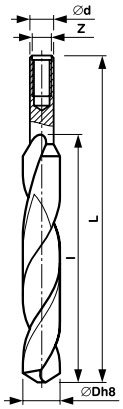
**PROFI**

# HCS

$\lambda = 15° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | ∅d /mm/ | L /mm/ | l /mm/ | Z /mm/ | kg/ | |
|---|---|---|---|---|---|---|
| 15 | 14 | 130 | 102 | M10×1 | 0,14 | 15 |
| 16 | 14 | 130 | 102 | M10×1 | 0,15 | 16 |
| 17 | 14 | 130 | 102 | M10×1 | 0,17 | 17 |
| 18 | 14 | 130 | 102 | M10×1 | 0,18 | 18 |
| 19 | 14 | 130 | 102 | M10×1 | 0,19 | 19 |
| 20 | 14 | 130 | 102 | M10×1 | 0,21 | 20 |
| 21 | 14 | 130 | 102 | M10×1 | 0,23 | 21 |
| 22 | 14 | 130 | 102 | M10×1 | 0,25 | 22 |
| 24 | 17 | 130 | 102 | M11×1 | 0,28 | 24 |
| 25 | 17 | 130 | 102 | M11×1 | 0,31 | 25 |
| 26 | 17 | 130 | 102 | M11×1 | 0,34 | 26 |
| 28 | 17 | 130 | 102 | M11×1 | 0,37 | 28 |
| 30 | 19 | 130 | 102 | M11×1 | 0,42 | 30 |
| 32 | 23 | 130 | 102 | M11×1 | 0,45 | 32 |
| 35 | 24 | 130 | 102 | M13×1 | 0,49 | 35 |
| 39 | 28 | 130 | 102 | M13×1 | 0,53 | 39 |




**Usability:**

Stable drills with thread in shank with the possibility of extending the tools by means of extending bars. These drills are recommended for drilling of forms in the building industry.

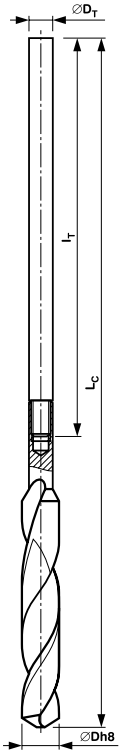
**Manufacturing Mode:** F

**Surface Treatment:** ●

**Grinding Mode:** Form N

## EXTENDING BARES

| ∅D /mm/ | $\varnothing D_T$ /mm/ | kg/ | | kg/ | | kg/ | |
|---|---|---|---|---|---|---|---|
| 15 | 13 | 1,23 | 15×290 | 2,08 | 15×490 | 2,88 | 15×690 |
| 16 | 13 | 1,23 | 16×290 | 2,08 | 16×490 | 2,88 | 16×690 |
| 17 | 13 | 1,23 | 17×290 | 2,08 | 17×490 | 2,88 | 17×690 |
| 18 | 13 | 1,23 | 18×290 | 2,08 | 18×490 | 2,88 | 18×690 |
| 19 | 13 | 1,23 | 19×290 | 2,08 | 19×490 | 2,88 | 19×690 |
| 20 | 13 | 1,23 | 20×290 | 2,08 | 20×490 | 2,88 | 20×690 |
| 21 | 13 | 1,23 | 21×290 | 2,08 | 21×490 | 2,88 | 21×690 |
| 22 | 13 | 1,23 | 22×290 | 2,08 | 22×490 | 2,88 | 22×690 |
| 24 | 13 | 1,23 | 24×290 | 2,08 | 24×490 | 2,88 | 24×690 |
| 25 | 13 | 1,23 | 25×290 | 2,08 | 25×490 | 2,88 | 25×690 |
| 26 | 13 | 1,23 | 26×290 | 2,08 | 26×490 | 2,88 | 26×690 |
| 28 | 13 | 1,23 | 28×290 | 2,08 | 28×490 | 2,88 | 28×690 |
| 30 | 13 | 1,23 | 30×290 | 2,08 | 30×490 | 2,88 | 30×690 |
| 32 | 13 | 1,23 | 32×290 | 2,08 | 32×490 | 2,88 | 32×690 |
| 35 | 13 | 1,23 | 35×290 | 2,08 | 35×490 | 2,88 | 35×690 |
| 39 | 13 | 1,23 | 39×290 | 2,08 | 39×490 | 2,88 | 39×690 |




$l_T$ ´ = 290 mm ~ $l_C$ = 400 mm

$l_T$ ´ = 490 mm ~ $l_C$ = 600 mm

$l_T$ ´ = 690 mm ~ $l_C$ = 800 mm

**Usability:**

Used as an extension of the drills for the casing ZVSE 221188B.

**Surface Treatment:** ●

# Wood Machining Drills

## FRAMEWORK DRILLS, STRAIGHT SHANK

**PROFI** **HCS**

$\lambda = 15° \div 30°$

$\varepsilon = 118°$

| ∅D /mm/ | ∅$D_T$ /mm/ | L /mm/ | l /mm/ | Z /mm/ | kg | |
|---|---|---|---|---|---|---|
| 8 | 6 | 17 | 75 | M6×1 | 0,027 | 8 |
| 10 | 10 | 133 | 87 | M8×1 | 0,052 | 10 |
| 12 | 10 | 151 | 101 | M8×1 | 0,089 | 15 |
| 14 | 12 | 160 | 108 | M8×1 | 0,114 | 14 |

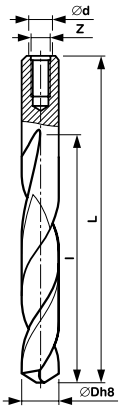
**Usability:**

Stable drills with thread in shank with the possibility of extending the tools by means of extending bars. These drills are recommended for drilling of forms in the building industry.

**Manufacturing Mode:** F

**Surface Treatment:** ●

**Grinding Mode:** Form N




## EXTENDING BARES

| ∅D /mm/ | ∅$D_T$ /mm/ | $L_T$ | kg | | $L_T$ | kg | | $L_T$ | kg | |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 6 | 300 | 0,29 | 8×290 | 500 | 0,51 | 8×490 | 600 | 0,61 | 8×690 |
| 10 | 10 | 284 | 0,79 | 10×290 | 484 | 1,37 | 10×490 | 584 | 1,17 | 10×690 |
| 12 | 12 | 266 | 0,74 | 12×290 | 466 | 1,30 | 12×490 | 566 | 1,57 | 12×690 |
| 14 | 12 | 257 | 1,04 | 14×290 | 457 | 1,86 | 14×490 | 557 | 2,27 | 14×690 |

$l_T$ ´ = 290 mm ~ $l_C$ = 400 mm

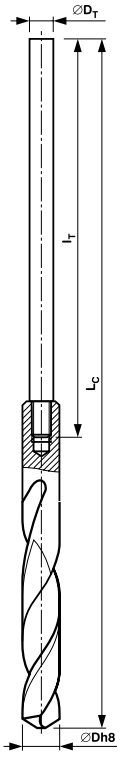
$l_T$ ´ = 490 mm ~ $l_C$ = 600 mm

$l_T$ ´ = 690 mm ~ $l_C$ = 800 mm

**Usability:**

Used as an extension of the drills for the casing ZVSE 221188A.

**Surface Treatment:** ●

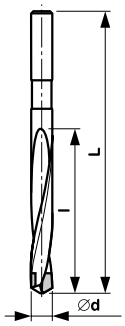


**DRILLS, STRAIGHT SHANK WITH CARBIDE CUTTING**

# SK - K10

$\lambda = 15° \div 30°$

$\varepsilon = 118°$




| ∅d /mm/ | L /mm/ | l /mm/ | kg | |
|---|---|---|---|---|
| 2,5 | 47 | 18 | 0,001 | 2,5 |
| 2,8 | 47 | 18 | 0,002 | 2,8 |
| 3 | 52 | 20 | 0,003 | 3 |
| 3,1 | 52 | 20 | 0,003 | 3,1 |
| 3,2 | 52 | 20 | 0,003 | 3,2 |
| 3,4 | 60 | 28 | 0,004 | 3,4 |
| 3,5 | 60 | 28 | 0,004 | 3,5 |
| 3,8 | 60 | 28 | 0,004 | 3,8 |
| 4 | 65 | 32 | 0,005 | 4 |
| 4,2 | 65 | 32 | 0,006 | 4,2 |
| 4,5 | 75 | 34 | 0,007 | 4,5 |
| 4,8 | 75 | 34 | 0,009 | 4,8 |
| 5 | 80 | 36 | 0,010 | 5 |
| 5,2 | 80 | 36 | 0,012 | 5,2 |
| 5,5 | 85 | 38 | 0,013 | 5,5 |
| 5,8 | 85 | 38 | 0,016 | 5,8 |
| 6 | 90 | 40 | 0,017 | 6 |
| 6,2 | 90 | 40 | 0,019 | 6,2 |
| 6,5 | 95 | 42 | 0,022 | 6,5 |
| 6,8 | 100 | 44 | 0,025 | 6,8 |
| 7 | 100 | 44 | 0,027 | 7 |
| 7,2 | 100 | 44 | 0,029 | 7,2 |
| 7,5 | 105 | 48 | 0,032 | 7,5 |
| 7,8 | 110 | 50 | 0,036 | 7,8 |
| 8 | 110 | 50 | 0,038 | 8 |
| 8,2 | 110 | 50 | 0,040 | 8,2 |
| 8,5 | 115 | 52 | 0,043 | 8,5 |
| 8,8 | 120 | 54 | 0,047 | 8,8 |
| 9 | 120 | 54 | 0,054 | 9 |
| 9,2 | 120 | 54 | 0,053 | 9,2 |
| 9,5 | 125 | 56 | 0,058 | 9,5 |
| 9,8 | 130 | 60 | 0,062 | 9,8 |
| 10 | 130 | 60 | 0,065 | 10 |
| 10,5 | 130 | 60 | 0,070 | 10,5 |
| 11 | 135 | 62 | 0,080 | 11 |
| 11,5 | 135 | 62 | 0,087 | 11,5 |
| 12 | 140 | 65 | 0,095 | 12 |
| 13 | 140 | 65 | 0,102 | 13 |
| 14 | 145 | 70 | 0,113 | 14 |
| 15 | 145 | 70 | 0,148 | 15 |
| 16 | 150 | 70 | 0,173 | 16 |
| 17 | 150 | 70 | 0,202 | 17 |
| 18 | 160 | 75 | 0,243 | 18 |
| 19 | 160 | 75 | 0,279 | 19 |
| 20 | 170 | 85 | 0,319 | 20 |

# Drills with carbide cutting

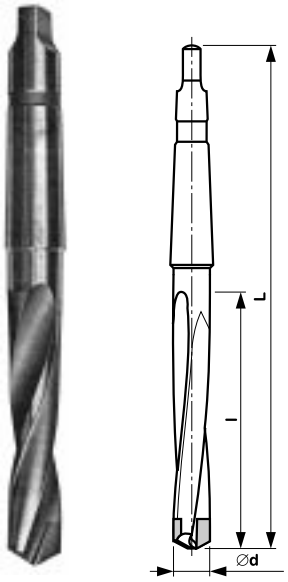
**DRILLS** WITH TAPER SHANK WITH CARBIDE CUTTING

**SK**

$\lambda = 15° \div 30°$

$\varepsilon = 118°$

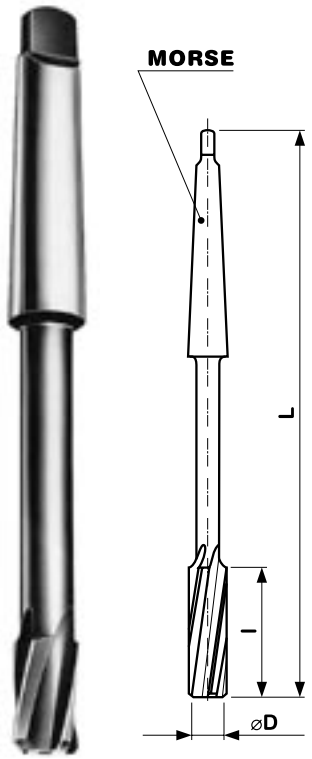
| ∅d /mm/ | L /mm/ | l /mm/ | $l_1$ /mm/ | MORSE | kg | |
|---|---|---|---|---|---|---|
| 10 | 140 | 65 | 65,5 | 1 | 0,085 | 10 |
| 10,5 | 145 | 70 | 65,5 | 1 | 0,090 | 10,5 |
| 11 | 145 | 70 | 65,5 | 1 | 0,092 | 11 |
| 11,5 | 150 | 75 | 65,5 | 1 | 0,095 | 11,5 |
| 12 | 150 | 75 | 65,5 | 1 | 0,095 | 12 |
| 13 | 170 | 80 | 80 | 2 | 0,210 | 13 |
| 14 | 175 | 85 | 80 | 2 | 0,220 | 14 |
| 15 | 180 | 90 | 80 | 2 | 0,234 | 15 |
| 16 | 185 | 95 | 80 | 2 | 0,237 | 16 |
| 17 | 190 | 100 | 80 | 2 | 0,248 | 17 |
| 18 | 195 | 105 | 80 | 2 | 0,252 | 18 |
| 19 | 215 | 105 | 99 | 3 | 0,453 | 19 |
| 20 | 220 | 110 | 99 | 3 | 0,472 | 20 |
| 21 | 225 | 115 | 99 | 3 | 0,483 | 21 |
| 22 | 230 | 120 | 99 | 3 | 0,498 | 22 |
| 23 | 235 | 125 | 99 | 3 | 0,502 | 23 |
| 24 | 240 | 130 | 99 | 3 | 0,531 | 24 |
| 25 | 245 | 135 | 99 | 3 | 0,558 | 25 |
| 26 | 250 | 140 | 99 | 3 | 0,598 | 26 |
| 27 | 275 | 140 | 124 | 4 | 1,025 | 27 |
| 28 | 280 | 145 | 124 | 4 | 1,040 | 28 |
| 29 | 285 | 150 | 124 | 4 | 1,062 | 29 |
| 30 | 209 | 155 | 124 | 4 | 1,083 | 30 |
| 31 | 300 | 160 | 124 | 4 | 1,164 | 31 |
| 32 | 300 | 160 | 124 | 4 | 1,186 | 32 |
| 33 | 310 | 165 | 124 | 4 | 1,216 | 33 |
| 34 | 310 | 165 | 124 | 4 | 1,304 | 34 |
| 35 | 320 | 170 | 124 | 4 | 1,544 | 35 |
| 36 | 320 | 170 | 124 | 4 | 1,586 | 36 |
| 37 | 330 | 180 | 124 | 4 | 1,767 | 37 |
| 38 | 330 | 180 | 124 | 4 | 1,808 | 38 |
| 39 | 330 | 180 | 124 | 4 | 1,972 | 39 |
| 40 | 330 | 180 | 124 | 4 | 2,043 | 40 |



## CORE DRILLS WITH TAPER SHANK

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | MORSE | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 9,80 | 168 | 38 | 1 | 4 | 0,090 | 9,8 |
| 10 H11 | 168 | 38 | 1 | 4 | 0,090 | 10H11 |
| 10,75 | 175 | 41 | 1 | 4 | 0,100 | 10,75 |
| 11 H11 | 175 | 41 | 1 | 4 | 0,100 | 11H11 |
| 11,75 | 182 | 44 | 1 | 4 | 0,120 | 11,75 |
| 12 H11 | 182 | 44 | 1 | 4 | 0,120 | 12H11 |
| 12,75 | 182 | 44 | 1 | 4 | 0,130 | 12,75 |
| 13 H11 | 182 | 44 | 1 | 4 | 0,130 | 13H11 |
| 13,75 | 189 | 47 | 1 | 4 | 0,140 | 13,75 |
| 14 H11 | 189 | 47 | 1 | 4 | 0,140 | 14H11 |
| 14,75 | 204 | 50 | 2 | 4 | 0,240 | 14,75 |
| 15 H11 | 204 | 50 | 2 | 4 | 0,240 | 15H11 |
| 15,75 | 210 | 52 | 2 | 4 | 0,275 | 15,75 |
| 16 H11 | 210 | 52 | 2 | 4 | 0,280 | 16H11 |
| 16,75 | 214 | 54 | 2 | 4 | 0,310 | 15,75 |
| 17 H11 | 214 | 54 | 2 | 4 | 0,315 | 17H11 |
| 17,75 | 219 | 56 | 2 | 4 | 0,340 | 17,75 |
| 18 H11 | 219 | 56 | 2 | 4 | 0,345 | 18H11 |
| 18,70 | 223 | 58 | 2 | 4 | 0,355 | 18,7 |
| 19 H11 | 223 | 58 | 2 | 4 | 0,360 | 19H11 |
| 19,70 | 228 | 60 | 2 | 4 | 0,370 | 19,7 |
| 20 H11 | 228 | 60 | 2 | 4 | 0,375 | 20H11 |
| 20,7 | 232 | 62 | 2 | 4 | 0,380 | 20,7 |
| 21 H11 | 232 | 62 | 2 | 4 | 0,380 | 21H11 |
| 21,70 | 237 | 64 | 2 | 4 | 0,400 | 21,7 |
| 22 H11 | 237 | 64 | 2 | 4 | 0,405 | 22H11 |
| 22,70 | 241 | 66 | 2 | 4 | 0,580 | 22,7 |
| 23 H11 | 241 | 66 | 2 | 4 | 0,610 | 23H11 |
| 23,70 | 268 | 68 | 3 | 4 | 0,730 | 23,7 |
| 24 H11 | 268 | 68 | 3 | 4 | 0,738 | 24H11 |
| 24,70 | 268 | 68 | 3 | 4 | 0,740 | 24,7 |
| 25 H11 | 268 | 68 | 3 | 4 | 0,750 | 25H11 |
| 25,70 | 273 | 70 | 3 | 4 | 0,790 | 25,7 |
| 26 H11 | 273 | 70 | 3 | 4 | 0,795 | 26H11 |
| 27,70 | 277 | 71 | 3 | 4 | 0,850 | 27,7 |
| 28 H11 | 277 | 71 | 3 | 4 | 0,855 | 28H11 |
| 29,70 | 281 | 73 | 3 | 4 | 0,905 | 29,7 |
| 30 H11 | 281 | 73 | 3 | 4 | 0,910 | 30H11 |
| 31,60 | 317 | 77 | 4 | 4 | 1,490 | 31,6 |
| 32 H11 | 317 | 77 | 4 | 4 | 1,500 | 32H11 |




**Workmanship:**

Material high-speed steel HSS. Workmanship with 4 cutting edges with nominal size in tolerance H 11 or with dimension reduced of material allowance for follow precise working.

**Usability:**

Working prebored holes, cast holes or punched holes to higher precision of holes.

**Manufacturing Mode:** F

**Surface Treatment:** ○

# Core Drills and Hand Reamers

| ∅D /mm/ | L /mm/ | l /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|
| 4,8 | 86 | 52 | 3 | 0,011 | 4,8 |
| 5 H11 | 86 | 52 | 3 | 0,013 | 5H11 |
| 5,80 | 93 | 57 | 3 | 0,017 | 5,8 |
| 6 H11 | 93 | 57 | 3 | 0,020 | 6H11 |
| 6,80 | 109 | 69 | 3 | 0,022 | 6,8 |
| 7 H11 | 109 | 69 | 3 | 0,026 | 7H11 |
| 7,80 | 117 | 75 | 3 | 0,032 | 7,8 |
| 8 H11 | 117 | 75 | 3 | 0,037 | 8H11 |
| 8,80 | 125 | 81 | 3 | 0,050 | 8,8 |
| 9 H11 | 125 | 81 | 3 | 0,056 | 9H11 |
| 9,80 | 133 | 87 | 3 | 0,066 | 9,8 |
| 10 H11 | 133 | 87 | 3 | 0,071 | 10H11 |
| 10,75 | 142 | 94 | 3 | 0,079 | 10,75 |
| 11 H11 | 142 | 94 | 3 | 0,084 | 11H11 |
| 11,75 | 142 | 94 | 3 | 0,095 | 11,75 |
| 12 H11 | 151 | 101 | 3 | 0,104 | 12H11 |
| 12,75 | 151 | 101 | 3 | 0,115 | 12,75 |
| 13 H11 | 151 | 101 | 3 | 0,120 | 13H11 |
| 13,75 | 160 | 108 | 3 | 0,139 | 13,75 |
| 14 H11 | 160 | 108 | 3 | 0,144 | 14H11 |
| 14,75 | 169 | 114 | 3 | 0,169 | 14,75 |
| 15 H11 | 169 | 114 | 3 | 0,174 | 15H11 |
| 15,75 | 178 | 120 | 3 | 0,199 | 15,75 |
| 16 H11 | 178 | 120 | 3 | 0,204 | 16H11 |

**Workmanship:**

Material high-speed steel HSS. Workmanship with 4 cutting edges with nominal size in tolerance H 11 or with dimension reduced of material allowance for follow precise working.

**Usability:**

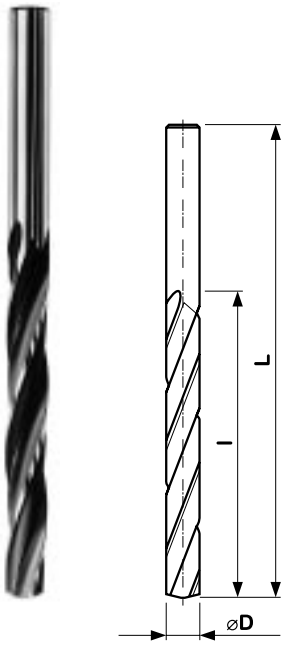
Working prebored holes, cast holes or punched holes to higher precision of holes.

**Manufacturing Mode:** F

**Surface Treatment:** ○

## CORE DRILLS WITH THREE FLUTES

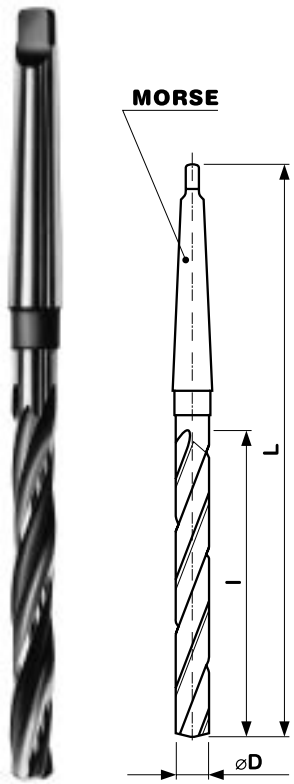
**PROFI** **HSS**



## CORE DRILLS WITH TREE FLUTES

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | MORSE | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 8,8 | 162 | 81 | 1 | 3 | 0,085 | 8,8 |
| 9 H11 | 162 | 81 | 1 | 3 | 0,090 | 9H11 |
| 9,8 | 168 | 87 | 1 | 3 | 0,105 | 9,8 |
| 10 H11 | 168 | 87 | 1 | 3 | 0,110 | 10H11 |
| 10,75 | 175 | 94 | 1 | 3 | 0,115 | 10,75 |
| 11 H11 | 175 | 94 | 1 | 3 | 0,120 | 11H11 |
| 11,75 | 175 | 94 | 1 | 3 | 0,122 | 11,75 |
| 12 H11 | 182 | 101 | 1 | 3 | 0,130 | 12H11 |
| 12,75 | 182 | 101 | 1 | 3 | 0,135 | 12,75 |
| 13 H11 | 182 | 101 | 1 | 3 | 0,140 | 13H11 |
| 13,75 | 189 | 108 | 1 | 3 | 0,155 | 13,75 |
| 14 H11 | 189 | 108 | 1 | 3 | 0,160 | 14H11 |
| 14,75 | 212 | 114 | 2 | 3 | 0,255 | 14,75 |
| 15 H11 | 212 | 114 | 2 | 3 | 0,260 | 15H11 |
| 15,75 | 218 | 120 | 2 | 3 | 0,285 | 15,75 |
| 16 H11 | 218 | 120 | 2 | 3 | 0,290 | 16H11 |
| 16,75 | 223 | 125 | 2 | 3 | 0,305 | 16,75 |
| 17 H11 | 223 | 125 | 2 | 3 | 0,310 | 17H11 |
| 17,75 | 228 | 130 | 2 | 3 | 0,332 | 17,75 |
| 18 H11 | 228 | 130 | 2 | 3 | 0,338 | 18H11 |
| 18,7 | 233 | 135 | 2 | 3 | 0,352 | 18,7 |
| 19 H11 | 233 | 135 | 2 | 3 | 0,358 | 19H11 |
| 19,7 | 238 | 140 | 2 | 3 | 0,384 | 19,7 |
| 20 H11 | 238 | 140 | 2 | 3 | 0,390 | 20H11 |
| 21,7 | 248 | 150 | 2 | 3 | 0,420 | 21,7 |
| 22 H11 | 248 | 150 | 2 | 3 | 0,427 | 21H11 |
| 23,7 | 281 | 160 | 3 | 3 | 0,460 | 23,7 |
| 24 H11 | 281 | 160 | 3 | 3 | 0,470 | 24H11 |
| 24,7 | 281 | 160 | 3 | 3 | 0,475 | 24,7 |
| 25 H11 | 281 | 160 | 3 | 3 | 0,485 | 25H11 |
| 25,7 | 286 | 165 | 3 | 3 | 0,710 | 25,7 |
| 26 H11 | 286 | 165 | 3 | 3 | 0,720 | 26H11 |
| 27,7 | 291 | 170 | 3 | 3 | 0,850 | 27,7 |
| 28 H11 | 291 | 170 | 3 | 3 | 0,860 | 28H11 |
| 29,7 | 296 | 175 | 3 | 3 | 0,955 | 29,7 |
| 30 H11 | 296 | 175 | 3 | 3 | 0,960 | 30H11 |
| 31,6 | 306 | 185 | 3 | 3 | 1,152 | 31,6 |
| 32 H11 | 334 | 185 | 4 | 3 | 1,490 | 32H11 |
| 33,6 | 339 | 190 | 4 | 3 | 1,555 | 33,6 |
| 34 H11 | 339 | 190 | 4 | 3 | 1,560 | 34H11 |
| 34,6 | 339 | 190 | 4 | 3 | 1,650 | 34,6 |
| 35 H11 | 339 | 190 | 4 | 3 | 1,660 | 35H11 |
| 35,6 | 344 | 195 | 4 | 3 | 1,740 | 35,6 |
| 36 H11 | 344 | 195 | 4 | 3 | 1,750 | 36H11 |
| 37,6 | 349 | 200 | 4 | 3 | 1,860 | 37,6 |
| 38 H11 | 349 | 200 | 4 | 3 | 1,870 | 38H11 |
| 39,6 | 349 | 200 | 4 | 3 | 2,030 | 39,6 |
| 40 H11 | 349 | 200 | 4 | 3 | 2,040 | 40H11 |
| 41,6 | 354 | 205 | 4 | 3 | 2,210 | 41,6 |
| 42 H11 | 354 | 205 | 4 | 3 | 2,220 | 42H11 |
| 43,6 | 359 | 210 | 4 | 3 | 2,380 | 43,6 |
| 44 H11 | 359 | 210 | 4 | 3 | 2,390 | 44H11 |
| 44,6 | 359 | 210 | 4 | 3 | 2,500 | 44,6 |
| 45 H11 | 359 | 210 | 4 | 3 | 2,510 | 45H11 |
| 45,6 | 364 | 215 | 4 | 3 | 2,575 | 45,6 |
| 46 H11 | 364 | 215 | 4 | 3 | 2,585 | 46H11 |
| 47,6 | 369 | 220 | 4 | 3 | 2,830 | 47,6 |
| 48 H11 | 369 | 220 | 4 | 3 | 2,840 | 48H11 |
| 49,6 | 369 | 220 | 4 | 3 | 3,015 | 49,6 |
| 50 H11 | 369 | 220 | 4 | 3 | 3,025 | 50H11 |




**Workmanship:**

Material high-speed steel HSS. Workmanship with 3 cutting edges with nominal size in tolerance H 11 or with dimension reduced of material allowance for follow precise working.

**Usability:**

Tool of rigid construction to working prebored holes cast holes or punched holes. Three cutting edges workmanship encreases the accuracy of the hole working, especially the roundnes.

**Manufacturing Mode:** F

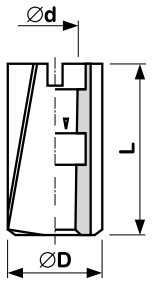
**Surface Treatment:** O

# Core Drills

## SHELL CORE DRILLS

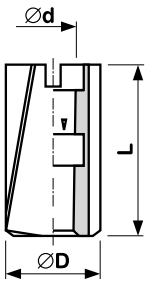
**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | ∅d /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|
| 24,7 | 45 | 13 | 4 | 0,080 | 24,7 |
| 25 H11 | 45 | 13 | 4 | 0,085 | 25H11 |
| 25,7 | 45 | 13 | 4 | 0,090 | 25,7 |
| 26 H11 | 45 | 13 | 4 | 0,095 | 26H11 |
| 27,7 | 45 | 13 | 4 | 0,110 | 27,7 |
| 28 H11 | 45 | 13 | 4 | 0,115 | 28H11 |
| 28,7 | 45 | 13 | 4 | 0,118 | 28,7 |
| 29 H11 | 45 | 13 | 4 | 0,120 | 29H11 |
| 29,7 | 45 | 13 | 4 | 0,125 | 29,7 |
| 30 H11 | 45 | 13 | 4 | 0,130 | 30H11 |
| 30,6 | 45 | 13 | 4 | 0,140 | 30,6 |
| 31 H11 | 45 | 13 | 4 | 0,145 | 31H11 |
| 31,6 | 45 | 13 | 4 | 0,155 | 31,6 |
| 32 H11 | 45 | 13 | 4 | 0,160 | 32H11 |
| 32,6 | 45 | 13 | 4 | 0,168 | 32,6 |
| 33 H11 | 45 | 13 | 4 | 0,170 | 33H11 |
| 33,6 | 45 | 13 | 4 | 0,175 | 33,6 |
| 34 H11 | 45 | 13 | 4 | 0,180 | 34H11 |
| 34,6 | 45 | 13 | 4 | 0,190 | 34,6 |
| 35 H11 | 45 | 13 | 4 | 0,195 | 35H11 |
| 35,6 | 50 | 16 | 4 | 0,200 | 35,6 |
| 36 H11 | 50 | 16 | 4 | 0,205 | 36H11 |
| 36,6 | 50 | 16 | 4 | 0,215 | 36,6 |
| 37 H11 | 50 | 16 | 4 | 0,220 | 37H11 |
| 37,6 | 50 | 16 | 4 | 0,225 | 37,6 |
| 38 H11 | 50 | 16 | 4 | 0,230 | 38H11 |
| 38,6 | 50 | 16 | 4 | 0,245 | 38,6 |
| 39 H11 | 50 | 16 | 4 | 0,250 | 39H11 |
| 39,6 | 50 | 16 | 4 | 0,260 | 39,6 |
| 40 H11 | 50 | 16 | 4 | 0,265 | 40H11 |
| 40,6 | 50 | 16 | 4 | 0,275 | 40,6 |
| 41 H11 | 50 | 16 | 4 | 0,280 | 41H11 |
| 41,6 | 50 | 16 | 4 | 0,300 | 41,6 |
| 42 H11 | 50 | 16 | 4 | 0,305 | 42H11 |
| 42,6 | 50 | 16 | 4 | 0,315 | 42,6 |
| 43 H11 | 50 | 16 | 4 | 0,320 | 43H11 |
| 43,6 | 50 | 16 | 4 | 0,330 | 43,6 |
| 44 H11 | 50 | 16 | 4 | 0,335 | 44H11 |
| 44,6 | 50 | 16 | 4 | 0,360 | 44,6 |
| 45 H11 | 50 | 16 | 4 | 0,365 | 45H11 |
| 45,6 | 56 | 19 | 4 | 0,380 | 45,6 |
| 46 H11 | 56 | 19 | 4 | 0,385 | 46H11 |
| 46,6 | 56 | 19 | 4 | 0,405 | 46,6 |
| 47 H11 | 56 | 19 | 4 | 0,410 | 47H11 |
| 47,6 | 56 | 19 | 4 | 0,420 | 47,6 |
| 48 H11 | 56 | 19 | 4 | 0,425 | 48H11 |
| 48,6 | 56 | 19 | 4 | 0,435 | 48,6 |
| 49 H11 | 56 | 19 | 4 | 0,440 | 49H11 |
| 49,6 | 56 | 19 | 4 | 0,455 | 49,6 |
| 50 H11 | 56 | 19 | 4 | 0,460 | 20H11 |
| 51,5 | 56 | 19 | 4 | 0,525 | 51,5 |
| 52 H11 | 56 | 19 | 4 | 0,530 | 52H11 |
| 54,5 | 63 | 22 | 4 | 0,640 | 54,5 |
| 55 H11 | 63 | 22 | 4 | 0,690 | 55H11 |
| 55,5 | 63 | 22 | 4 | 0,690 | 55,5 |
| 56 H11 | 63 | 22 | 4 | 0,700 | 56H11 |
| 57,5 | 63 | 22 | 4 | 0,735 | 57,5 |
| 58 H11 | 63 | 22 | 4 | 0,735 | 58H11 |
| 59,5 | 63 | 22 | 4 | 0,790 | 59,5 |
| 60 H11 | 63 | 22 | 4 | 0,795 | 60H11 |
| 61,5 | 63 | 22 | 4 | 0,840 | 61,5 |
| 62 H11 | 63 | 22 | 4 | 0,845 | 62H11 |
| 62,5 | 63 | 22 | 4 | 0,930 | 62,5 |
| 63 H11 | 63 | 22 | 4 | 0,940 | 63H11 |
| 64,5 | 71 | 27 | 4 | 1,003 | 64,5 |
| 65 H11 | 71 | 27 | 4 | 1,008 | 65H11 |
| 67,5 | 71 | 27 | 4 | 1,160 | 67,5 |
| 68 H11 | 71 | 27 | 4 | 1,165 | 68H11 |
| 69,5 | 71 | 27 | 4 | 1,300 | 69,5 |
| 70 H11 | 71 | 27 | 4 | 1,305 | 70H11 |
| 71,5 | 71 | 27 | 4 | 1,450 | 71,5 |
| 72 H11 | 71 | 27 | 4 | 1,455 | 72H11 |



## SHELL CORE DRILLS

**PROFI** **HSS**




| ∅D /mm/ | L /mm/ | ∅d /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|
| 74,5 | 71 | 27 | 4 | 1,570 | 74,5 |
| 75 H11 | 71 | 27 | 4 | 1,575 | 75H11 |
| 77,5 | 80 | 32 | 4 | 1,790 | 77,5 |
| 78 H11 | 80 | 32 | 4 | 1,820 | 78H11 |
| 79,5 | 80 | 32 | 4 | 1,950 | 79,5 |
| 80 H11 | 80 | 32 | 4 | 1,955 | 80H11 |
| 81,5 | 80 | 32 | 4 | 2,130 | 81,5 |
| 82 H11 | 80 | 32 | 4 | 2,135 | 82H11 |
| 84,5 | 80 | 32 | 4 | 2,250 | 84,5 |
| 85 H11 | 80 | 32 | 4 | 2,255 | 85H11 |
| 87,5 | 80 | 32 | 4 | 2,480 | 87,5 |
| 88 H11 | 80 | 32 | 4 | 2,520 | 88H11 |
| 89,5 | 80 | 32 | 4 | 2,750 | 89,5 |
| 90 H11 | 80 | 32 | 4 | 2,755 | 90H11 |
| 91,5 | 90 | 40 | 4 | 2,850 | 91,5 |
| 92 H11 | 90 | 40 | 4 | 2,855 | 92H11 |
| 94,5 | 90 | 40 | 4 | 2,980 | 94,5 |
| 95 H11 | 90 | 40 | 4 | 2,985 | 95H11 |
| 97,5 | 90 | 40 | 4 | 3,280 | 97,5 |
| 98 H11 | 90 | 40 | 4 | 3,325 | 98H11 |
| 99,5 | 90 | 40 | 4 | 3,625 | 99,5 |
| 100 H11 | 90 | 40 | 4 | 3,630 | 100H11 |

**Workmanship:**

Material high-speed steel HSS. Taper clamping hole 1:30. Workmanship with 4 cutting edges with nominal size in tolerance H 11 or with dimension reduced of material allowance for follow precise working.

**Usability:**

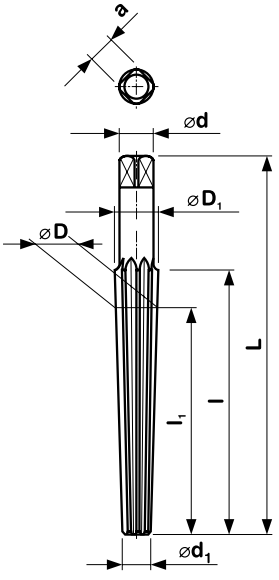
Tool to working prebored holes, cast holes or punched holes to obtain higher precision of holes. For clamping are used the arbors ČSN 241210 (DIN 217).

**Manufacturing Mode:** F

**Surface Treatment:** O

## HAND TAPER REAMERS 1 : 10

**PROFI** **HSS**




| ∅D /mm/ | L /mm/ | $l_1$ /mm/ | l /mm/ | ∅d /mm/ | a /mm/ | $(\varnothing D_1)$ /mm/ | $\varnothing d_1$ /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 100 | 60 | 70 | 10,0 | 8 | 11 | 6,0 | 4 | 0,035 | 10 |
| 16 | 120 | 70 | 80 | 12,5 | 10 | 17 | 11,0 | 6 | 0,092 | 16 |
| 24 | 160 | 100 | 110 | 20,0 | 16 | 25 | 18,0 | 6 | 0,304 | 24 |
| 32 | 200 | 120 | 140 | 25,0 | 20 | 34 | 25,0 | 8 | 0,690 | 32 |

**Workmanship:**

Material efficient high-speed steel HSS. Straight teeth uniform spacing.

**Usability:**

For hand and machine reaming of cavities for taper ends of shafts 1:10.

**Manufacturing Mode:** F

**Surface Treatment:** O

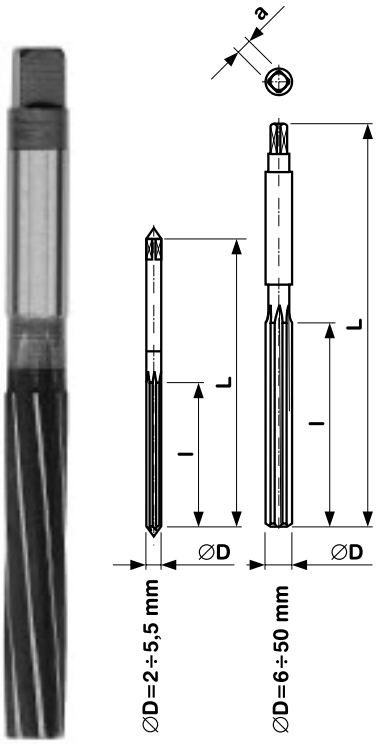
# Hand Reamers

## HAND REAMERS WITH STRAIGHT SHANK

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | a /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 2 | 50 | 25 | 1,60 | 4 | 0,001 | 2XX |
| 2 | 54 | 27 | 1,80 | 4 | 0,001 | 2XX |
| 2,5 | 58 | 29 | 2,00 | 4 | 0,002 | 2,5XX |
| 2,8 | 62 | 31 | 2,24 | 4 | 0,002 | 2,8XX |
| 3 | 62 | 31 | 2,24 | 4 | 0,003 | 3XX |
| 3,5 | 71 | 35 | 2,80 | 4 | 0,004 | 3,5XX |
| 4 | 76 | 38 | 3,15 | 4 | 0,005 | 4XX |
| 4,5 | 81 | 41 | 3,55 | 4 | 0,007 | 4,5XX |
| 5 | 87 | 44 | 4,00 | 4 | 0,010 | 5XX |
| 5,5 | 93 | 47 | 4,50 | 4 | 0,013 | 5,5XX |
| 6 | 93 | 47 | 4,50 | 6 | 0,017 | 6XX |
| 6,5 | 100 | 50 | 5,00 | 6 | 0,023 | 6,5XX |
| 7 | 107 | 54 | 5,60 | 6 | 0,028 | 7XX |
| 7,5 | 107 | 54 | 5,60 | 6 | 0,031 | 7,5XX |
| 8 | 115 | 58 | 6,30 | 6 | 0,036 | 8XX |
| 8,5 | 115 | 58 | 6,30 | 6 | 0,041 | 8,5XX |
| 9 | 124 | 62 | 7,10 | 6 | 0,051 | 9XX |
| 10 | 133 | 66 | 8,00 | 6 | 0,067 | 10XX |
| 11 | 142 | 71 | 9,00 | 6 | 0,087 | 11XX |
| 12 | 152 | 76 | 10,00 | 8 | 0,110 | 12XX |
| 13 | 152 | 76 | 10,00 | 8 | 0,130 | 13XX |
| 14 | 163 | 81 | 11,20 | 8 | 0,160 | 14XX |
| 15 | 163 | 81 | 11,20 | 8 | 0,190 | 15XX |
| 16 | 175 | 87 | 12,50 | 8 | 0,230 | 16XX |
| 17 | 175 | 87 | 12,50 | 8 | 0,260 | 17XX |
| 18 | 188 | 93 | 14,00 | 8 | 0,320 | 18XX |
| 19 | 188 | 93 | 14,00 | 8 | 0,370 | 19XX |
| 20 | 201 | 100 | 16,00 | 8 | 0,410 | 20XX |
| 21 | 201 | 100 | 16,00 | 8 | 0,460 | 21XX |
| 22 | 215 | 107 | 18,00 | 8 | 0,540 | 22XX |
| 23 | 215 | 107 | 18,00 | 8 | 0,570 | 23XX |
| 24 | 231 | 115 | 20,00 | 8 | 0,690 | 24XX |
| 25 | 231 | 115 | 20,00 | 8 | 0,730 | 25XX |
| 26 | 231 | 115 | 20,00 | 8 | 0,830 | 26XX |
| 27 | 247 | 124 | 22,40 | 10 | 0,940 | 27XX |
| 28 | 247 | 124 | 22,40 | 10 | 1,150 | 28XX |
| 30 | 247 | 124 | 22,40 | 10 | 1,210 | 30XX |
| 32 | 265 | 133 | 25,00 | 10 | 1,410 | 32XX |
| 34 | 284 | 142 | 28,00 | 10 | 1,710 | 34XX |
| 35 | 284 | 142 | 28,00 | 10 | 1,810 | 35XX |
| 36 | 284 | 142 | 28,00 | 10 | 1,900 | 36XX |
| 38 | 305 | 152 | 31,50 | 10 | 2,345 | 38XX |
| 40 | 305 | 152 | 31,50 | 10 | 2,530 | 40XX |
| 42 | 305 | 152 | 31,50 | 12 | 2,980 | 42XX |
| 44 | 326 | 163 | 35,50 | 12 | 3,380 | 44XX |
| 45 | 326 | 163 | 35,50 | 12 | 3,630 | 45XX |
| 46 | 326 | 163 | 35,50 | 12 | 3,850 | 46XX |
| 48 | 347 | 174 | 40,00 | 12 | 4,340 | 48XX |
| 50 | 347 | 174 | 40,00 | 12 | 4,650 | 50XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.




**Workmanship:**

Material high-speed steel HSS. Workmanship with straight flutes and uniform pitch. Diameter of the shank is equal with ∅D in-tolerance f8.

**Usability:**

Reaming clear holes by repairing and piece work for all non-ferrous metal and ferrous metal, their alloys and plastics.

**Manufacturing Mode:** F

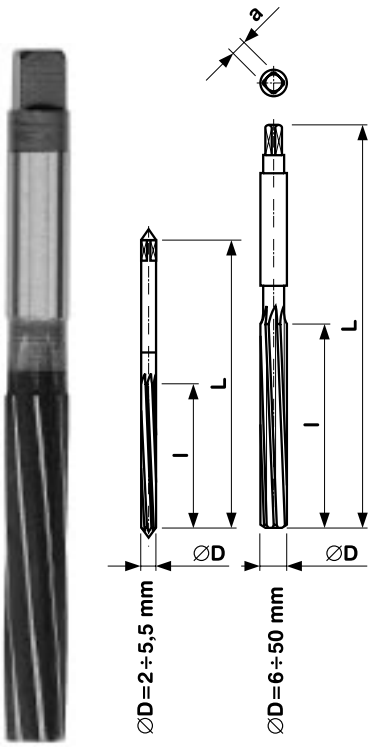
**Surface Treatment:** O

## HEND REAMERS WITH STRAIGHT SHANK

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | a /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 2 | 50 | 25 | 1,60 | 4 | 0,001 | 2XX |
| 2,2 | 54 | 27 | 1,80 | 4 | 0,001 | 2,2XX |
| 2,5 | 58 | 29 | 2,00 | 4 | 0,002 | 2,5XX |
| 2,8 | 62 | 31 | 2,24 | 4 | 0,002 | 2,8XX |
| 3 | 62 | 31 | 2,24 | 4 | 0,003 | 3XX |
| 3,5 | 71 | 35 | 2,80 | 4 | 0,004 | 3,5XX |
| 4 | 76 | 38 | 3,15 | 4 | 0,005 | 4XX |
| 4,5 | 81 | 41 | 3,55 | 4 | 0,007 | 4,5XX |
| 5 | 87 | 44 | 4,00 | 4 | 0,010 | 5XX |
| 5,5 | 93 | 47 | 4,50 | 4 | 0,013 | 5,5XX |
| 6 | 93 | 47 | 4,50 | 6 | 0,017 | 6XX |
| 6,5 | 100 | 50 | 5,00 | 6 | 0,023 | 6,5XX |
| 7 | 107 | 54 | 5,60 | 6 | 0,028 | 7XX |
| 7,5 | 107 | 54 | 5,60 | 6 | 0,031 | 7,5XX |
| 8 | 115 | 58 | 6,30 | 6 | 0,036 | 8XX |
| 8,5 | 115 | 58 | 6,30 | 6 | 0,041 | 8,5XX |
| 9 | 124 | 62 | 7,10 | 6 | 0,051 | 9XX |
| 10 | 133 | 66 | 8,00 | 6 | 0,067 | 10XX |
| 11 | 142 | 71 | 9,00 | 6 | 0,087 | 11XX |
| 12 | 152 | 76 | 10,00 | 8 | 0,110 | 12XX |
| 13 | 152 | 76 | 10,00 | 8 | 0,130 | 13XX |
| 14 | 163 | 81 | 11,20 | 8 | 0,160 | 14XX |
| 15 | 163 | 81 | 11,20 | 8 | 0,190 | 15XX |
| 16 | 175 | 87 | 12,50 | 8 | 0,230 | 16XX |
| 17 | 175 | 87 | 12,50 | 8 | 0,260 | 17XX |
| 18 | 188 | 93 | 14,00 | 8 | 0,320 | 18XX |
| 19 | 188 | 93 | 14,00 | 8 | 0,370 | 19XX |
| 20 | 201 | 100 | 16,00 | 8 | 0,410 | 20XX |
| 21 | 201 | 100 | 16,00 | 8 | 0,460 | 21XX |
| 22 | 215 | 107 | 18,00 | 8 | 0,540 | 22XX |
| 23 | 215 | 107 | 18,00 | 8 | 0,570 | 23XX |
| 24 | 231 | 115 | 20,00 | 8 | 0,690 | 24XX |
| 25 | 231 | 115 | 20,00 | 8 | 0,730 | 25XX |
| 26 | 231 | 115 | 20,00 | 8 | 0,830 | 26XX |
| 27 | 247 | 124 | 22,40 | 10 | 0,940 | 27XX |
| 28 | 247 | 124 | 22,40 | 10 | 1,150 | 28XX |
| 30 | 247 | 124 | 22,40 | 10 | 1,210 | 30XX |
| 32 | 265 | 133 | 25,00 | 10 | 1,410 | 32XX |
| 34 | 284 | 142 | 28,00 | 10 | 1,710 | 34XX |
| 35 | 284 | 142 | 28,00 | 10 | 1,810 | 35XX |
| 36 | 284 | 142 | 28,00 | 10 | 1,900 | 36XX |
| 38 | 305 | 152 | 31,50 | 10 | 2,345 | 38XX |
| 40 | 305 | 152 | 31,50 | 10 | 2,530 | 40XX |
| 42 | 305 | 152 | 31,50 | 12 | 2,980 | 42XX |
| 44 | 326 | 163 | 35,50 | 12 | 3,380 | 44XX |
| 45 | 326 | 163 | 35,50 | 12 | 3,630 | 45XX |
| 46 | 326 | 163 | 35,50 | 12 | 3,850 | 46XX |
| 48 | 347 | 174 | 40,00 | 12 | 4,340 | 48XX |
| 50 | 347 | 174 | 40,00 | 12 | 4,650 | 50XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.




**Workmanship:**

Material high-speed steel HSS. Workmanship with left hand helix 7° and uniform pitch. Diameter of the shank is equal with ∅D in tolerance f8.

**Usability:**

Reaming clear holes by repairing and piece work for all non-ferrous metal and ferrous metal, their alloys and plastics.

**Manufacturing Mode:** F

**Surface Treatment:** ○

# Hand Reamers

## ADJUSTABLE HAND REAMERS

**PROFI** **HCS**

| ∅D /mm/ | Max /mm/ | L /mm/ | l /mm/ | $l_1$ /mm/ | a /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|---|
| 8 | + 0,16 | 115 | 43 | 15 | 6,3 | 6 | 0,035 | 8 |
| 9 | + 0,16 | 124 | 47 | 15 | 7,1 | 6 | 0,050 | 9 |
| 10 | +0,16 | 133 | 51 | 15 | 8,0 | 6 | 0,070 | 10 |
| 11 | + 0,20 | 142 | 51 | 20 | 9,0 | 6 | 0,095 | 11 |
| 12 | + 0,20 | 152 | 56 | 20 | 10,0 | 8 | 0,110 | 12 |
| 13 | + 0,20 | 152 | 56 | 20 | 10,0 | 8 | 0,125 | 13 |
| 14 | + 0,20 | 163 | 61 | 20 | 11,2 | 8 | 0,160 | 14 |
| 15 | + 0,20 | 163 | 61 | 20 | 11,2 | 8 | 0,180 | 15 |
| 16 | + 0,20 | 175 | 62 | 25 | 12,5 | 8 | 0,215 | 16 |
| 17 | + 0,20 | 175 | 62 | 25 | 12,5 | 8 | 0,245 | 17 |
| 18 | + 0,20 | 188 | 68 | 25 | 14,0 | 8 | 0,295 | 18 |
| 19 | + 0,25 | 188 | 68 | 25 | 14,0 | 8 | 0,330 | 19 |
| 20 | + 025 | 201 | 75 | 25 | 16,0 | 8 | 0,385 | 20 |
| 21 | + 0,25 | 201 | 75 | 25 | 16,0 | 8 | 0,420 | 21 |
| 22 | + 0,25 | 215 | 82 | 25 | 18,0 | 8 | 0,490 | 22 |
| 24 | + 0,25 | 231 | 85 | 30 | 20,0 | 8 | 0,620 | 24 |
| 25 | + 0,25 | 231 | 85 | 30 | 20,0 | 8 | 0,670 | 25 |
| 26 | + 0,25 | 231 | 85 | 30 | 20,0 | 10 | 0,750 | 26 |
| 28 | + 0,25 | 247 | 94 | 30 | 22,4 | 10 | 0,960 | 28 |
| 30 | + 0,25 | 247 | 94 | 30 | 22,4 | 10 | 1,100 | 30 |
| 32 | + 0,30 | 265 | 98 | 35 | 25,0 | 10 | 1,390 | 32 |
| 34 | + 0,30 | 284 | 107 | 35 | 28,0 | 10 | 1,630 | 34 |
| 35 | + 0,30 | 284 | 107 | 35 | 28,0 | 10 | 1,730 | 35 |
| 36 | + 0,30 | 284 | 107 | 35 | 28,0 | 10 | 1,820 | 36 |
| 38 | + 0,30 | 305 | 112 | 40 | 31,5 | 10 | 2,350 | 38 |
| 40 | + 0,30 | 305 | 112 | 40 | 31,5 | 10 | 2,530 | 40 |
| 42 | + 0,30 | 305 | 112 | 40 | 31,5 | 12 | 2,690 | 42 |
| 44 | + 0,30 | 326 | 123 | 40 | 35,5 | 12 | 3,090 | 44 |
| 45 | + 0,30 | 326 | 123 | 40 | 35,5 | 12 | 3,230 | 45 |
| 46 | + 0,30 | 326 | 123 | 40 | 35,5 | 12 | 3,390 | 46 |
| 48 | + 0,30 | 347 | 134 | 40 | 40,0 | 12 | 3,970 | 48 |
| 50 | + 0,30 | 347 | 134 | 40 | 40,0 | 12 | 4,230 | 50 |

**Workmanship:**

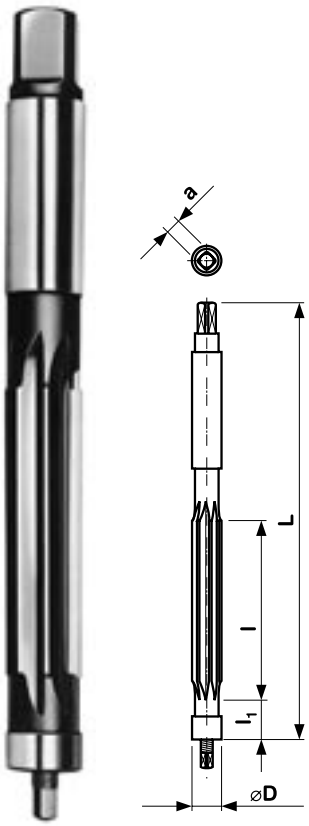
Material alloy tool steel HCS. Workmanship with straight flutes and non-uniform spacing. Guiding diameter in tolerance b11, shank f8.

**Usability:**

With expanding particle you can adjust nominal diameter of reamers to demanded size higher than ∅D, maximum see table. More frequent use at piece work and repairs in metal materials. Reamers are storaged in releasing state.

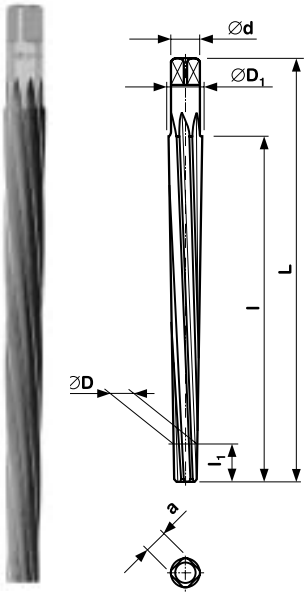
**Manufacturing Mode:** F

**Surface Treatment:** O



## HAND TAPER REAMERS 1 : 50

**PROFI** **HSS**




| ∅D /mm/ | L /mm/ | $l_1$ /mm/ | l /mm/ | ∅d /mm/ | a /mm/ | ($∅D_1$) | Even Teeth | kg | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 80 | 5 | 58 | 4,0 | 3,15 | 4,06 | 4 | 0,004 | 3A | 3B |
| 4 | 93 | 5 | 68 | 5,0 | 4,00 | 5,26 | 4 | 0,008 | 4A | 4B |
| 5 | 100 | 5 | 73 | 6,3 | 5,00 | 6,35 | 5 | 0,017 | 5A | 5B |
| 6 | 135 | 5 | 105 | 8,0 | 6,30 | 8,00 | 6 | 0,027 | 6A | 6B |
| 8 | 180 | 5 | 145 | 10,0 | 8,00 | 10,80 | 6 | 0,060 | 8A | 8B |
| 10 | 215 | 5 | 175 | 12,5 | 10,00 | 13,40 | 6 | 0,102 | 10A | 10B |
| 12 | 255 | 10 | 210 | 14,0 | 11,20 | 16,00 | 8 | 0,245 | 12A | 12B |
| 14 | 255 | 10 | 210 | 14,0 | 11,20 | 18,00 | 8 | 0,300 | 14A | 14B |
| 16 | 280 | 10 | 230 | 18,0 | 14,00 | 20,40 | 8 | 0,430 | 15A | 15B |
| 20 | 310 | 10 | 250 | 22,4 | 18,00 | 24,80 | 8 | 0,715 | 20A | 20B |
| 25 | 370 | 15 | 300 | 28,0 | 22,40 | 30,70 | 10 | 1,418 | 25A | 25B |
| 30 | 400 | 15 | 320 | 31,5 | 25,00 | 36,10 | 10 | 2,040 | 30A | 30B |

**Workmanship: Form A**

Material efficient high-speed steel HSS.

**Form B**

Material efficient high-speed steel HSS. Left hand helix 7°,tool size ∅D=2,0 mm is made with helping tool points 60º.

**Usability:**

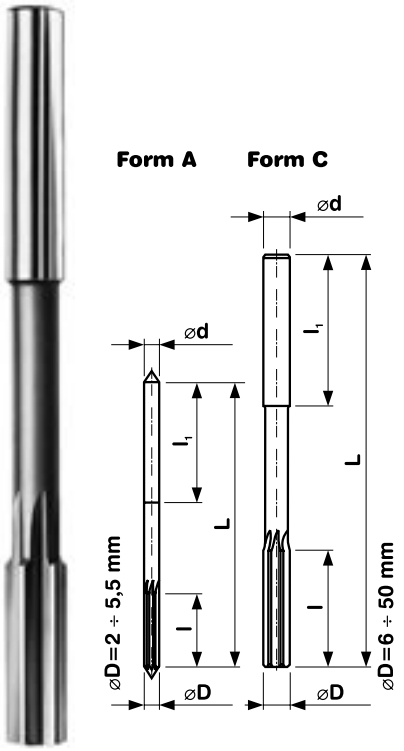
For hand reaming of holes for taper pins 1:50. By suitable clamping reamers can be used also for machine reaming.

**Manufacturing Mode:** F

**Surface Treatment:** O

## MACHINE REAMERS WITH STRIGHT SHANK

**PROFI** **HSS**




| ∅D /mm/ | L /mm/ | l /mm/ | $l_1$ /mm/ | ∅d h9 /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|
| 2 | 49 | 11 | 24 | 2,0 | 4 | 0,001 | 2XX |
| 2,2 | 53 | 12 | 26 | 2,2 | 4 | 0,001 | 2,2XX |
| 2,5 | 57 | 14 | 27 | 2,5 | 4 | 0,002 | 2,5XX |
| 2,8 | 61 | 15 | 28 | 2,8 | 6 | 0,003 | 2,8XX |
| 3 | 61 | 15 | 29 | 3,0 | 6 | 0,003 | 3XX |
| 3,2 | 65 | 16 | 30 | 3,2 | 6 | 0,004 | 3,2XX |
| 3,5 | 70 | 18 | 31 | 3,5 | 6 | 0,005 | 3,5XX |
| 4 | 75 | 19 | 32 | 4,0 | 6 | 0,006 | 4XX |
| 4,5 | 80 | 21 | 33 | 4,5 | 6 | 0,009 | 4,5XX |
| 5 | 86 | 23 | 34 | 5,0 | 6 | 0,011 | 5XX |
| 5,5 | 93 | 26 | 36 | 5,5 | 6 | 0,016 | 5,5XX |
| 6 | 93 | 26 | 36 | 6,0 | 6 | 0,020 | 6XX |
| 7 | 109 | 31 | 40 | 7,0 | 6 | 0,028 | 7XX |
| 8 | 117 | 33 | 42 | 8,0 | 6 | 0,035 | 8XX |
| 9 | 125 | 36 | 44 | 9,0 | 6 | 0,050 | 9XX |
| 10 | 133 | 38 | 46 | 10,0 | 6 | 0,064 | 10XX |
| 11 | 142 | 41 | 46 | 10,0 | 6 | 0,085 | 11XX |
| 12 | 151 | 44 | 46 | 10,0 | 8 | 0,100 | 12XX |
| 13 | 151 | 44 | 46 | 10,0 | 8 | 0,120 | 13XX |
| 14 | 160 | 47 | 50 | 12,5 | 8 | 0,160 | 14XX |
| 15 | 162 | 50 | 50 | 12,5 | 8 | 0,168 | 15XX |
| 16 | 170 | 52 | 50 | 12,5 | 8 | 0,180 | 16XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.

**Workmanship:**

Material efficient high-speed steel HSS. Straight teeth with non-uniform spacing.

**Usability:**

Machine reaming of holes in ferrous and non-ferrous metals, their alloys and plastics. Reamers are not suitable for reaming holes with longitudinal flutes.

**Manufacturing Mode:** V~Form A
F~Form C

**Surface Treatment:** O

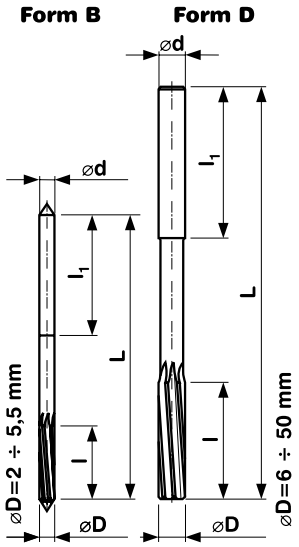
# Machine Reamers

## MACHINE REAMERS WITH STRAIGHT SHANK

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | $l_1$ /mm/ | ∅d h9 /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|
| 2 | 49 | 11 | 24 | 2,0 | 4 | 0,001 | 2XX |
| 2,2 | 53 | 12 | 26 | 2,2 | 4 | 0,001 | 2,2XX |
| 2,5 | 57 | 14 | 27 | 2,5 | 4 | 0,002 | 2,5XX |
| 2,8 | 61 | 15 | 28 | 2,8 | 6 | 0,003 | 2,8XX |
| 3 | 61 | 15 | 29 | 3,0 | 6 | 0,003 | 3XX |
| 3,2 | 65 | 16 | 30 | 3,2 | 6 | 0,004 | 3,2XX |
| 3,5 | 70 | 18 | 31 | 3,5 | 6 | 0,005 | 3,5XX |
| 4 | 75 | 19 | 32 | 4,0 | 6 | 0,006 | 4XX |
| 4,5 | 80 | 21 | 33 | 4,5 | 6 | 0,009 | 4,5XX |
| 5 | 86 | 23 | 34 | 5,0 | 6 | 0,011 | 5XX |
| 5,5 | 93 | 26 | 36 | 5,5 | 6 | 0,016 | 5,5XX |
| 6 | 93 | 26 | 36 | 6,0 | 6 | 0,020 | 6XX |
| 7 | 109 | 31 | 40 | 7,0 | 6 | 0,028 | 7XX |
| 8 | 117 | 33 | 42 | 8,0 | 6 | 0,035 | 8XX |
| 9 | 125 | 36 | 44 | 9,0 | 6 | 0,050 | 9XX |
| 10 | 133 | 38 | 46 | 10,0 | 6 | 0,064 | 10XX |
| 11 | 142 | 41 | 46 | 10,0 | 6 | 0,085 | 11XX |
| 12 | 151 | 44 | 46 | 10,0 | 8 | 0,100 | 12XX |
| 13 | 151 | 44 | 46 | 10,0 | 8 | 0,120 | 13XX |
| 14 | 160 | 47 | 50 | 12,5 | 8 | 0,160 | 14XX |
| 15 | 162 | 50 | 50 | 12,5 | 8 | 0,168 | 15XX |
| 16 | 170 | 52 | 50 | 12,5 | 8 | 0,180 | 16XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.




**Workmanship:**

Material efficient high-speed steel HSS. Left hand helix 7° with uniform spacing.

**Usatibity:**

Machine reaming of holes in ferrous and non-ferrous metals, their alloys and plastics.

**Manufacturing Mode:** **V~Form B**
**F~Form D**

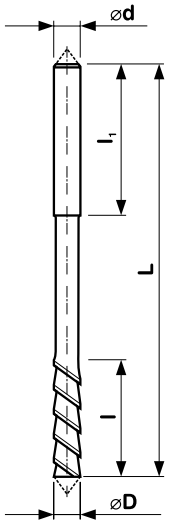
**Surface Treatment:** O

## QUICK-SPIRAL REAMERS WITH STRAIGHT SHANK

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | $l_1$ /mm/ | ∅d h9 /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|
| 3 | 61 | 15 | 28 | 3,0 | 2 | 0,003 | 3 |
| 4 | 75 | 19 | 32 | 4,0 | 2 | 0,006 | 4 |
| 5 | 86 | 23 | 34 | 5,0 | 2 | 0,011 | 5 |
| 6 | 93 | 26 | 36 | 6,0 | 2 | 0,016 | 6 |
| 7 | 109 | 31 | 40 | 7,0 | 2 | 0,028 | 7 |
| 8 | 117 | 33 | 42 | 8,0 | 2 | 0,035 | 8 |
| 9 | 125 | 36 | 44 | 9,0 | 2 | 0,050 | 9 |
| 10 | 133 | 38 | 46 | 10,0 | 2 | 0,064 | 10 |
| 11 | 142 | 41 | 46 | 10,0 | 2 | 0,085 | 11 |
| 12 | 151 | 44 | 46 | 10,0 | 2 | 0,100 | 12 |
| 13 | 151 | 44 | 46 | 10,0 | 2 | 0,120 | 13 |
| 14 | 160 | 47 | 50 | 12,5 | 3 | 0,160 | 14 |
| 15 | 162 | 50 | 50 | 12,5 | 3 | 0,168 | 15 |
| 16 | 170 | 52 | 50 | 12,5 | 3 | 0,180 | 16 |

Usually the tool is produced for holes with size tolerances H8.




**Workmanship:**

Material efficient high-speeed steel HSS. Teeth in left-hand spiral, tool sizes up to ∅D=5,0 mm are made with helping point.

**Usability:**

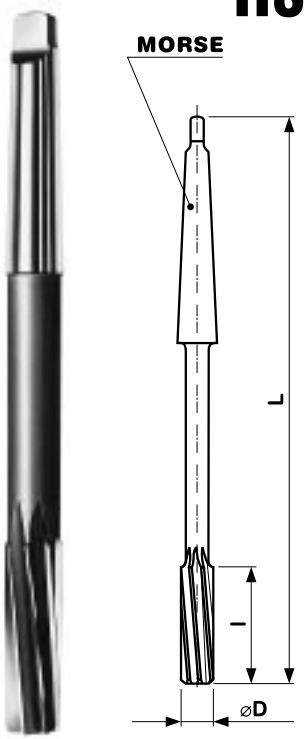
Suitable for reaming clear holes, deeper holes or interrupted holes in materials which make long chips, for example steels with strenght to 500 N/mm$^2$, copper alloys, aluminium alloys and thermoplastics.

**Manufacturing Mode:** **V (D<6mm)**
**F (D≥6mm)**

**Surface Treatment:** O

## MACHINE REAMERS WITH TAPER SHANK

**PROFI** **HSS**




| ⌀D /mm/ | L /mm/ | l /mm/ | MORSE | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 6 | 138 | 26 | 1 | 6 | 0,063 | 6XX |
| 7 | 150 | 31 | 1 | 6 | 0,068 | 7XX |
| 8 | 156 | 33 | 1 | 6 | 0,076 | 8XX |
| 9 | 162 | 36 | 1 | 6 | 0,085 | 9XX |
| 10 | 168 | 38 | 1 | 6 | 0,095 | 10XX |
| 11 | 175 | 41 | 1 | 6 | 0,107 | 11XX |
| 12 | 182 | 44 | 1 | 8 | 0,125 | 12XX |
| 13 | 182 | 44 | 1 | 8 | 0,133 | 13XX |
| 14 | 189 | 47 | 1 | 8 | 0,145 | 14XX |
| 15 | 204 | 50 | 2 | 8 | 0,265 | 15XX |
| 16 | 210 | 52 | 2 | 8 | 0,295 | 16XX |
| 17 | 214 | 54 | 2 | 8 | 0,325 | 17XX |
| 18 | 219 | 56 | 2 | 8 | 0,350 | 18XX |
| 19 | 223 | 58 | 2 | 8 | 0,370 | 19XX |
| 20 | 228 | 60 | 2 | 8 | 0,385 | 20XX |
| 21 | 232 | 62 | 2 | 8 | 0,415 | 21XX |
| 22 | 237 | 64 | 2 | 8 | 0,435 | 22XX |
| 23 | 241 | 66 | 2 | 8 | 0,455 | 23XX |
| 24 | 268 | 68 | 3 | 8 | 0,730 | 24XX |
| 25 | 268 | 68 | 3 | 8 | 0,790 | 25XX |
| 26 | 273 | 70 | 3 | 10 | 0,830 | 26XX |
| 27 | 277 | 71 | 3 | 10 | 0,850 | 27XX |
| 28 | 277 | 71 | 3 | 10 | 0,880 | 28XX |
| 29 | 281 | 73 | 3 | 10 | 0,920 | 29XX |
| 30 | 281 | 73 | 3 | 10 | 0,940 | 30XX |
| 31 | 285 | 75 | 3 | 10 | 0,965 | 31XX |
| 32 | 317 | 77 | 4 | 10 | 1,565 | 32XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.

**Workmanship:**
Material efficient high-speed steel HSS.Teeth in left-hand spiral 7° with uniform spacing.

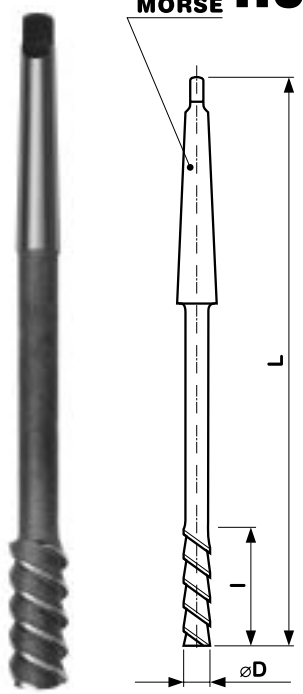
**Usability:**
Machine reaming of holes in ferrous and non-ferrous metals, their alloys and plastics.

**Manufacturing Mode:** F

**Surface Treatment:** O

## QUICK-SPIRAL REAMERS WITH TAPER SHANK

**PROFI** **HSS**




| ⌀D /mm/ | L /mm/ | l /mm/ | MORSE | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 6 | 138 | 26 | 1 | 2 | 0,063 | 6 |
| 7 | 150 | 31 | 1 | 2 | 0,068 | 7 |
| 8 | 156 | 33 | 1 | 2 | 0,076 | 8 |
| 9 | 162 | 36 | 1 | 2 | 0,085 | 9 |
| 10 | 168 | 38 | 1 | 2 | 0,095 | 10 |
| 11 | 175 | 41 | 1 | 2 | 0,107 | 11 |
| 12 | 182 | 44 | 1 | 2 | 0,125 | 12 |
| 13 | 182 | 44 | 1 | 2 | 0,133 | 13 |
| 14 | 189 | 47 | 1 | 3 | 0,145 | 14 |
| 15 | 204 | 50 | 2 | 3 | 0,265 | 15 |
| 16 | 210 | 52 | 2 | 3 | 0,295 | 16 |
| 17 | 214 | 54 | 2 | 3 | 0,325 | 17 |
| 18 | 219 | 56 | 2 | 3 | 0,350 | 18 |
| 19 | 223 | 58 | 2 | 3 | 0,370 | 19 |
| 20 | 228 | 60 | 2 | 3 | 0,385 | 20 |
| 21 | 232 | 62 | 2 | 3 | 0,415 | 21 |
| 22 | 237 | 64 | 2 | 3 | 0,435 | 22 |
| 23 | 241 | 66 | 2 | 3 | 0,455 | 23 |
| 24 | 268 | 68 | 3 | 3 | 0,730 | 24 |
| 25 | 268 | 68 | 3 | 3 | 0,790 | 25 |
| 26 | 273 | 70 | 3 | 3 | 0,830 | 26 |
| 28 | 277 | 71 | 3 | 3 | 0,880 | 28 |
| 30 | 281 | 73 | 3 | 3 | 0,940 | 30 |
| 32 | 317 | 77 | 4 | 3 | 1,565 | 32 |

Usually the tool is produced for holes with size tolerances H8.

**Workmanship:**
Material effient high-speed steel HSS. Teeth in left hand spiral.

**Usability:**
Suitable for reaming clear holes, deeper holes or interrupted holes in materials which make long chips, for example steels with strenght to 500 N/mm$^2$, copper alloys, aluminium alloys and thermoplastics.

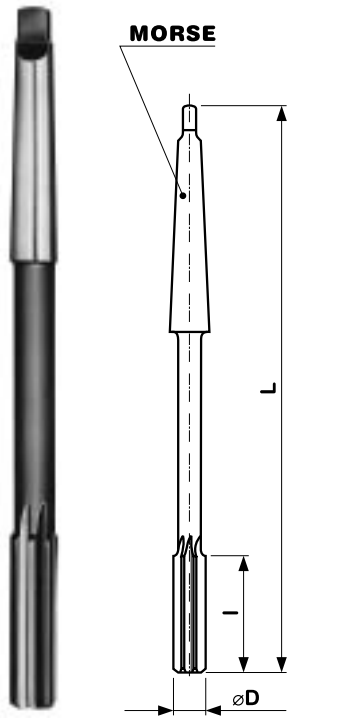
**Manufacturing Mode:** F

**Surface Treatment:** O

# Machine Reamers

## MACHINE REAMERS WITH STAPER SHANK

PROFI **HSS**




| ∅D /mm/ | L /mm/ | l /mm/ | MORSE | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 6 | 138 | 26 | 1 | 6 | 0,063 | 6XX |
| 7 | 150 | 31 | 1 | 6 | 0,068 | 7XX |
| 8 | 156 | 33 | 1 | 6 | 0,076 | 8XX |
| 9 | 162 | 36 | 1 | 6 | 0,085 | 9XX |
| 10 | 168 | 38 | 1 | 6 | 0,095 | 10XX |
| 11 | 175 | 41 | 1 | 6 | 0,107 | 11XX |
| 12 | 182 | 44 | 1 | 8 | 0,125 | 12XX |
| 13 | 182 | 44 | 1 | 8 | 0,133 | 13XX |
| 14 | 189 | 47 | 1 | 8 | 0,145 | 14XX |
| 15 | 204 | 50 | 2 | 8 | 0,265 | 15XX |
| 16 | 210 | 52 | 2 | 8 | 0,295 | 16XX |
| 17 | 214 | 54 | 2 | 8 | 0,325 | 17XX |
| 18 | 219 | 56 | 2 | 8 | 0,350 | 18XX |
| 19 | 223 | 58 | 2 | 8 | 0,370 | 19XX |
| 20 | 228 | 60 | 2 | 8 | 0,385 | 20XX |
| 21 | 232 | 62 | 2 | 8 | 0,415 | 21XX |
| 22 | 237 | 64 | 2 | 8 | 0,435 | 22XX |
| 23 | 241 | 66 | 2 | 8 | 0,455 | 23XX |
| 24 | 268 | 68 | 3 | 8 | 0,730 | 24XX |
| 25 | 268 | 68 | 3 | 8 | 0,790 | 25XX |
| 26 | 273 | 70 | 3 | 10 | 0,830 | 26XX |
| 27 | 277 | 71 | 3 | 10 | 0,850 | 27XX |
| 28 | 277 | 71 | 3 | 10 | 0,880 | 28XX |
| 29 | 281 | 73 | 3 | 10 | 0,920 | 29XX |
| 30 | 281 | 73 | 3 | 10 | 0,940 | 30XX |
| 31 | 285 | 75 | 3 | 10 | 0,965 | 31XX |
| 32 | 317 | 77 | 4 | 10 | 1,565 | 32XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.

**Workmanship:**
Material efficient high-speeed steel HSS. Straight teeth with non-uniform spacing.

**Usability:**
Machine reaming of holes in ferrous and non-ferrous metals, their alloys and plastics.

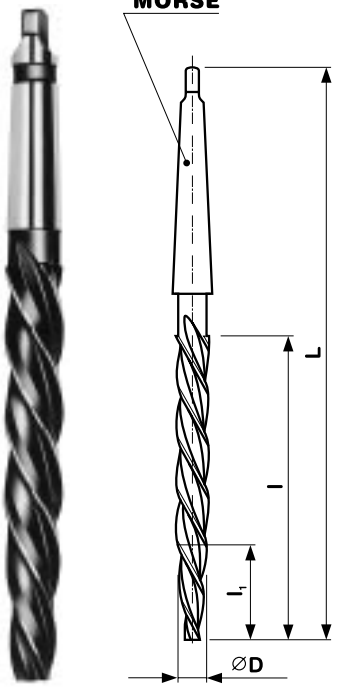
They are not suitable for reaming holes with longitudinal grooves.

**Manufacturing Mode:** F

**Surface Treatment:** O

## MACHINE BRIDGE REAMERS WITH STRAIGHT SHANK

PROFI **HSS**




| ∅D /mm/ | L /mm/ | l /mm/ | $l_1$ /mm/ | MORSE | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|
| 8,4 | 161 | 85 | 25 | 1 | 4 | 0,085 | 8,4 |
| 9,5 | 166 | 90 | 27 | 1 | 4 | 0,090 | 9,5 |
| 10 | 171 | 95 | 30 | 1 | 4 | 0,095 | 10 |
| 11 | 176 | 100 | 33 | 1 | 4 | 0,100 | 11 |
| 12 | 199 | 105 | 39 | 2 | 4 | 0,180 | 12 |
| 13 | 199 | 105 | 39 | 2 | 4 | 0,210 | 13 |
| 14 | 209 | 115 | 42 | 2 | 4 | 0,240 | 14 |
| 15 | 219 | 125 | 45 | 2 | 4 | 0,280 | 15 |
| 16 | 229 | 135 | 48 | 2 | 4 | 0,320 | 16 |
| 17 | 251 | 135 | 51 | 3 | 4 | 0,380 | 17 |
| 18 | 261 | 145 | 58 | 3 | 4 | 0,400 | 18 |
| 19 | 261 | 145 | 58 | 3 | 4 | 0,420 | 19 |
| 20 | 271 | 155 | 62 | 3 | 4 | 0,520 | 20 |
| 21 | 271 | 155 | 62 | 3 | 4 | 0,630 | 21 |
| 22 | 281 | 165 | 66 | 3 | 4 | 0,650 | 22 |
| 23 | 281 | 165 | 66 | 3 | 4 | 0,660 | 23 |
| 24 | 296 | 180 | 72 | 3 | 4 | 0,740 | 24 |
| 25 | 296 | 180 | 72 | 3 | 4 | 0,780 | 25 |
| 26 | 296 | 180 | 72 | 3 | 4 | 0,820 | 26 |
| 27 | 311 | 195 | 78 | 3 | 4 | 0,900 | 27 |
| 28 | 311 | 195 | 78 | 3 | 4 | 0,930 | 28 |
| 29 | 311 | 195 | 78 | 3 | 4 | 0,960 | 29 |
| 30 | 311 | 195 | 78 | 3 | 4 | 1,070 | 30 |
| 31 | 326 | 210 | 84 | 3 | 4 | 1,120 | 31 |
| 34 | 364 | 220 | 88 | 4 | 4 | 1,740 | 34 |
| 37 | 364 | 220 | 88 | 4 | 4 | 2,000 | 37 |

**Workmanship:**
Material efficient high-speed steel HSS. Teeth in left-hand spiral.

**Usability:**
Tools are determined for working set-over holes in metal sheets from variable steel types and alloys of non-ferrous metals and light metals. It elongs to holes for rivets and other bolts by mounting bridge constructions, kettles and vessels.

**Manufacturing Mode:** F

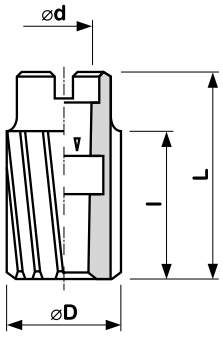
**Surface Treatment:** O

## SHELL REAMERS

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | ∅d /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 25 | 45 | 32 | 13 | 8 | 0,090 | 25XX |
| 26 | 45 | 32 | 13 | 10 | 0,100 | 26XX |
| 27 | 45 | 32 | 13 | 10 | 0,110 | 27XX |
| 28 | 45 | 32 | 13 | 10 | 0,120 | 28XX |
| 29 | 45 | 32 | 13 | 10 | 0,130 | 29XX |
| 30 | 45 | 32 | 13 | 10 | 0,140 | 30XX |
| 31 | 50 | 36 | 16 | 10 | 0,160 | 31XX |
| 32 | 50 | 36 | 16 | 10 | 0,170 | 32XX |
| 34 | 50 | 36 | 16 | 10 | 0,185 | 34XX |
| 35 | 50 | 36 | 16 | 10 | 0,200 | 35XX |
| 36 | 56 | 40 | 19 | 10 | 0,230 | 36XX |
| 38 | 56 | 40 | 19 | 10 | 0,260 | 38XX |
| 40 | 56 | 40 | 19 | 10 | 0,290 | 40XX |
| 42 | 56 | 40 | 19 | 12 | 0,330 | 42XX |
| 44 | 63 | 45 | 22 | 12 | 0,435 | 44XX |
| 45 | 63 | 45 | 22 | 12 | 0,455 | 45XX |
| 46 | 63 | 45 | 22 | 12 | 0,475 | 46XX |
| 48 | 63 | 45 | 22 | 12 | 0,495 | 48XX |
| 50 | 63 | 45 | 22 | 12 | 0,515 | 50XX |
| 52 | 71 | 50 | 27 | 12 | 0,640 | 52XX |
| 55 | 71 | 50 | 27 | 12 | 0,760 | 55XX |
| 58 | 71 | 50 | 27 | 12 | 0,830 | 58XX |
| 60 | 71 | 50 | 27 | 14 | 0,900 | 60XX |
| 62 | 80 | 56 | 32 | 14 | 0,970 | 62XX |
| 63 | 80 | 56 | 32 | 14 | 1,100 | 63XX |
| 65 | 80 | 56 | 32 | 14 | 1,160 | 64XX |
| 68 | 80 | 56 | 32 | 14 | 1,340 | 68XX |
| 70 | 80 | 56 | 32 | 14 | 1,500 | 70XX |
| 72 | 90 | 63 | 40 | 14 | 1,670 | 72XX |
| 75 | 90 | 63 | 40 | 14 | 1,810 | 75XX |
| 78 | 90 | 63 | 40 | 14 | 2,150 | 78XX |
| 80 | 90 | 63 | 40 | 14 | 2,240 | 80XX |
| 82 | 90 | 63 | 40 | 14 | 2,450 | 82XX |
| 85 | 90 | 63 | 40 | 14 | 2,590 | 82XX |
| 88 | 100 | 71 | 50 | 16 | 3,100 | 88XX |
| 90 | 100 | 71 | 50 | 16 | 3,170 | 90XX |
| 92 | 100 | 71 | 50 | 16 | 3,280 | 92XX |
| 95 | 100 | 71 | 50 | 16 | 3,430 | 95XX |
| 98 | 100 | 71 | 50 | 16 | 4,150 | 98XX |
| 100 | 100 | 71 | 50 | 16 | 4,170 | 100XX |

XX Usually the reamers are produced for holes with size tolerances H7 and H8, contingently according customer's wish.




**Workmanship:**

Material efficient high-speed steel HSS. Taper clamping hole 1:30. Teeth in left-hand spiral 7° with uniform spacing.

**Usability:**

Machine reaming of holes in ferrous and non-ferrous metals, their alloys and plastics. For clamping use arbors ČSN 24 1210 ((DIN 217).

**Manufacturing Mode:** F

**Surface Treatment:** O

# Machine Reamers

## SHELL REAMERS, STRAIGHT FLUTED

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | ∅d /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 25 | 45 | 32 | 13 | 8 | 0,090 | 25XX |
| 26 | 45 | 32 | 13 | 10 | 0,100 | 26XX |
| 27 | 45 | 32 | 13 | 10 | 0,110 | 27XX |
| 28 | 45 | 32 | 13 | 10 | 0,120 | 28XX |
| 29 | 45 | 32 | 13 | 10 | 0,130 | 29XX |
| 30 | 45 | 32 | 13 | 10 | 0,140 | 30XX |
| 31 | 50 | 36 | 16 | 10 | 0,160 | 31XX |
| 32 | 50 | 36 | 16 | 10 | 0,170 | 32XX |
| 34 | 50 | 36 | 16 | 10 | 0,185 | 34XX |
| 35 | 50 | 36 | 16 | 10 | 0,200 | 35XX |
| 36 | 56 | 40 | 19 | 10 | 0,230 | 36XX |
| 38 | 56 | 40 | 19 | 10 | 0,260 | 38XX |
| 40 | 56 | 40 | 19 | 10 | 0,290 | 40XX |
| 42 | 56 | 40 | 19 | 12 | 0,330 | 42XX |
| 44 | 63 | 45 | 22 | 12 | 0,435 | 44XX |
| 45 | 63 | 45 | 22 | 12 | 0,455 | 45XX |
| 46 | 63 | 45 | 22 | 12 | 0,475 | 46XX |
| 48 | 63 | 45 | 22 | 12 | 0,495 | 48XX |
| 50 | 63 | 45 | 22 | 12 | 0,515 | 50XX |
| 52 | 71 | 50 | 27 | 12 | 0,640 | 52XX |
| 55 | 71 | 50 | 27 | 12 | 0,760 | 55XX |
| 58 | 71 | 50 | 27 | 12 | 0,830 | 58XX |
| 60 | 71 | 50 | 27 | 14 | 0,900 | 60XX |
| 62 | 80 | 56 | 32 | 14 | 0,970 | 62XX |
| 63 | 80 | 56 | 32 | 14 | 1,100 | 63XX |
| 65 | 80 | 56 | 32 | 14 | 1,160 | 65XX |
| 68 | 80 | 56 | 32 | 14 | 1,340 | 68XX |
| 70 | 80 | 56 | 32 | 14 | 1,500 | 70XX |
| 72 | 90 | 63 | 40 | 14 | 1,670 | 72XX |
| 75 | 90 | 63 | 40 | 14 | 1,810 | 75XX |
| 78 | 90 | 63 | 40 | 14 | 2,150 | 78XX |
| 80 | 90 | 63 | 40 | 14 | 2,240 | 80XX |
| 82 | 90 | 63 | 40 | 14 | 2,450 | 82XX |
| 85 | 90 | 63 | 40 | 14 | 2,590 | 85XX |
| 88 | 100 | 71 | 50 | 16 | 3,100 | 88XX |
| 90 | 100 | 71 | 50 | 16 | 3,170 | 90XX |
| 92 | 100 | 71 | 50 | 16 | 3,280 | 92XX |
| 95 | 100 | 71 | 50 | 16 | 3,430 | 95XX |
| 98 | 100 | 71 | 50 | 16 | 4,150 | 98XX |
| 100 | 100 | 71 | 50 | 16 | 4,170 | 100XX |

XX Usually the reamers are produced for holes with size tolerances H7 and H8, contingently according customer's wish.

**Workmanship:**

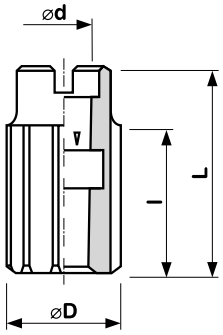
Material efficient high-speed steel HSS. Taper clamping hole 1:30. Straight teeth with non-uniform spacing.

**Manufacturing Mode:** F

**Surface Treatment:** O

**Usability:**

Machine reaming of holes in parts from all ferrous and non-ferrous metals, their alloys and plastics. For clamping use arbors ČSN 24 1210 (DIN 217). Reamers are not suitable for reaming holes with longitudinal flutes.

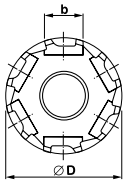


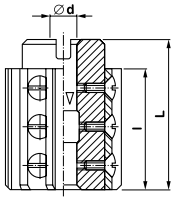
## SHELL BUILT-UP REAMERS

**PROFI** **HSS**

| ∅D /mm/ | L /mm/ | l /mm/ | ∅d /mm/ | b /mm/ | Pieces /ks/ | kg | |
|---|---|---|---|---|---|---|---|
| 100 | 90 | 71 | 40 | 20 | 8 | 3,540 | 100XX |
| 105 | 90 | 71 | 40 | 20 | 8 | 3,950 | 105XX |
| 110 | 90 | 71 | 40 | 20 | 8 | 4,390 | 110XX |
| 115 | 100 | 80 | 50 | 25 | 8 | 5,100 | 115XX |
| 120 | 100 | 80 | 50 | 25 | 8 | 5,640 | 120XX |
| 125 | 100 | 80 | 50 | 25 | 8 | 6,190 | 128XX |
| 130 | 100 | 80 | 50 | 20 | 10 | 6,900 | 130XX |
| 140 | 100 | 80 | 50 | 20 | 10 | 8,210 | 140XX |
| 150 | 100 | 80 | 50 | 20 | 10 | 9,500 | 150XX |

XX Reamers are produced for holes with size tolerance H7 and H8, contingently according customer's wish.




**Workmanship:**

Material of blades efficient high-speed steel HSS. Taper clamping hole 1:30. Body of reamers from constructional steel. Exchangeable blades are delivered also as semi-products self.

**Usability:**

Machine reaming in parts of all ferrous and non-ferrous metals, their alloys and plastics. For clamping use arbors ČSN 241210 (DIN 217).

**Manufacturing Mode:** F

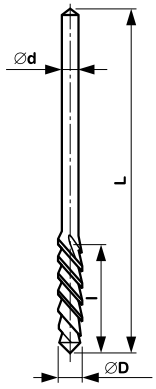
**Surface Treatment:** ○

## MACHINE HELICAL REAMERS WITH HELIX ANGLE 45°-50°

**PROFI** **HSS**

| ∅D /mm/ | l /mm/ | L /mm/ | ∅d h10 /mm/ | kg | |
|---|---|---|---|---|---|
| 1,0 | 6,5 | 40 | 0,99 | 0,0005 | 1XX |
| 1,1 | 6,5 | 40 | 1,09 | 0,0008 | 1,1XX |
| 1,2 | 6,5 | 40 | 1,19 | 0,0008 | 1,2XX |
| 1,3 | 6,5 | 40 | 1,29 | 0,0008 | 1,3XX |
| 1,4 | 6,5 | 40 | 1,39 | 0,001 | 1,4XX |
| 1,5 | 8 | 50 | 1,48 | 0,0012 | 1,5XX |
| 1,6 | 8 | 50 | 1,58 | 0,0015 | 1,6XX |
| 1,7 | 8 | 50 | 1,68 | 0,0015 | 1,7XX |
| 1,8 | 8 | 50 | 1,78 | 0,0018 | 1,8XX |
| 1,9 | 8 | 50 | 1,88 | 0,0018 | 1,9XX |
| 2,0 | 8 | 50 | 1,98 | 0,002 | 2XX |
| 2,2 | 12 | 60 | 2,18 | 0,0022 | 2,2XX |
| 2,5 | 12 | 60 | 2,48 | 0,0025 | 2,5XX |
| 2,8 | 12 | 60 | 2,78 | 0,0028 | 2,8XX |
| 3,0 | 12 | 60 | 2,98 | 0,003 | 3XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.




**Usability:**

For reaming holes in material with over 700 MPa strenght.

# Machine Reamers

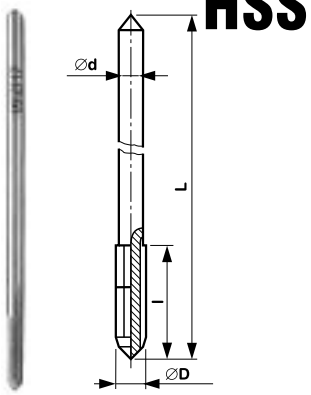
## STRAIGHT-FLUTED REAMERS FOR SMALL HOLES

| ∅D /mm/ | l /mm/ | L /mm/ | ∅d h10 /mm/ | kg | |
|---|---|---|---|---|---|
| 1,0 | 6,5 | 40 | 0,99 | 0,0005 | 1XX |
| 1,1 | 6,5 | 40 | 1,09 | 0,0008 | 1,1XX |
| 1,2 | 6,5 | 40 | 1,19 | 0,0008 | 1,2XX |
| 1,3 | 6,5 | 40 | 1,29 | 0,0008 | 1,3XX |
| 1,4 | 6,5 | 40 | 1,39 | 0,001 | 1,4XX |
| 1,5 | 8 | 50 | 1,48 | 0,0012 | 1,5XX |
| 1,6 | 8 | 50 | 1,58 | 0,0015 | 1,6XX |
| 1,7 | 8 | 50 | 1,68 | 0,0015 | 1,7XX |
| 1,8 | 8 | 50 | 1,78 | 0,0018 | 1,8XX |
| 1,9 | 8 | 50 | 1,88 | 0,0018 | 1,9XX |
| 2,0 | 8 | 50 | 1,98 | 0,002 | 2XX |

XX Reamers are produced for holes in size tolerances H7 and H8, contingently according customer's wish.

**Usability:**
For reaming holes in light materials and plastics.

PROFI **HSS**



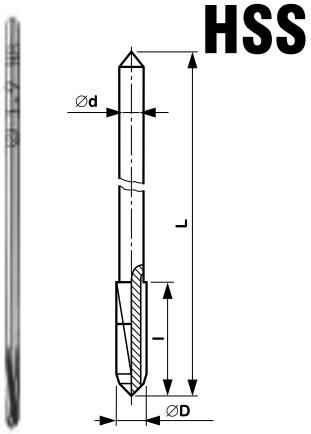

## SPIRAL-FLUTED REAMERS FOR SMALL HOLES

| ∅D /mm/ | l /mm/ | L /mm/ | ∅d h10 /mm/ | kg | |
|---|---|---|---|---|---|
| 1,0 | 6,5 | 40 | 0,99 | 0,0005 | 1XX |
| 1,1 | 6,5 | 40 | 1,09 | 0,0008 | 1,1XX |
| 1,2 | 6,5 | 40 | 1,19 | 0,0008 | 1,2XX |
| 1,3 | 6,5 | 40 | 1,29 | 0,0008 | 1,3XX |
| 1,4 | 6,5 | 40 | 1,39 | 0,001 | 1,4XX |
| 1,5 | 8 | 50 | 1,48 | 0,0012 | 1,5XX |
| 1,6 | 8 | 50 | 1,58 | 0,0015 | 1,6XX |
| 1,7 | 8 | 50 | 1,68 | 0,0015 | 1,7XX |
| 1,8 | 8 | 50 | 1,78 | 0,0018 | 1,8XX |
| 1,9 | 8 | 50 | 1,88 | 0,0018 | 1,9XX |
| 2,0 | 8 | 50 | 1,98 | 0,002 | 2XX |

XX Reamers are produced for holes in-size tolerances H7 and H8, contingently according customer's wish.

**Usability:**
For reaming holes in material with up to 800 MPa strenght.

PROFI **HSS**

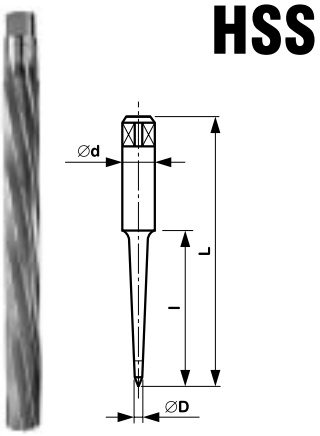



## TAPER PIN REAMERS

| ∅D /mm/ | l /mm/ | L /mm/ | ∅d h10 /mm/ | kg | |
|---|---|---|---|---|---|
| 0,6 | 20 | 38 | 3 | 0,0005 | 0,6 |
| 0,8 | 24 | 42 | 3 | 0,0007 | 0,8 |
| 1,0 | 28 | 48 | 3 | 0,001 | 1 |
| 1,6 | 38 | 58 | 3 | 0,002 | 1,6 |
| 2,0 | 45 | 65 | 3 | 0,003 | 2 |

**Usability:**
For reaming holes for taper pins 1:50.

PROFI **HSS**



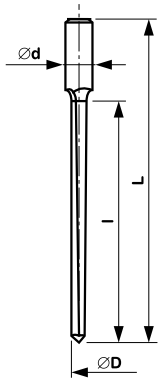
## TAPER REAMERS FOR NOZZLES

| ∅D /mm/ | l /mm/ | L /mm/ | ∅d /mm/ | kg | |
|---|---|---|---|---|---|
| 0,3 | 45 | 65 | 1,5 | 0,031 | 0,3 |
| 0,6 | 55 | 75 | 2 | 0,031 | 0,6 |
| 0,9 | 65 | 85 | 2,2 | 0,031 | 0,9 |

**PROFI** **HSS**

**Usability:**

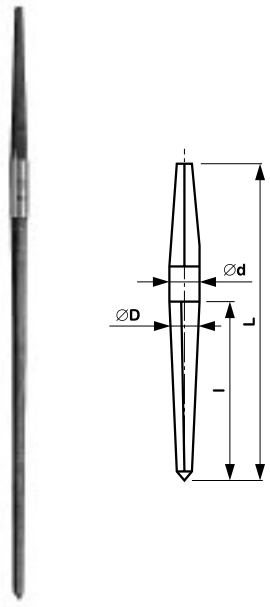
For reaming nozzle holes. Supplied sets. Each set consists of three single teamers and chuck.



## LONG HAND REAMERS
**FOR SMALL HLES WITH TAPER 1:100**

| ∅D /mm/ | l /mm/ | L /mm/ | ∅d h10 /mm/ | kg | |
|---|---|---|---|---|---|
| 0,3 | 18 | 45 | | 0,0002 | 0,3 |
| 0,4 | 18 | 45 | | 0,0004 | 0,4 |
| 0,5 | 25 | 53 | | 0,0006 | 0,5 |
| 0,6 | 25 | 53 | | 0,0007 | 0,6 |
| 0,7 | 32 | 60 | | 0,0008 | 0,7 |
| 0,8 | 32 | 60 | | 0,0009 | 0,8 |
| 0,9 | 40 | 75 | | 0,0009 | 0,9 |
| 1 | 40 | 75 | | 0,001 | 1 |
| 1,15 | 40 | 75 | | 0,002 | 1,15 |
| 1,3 | 50 | 85 | | 0,003 | 1,3 |
| 1,5 | 50 | 85 | | 0,004 | 1,5 |
| 1,75 | 50 | 85 | | 0,005 | 1,75 |
| 2 | 60 | 95 | | 0,006 | 2 |
| 2,25 | 60 | 95 | | 0,007 | 2,25 |
| 2,5 | 60 | 95 | | 0,007 | 2,5 |
| 2,75 | 75 | 110 | | 0,008 | 2,75 |
| 3 | 75 | 115 | | 0,009 | 3 |
| 3,25 | 75 | 115 | | 0,010 | 3,25 |
| 3,5 | 85 | 125 | | 0,015 | 3,5 |
| 3,75 | 85 | 125 | | 0,020 | 3,75 |
| 4 | 85 | 125 | | 0,025 | 4 |
| 4,25 | 95 | 140 | | 0,030 | 4,25 |
| 4,5 | 95 | 140 | | 0,035 | 4,5 |
| 5 | 95 | 145 | | 0,040 | 5 |

**PROFI** **HSS**




**Usability:**

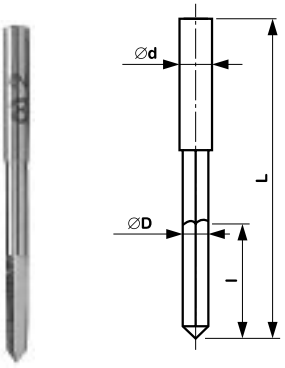
For reaming deep holes with taper 1:100.

# Machine Reamers

## MACHINE REAMERS
**FOR SMALL HOLES WITH TAPER 1:100**

**PROFI** **HSS**

| ∅D /mm/ | l /mm/ | L /mm/ | ∅d h10 /mm/ | kg | |
|---|---|---|---|---|---|
| 0,3 | 7 | 23 | 1 | 0,0002 | 0,3 |
| 0,4 | 7 | 23 | 1 | 0,0003 | 0,4 |
| 0,5 | 7 | 23 | 1 | 0,0004 | 0,5 |
| 0,6 | 7 | 23 | 1 | 0,0005 | 0,6 |
| 0,7 | 7 | 23 | 1 | 0,0006 | 0,7 |
| 0,8 | 8 | 25 | 1,5 | 0,0007 | 0,8 |
| 0,9 | 8 | 25 | 1,5 | 0,0008 | 0,9 |
| 1 | 8 | 25 | 1,5 | 0,0009 | 1, |
| 1,1 | 8 | 25 | 1,5 | 0,001 | 1,1 |
| 1,2 | 8 | 25 | 1,5 | 0,002 | 1,2 |
| 1,3 | 8 | 25 | 1,5 | 0,003 | 1,3 |
| 1,4 | 8 | 25 | 1,5 | 0,004 | 1,4 |
| 1,5 | 10 | 30 | 2,2 | 0,005 | 1,5 |
| 1,6 | 10 | 30 | 2,2 | 0,006 | 1,6 |
| 1,7 | 10 | 30 | 2,2 | 0,007 | 1,7 |
| 1,8 | 10 | 30 | 2,2 | 0,008 | 1,8 |
| 1,9 | 10 | 30 | 2,2 | 0,009 | 1,9 |
| 2 | 10 | 30 | 2,2 | 0,010 | 2 |
| 2,3 | 12 | 34 | 2,2 | 0,011 | 2,3 |
| 2,6 | 12 | 34 | 2,2 | 0,012 | 2,6 |
| 3 | 12 | 34 | 2,2 | 0,013 | 3 |
| 3,5 | 13 | 40 | 2,6 | 0,015 | 3,5 |
| 4 | 13 | 40 | 2,6 | 0,020 | 4 |

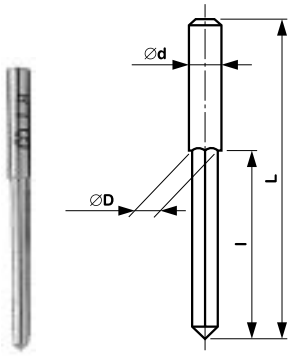



**Usability:**
For machine reaming small holes with taper 1:100.

## FINISHINIG REAMERS
**FOR SMALL HOLES WITH TAPER 1:100**

**PROFI** **HSS**

| ∅D /mm/ | l /mm/ | L /mm/ | Number of teeth | ∅d /mm/ | kg | |
|---|---|---|---|---|---|---|
| 0,3 | 13 | 23 | 1 | 1 | 0,0001 | 0,3 |
| 0,4 | 13 | 23 | 1 | 1 | 0,0001 | 0,4 |
| 0,5 | 13 | 23 | 1 | 1 | 0,0002 | 0,5 |
| 0,6 | 13 | 23 | 1 | 1 | 0,0002 | 0,6 |
| 0,7 | 13 | 23 | 1 | 1 | 0,0003 | 0,7 |
| 0,8 | 15 | 25 | 1 | 1,5 | 0,0003 | 0,8 |
| 0,9 | 15 | 25 | 1 | 1,5 | 0,0004 | 0,9 |
| 1,0 | 15 | 25 | 1 | 1,5 | 0,001 | 1 |
| 1,1 | 15 | 25 | 2 | 1,5 | 0,001 | 1,1 |
| 1,2 | 15 | 25 | 2 | 1,5 | 0,002 | 1,2 |
| 1,3 | 15 | 25 | 2 | 1,5 | 0,002 | 1,3 |
| 1,4 | 15 | 25 | 2 | 1,5 | 0,003 | 1,4 |
| 1,5 | 18 | 30 | 2 | 2,2 | 0,003 | 1,5 |
| 1,6 | 18 | 30 | 2 | 2,2 | 0,004 | 1,6 |
| 1,7 | 18 | 30 | 2 | 2,2 | 0,004 | 1,7 |
| 1,8 | 18 | 30 | 2 | 2,2 | 0,005 | 1,8 |
| 1,9 | 18 | 30 | 2 | 2,2 | 0,006 | 1,9 |
| 2,0 | 18 | 30 | 2 | 2,2 | 0,007 | 2 |
| 2,1 | 18 | 30 | 3 | 2,2 | 0,008 | 2,1 |
| 2,2 | 18 | 30 | 3 | 2,2 | 0,009 | 2,2 |
| 2,3 | 22 | 34 | 3 | 2,2 | 0,010 | 2,3 |
| 2,4 | 22 | 34 | 3 | 2,2 | 0,011 | 2,4 |
| 2,5 | 22 | 34 | 3 | 2,2 | 0,012 | 2,5 |
| 2,6 | 22 | 34 | 3 | 2,2 | 0,013 | 2,6 |
| 2,7 | 22 | 34 | 3 | 2,2 | 0,014 | 2,7 |
| 2,8 | 22 | 34 | 3 | 2,2 | 0,015 | 2,8 |
| 2,9 | 22 | 34 | 3 | 2,2 | 0,016 | 2,9 |
| 3,0 | 22 | 34 | 3 | 2,2 | 0,017 | 3 |
| 3,1 | 25 | 40 | 3 | 2,6 | 0,019 | 3,1 |
| 3,2 | 25 | 40 | 3 | 2,6 | 0,020 | 3,2 |
| 3,3 | 25 | 40 | 3 | 2,6 | 0,021 | 3,3 |
| 3,4 | 25 | 40 | 3 | 2,6 | 0,022 | 3,4 |
| 3,5 | 25 | 40 | 3 | 2,6 | 0,024 | 3,5 |
| 3,6 | 25 | 40 | 3 | 2,6 | 0,025 | 3,6 |
| 3,7 | 25 | 40 | 3 | 2,6 | 0,026 | 3,7 |
| 3,8 | 25 | 40 | 3 | 2,6 | 0,030 | 3,8 |
| 3,9 | 25 | 40 | 3 | 2,6 | 0,035 | 3,9 |
| 4,0 | 25 | 40 | 3 | 2,6 | 0,040 | 4 |



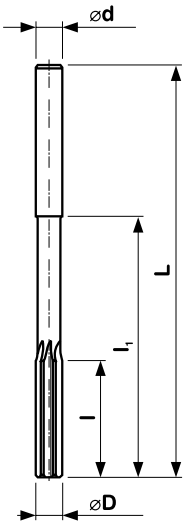

**Usability:**
For machine reaming of small holes with taper 1:100.

# Machine Reamers with Carbide Cutting Lips

## MACHINE REAMERS WITH CARBIDE K10 CUTTING LIPS

**PROFI**

# SK - K10




| ∅D H7, H8 /mm/ | ∅d h6 /mm/ | L /mm/ | $l_1$ /mm/ | l /mm/ | Number of teeth | |
|---|---|---|---|---|---|---|
| 5,0 | 5 | 90 | 60 | 16 | 4 | 5 |
| 6,0 | 6 | 100 | 70 | 16 | 4 | 6 |
| 7,0 | 7 | 100 | 70 | 16 | 4 | 7 |
| 8,0 | 8 | 100 | 70 | 16 | 4 | 8 |
| 9,0 | 9 | 110 | 80 | 19 | 4 | 9 |
| 10,0 | 10 | 110 | 80 | 19 | 4 | 10 |
| 11,0 | 10 | 125 | 85 | 19 | 4 | 11 |
| 12,0 | 10 | 125 | 85 | 19 | 6 | 12 |
| 13,0 | 10 | 135 | 95 | 19 | 6 | 13 |
| 14,0 | 12,5 | 145 | 95 | 19 | 6 | 14 |
| 15,0 | 12,5 | 150 | 100 | 22 | 6 | 15 |
| 16,0 | 12,5 | 150 | 100 | 22 | 6 | 16 |
| 17,0 | 14 | 150 | 100 | 22 | 6 | 17 |
| 18,0 | 14 | 160 | 110 | 22 | 6 | 18 |
| 19,0 | 16 | 165 | 110 | 22 | 6 | 19 |
| 20,0 | 16 | 165 | 110 | 22 | 6 | 20 |

**Workmanship:**

Design like ČSN 221370.

Straight fluted – asymmetric division, right-hand cutting, straight shank.

Reamers telerance H7, H8.

**Usability:**

Machine reaming of precision holes, when very hight tool life is required. Particularly suitable for reaming of very hard and extremely abrasive naterials

## CUTTING CONDITION FOR MACHINE REAMERS WITH CARBIDE LIPS K 10

| Material | Pevn. mat. N/mm² strenght | cutting speed (m/min) | | Forward feed (mm/ r.p.m.) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | without cuting | couting | do ∅10 /mm/ | do ∅10÷15 /mm/ | do ∅15÷25 /mm/ | do ∅25÷32 /mm/ | do ∅32÷36 /mm/ | do ∅36÷50 /mm/ | do ∅50÷52 /mm/ |
| Structural steel<br>Machine steel | 400 | 8÷10 | 30÷60 | 0,15÷0,3 | 0,25÷0,4 | 0,3÷0,5 | 0,4÷0,6 | 0,5÷0,8 | 0,6÷0,9 | 0,7÷1,1 |
| Plain carbon stell<br>Cast steel | 600 | 7÷9 | 25÷55 | 0,1÷0,3 | 0,2÷0,35 | 0,25÷0,4 | 0,3÷0,5 | 0,4÷0,7 | 0,5÷0,8 | 0,6÷1,0 |
| Alloyed steel<br>Cast steel | 900 | 5÷7 | 15÷35 | 0,1÷0,3 | 0,2÷0,35 | 0,25÷0,4 | 0,3÷0,5 | 0,4÷0,7 | 0,5÷0,8 | 0,6÷1,0 |
| Cast steel, ocelolitina 1200<br>Tool steel | | 4÷6 | 9÷20 | 0,1÷0,25 | 0,2÷0,3 | 0,25÷0,35 | 0,3÷0,4 | 0,4÷0,6 | 0,5÷0,7 | 0,6÷0,9 |
| Cast iron | HB<200 | 10÷20 | 12÷35 | 0,1÷0,2 | 0,2÷0,3 | 0,3÷0,4 | 0,4÷0,5 | 0,5÷0,6 | 0,6÷0,7 | 0,65÷0,75 |
| Cast iron | HB>200 | 8÷16 | 10÷30 | 0,1÷0,2 | 0,15÷0,3 | 0,25÷0,4 | 0,35÷0,5 | 0,45÷0,6 | 0,55÷0,7 | 0,6÷0,75 |
| Bronze | 110 HB | 10÷20 | - | 0,1÷0,3 | 0,2÷0,4 | 0,25÷0,5 | 0,3÷0,6 | 0,4÷0,8 | 0,5÷0,9 | 0,6÷1,0 |
| Aluminium<br>Aluminium alloy | 90 HB | 15÷40 | - | 0,2÷0,4 | 0,3÷0,5 | 0,4÷0,7 | 0,5÷0,8 | 0,6÷1,0 | 0,7÷1,2 | 0,8÷1,4 |

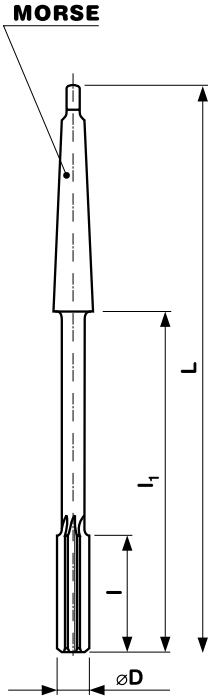
# Machine Reamers with Carbide Cutting Lips

| ∅D H7, H8 /mm/ | L /mm/ | $l_1$ /mm/ | l /mm/ | MORSE | Number of teeth | |
|---|---|---|---|---|---|---|
| 5,0 | 130 | 63 | 16 | 1 | 4 | 5 |
| 6,0 | 130 | 63 | 16 | 1 | 4 | 6 |
| 7,0 | 130 | 63 | 16 | 1 | 4 | 7 |
| 8,0 | 130 | 63 | 16 | 1 | 4 | 8 |
| 9,0 | 140 | 73 | 19 | 1 | 4 | 9 |
| 10,0 | 140 | 73 | 19 | 1 | 4 | 10 |
| 11,0 | 150 | 83 | 19 | 1 | 6 | 11 |
| 12,0 | 150 | 83 | 19 | 1 | 6 | 12 |
| 13,0 | 160 | 93 | 19 | 1 | 6 | 13 |
| 14,0 | 160 | 93 | 19 | 1 | 6 | 14 |
| 15,0 | 180 | 99 | 22 | 1 | 6 | 15 |
| 16,0 | 180 | 99 | 22 | 2 | 6 | 16 |
| 17,0 | 180 | 99 | 22 | 2 | 6 | 17 |
| 18,0 | 190 | 109 | 22 | 2 | 6 | 18 |
| 19,0 | 190 | 109 | 22 | 2 | 6 | 19 |
| 20,0 | 190 | 109 | 22 | 2 | 6 | 20 |
| 22,0 | 200 | 119 | 22 | 2 | 6 | 22 |
| 24,0 | 230 | 130 | 22 | 2 | 6 | 24 |
| 25,0 | 230 | 130 | 22 | 3 | 6 | 25 |
| 26,0 | 240 | 140 | 25 | 3 | 6 | 26 |
| 28,0 | 240 | 140 | 25 | 3 | 6 | 28 |
| 30,0 | 250 | 150 | 25 | 3 | 6 | 30 |
| 32,0 | 250 | 150 | 25 | 3 | 6 | 32 |
| 33,0 | 250 | 150 | 30 | 3 | 8 | 33 |
| 34,0 | 250 | 150 | 30 | 3 | 8 | 34 |
| 35,0 | 250 | 150 | 30 | 3 | 8 | 35 |
| 36,0 | 250 | 150 | 30 | 3 | 8 | 36 |
| 38,0 | 250 | 150 | 30 | 3 | 8 | 38 |
| 40,0 | 250 | 150 | 30 | 3 | 10 | 40 |
| 42,0 | 250 | 150 | 30 | 3 | 10 | 42 |
| 44,0 | 300 | 176 | 30 | 4 | 12 | 44 |
| 45,0 | 300 | 176 | 30 | 4 | 12 | 45 |
| 46,0 | 300 | 176 | 30 | 4 | 12 | 46 |
| 47,0 | 300 | 176 | 30 | 4 | 12 | 47 |
| 48,0 | 300 | 176 | 30 | 4 | 12 | 48 |
| 50,0 | 300 | 176 | 30 | 4 | 12 | 50 |
| 52,0 | 300 | 176 | 30 | 4 | 12 | 52 |

**MACHINE REAMERS WITH CARBIDE K10 CUTTING LIPS**

**PROFI**

# SK - K10




**Workmanship:**

Design like ČSN 221371.

Straight fluted – asymmetric division., right-hand cutting, Morse taper shank.

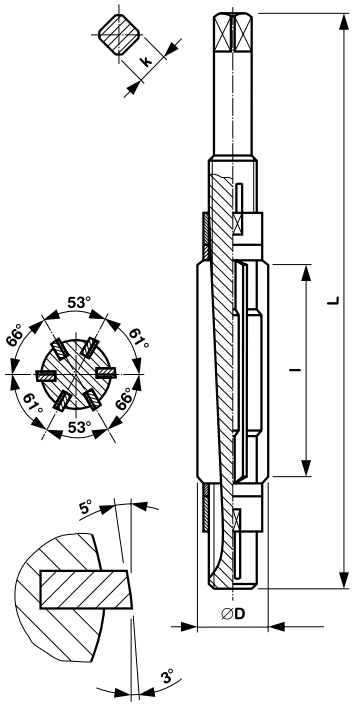
Reamers telerance H7, H8.

**Usability:**

Machine reaming of precision holes, when very hight tool life is required. Particularly suitable for reaming of very hard and extremely abrasive naterials

## REAMERS WITHOUT GUIDE BUSH

| Range /mm/ | ange /inch/ | l /mm/ | L /mm/ | k /mm/ | D /mm/ | kg/ | |
|---|---|---|---|---|---|---|---|
| 7,60÷8,50 | 19/64÷21/64 | 26 | 90 | 4 | 5 | 0,03 | 7,60 - 8,50 |
| 8,40÷9,40 | 21/64÷3/8 | 30 | 95 | 4 | 5 | 0,03 | 8,40 - 9,40 |
| 9,30÷10,40 | 3/8÷13/32 | 33 | 105 | 4,5 | 5,6 | 0,04 | 9,30 - 10,40 |
| 10,25÷11,45 | 13/32÷29/64 | 36 | 110 | 5 | 6,3 | 0,05 | 10,25 - 11,45 |
| 11,30÷12,65 | 29/64÷1/2 | 41 | 120 | 5,6 | 7,1 | 0,07 | 11,30 - 12,65 |
| 12,50÷14,00 | 1/2÷35/64 | 46 | 135 | 6,3 | 8 | 0,10 | 12,50 - 14,00 |
| 13,75÷15,25 | 35/64÷19/32 | 50 | 145 | 7,1 | 9 | 0,15 | 13,75 - 15,25 |
| 15,00÷16,70 | 19/32÷21/32 | 54 | 155 | 8 | 10 | 0,17 | 15,00 - 16,70 |
| 16,50÷18,40 | 21/32÷23/32 | 59 | 170 | 9 | 11,2 | 0,23 | 16,50 - 18,40 |
| 18,25÷20,25 | 23/32÷25/32 | 64 | 185 | 10 | 12,5 | 0,31 | 18,25 - 20,25 |
| 19,75÷22,00 | 25/32÷27/32 | 71 | 200 | 11,2 | 14 | 0,42 | 19,75 - 22,00 |
| 21,50÷24,00 | 27/32÷15/16 | 76 | 215 | 11,2 | 14 | 0,51 | 21,50 - 24,00 |
| 23,75÷26,60 | 15/16÷1 3/64 | 84 | 240 | 12,5 | 16 | 0,71 | 23,75 - 26,60 |
| 26,50÷29,75 | 1 3/64÷1 11/64 | 93 | 265 | 14 | 18 | 0,97 | 26,50 - 29,75 |
| 29,50÷33,00 | 1 11/64÷1 9/32 | 105 | 295 | 16 | 20 | 1,32 | 29,50 - 33,00 |
| 32,50÷36,50 | 1 9/32÷1 7/16 | 116 | 320 | 18 | 22,4 | 1,89 | 32,50 - 36,50 |
| 36,00÷40,40 | 1 7/16÷1 19/32 | 127 | 355 | 20 | 25 | 2,39 | 36,00 - 40,40 |
| 40,00÷45,00 | 1 19/32÷1 3/4 | 143 | 390 | 22,4 | 28 | 3,96 | 40,00 - 45,00 |
| 44,50÷50,00 | 1 3/4÷1 31/32 | 161 | 435 | 25 | 31,5 | 4,76 | 44,50 - 50,00 |
| 49,50÷55,00 | 1 31/32÷2 5/32 | 161 | 435 | 28 | 33,5 | 5,64 | 49,50 - 55,00 |
| 54,50÷60,00 | 2 5/32÷2 11/32 | 161 | 435 | 31,5 | 40 | 6,75 | 54,50 - 60,00 |




Adjustable hend reamers are used finishing machine cutting aperation of cylindrical holes. The holes have pracise diametric form and smooth surface. Diameter of hand teamer is variable within the range show in table. Adjusted diameter is meassured on pair of opposite knives. The knives of reamers are usually supplied with geometry suitable for machining of grey cast iron and bronz.

**Delivery:**

Adjustable hand reamers are individually in carton or in sets in wooden caskets deluvered.

## CASKET OF REAMERS
**- WITHOUT GUIDE BUSH**

| Range | Content of the casket | Dimensions of casket | kg/ | |
|---|---|---|---|---|
| 10,25÷33,00 | 12 | 470×280×60 | 5,8 | 10,25-33 |
| 13,75÷24,00 | 6 | 260×230×55 | 2,3 | 13,75-24 |

# Reamers with guide bush

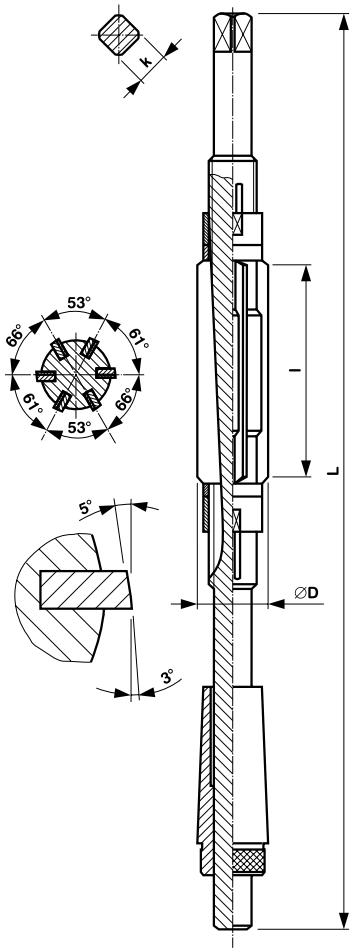
| Range /mm/ | Range /inch/ | l /mm/ | L /mm/ | k /mm/ | D /mm/ | | |
|---|---|---|---|---|---|---|---|
| 10,25÷11,45 | 13/32÷29/64 | 38 | 165 | 5 | 6,3 | 0,11 | 10,25 - 11,45 |
| 11,30÷12,65 | 29/64÷1/2 | 42 | 180 | 5,6 | 7,1 | 0,14 | 11,30 - 12,65 |
| 12,50÷14,00 | 1/2÷35/64 | 47,5 | 200 | 6,3 | 8 | 0,19 | 12,50 - 14,00 |
| 13,75÷15,25 | 35/64÷19/32 | 51 | 220 | 7,1 | 9 | 0,25 | 13,75 - 15,25 |
| 15,00÷16,70 | 19/32÷21/32 | 55 | 240 | 8 | 10 | 0,31 | 15,00 - 16,70 |
| 16,50÷18,40 | 21/32÷23/32 | 60 | 260 | 9 | 11,2 | 0,42 | 16,50 - 18,40 |
| 18,25÷20,25 | 23/32÷25/32 | 65,5 | 290 | 10 | 12,5 | 0,53 | 18,25 - 20,25 |
| 19,75÷22,00 | 25/32÷27/32 | 71 | 310 | 11,2 | 14 | 0,56 | 19,75 - 22,00 |
| 21,50÷24,00 | 27/32÷15/16 | 77 | 340 | 11,2 | 14 | 0,69 | 21,50 - 24,00 |
| 23,75÷26,60 | 15/16÷1 3/64 | 85 | 375 | 12,5 | 16 | 0,91 | 23,75 - 26,60 |
| 26,50÷29,75 | 1 3/64÷1 11/64 | 95 | 420 | 14 | 18 | 1,23 | 26,50 - 29,75 |
| 29,50÷33,00 | 1 11/64÷1 9/32 | 95 | 470 | 16 | 20 | 1,71 | 29,50 - 33,00 |
| 32,50÷36,50 | 1 9/32÷1 7/16 | 117 | 510 | 18 | 22,4 | 2,31 | 32,50 - 36,50 |
| 36,00÷40,40 | 1 7/16÷1 19/32 | 129 | 570 | 20 | 25 | 3,10 | 36,00 - 40,40 |
| 40,00÷45,00 | 1 19/32÷1 3/4 | 144 | 630 | 22,4 | 28 | 4,30 | 40,00 - 45,00 |

Adjustable hend reamers are used finishing machine cutting aperation of cylindrical holes. The holes have pracise diametric form and smooth surface. Guide bushes secure correct placing of hand reamer into the hole. Diameter of hand teamer is variable within the range show in table. Adjusted diameter is meassured on pair of opposite knives. The knives of reamers are usually supplied with geometry suitable for machining of grey cast iron and bronz.

**Delivery:**

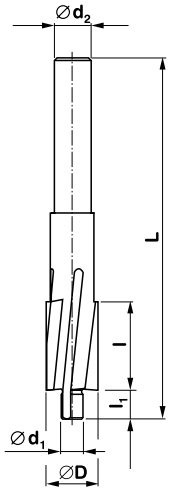
Adjustable hand reamers are individually in carton or in sets in wooden caskets deluvered.





## COUNTERBORES WITH STRAIGHT SHANK AND FIXED PILOT

**PROFI** **HSS**




| ∅Dz9 /mm/ | ∅d1e8 /mm/ | ∅d2h9 /mm/ | L /mm/ | l /mm/ | l1 /mm/ | Screw Thread | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|---|---|
| 4,3 | 2,2 | 4,3 | 56 | 10 | 3 | M2 | 4 | 0,005 | 4,3×2,2 |
| 4,3 | *1,6 | 4,3 | 56 | 10 | 3 | M2 | 4 | 0,005 | 4,3×1,6 |
| 5 | 2,7 | 5,0 | 56 | 10 | 3 | M2,5 | 4 | 0,006 | 5×2,7 |
| 5 | *2,05 | 5,0 | 56 | 10 | 3 | M2,5 | 4 | 0,006 | 5×2,05 |
| 6 | 3,2 | 5,0 | 71 | 14 | 4 | M3 | 4 | 0,010 | 6×3,2 |
| 6 | *2,5 | 5,0 | 71 | 14 | 4 | M3 | 4 | 0,010 | 6×2,5 |
| 6,5 | 3,7 | 5,0 | 71 | 14 | 4 | (M3,5) | 4 | 0,011 | 6,5×3,7 |
| 6,5 | *2,9 | 5,0 | 71 | 14 | 4 | (M3,5) | 4 | 0,011 | 6,5×2,9 |
| 8 | 4,3 | 5,0 | 71 | 14 | 4 | M4 | 4 | 0,012 | 8×4,3 |
| 8 | *3,3 | 5,0 | 71 | 14 | 4 | M4 | 4 | 0,012 | 8×3,3 |
| 10 | 5,3 | 8,0 | 80 | 18 | 6 | M5 | 4 | 0,028 | 10×5,3 |
| 10 | *4,2 | 8,0 | 80 | 18 | 6 | M5 | 4 | 0,028 | 10×4,2 |
| 11 | 6,4 | 8,0 | 80 | 18 | 6 | M6 | 4 | 0,034 | 11×6,4 |
| 11 | *5,0 | 8,0 | 80 | 18 | 6 | M6 | 4 | 0,034 | 11×5,0 |
| 15 | 8,4 | 12,5 | 100 | 22 | 8 | M8 | 4 | 0,086 | 15×8,4 |
| 15 | *6,8 | 12,5 | 100 | 22 | 8 | M8 | 4 | 0,086 | 15×6,8 |
| 18 | 10,5 | 12,5 | 100 | 22 | 10 | M10 | 4 | 0,114 | 18×10,5 |
| 18 | *8,5 | 12,5 | 100 | 22 | 10 | M10 | 4 | 0,114 | 18×8,5 |
| 20 | 13,0 | 12,5 | 100 | 22 | 12 | M12 | 4 | 0,122 | 20×13 |
| 20 | *10,2 | 12,5 | 100 | 22 | 12 | M12 | 4 | 0,122 | 20×10,2 |

Workmanship marked * have dimensions of pilot pins adapted to prebored holes for the thread.

**Workmanship:**

Material efficient high-speed steel HSS. Workmanship 4 cutting blades in right hand spiral.

**Usability:**

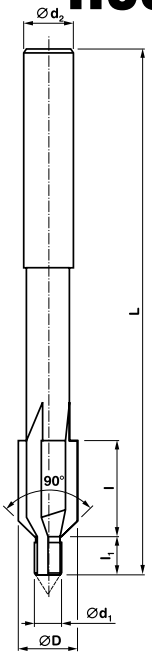
Counterboring holes for screws with flat fillister head in normal materials. It is possible to counterbore prebored holes for screw body.

**Manufacturing Mode:** F

**Surface Treatment:** O

## COUNTERBORES WITH STRAIGHT SHANK AND FIXED PILOT

**PROFI** **HSS**




| ∅Dz9 /mm/ | ∅d1e8 /mm/ | ∅d2h9 /mm/ | L /mm/ | l /mm/ | l1 /mm/ | Screw Thread | Even Teeth | kg | |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 2,2 | 4,0 | 56 | 10 | 3 | M2 | 4 | 0,005 | 4×2,2 |
| 4 | *1,6 | 4,0 | 56 | 10 | 3 | M2 | 4 | 0,005 | 4×1,6 |
| 4,9 | 2,7 | 5,0 | 56 | 10 | 3 | M2,5 | 4 | 0,006 | 4,9×2,7 |
| 4,9 | *2,05 | 5,0 | 56 | 10 | 3 | M2,5 | 4 | 0,006 | 4,9×2,05 |
| 5,7 | 3,2 | 5,0 | 71 | 14 | 4 | M3 | 4 | 0,010 | 5,7×3,2 |
| 5,7 | *2,5 | 5,0 | 71 | 14 | 4 | M3 | 4 | 0,010 | 5,7×2,5 |
| 6,7 | 3,7 | 5,0 | 71 | 14 | 4 | (M3,5) | 4 | 0,011 | 6,7×3,7 |
| 6,7 | *2,9 | 5,0 | 71 | 14 | 4 | (M3,5) | 4 | 0,011 | 6,7×2,9 |
| 7,8 | 4,3 | 5,0 | 71 | 14 | 4 | M4 | 4 | 0,012 | 7,8×4,3 |
| 7,8 | *3,3 | 5,0 | 71 | 14 | 4 | M4 | 4 | 0,012 | 7,8×3,3 |
| 9,5 | 5,3 | 8,0 | 80 | 18 | 6 | M5 | 4 | 0,028 | 9,5×5,3 |
| 9,5 | *4,2 | 8,0 | 80 | 18 | 6 | M5 | 4 | 0,028 | 9,5×4,2 |
| 11,4 | 6,4 | 8,0 | 80 | 18 | 6 | M6 | 4 | 0,034 | 11,4×6,4 |
| 11,4 | *5,0 | 8,0 | 80 | 18 | 6 | M6 | 4 | 0,034 | 11,4×5,0 |

Dimensions $d_1$ marked * are determined for prebored holes for thread (other for holes for screw shank).

**Workmanship:**

Material efficient high-speed steel HSS. Workmanship 4 blades with straight teeth.

**Usability:**

Countersinking holes for screws with countersunk head 90° in usual materials.

**Manufacturing Mode:** F

**Surface Treatment:** O

# Counterbores

| ∅D /mm/ | ∅$d_1$ e8 /mm/ | L /mm/ | l /mm/ | $l_1$ /mm/ |
|---|---|---|---|---|
| 15,4 | 8,4 | 140 | 22 | 8 |
| 15,4 | *6,8 | 140 | 22 | 8 |
| 18,5 | 10,5 | 148 | 25 | 10 |
| 18,5 | *8,5 | 148 | 25 | 10 |
| 22,5 | 13,0 | 160 | 30 | 12 |
| 22,5 | *10,2 | 160 | 30 | 12 |
| 28 | 17,0 | 192 | 35 | 15 |
| 28 | *14,0 | 192 | 35 | 15 |
| 37 | 21,0 | 205 | 40 | 19 |
| 37 | *17,5 | 205 | 40 | 19 |

**COUNTERSINKS WITH TAPER SHANK AND FIXED PILOT**

**PROFI** **HSS**

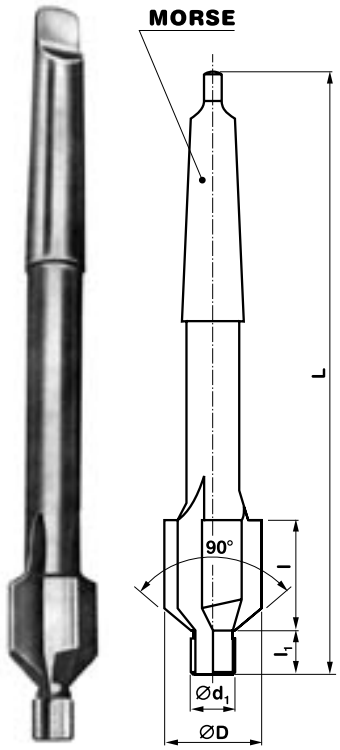
| ∅D /mm/ | MORSE | Screw Thread | Even Teeth | kg | |
|---|---|---|---|---|---|
| 15,4 | 2 | M8 | 4 | 0,180 | 15,4×8,4 |
| 15,4 | 2 | M8 | 4 | 0,180 | 15,4×6,8 |
| 18,5 | 2 | M10 | 4 | 0,270 | 18,5×10,5 |
| 18,5 | 2 | M10 | 4 | 0,270 | 18,5×8,5 |
| 22,5 | 2 | M12 | 4 | 0,330 | 22,5×13 |
| 22,5 | 2 | M12 | 4 | 0,330 | 22,5×10,2 |
| 28,0 | 3 | M16 | 4 | 0,430 | 28×17 |
| 28,0 | 3 | M16 | 4 | 0,430 | 28×14 |
| 37,0 | 3 | M20 | 4 | 0,830 | 37×21 |
| 37,0 | 3 | M20 | 4 | 0,870 | 37×17,5 |

Dimensions $d_1$ marked * are determined for prebored holes for thread (other for holes for screw shank.

**Workmanship:**
Material efficient high-speed steel HSS. Workmanship 4 blades with straight teeth.

**Usability:**
Countersinking holes for screws with countersunk head 90° in usual materials.

**Manufacturing Mode:** F
**Surface Treatment:** O

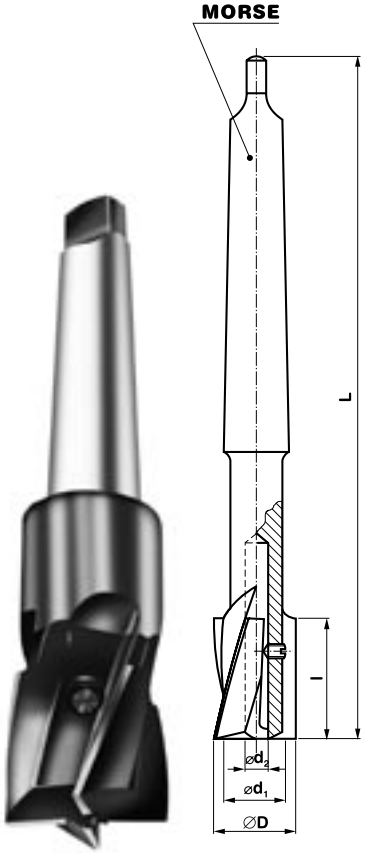


## COUNTERBORES
**WITH HOLE FOR DETACHABLE PILOT AND TAPER SHANK**

**PROFI** **HSS**

| ∅Dz9 /mm/ | ∅d1 pin /mm/ | ∅$d_2$ /mm/ | L /mm/ | l /mm/ |
|---|---|---|---|---|
| 13,0 | 4,3; 4,5 | 4,0 | 132 | 22 |
| 15,0 | 5,3; 5,5; 6,8; 8,4 | 4,0 | 132 | 22 |
| 18,0 | 6,4; 6,6; 8,5; 10,5 | 5,0 | 140 | 25 |
| 20,0 | 7,4; 7,6; 10,2; 13 | 5,0 | 140 | 25 |
| 24,0 | 8,4; 9; 12; 15 | 6,0 | 150 | 30 |
| 26,0 | 14; 17 | 8,0 | 180 | 35 |
| 28,0 | 10,5; 11 | 8,0 | 180 | 35 |
| 30,0 | 15,5; 19 | 8,0 | 180 | 35 |
| 34,0 | 13; 14; 17,5; 21 | 10,0 | 190 | 40 |
| 36,0 | 15; 16 | 10,0 | 190 | 40 |
| 40,0 | 17; 18; 21; 25 | 10,0 | 190 | 40 |
| 43,0 | 19; 20 | 12,0 | 236 | 50 |
| 48,0 | 21; 22; 26,5; 31 | 12,0 | 236 | 50 |
| 53,0 | 23; 24 | 16,0 | 250 | 63 |
| 57,0 | 25; 26; 33; 37 | 16,0 | 250 | 63 |
| 60,0 | 28; 30 | 16,0 | 250 | 63 |

| ∅Dz9 /mm/ | MORSE | Screw Thread | Even Teeth | kg | |
|---|---|---|---|---|---|
| 13,0 | 2 | | 4 | 0,160 | 13 |
| 15,0 | 2 | M8 | 4 | 0,160 | 15 |
| 18,0 | 2 | M10 | 4 | 0,210 | 18 |
| 20,0 | 2 | M12 | 4 | 0,210 | 20 |
| 24,0 | 2 | M14 | 4 | 0,300 | 24 |
| 26,0 | 3 | M16 | 4 | 0,480 | 26 |
| 28,0 | 3 | | 4 | 0,540 | 28 |
| 30,0 | 3 | (M18) | 4 | 0,580 | 30 |
| 34,0 | 3 | M20 | 4 | 0,730 | 34 |
| 36,0 | 3 | | 4 | 0,770 | 36 |
| 40,0 | 3 | M24 | 4 | 0,820 | 40 |
| 43,0 | 4 | | 4 | 1,500 | 43 |
| 48,0 | 4 | M30 | 4 | 1,800 | 48 |
| 53,0 | 4 | | 4 | 2,200 | 53 |
| 57,0 | 4 | M36x3 | 4 | 2,250 | 57 |
| 60,0 | 4 | | 4 | 2,400 | 60 |




**Workmanship:**

Material efficient high-speed steel HSS. Workmanship 4 cutting blades in right hand spiral. Countersinks are delivered together with screw for mounting the exchangeable piloting pin ČSN 221608 (DIN 1868).

**Usability:**

Counterboring holes for screw with flat fillister head in normal materials. It is possible to counterbore prebored holes for screw body and prebored holes for thread. By using suitable pins you can recess hole for screws with hexagon nut with washer and other types recessing. Piloting pins ČSN 221608 (DIN 1868).

**Manufacturing Mode:** F

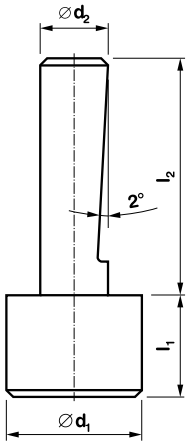
**Surface Treatment:** O

# Counterbores

## PILOT FOR COUNTERBORES ČSN 221606

**PROFI** **HSS**

| ∅$d_1$e8 /mm/ | ∅$d_2$ /mm/ | $l_1$ /mm/ | $l_2$ /mm/ | for counterborer | Screw Thread | kg | |
|---|---|---|---|---|---|---|---|
| 4,3 | 4 | 5 | 20 | 13,0 | | 0,003 | 4,3×4 |
| 4,5 | 4 | 5 | 20 | 13,0 | | 0,003 | 4,5×4 |
| 5,3 | 4 | 5 | 20 | 15,0 | | 0,003 | 5,3×4 |
| 5,5 | 4 | 5 | 20 | 15,0 | M8 | 0,004 | 5,5×4 |
| *6,8 | 4 | 6 | 20 | 15,0 | M8 | 0,005 | 6,8×4 |
| 8,4 | 4 | 7 | 20 | 15,0 | | 0,008 | 8,4×4 |
| 6,4 | 5 | 6 | 23 | 18,0 | | 0,006 | 6,4×5 |
| 6,6 | 5 | 6 | 23 | 18,0 | | 0,005 | 6,6×5 |
| 7,4 | 5 | 6 | 23 | 20,0 | | 0,007 | 7,4×5 |
| 7,6 | 5 | 6 | 23 | 20,0 | | 0,007 | 7,6×5 |
| 8,5 | 5 | 7 | 23 | 18,0 | M10 | 0,008 | 8,5×5 |
| *10,2 | 5 | 8 | 23 | 20,0 | M12 | 0,008 | 10,2×5 |
| *10,5 | 5 | 8 | 23 | 18,0 | M10 | 0,008 | 10,5×5 |
| 13 | 5 | 10 | 23 | 20,0 | M12 | 0,012 | 13×5 |
| 8,4 | 6 | 7 | 28 | 24,0 | | 0,009 | 8,4×6 |
| 9 | 6 | 7 | 28 | 24,0 | | 0,010 | 9×6 |
| *12 | 6 | 8 | 28 | 24,0 | M14 | 0,014 | 12×6 |
| 15 | 6 | 10 | 28 | 24,0 | M14 | 0,017 | 15×6 |
| 10,5 | 8 | 8 | 32 | 28,0 | | 0,010 | 10,5×8 |
| 11 | 8 | 8 | 32 | 28,0 | | 0,016 | 11×8 |
| *14 | 8 | 10 | 32 | 26,0 | M16 | 0,020 | 14×8 |
| *15,5 | 8 | 10 | 32 | 30,0 | M18 | 0,025 | 15,5×8 |
| 17 | 8 | 12 | 32 | 26,0 | M16 | 0,035 | 17×8 |
| 19 | 8 | 12 | 32 | 30,0 | M18 | 0,038 | 19×8 |
| 13 | 10 | 10 | 40 | 34,0 | | 0,032 | 13×10 |
| 14 | 10 | 10 | 40 | 34,0 | | 0,032 | 14×10 |
| 15 | 10 | 10 | 40 | 36,0 | | 0,035 | 15×10 |
| 16 | 10 | 10 | 40 | 36,0 | | 0,038 | 16×10 |
| 17 | 10 | 12 | 40 | 40,0 | | 0,040 | 17×10 |
| *17,5 | 10 | 12 | 40 | 34,0 | M20 | 0,040 | 17,5×10 |
| 18 | 10 | 12 | 40 | 40,0 | | 0,045 | 18×10 |
| 21 | 10 | 15 | 40 | 34,0 | M20 | 0,060 | 21×10 |
| *21 | 10 | 15 | 40 | 40,0 | M24 | 0,060 | 21×10 |
| 25 | 10 | 15 | 40 | 40,0 | M24 | 0,080 | 25×10 |
| 19 | 12 | 12 | 50 | 43,0 | | 0,070 | 19×12 |
| 20 | 12 | 12 | 50 | 43,0 | | 0,070 | 20×12 |
| 21 | 12 | 15 | 50 | 48,0 | | 0,075 | 21×12 |
| 22 | 12 | 15 | 50 | 48,0 | | 0,085 | 22×12 |
| *26,5 | 12 | 18 | 50 | 48,0 | M30 | 0,120 | 26,5×12 |
| 31 | 12 | 18 | 50 | 48,0 | M30 | 0,140 | 31×12 |
| 23 | 16 | 15 | 60 | 53,0 | | 0,120 | 23×16 |
| 24 | 16 | 15 | 60 | 53,0 | | 0,130 | 24×16 |
| 25 | 16 | 15 | 60 | 57,0 | | 0,150 | 25×16 |
| 26 | 16 | 18 | 60 | 57,0 | | 0,160 | 26×16 |
| 28 | 16 | 18 | 60 | 60,0 | | 0,190 | 28×16 |
| 30 | 16 | 18 | 60 | 60,0 | | 0,200 | 30×16 |
| *33 | 16 | 22 | 60 | 57,0 | M36x3 | 0,230 | 33×16 |
| 37 | 16 | 22 | 60 | 57,0 | M36x3 | 0,280 | 37×16 |




Dimensions marked * are for prebored thread holes. Other pins are for countersinks to working less usualy dimensions of sinking.

**Workmanship:**

Made from constructional steel, case-hardened.

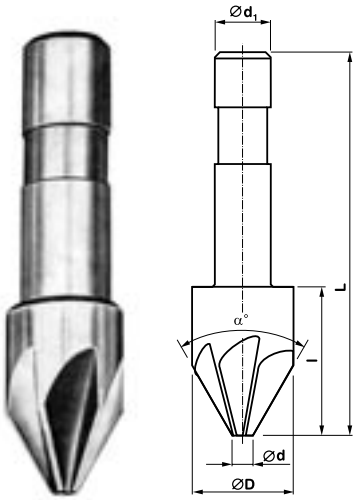
**Usability:**

Piloting pins complete contersinks ČSN 221606 (DIN 375). Pins with named thread are used for sinking holes for screw with flat fillister head for their screw body.

**Surface Treatment:** O

## COUNTERSINKS WITH STRAIGHT SHANK

**PROFI** **HSS**




| ∅D /mm/ | α° | ∅d /mm/ | ∅$d_1$ h9 /mm/ | L /mm/ |
|---|---|---|---|---|
| 8 | 60 | 1,6 | 8 | 48 |
| 8 | 90 | 1,6 | 8 | 44 |
| 8 | 120 | 1,6 | 8 | 44 |
| 10 | 60 | 2 | 8 | 50 |
| 10 | 90 | 2 | 8 | 46 |
| 10 | 120 | 2 | 8 | 46 |
| 12,5 | 60 | 2,5 | 8 | 52 |
| 12,5 | 90 | 2,5 | 8 | 48 |
| 16 | 120 | 3,2 | 10 | 56 |
| 20 | 90 | 4 | 10 | 60 |

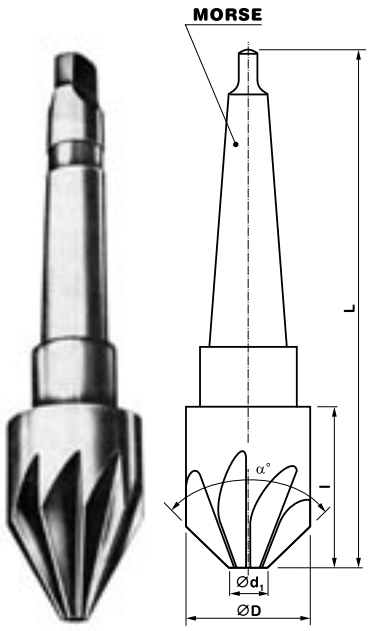
| ∅D /mm/ | α° | l /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|
| 8 | 60 | - | 5 | 0,018 | 60×8 |
| 8 | 90 | - | 5 | 0,016 | 90×8 |
| 8 | 120 | - | 5 | 0,017 | 120×8 |
| 10 | 60 | 18 | 5 | 0,025 | 60×10 |
| 10 | 90 | 14 | 5 | 0,027 | 90×10 |
| 10 | 120 | 14 | 5 | 0,030 | 120×10 |
| 12,5 | 60 | 20 | 5 | 0,030 | 60×12,5 |
| 12,5 | 90 | 16 | 5 | 0,025 | 90×12,5 |
| 16 | 120 | 20 | 7 | 0,054 | 120×16 |
| 20 | 90 | 24 | 7 | 0,074 | 90×20 |

**Workmanship, Usability, Manufacturing Mode, Surface Treatment:** next standard

## COUNTERSINKS WITH TAPER SHANK

**PROFI** **HSS**

| ∅D /mm/ | α° | ∅$d_1$ e8 /mm/ | L /mm/ | l /mm/ |
|---|---|---|---|---|
| 16 | 60 | 3,2 | 97 | 24 |
| 16 | 90 | 3,2 | 93 | 20 |
| 25 | 60 | 7,0 | 125 | 33 |
| 25 | 90 | 7,0 | 121 | 29 |
| 31,5 | 90 | 9,0 | 124 | 32 |
| 31,5 | 120 | 9,0 | 124 | 32 |
| 40 | 60 | 12,5 | 160 | 45 |
| 40 | 90 | 12,5 | 150 | 35 |
| 50 | 90 | 16,0 | 153 | 38 |
| 63 | 60 | 20,0 | 200 | 58 |
| 63 | 90 | 20,0 | 185 | 43 |
| 63 | 120 | 20,0 | 185 | 43 |




| ∅D /mm/ | α° | MORSE | Even Teeth | kg | |
|---|---|---|---|---|---|
| 16 | 60 | 1 | 7 | 0,076 | 60×16 |
| 16 | 90 | 1 | 7 | 0,080 | 90×16 |
| 25 | 60 | 2 | 7 | 0,250 | 60×25 |
| 25 | 90 | 2 | 7 | 0,250 | 90×25 |
| 31,5 | 90 | 2 | 7 | 0,325 | 90×31,5 |
| 31,5 | 120 | 2 | 7 | 0,315 | 120×31,5 |
| 40 | 60 | 3 | 9 | 0,700 | 60×40 |
| 40 | 90 | 3 | 9 | 0,660 | 90×40 |
| 50 | 90 | 3 | 9 | 0,750 | 90×50 |
| 63 | 60 | 4 | 9 | 1,530 | 60×63 |
| 63 | 90 | 4 | 9 | 1,150 | 90×63 |
| 63 | 120 | 4 | 9 | 1,150 | 120×63 |

**Workmanship:**

Material efficient high-speed steel HSS. Straight teeth.

**Usability:**

Burrs removal, chamfering and sinking of holes in products from steel, cast iron, alloys of non-ferrous metals, light metals and non-metallic materials.

**Manufacturing Mode:** F

**Surface Treatment:** O

# Counterbores

## COUNTERSINKS 60° WITH STRAIGHT SHANK

**PROFI** **HSS**

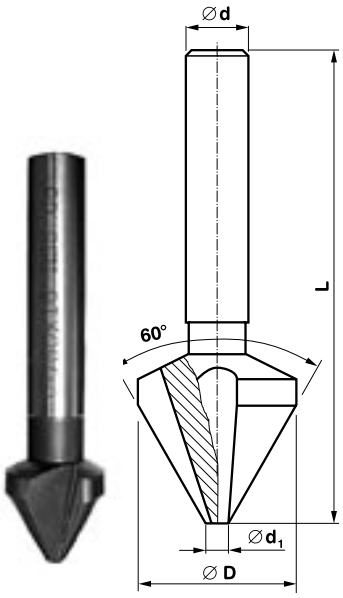
| ∅D /mm/ | ∅d /mm/ | ∅$d_1$ /mm/ | L /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 6,3 | 5 | 1,6 | 45 | 3 | 0,007 | 6,3×60 |
| 8 | 6 | 2,0 | 50 | 3 | 0,011 | 8×60 |
| 12,5 | 8 | 3,2 | 56 | 3 | 0,028 | 12,5×60 |
| 16 | 10 | 4,0 | 63 | 3 | 0,038 | 16×60 |
| 20 | 10 | 5,0 | 67 | 3 | 0,046 | 20×60 |
| 25 | 10 | 6,3 | 71 | 3 | 0,060 | 25×60 |

**Workmanship:**
Material efficient high-speed steel HSS, 3 straight teeth.

**Usability:**
Burr removal, chamfering, sinking of holes for countersunk screws in products from steel, cast iron, and non-ferrous metals, light metals and non-metallic materials.

**Manufacturing Mode:** **V (D<12,5mm)**
**F (D≥12,5mm)**

**Surface Treatment:** O




## COUNTERSINKS 60° WITH TAPER SHANK

**PROFI** **HSS**

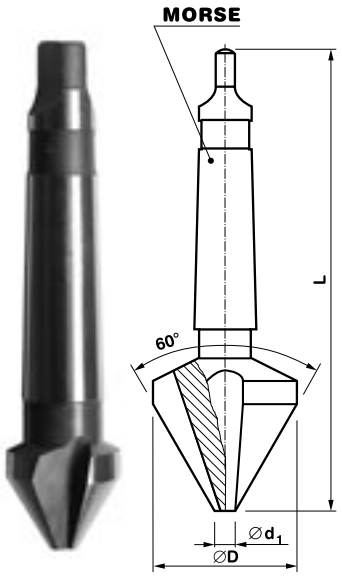
| ∅D /mm/ | MORSE | ∅$d_1$ /mm/ | L /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 16 | 1 | 4,0 | 90 | 3 | 0,060 | 16×60 |
| 20 | 2 | 5,0 | 106 | 3 | 0,150 | 20×60 |
| 25 | 2 | 6,3 | 112 | 3 | 0,165 | 25×60 |
| 31 | 2 | 10 | 118 | 3 | 0,200 | 31×60 |
| 40 | 3 | 12,5 | 150 | 3 | 0,450 | 40×60 |
| 50 | 3 | 16,0 | 160 | 3 | 0,650 | 50×60 |
| 63 | 4 | 20,0 | 190 | 3 | 1,050 | 63×60 |

**Workmanship:**
Material efficient high-speed steel HSS, 3 straight teeth.

**Usability:**
Burr removal, chamfering, sinking of holes for countersunk screws in products from steel, cast iron, and non-ferrous metals, light metals and non-metallic materials.

**Manufacturing Mode:** **V (D<10,4mm)**
**F (D≥10,4mm)**

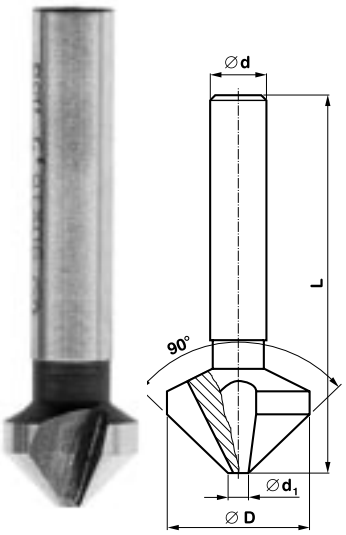
**Surface Treatment:** O



## COUNTERSINKS 90° WITH STRAIGHT SHANK

**PROFI** **HSS**

| ∅D /mm/ | ∅d /mm/ | ∅$d_1$ /mm/ | L /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 4,3 | 4 | 1,3 | 40 | 3 | 0,004 | 4,3×90 |
| 4,9 | 4 | 1,5 | 40 | 3 | 0,004 | 4,9×90 |
| 5 | 4 | 1,5 | 40 | 3 | 0,004 | 5×90 |
| 5,3 | 4 | 1,5 | 40 | 3 | 0,005 | 5,3×90 |
| 5,7 | 5 | 1,5 | 45 | 3 | 0,006 | 5,7×90 |
| 5,8 | 5 | 1,5 | 45 | 3 | 0,007 | 5,8×90 |
| 6 | 5 | 1,5 | 45 | 3 | 0,007 | 6×90 |
| 6,3 | 5 | 1,5 | 45 | 3 | 0,007 | 6,3×90 |
| 7 | 6 | 1,8 | 50 | 3 | 0,007 | 7×90 |
| 7,3 | 6 | 1,8 | 50 | 3 | 0,007 | 7,3×90 |
| 7,8 | 6 | 2,0 | 50 | 3 | 0,011 | 7,8×90 |
| 8 | 6 | 2,0 | 50 | 3 | 0,011 | 8×90 |
| 8,3 | 6 | 2,0 | 50 | 3 | 0,011 | 8,3×90 |
| 9,4 | 6 | 2,2 | 50 | 3 | 0,012 | 9,4×90 |
| 9,5 | 6 | 2,2 | 50 | 3 | 0,012 | 9,5×90 |
| 10 | 6 | 2,5 | 50 | 3 | 0,012 | 10×90 |
| 10,4 | 6 | 2,5 | 50 | 3 | 0,012 | 10,4×90 |
| 11,4 | 8 | 2,8 | 56 | 3 | 0,022 | 11,4×90 |
| 11,5 | 8 | 2,8 | 56 | 3 | 0,022 | 11,5×90 |
| 12,4 | 8 | 2,8 | 56 | 3 | 0,028 | 12,4×90 |
| 13,4 | 8 | 2,9 | 56 | 3 | 0,024 | 13,4×90 |
| 15 | 10 | 3,2 | 60 | 3 | 0,038 | 15×90 |
| 15,4 | 10 | 3,2 | 60 | 3 | 0,038 | 15,4×90 |
| 16,5 | 10 | 3,2 | 60 | 3 | 0,038 | 16,5×90 |
| 18,5 | 10 | 3,5 | 63 | 3 | 0,044 | 18,5×90 |
| 19 | 10 | 3,5 | 63 | 3 | 0,044 | 19×90 |
| 20,5 | 10 | 3,5 | 63 | 3 | 0,046 | 20,5×90 |
| 22,5 | 10 | 3,8 | 67 | 3 | 0,055 | 22,5×90 |
| 23 | 10 | 3,8 | 67 | 3 | 0,055 | 23×90 |
| 25 | 10 | 3,8 | 67 | 3 | 0,060 | 25×90 |
| 26 | 10 | 3,8 | 67 | 3 | 0,070 | 26×90 |
| 28 | 12 | 4,0 | 71 | 3 | 0,100 | 28×90 |
| 30 | 12 | 4,2 | 71 | 3 | 0,100 | 30×90 |
| 31 | 12 | 4,2 | 71 | 3 | 0,100 | 31×90 |




**Workmanship:**
Material efficient high-speed steel HSS, 3 straight teeth.

**Usability:**
Burr removal, chamfering, sinking of holes for countersunk screws in products from steel, cast iron, non-ferrous metals, light metals and non-metallic materials.

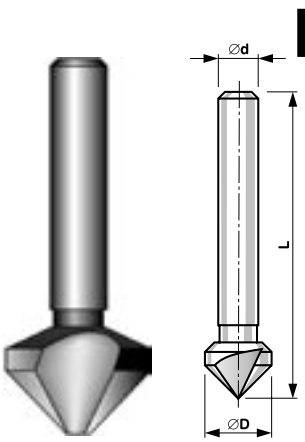
**Manufacturing Mode:** F
**Surface Treatment:** ○

# Counterbores

## COUNTERSINKS 90°

HSS

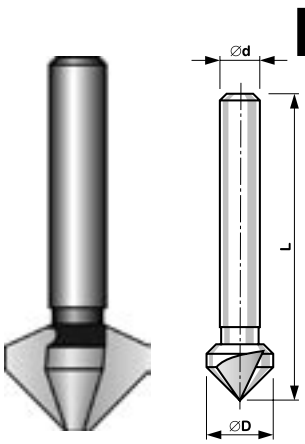
| ∅D /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|
| 5 | 4 | 40 | 5 |
| 6 | 5 | 45 | 6 |
| 8 | 6 | 46 | 8 |
| 10 | 6 | 46 | 10 |
| 12 | 8 | 46 | 12 |
| 16 | 8 | 46,5 | 16 |
| 20 | 10 | 47 | 20 |
| 25 | 10 | 51 | 25 |
| 30 | 12 | 71 | 30 |




## COUNTERSINKS 90°

HSS

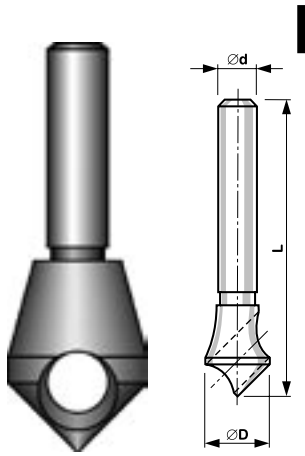
| ∅D /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|
| 4,3 | 4 | 40 | 4,3 |
| 5 | 4 | 40 | 5 |
| 6 | 5 | 45 | 6 |
| 6,3 | 5 | 46 | 6,3 |
| 7 | 6 | 50 | 7 |
| 8 | 6 | 46 | 8 |
| 11,5 | 8 | 56 | 11,5 |
| 10 | 6 | 46 | 10 |
| 12 | 8 | 46 | 12 |
| 12,4 | 8 | 54 | 12,4 |
| 16 | 8 | 46,5 | 16 |
| 16,5 | 10 | 60 | 16,5 |
| 20 | 10 | 47 | 20 |
| 20,5 | 10 | 63 | 20,5 |
| 23 | 10 | 67 | 23 |
| 25 | 10 | 51 | 25 |
| 25,5 | 10 | 66 | 25,5 |
| 30 | 12 | 71 | 30 |




## DEBURRER COUNTERSINKS WITH STRAIGHT SHANK

HSS

| Size | ∅D /mm/ | ∅d /mm/ | L /mm/ | |
|---|---|---|---|---|
| 2/5 | 10 | 6 | 46 | 2-5 |
| 5/10 | 14 | 8 | 46 | 5-10 |
| 10/15 | 21,5 | 10 | 64,5 | 10-15 |
| 15/20 | 28 | 12 | 80 | 15-20 |
| 20/25 | 35 | 15 | 97 | 20-25 |




**Workmanship:**

Material efficient high-speed steel HSS, 3 straight teeth.

**Manufacturing Mode:** F

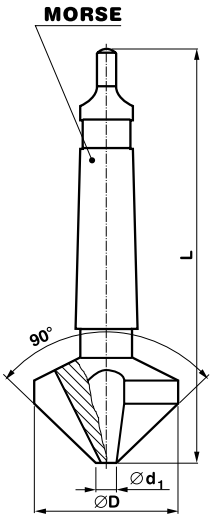
**Surface Treatment:** O

**Usability:**

Burr removal, chamfering, sinking of holes for countersunk screws in products from steel, cast iron, non-ferrous metals, light metals and non-metallic materials.

## COUNTERSINKS 90° WITH TAPER SHANK

**PROFI** **HSS**




| ∅D /mm/ | MORSE | ∅d1 /mm/ | L /mm/ | Even Teeth | kg | |
|---|---|---|---|---|---|---|
| 15 | 1 | 3,2 | 85 | 3 | 0,055 | 15×90 |
| 16,5 | 1 | 3,2 | 85 | 3 | 0,060 | 16,5×90 |
| 19 | 2 | 3,5 | 100 | 3 | 0,140 | 18×90 |
| 20,5 | 2 | 3,5 | 100 | 3 | 0,150 | 20,5×90 |
| 23 | 2 | 3,8 | 106 | 3 | 0,160 | 23×90 |
| 25 | 2 | 3,8 | 106 | 3 | 0,165 | 25×90 |
| 26 | 2 | 3,8 | 106 | 3 | 0,170 | 26×90 |
| 28 | 2 | 4,0 | 112 | 3 | 0,200 | 28×90 |
| 30 | 2 | 4,2 | 112 | 3 | 0,200 | 30×90 |
| 31 | 2 | 4,2 | 112 | 3 | 0,200 | 31×90 |
| 34 | 2 | 4,5 | 118 | 3 | 0,220 | 34×90 |
| 37 | 2 | 4,8 | 118 | 3 | 0,250 | 37×90 |
| 40 | 3 | 10,0 | 140 | 3 | 0,450 | 40×90 |
| 50 | 3 | 14,0 | 150 | 3 | 0,650 | 50×90 |
| 63 | 4 | 16,0 | 180 | 3 | 1,050 | 63×90 |

**Workmanship:**

Material efficient high-speed steel HSS, 3 straight teeth.

**Usability:**

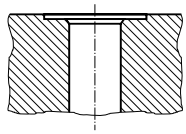
Burr removal, chamfering, sinking of holes for countersunk screws in products from steel, cast iron, non-ferrous metals, light metals and non-metallic materials.

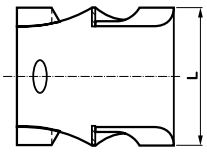
**Manufacturing Mode:** F

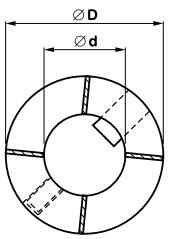
**Surface Treatment:** O

## SHELL TWO-SIDED SPOT-FACING TOOL

**PROFI** **HSS**








| ∅D /mm/ | ∅d /mm/ | L /mm/ | kg | Complete holder | |
|---|---|---|---|---|---|
| 18 | 9 | 20 | 0,030 | 9 | 18×9 |
| 22 | 11 | 22 | 0,045 | 11 | 22×11 |
| 26 | 14 | 25 | 0,075 | 14 | 26×14 |
| 30 | 16 | 28 | 0,090 | 16 | 30×16 |
| 33 | 18 | 32 | 0,130 | 18 | 33×18 |
| 36 | 20 | 32 | 0,150 | 20 | 36×20 |
| 40 | 22 | 36 | 0,210 | 22 | 40×22 |
| 43 | 24 | 40 | 0,270 | 24 | 43×24 |
| 48 | 26 | 45 | 0,390 | 26 | 48×26 |
| 52 | 30 | 50 | 0,500 | 30 | 52×30 |

**Workmanship:**

Material efficient high-speed steel HSS. Workmanship four teeth, two sided.

**Usability:**

Shell spot-facing tools are for spot facing support surfaces according to ČSN 021021 for jointing components in steel, cast iron and other metallic materials. For clamping are used the arbors ČSN 241216.

**Manufacturing Mode:** F

**Surface Treatment:** O

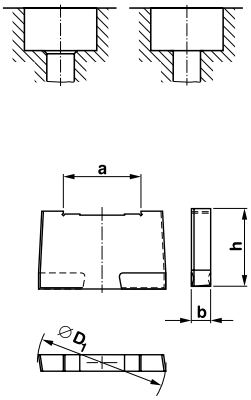
# Counterbores

## COUNTERBORING CUTTERS

**PROFI** **HSS**

| ∅$D_1$ Size | b /mm/ | h /mm/ | a H7 /mm/ | |
|---|---|---|---|---|
| 68 | 10 | 40 | 45 | 68×10 |
| 75 | 10 | 40 | 45 | 75×10 |
| 82 | 10 | 40 | 45 | 82×10 |
| 90 | 10 | 40 | 45 | 90×10 |
| 98 | 10 | 40 | 45 | 98×10 |
| 82 | 12 | 45 | 56 | 82×12 |
| 90 | 12 | 45 | 56 | 90×12 |
| 98 | 12 | 45 | 56 | 98×12 |
| 107 | 12 | 45 | 56 | 107×12 |
| 112 | 12 | 45 | 56 | 112×12 |
| 118 | 12 | 45 | 56 | 118×12 |

| ∅$D_1$ /mm/ | Even Teeth | kg | Holder ČSN 24 1213 | Guiding Bush ČSN 24 1214 |
|---|---|---|---|---|
| 68 | 2 | 0,202 | 22 | 31×22 ÷ 45×22 |
| 75 | 2 | 0,224 | 22 | 31×22 ÷ 45×22 |
| 82 | 2 | 0,244 | 22 | 31×22 ÷ 45×22 |
| 90 | 2 | 0,269 | 22 | 31×22 ÷ 45×22 |
| 98 | 2 | 0,292 | 22 | 31×22 ÷ 45×22 |
| 82 | 2 | 0,330 | 27 | 37×27 ÷ 56×27 |
| 90 | 2 | 0,363 | 27 | 37×27 ÷ 56×27 |
| 98 | 2 | 0,395 | 27 | 37×27 ÷ 56×27 |
| 107 | 2 | 0,431 | 27 | 37×27 ÷ 56×27 |
| 112 | 2 | 0,451 | 27 | 37×27 ÷ 56×27 |
| 118 | 2 | 0,475 | 27 | 37×27 ÷ 56×27 |




**Workmanship:**

Material efficient high-speed steel HSS. Workmanship two cutting edges.

**Usability:**

Sinking cutters are for counterboring according to ČSN 021020 for screw with ordinary hexagon head, hexagon nut with washer, and for $D_1$ = 68 mm of counterboring according to ČSN 021024 in steel, cast iron and other metallic materials. For clamping are used the arbors ČSN 241213 and complete guiding bushs ČSN 221214.

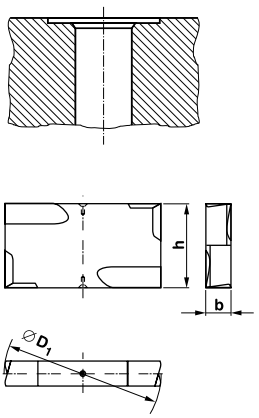
**Manufacturing Mode:** F

**Surface Treatment:** O

## TWO-SIDED SPOT-FACING CUTTERS

**PROFI** **HSS**

| ∅$D_1$ /mm/ | b /mm/ | h /mm/ | Even Teeth | kg | Holder ČSN 24 1217 | |
|---|---|---|---|---|---|---|
| 61 | 10 | 30 | 2 + 2 | 0,80 | 33 | 61×10 |
| 67 | 10 | 30 | 2 + 2 | 0,85 | 36 | 67×10 |
| 71 | 10 | 30 | 2 + 2 | 0,90 | 39 | 71×10 |
| 75 | 10 | 30 | 2 + 2 | 0,90 | 42 | 75×10 |
| 80 | 12 | 36 | 2 + 2 | 0,91 | 45 | 80×12 |
| 90 | 12 | 36 | 2 + 2 | 0,93 | 48 | 90×12 |
| 95 | 12 | 36 | 2 + 2 | 0,95 | 52 | 95×12 |
| 105 | 12 | 36 | 2 + 2 | 1,00 | 56 | 105×12 |
| 112 | 12 | 36 | 2 + 2 | 1,00 | 62 | 112×12 |




**Workmanship:**

Material efficient high-speed steel HSS. Workmanship two cutting edges, two sided.

**Usability:**

Two-sided spot facing cutters for facing supporting surfaces for coupling parts according to ČSN 011021 in steel, cast iron, and other metallic materials. For clamping are used the arbors ČSN 241217.

**Manufacturing Mode:** F

**Surface Treatment:** O

## ARBORS FOR SHELL CORE REAMERS AND REAMERS

**PROFI**

| ∅d h6 /mm/ | l h16 /mm/ | $L_1$ /mm/ | L js16 /mm/ | MORSE | kg | |
|---|---|---|---|---|---|---|
| 13 | 45 | 151 | 250 | 3 | 0,470 | 13M3 |
| 16 | 50 | 162 | 261 | 3 | 0,750 | 16M3 |
| 19 | 56 | 174 | 298 | 4 | 1,180 | 19M4 |
| 22 | 63 | 188 | 312 | 4 | 2,100 | 22M4 |
| 27 | 71 | 203 | 359 | 5 | 4,800 | 27M5 |
| 32 | 80 | 220 | 376 | 5 | 5,050 | 32M5 |
| 40 | 90 | 240 | 396 | 5 | 5,400 | 40M5 |
| 50 | 100 | 260 | 416 | 5 | 7,350 | 50M5 |

**Workmanship:**

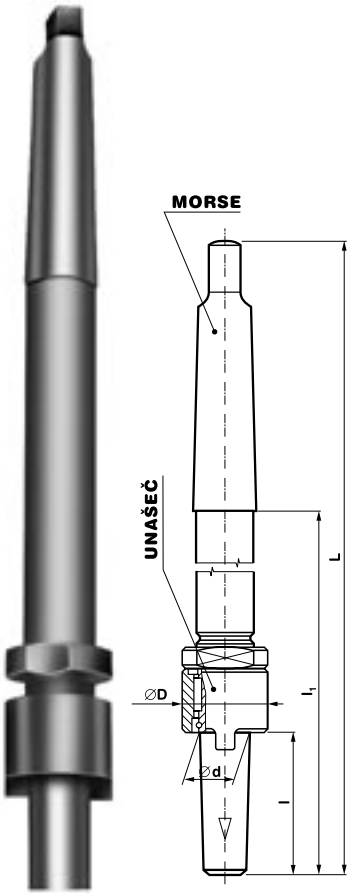
Arbor and driver are made from the alloy steel and case hardened. Shell core drills and reamers can be removed by using of the nut situated behind the driver.

It is possible to order the driver as an extra item.

**Surface Treatment:** O

**Usability:**

Arbors are used to clamping shell core drills ČSN 221414 and shell reamers ČSN 221432, ČSN 221435 and ČSN 221447.




## DRIVER

| ∅d H7 /mm/ | ∅D /mm/ | kg | |
|---|---|---|---|
| 13 | 23 | 0,040 | 13M3 |
| 16 | 27 | 0,050 | 16M3 |
| 19 | 32 | 0,090 | 19M4 |
| 22 | 39 | 0,150 | 22M4 |
| 27 | 46 | 0,280 | 27M5 |
| 32 | 56 | 0,560 | 32M5 |
| 40 | 65 | 0,700 | 40M5 |
| 50 | 80 | 1,300 | 50M5 |

# Arbors

| ∅d h6 /mm/ | ∅D h6 /mm/ | b H8 /mm/ | L js 16 /mm/ | |
|---|---|---|---|---|
| 22 | 45 | 10 | 210 | 22 |
| 27 | 56 | 12 | 250 | 27 |

**ARBORS FOR COUNTERBORING CUTTERS**

**PROFI**

| ∅d h6 /mm/ | MORSE | kg | Clampin screw ČSN 02 1103 |
|---|---|---|---|
| 22 | 4 | 1,050 | M10×20 |
| 27 | 5 | 2,550 | M12×22 |

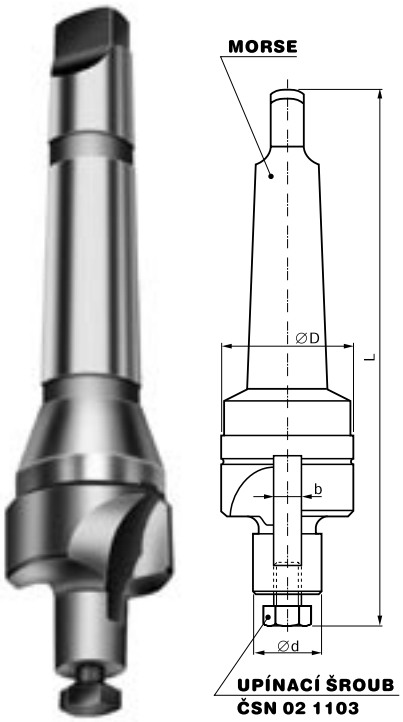
**Workmanship:**
Arbors are delivered together with clamping screw. Material of holder is high grade carbon steel, heat treated, flat tang and part of taper shank is hardened.

**Surface Treatment:** O

**Usability:**
Arbors are are used for clamping of sinking cutters ČSN 221655. Guide bush according to ČSN 241214 which fullfil the arbors, you have to order separately.

# COMPLETE

| ∅d h6 /mm/ | Guide Busch ČSN 24 1214 | Sinking Cutter ČSN 22 1655 |
|---|---|---|
| 22 | 31×22 ÷ 45×22 | 68×10 ÷ 98×10 |
| 22 | 37×27 ÷ 56×27 | 82×12 ÷ 118×12 |



## GUIDE BUSCHES
## FOR HOLDER FOR SINKING CUTTERS

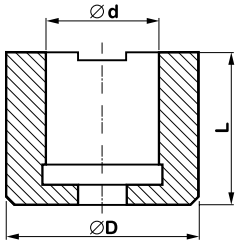
**PROFI**

| ∅D e8 /mm/ | ∅d H7 /mm/ | L js 16 /mm/ | Holder ČSN 24 1213 | kg | |
|---|---|---|---|---|---|
| 31 | 22 | 28 | 22 | 0,090 | 31×22 |
| 33 | 22 | 28 | 22 | 0,115 | 33×22 |
| 34 | 22 | 28 | 22 | 0,130 | 34×22 |
| 36 | 22 | 28 | 22 | 0,150 | 36×22 |
| 37 | 22 | 28 | 22 | 0,168 | 37×22 |
| 39 | 22 | 28 | 22 | 0,203 | 39×22 |
| 40 | 22 | 28 | 22 | 0,216 | 40×22 |
| 42 | 22 | 28 | 22 | 0,248 | 42×22 |
| 43 | 22 | 28 | 22 | 0,266 | 43×22 |
| 45 | 22 | 28 | 22 | 0,302 | 45×22 |
| 37 | 27 | 30 | 27 | 0,120 | 37×27 |
| 39 | 27 | 30 | 27 | 0,150 | 39×27 |
| 40 | 27 | 30 | 27 | 0,175 | 40×27 |
| 42 | 27 | 30 | 27 | 0,205 | 42×27 |
| 43 | 27 | 30 | 27 | 0,220 | 43×27 |
| 45 | 27 | 30 | 27 | 0,257 | 45×27 |
| 46 | 27 | 30 | 27 | 0,280 | 46×27 |
| 48 | 27 | 30 | 27 | 0,315 | 47×27 |
| 50 | 27 | 30 | 27 | 0,410 | 50×27 |
| 52 | 27 | 30 | 27 | 0,450 | 52×27 |
| 54 | 27 | 30 | 27 | 0,490 | 54×27 |
| 56 | 27 | 30 | 27 | 0,530 | 56×27 |

**Workmanship:**
Constructional steel, case-hardened

**Usability:**
Guide bushes are used to completation the arbors for sinking cutters ČSN 241213.

**Surface Treatment:** O



# Arbors

| ∅d f8 /mm/ | $l_1$ /mm/ | $l_2$ /mm/ | L /mm/ | MORSE | kg | |
|---|---|---|---|---|---|---|
| 9 | 20 | 80 | 200 | 2 | 0,25 | 9 |
| 11 | 22 | 85 | 212 | 2 | 0,29 | 11 |
| 14 | 25 | 90 | 236 | 3 | 0,42 | 14 |
| 16 | 28 | 100 | 250 | 3 | 0,44 | 16 |
| 18 | 32 | 112 | 265 | 3 | 0,59 | 18 |
| 20 | 34 | 125 | 280 | 3 | 0,72 | 20 |
| 22 | 38 | 132 | 300 | 3 | 0,89 | 22 |
| 24 | 42 | 140 | 315 | 3 | 1,07 | 24 |
| 26 | 45 | 150 | 335 | 4 | 1,51 | 26 |
| 30 | 50 | 160 | 355 | 4 | 1,95 | 30 |

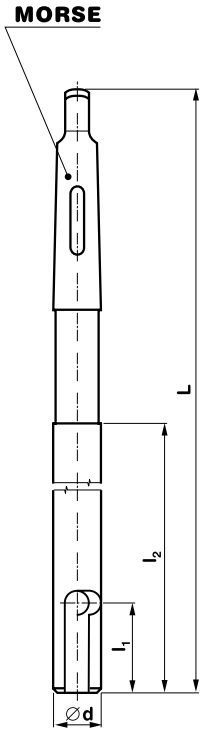
**ARBORS FOR TWO-SIDED SHELL SPOT-FACING TOOLS**

**PROFI**

**Workmanship:**
Constructional steel, case-hardened.

**Usability:**
Arbors are used for clamping two sided shell spot-facing tools according to ČSN 221650. Diameter ∅d is determined according to middle series of holes for screws ČSN 021050.

**Surface Treatment:** O




# COMPLETE

| ∅d h6 /mm/ | Shell Spot-facing Tool ČSN 24 1650 | |
|---|---|---|
| 9 | 18 | 18 |
| 11 | 22 | 22 |
| 14 | 26 | 26 |
| 16 | 30 | 30 |
| 18 | 33 | 33 |
| 20 | 36 | 36 |
| 22 | 40 | 40 |
| 24 | 43 | 43 |
| 26 | 48 | 48 |
| 30 | 52 | 52 |

## ARBORS FOR FACING CUTTERS

**PROFI**

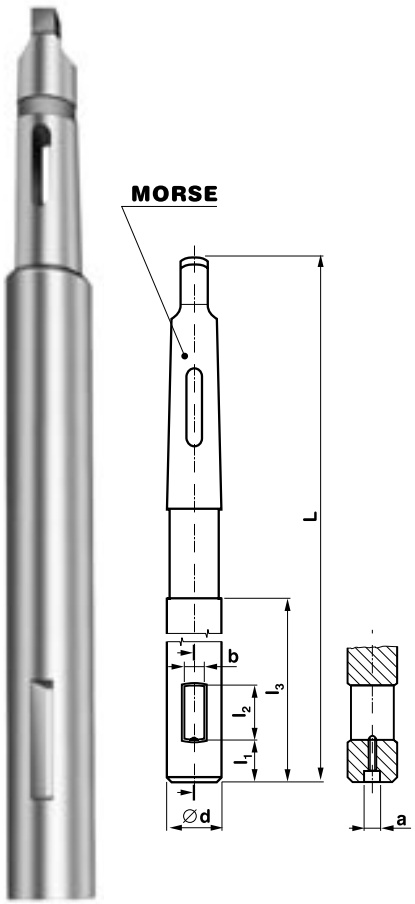
| ∅d f9 /mm/ | $l_1$ /mm/ | $l_2$ H10 /mm/ | b H9 /mm/ | a 6H /mm/ | |
|---|---|---|---|---|---|
| 33 | 30 | 30 | 10 | M10 | 33 |
| 36 | 34 | 30 | 10 | M10 | 36 |
| 39 | 36 | 30 | 10 | M10 | 39 |
| 42 | 40 | 30 | 10 | M10 | 42 |
| 45 | 42 | 36 | 12 | M12 | 45 |
| 48 | 45 | 36 | 12 | M12 | 46 |
| 52 | 48 | 36 | 12 | M12 | 52 |
| 56 | 53 | 36 | 12 | M12 | 56 |
| 62 | 60 | 36 | 12 | M12 | 62 |

| ∅d f9 /mm/ | $l_3$ /mm/ | L /mm/ | MORSE | kg | |
|---|---|---|---|---|---|
| 33 | 150 | 355 | 4 | 2,20 | |
| 36 | 160 | 365 | 4 | 2,50 | |
| 39 | 170 | 375 | 4 | 3,05 | |
| 42 | 180 | 400 | 5 | 4,45 | |
| 45 | 190 | 425 | 5 | 5,30 | |
| 48 | 200 | 450 | 5 | 5,75 | |
| 52 | 212 | 475 | 5 | 6,90 | |
| 56 | 236 | 500 | 5 | 8,10 | |
| 62 | 250 | 530 | 5 | 11,50 | |

**Workmanship:**
Constructional steel, case-hardened

**Usability:**
Guide bushes are used to completation the arbors for sinking cutters ČSN 241213.

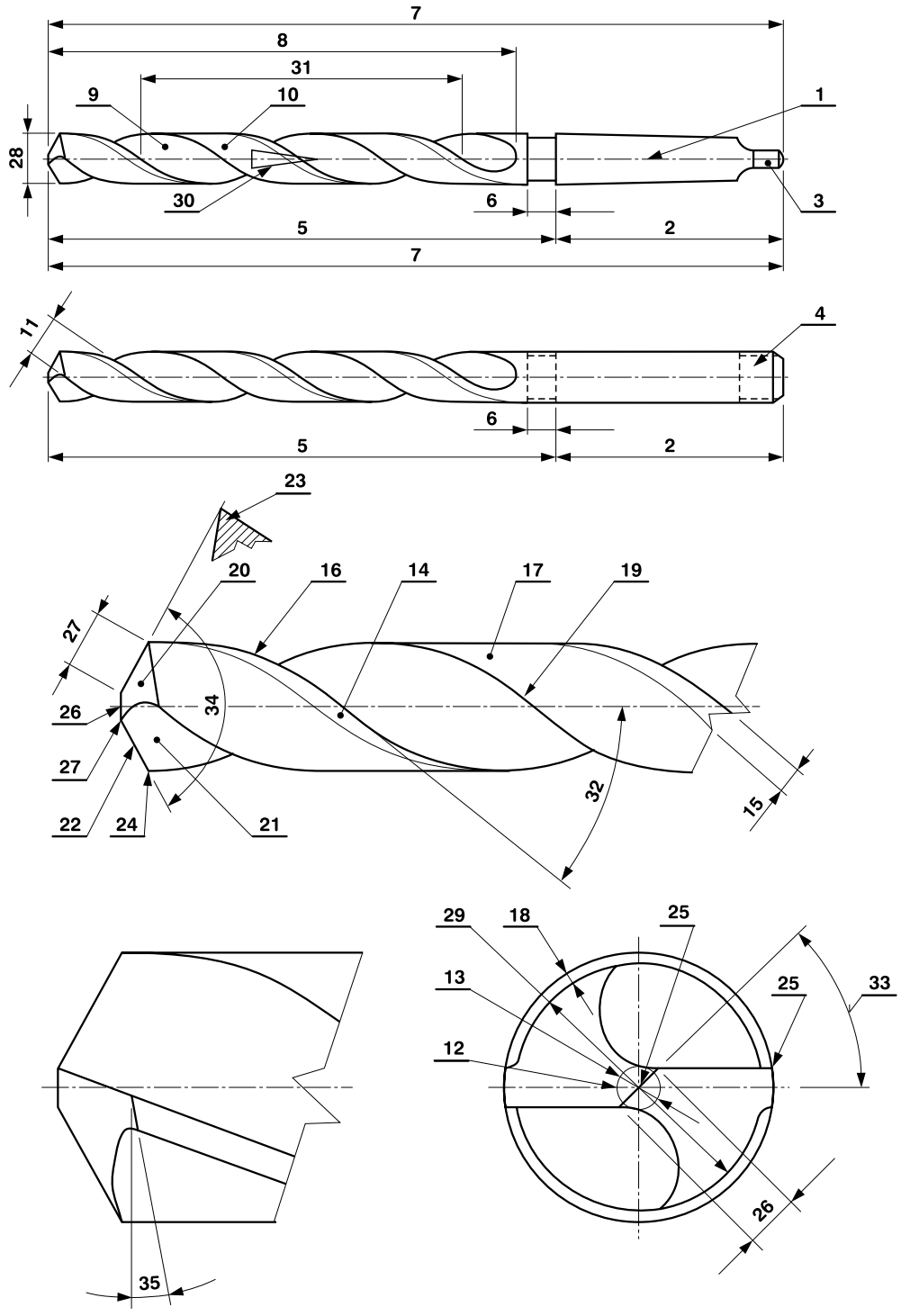
**Surface Treatment:** O




## COMPLETE

| ∅d f8 /mm/ | Spot-facing Tool ČSN 22 1657 | |
|---|---|---|
| 33 | 61 | |
| 36 | 67 | |
| 39 | 71 | |
| 42 | 75 | |
| 45 | 80 | |
| 48 | 90 | |
| 52 | 95 | |
| 56 | 105 | |
| 62 | 112 | |

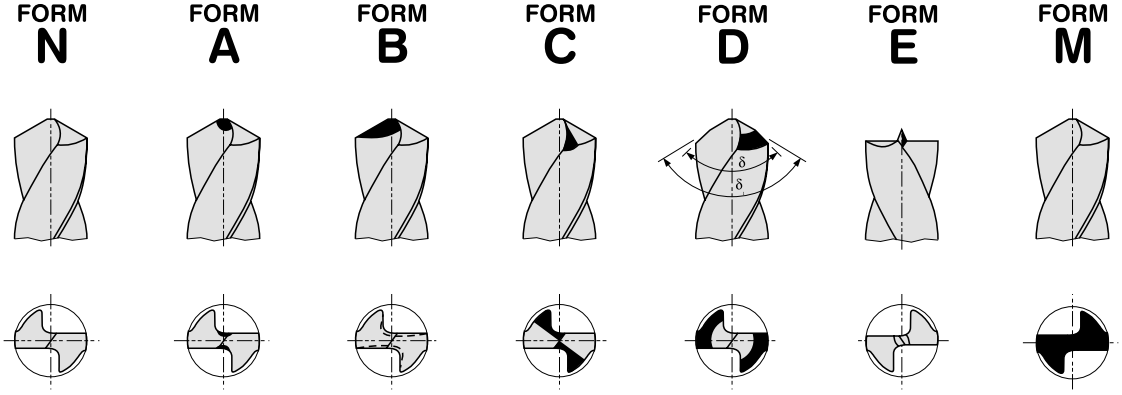
## TWIST DRILLS - DEFINITIONS



## MATERIAL FOR DRILLING TOOLS

| Mark of Material | Standart | According to | C | W | V | Co | Mo | Cr |
|---|---|---|---|---|---|---|---|---|
| HSS | POLDI | Maximum Special G EXTRA | 0,85 | 10,0 | 2,35 | 0,0 | 0,0 | 4,0 |
| | ČSN | 19802 | | | | | | |
| | DIN | S 9-1-2 WERKSTOFF Nr. 1.3316 | | | | | | |
| | | S 12-1-2 WERKSTOFF Nr. 1.3318 | | | | | | |
| | BOHLER | S 208 | | | | | | |
| | GOST | R 9 | | | | | | |
| HSS | POLDI | Maximum Special MO 5 | 0,85 | 6,25 | 1,85 | 0,0 | 5,0 | 4,15 |
| | ČSN | 19830 | | | | | | |
| | DIN | S 6-5-2 WERKSTOFF Nr. 1.3343 | | | | | | |
| | AISI | M 2 | | | | | | |
| | AFNOR | Z 85 WDCV 06 05 04 02 | | | | | | |
| | BOHLER | S 600 | | | | | | |
| | GOST | R 6 M 5 | | | | | | |
| | B.S. | BM2 | | | | | | |
| HSS E | POLDI | Maximum Special 75 MO | 0,85 | 6,25 | 1,85 | 4,75 | 5,0 | 4,2 |
| (HSS Co) | ČSN | 19852 | | | | | | |
| | DIN | S 6-5-2-5 WERKSTOFF Nr. 1.3243 | | | | | | |
| | AFNOR | Z 85 WDKCV 06 05 04 02 | | | | | | |
| | BOHLER | S 705 | | | | | | |
| | GOST | R 6 M 5 K 5 | | | | | | |
| HSS E Co 8% | DIN | S 2-1-1-8 WERKSTOFF Nr. 1.3247 | 1,1 | 1,4 | 1,2 | 7,8 | 9,2 | 3,9 |
| (HSS Co 8%) | AISI | M 42 | | | | | | |
| | BOHLER | S 500 | | | | | | |
| | B.S. | BM42 | | | | | | |

## GRINDING MODE




**N** - conical lip relief

**A** - conical lip relief, split point - form A

**B** - conical lip relief, split point with rake correction - form B

**C** - conical lip relief, split point - form C

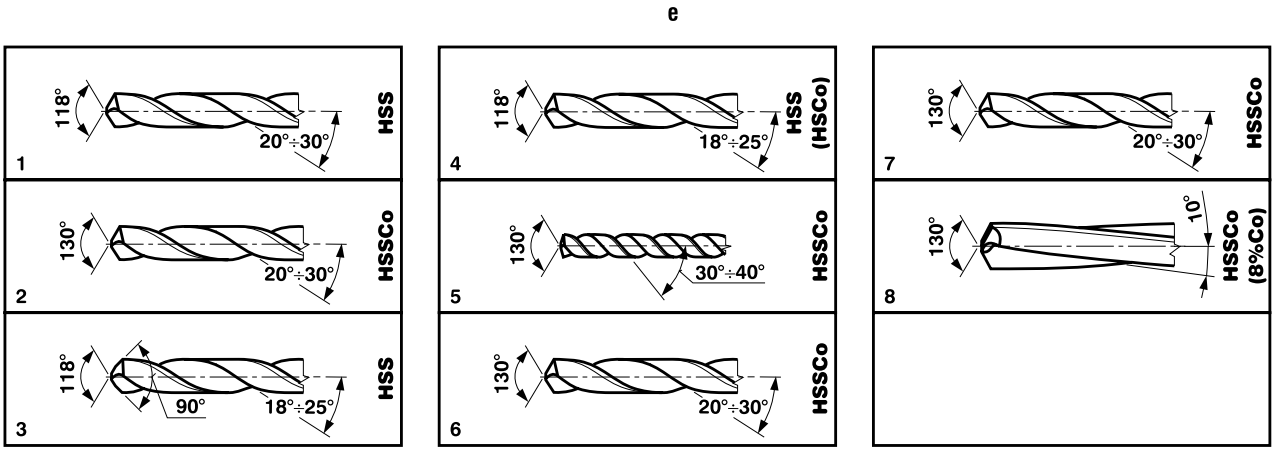
**D** - conical lip relief with bevelled outer corners - form D

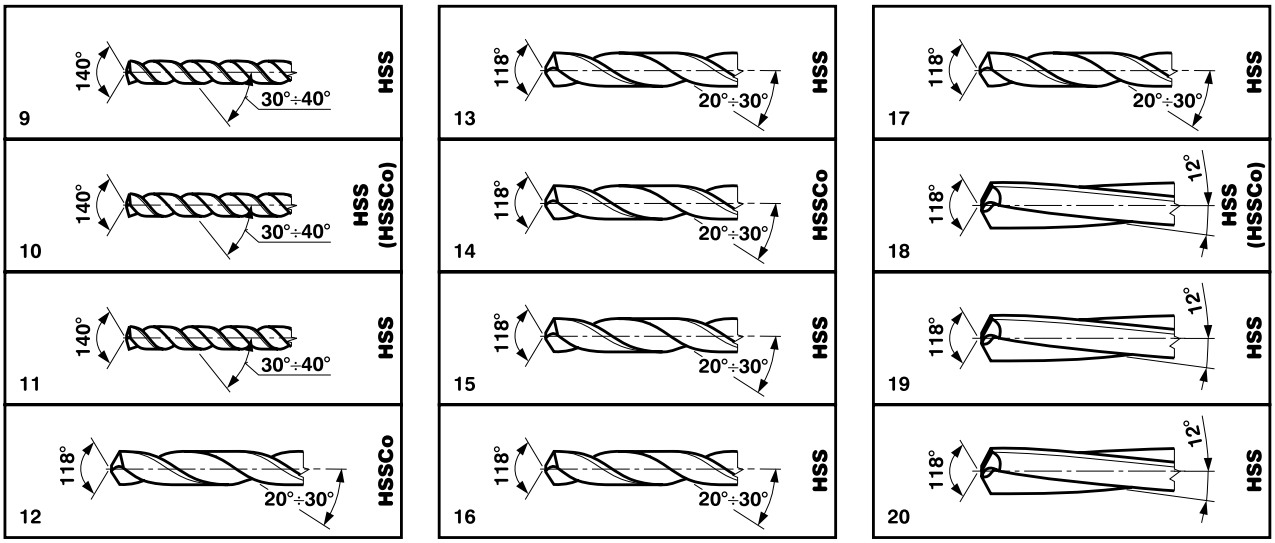
**E** - point angle 180° with centre point - form E

**M** - flat lip relief

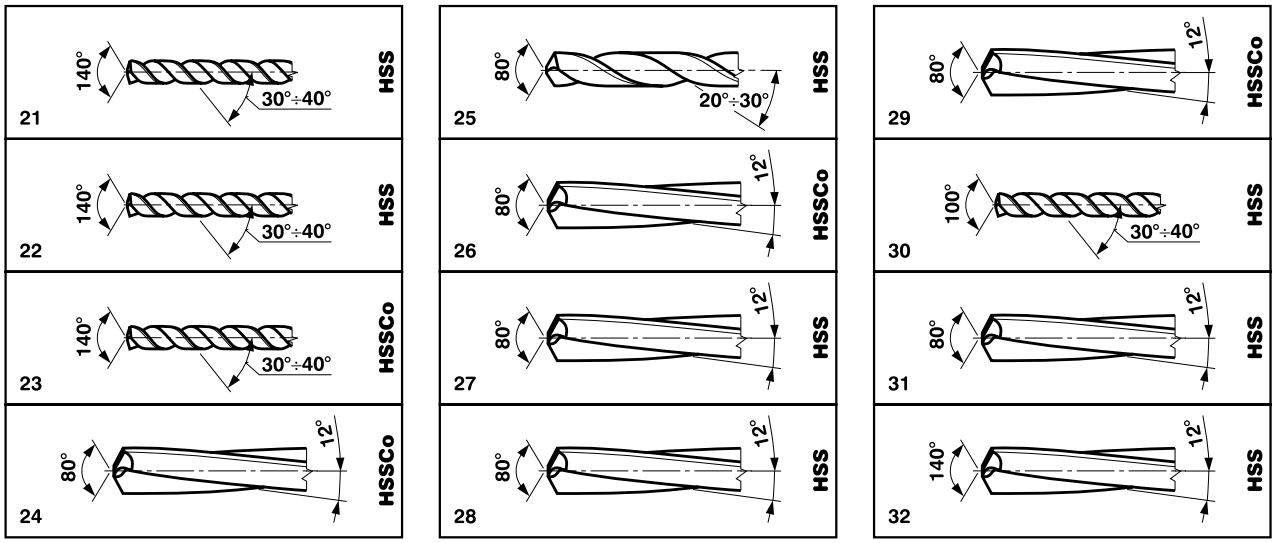
**S** - special grinding

## RECOMMENDED GEOMETRY OF DRILLS DEPENDING ON WORKING MATERIAL



## RECOMMENDED GEOMETRY OF DRILLS DEPENDING ON WORKING MATERIAL



# Technical Section

## TABLE OF CUTTING SPEEDS

$$n = \frac{1000\,v}{\pi\,D}$$

$$V = \frac{\pi\,D\,n}{1000}$$

| D(mm) | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 50 | 70 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2,0** | 1590 | 1910 | 2390 | 2860 | 3190 | 3980 | 4780 | 5580 | 6380 | 7960 | 11160 | 15900 |
| **2,5** | 1274 | 1528 | 1910 | 2290 | 2550 | 3180 | 3820 | 4460 | 6000 | 6370 | 8920 | 12740 |
| **3,15** | 1010 | 1210 | 1520 | 1820 | 2020 | 2530 | 3030 | 3540 | 4040 | 5060 | 7080 | 10100 |
| **4,0** | 796 | 955 | 1195 | 1430 | 1595 | 1990 | 2380 | 2990 | 3190 | 3980 | 5980 | 7960 |
| **5,0** | 637 | 760 | 955 | 1145 | 1275 | 1590 | 1910 | 2230 | 2550 | 3180 | 4460 | 6370 |
| **6,3** | 506 | 607 | 758 | 910 | 1010 | 1265 | 1520 | 1770 | 2020 | 2530 | 3540 | 5060 |
| **8,0** | 398 | 475 | 597 | 715 | 796 | 996 | 1194 | 1392 | 1592 | 1992 | 2784 | 3980 |
| **10,0** | 318 | 381 | 478 | 572 | 637 | 796 | 955 | 1115 | 1274 | 1592 | 2230 | 3180 |
| **12,5** | 254 | 305 | 382 | 458 | 508 | 635 | 764 | 890 | 1016 | 1270 | 1780 | 2540 |
| **16,0** | 199 | 239 | 299 | 358 | 398 | 498 | 597 | 697 | 796 | 995 | 1390 | 1990 |
| **20,0** | 159 | 191 | 239 | 286 | 318 | 398 | 478 | 558 | 636 | 795 | 1115 | 1590 |
| **25,0** | 127 | 153 | 191 | 229 | 255 | 318 | 382 | 446 | 600 | 637 | 892 | 1274 |
| **31,5** | 101 | 121 | 152 | 182 | 202 | 253 | 303 | 354 | 404 | 506 | 708 | 1010 |
| **40,0** | 80 | 95 | 119 | 143 | 159 | 194 | 239 | 278 | 318 | 398 | 557 | 795 |
| **50,0** | 64 | 76 | 96 | 114 | 127 | 159 | 191 | 223 | 255 | 318 | 445 | 636 |
| **63,0** | 51 | 61 | 76 | 91 | 101 | 127 | 152 | 177 | 202 | 253 | 354 | 506 |
| **80,0** | 40 | 48 | 60 | 71 | 80 | 100 | 119 | 139 | 159 | 199 | 278 | 398 |
| **100,0** | 32 | 38 | 48 | 57 | 64 | 80 | 96 | 112 | 127 | 159 | 223 | 318 |

## APPLICATION RECOMMENDATION FOR DRILLS

| | D (mm) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,00 | 2,50 | 3,15 | 4,00 | 5,00 | 6,50 | 8,00 | 10,0 | 12,5 | 16,0 | 20,0 | 25,0 | 31,5 | 40,0 | 50,0 | 63,0 | 80,0 |
| | s (mm/ot) | | | | | | | | | | | | | | | | |
| A | 0,015 | 0,020 | 0,025 | 0,032 | 0,032 | 0,040 | 0,050 | 0,063 | 0,063 | 0,080 | 0,100 | 0,125 | 0,125 | 0,160 | 0,200 | 0,250 | 0,315 |
| B | 0,020 | 0,025 | 0,032 | 0,040 | 0,040 | 0,050 | 0,063 | 0,080 | 0,080 | 0,100 | 0,125 | 0,160 | 0,160 | 0,200 | 0,250 | 0,315 | 0,400 |
| C | 0,025 | 0,032 | 0,040 | 0,050 | 0,050 | 0,063 | 0,080 | 0,100 | 0,100 | 0,125 | 0,160 | 0,200 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 |
| D | 0,032 | 0,040 | 0,050 | 0,063 | 0,063 | 0,080 | 0,100 | 0,125 | 0,125 | 0,160 | 0,200 | 0,250 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 |
| E | 0,040 | 0,050 | 0,063 | 0,080 | 0,080 | 0,100 | 0,125 | 0,160 | 0,160 | 0,200 | 0,250 | 0,315 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 |
| F | 0,050 | 0,063 | 0,080 | 0,100 | 0,100 | 0,125 | 0,160 | 0,200 | 0,200 | 0,250 | 0,315 | 0,400 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 |
| G | 0,063 | 0,080 | 0,100 | 0,125 | 0,125 | 0,160 | 0,200 | 0,250 | 0,250 | 0,315 | 0,400 | 0,500 | 0,500 | 0,630 | 0,800 | 1,000 | 1,250 |
| H | 0,080 | 0,100 | 0,125 | 0,160 | 0,160 | 0,200 | 0,250 | 0,315 | 0,315 | 0,400 | 0,500 | 0,630 | 0,630 | 0,800 | 1,000 | 1,250 | 1,600 |

# Technical Section

## APPLICATION RECOMMENDATION FOR DRILLS

| <3D | | <5D | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| PN 2904 | ČSN 221180 | ČSN 221121 | PN 2913 | PN 221140 | PN 2911 | PN 2909 | PN 2913 T 1000 | PN 2931 | PN 2907 | ČSN 221143 | ZVSE 221146 |
| PN 2905 | ČSN 221182 | ČSN 221131 | PN 2914 | ČSN 221144 | PN 2912 | PN 2910 | | | PN 2908 | PN 221153 | |
| | PN 221187 | | | | | | | | | | |
| HSS | HSS | HSS | HSS | HSS | HSS | HSS | HSS | HSS Tin | HSSCo | HSSCo | HSSCo8 | |
| 33 F | | 29 F | | | | | 29 F | 36 F | | | | 1 |
| 25 E | | 23 E | | | | | 23 E | 29 E | | | | |
| 33 F | | 29 F | | | | | 29 F | 26 F | | | | 2 |
| 25 E | | 23 E | | | | | 23 E | 29 E | 25 E | | | |
| 33 E | | 29 E | | | | | 29 E | 36 E | | | | 3 |
| 25 E | | 23 E | | | | | 23 E | 29 E | 25 E | | | |
| | | | | | | | | 15 D | 14 D | | | |
| | | | | | | | | 18 D | 16 D | | | 4 |
| | | | | | | | | | 13 C | | | |
| 33 F | | 29 F | | | | | 29 F | 36 F | | | | 5 |
| | | | | | | | | 16 D | 14 D | | | 6 |
| | | | | | | | | | 11 D | | | |
| | | | | | | | | 14 D | 13 D | | | |
| | | | | | | | | | 9 C | | | |
| 16 D | | 14 D | | | | | 14 D | 18 D | 16 D | | | 8 |
| | | | | | | | | | 9 C | | | |
| | | | | | | | | | 9 C | | | 9 |
| | | | | | | | | | 7 B | | 8 B | 10 |
| | | | | | | | | | 13 D | | | 11 |
| | | | | | | | | | 9 D | | | |
| | | | | | | | | | 11 C | | | |
| | | | | | | | | | 5 A | | 6 A | 12 |
| 33 F | | 29 F | | | | | 29 F | 36 F | 33 F | | | 13 |
| 25 F | | 23 F | | | | | 23 F | 29 F | 25 F | | | |
| 29 F | | 25 F | | | | | 25 F | 32 F | 27 F | | | 14 |
| 21 F | | 18 F | | | | | 18 F | 23 F | 20 F | | | |
| | | | | | | | | | | | 10 B | 15 |
| | | | | | | | | | | | 6 B | |
| 72 F | | | | | | 63 G | 63 G | | | | | 16 |
| 72 F | | | | | | 63 G | 63 G | | | | | 17 |
| 63 F | | 56 G | | | | 56 G | 56 G | 72 G | | | | 18 |
| 50 F | | 45 F | | | | | 45 F | 63 F | | | | |
| 33 E | | 29 E | | | | 29 E | 29 E | 36 E | 33 E | | | 19 |
| | | | | | 56 F | | | | | | | 20 |
| 41 E | | 36 E | | | | | 36 E | 45 E | 41 E | | | |
| 33 D | | 29 D | | | 28 D | | 22D | 36 D | 33 D | | | 21 |
| 25 D | | 22 D | | | | | 22 D | 29 D | 25 D | | | |
| 16 D | | 14 D | | | 14 D | | 14 D | 18 D | 16 D | | | 22 |
| 25 E | | 22 E | | | 22 E | 22 E | | 29 E | | | | |

## APPLICATION RECOMMENDATION FOR DRILLS

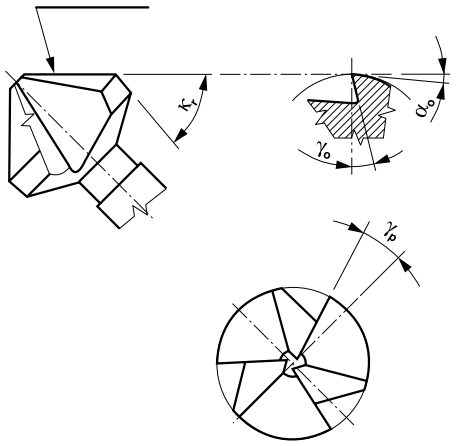
| Kód posuvu | D (mm) | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2,00 | 2,50 | 3,15 | 4,00 | 5,00 | 6,50 | 8,00 | 10,0 | 12,5 | 16,0 | 20,0 | 25,0 | 31,5 | 40,0 | 50,0 | 63,0 | 80,0 |
| | s (mm/ot) | | | | | | | | | | | | | | | | |
| A | 0,015 | 0,020 | 0,025 | 0,032 | 0,032 | 0,040 | 0,050 | 0,063 | 0,063 | 0,080 | 0,100 | 0,125 | 0,125 | 0,160 | 0,200 | 0,250 | 0,315 |
| B | 0,020 | 0,025 | 0,032 | 0,040 | 0,040 | 0,050 | 0,063 | 0,080 | 0,080 | 0,100 | 0,125 | 0,160 | 0,160 | 0,200 | 0,250 | 0,315 | 0,400 |
| C | 0,025 | 0,032 | 0,040 | 0,050 | 0,050 | 0,063 | 0,080 | 0,100 | 0,100 | 0,125 | 0,160 | 0,200 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 |
| D | 0,032 | 0,040 | 0,050 | 0,063 | 0,063 | 0,080 | 0,100 | 0,125 | 0,125 | 0,160 | 0,200 | 0,250 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 |
| E | 0,040 | 0,050 | 0,063 | 0,080 | 0,080 | 0,100 | 0,125 | 0,160 | 0,160 | 0,200 | 0,250 | 0,315 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 |
| F | 0,050 | 0,063 | 0,080 | 0,100 | 0,100 | 0,125 | 0,160 | 0,200 | 0,200 | 0,250 | 0,315 | 0,400 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 |
| G | 0,063 | 0,080 | 0,100 | 0,125 | 0,125 | 0,160 | 0,200 | 0,250 | 0,250 | 0,315 | 0,400 | 0,500 | 0,500 | 0,630 | 0,800 | 1,000 | 1,250 |
| H | 0,080 | 0,100 | 0,125 | 0,160 | 0,160 | 0,200 | 0,250 | 0,315 | 0,315 | 0,400 | 0,500 | 0,630 | 0,630 | 0,800 | 1,000 | 1,250 | 1,600 |

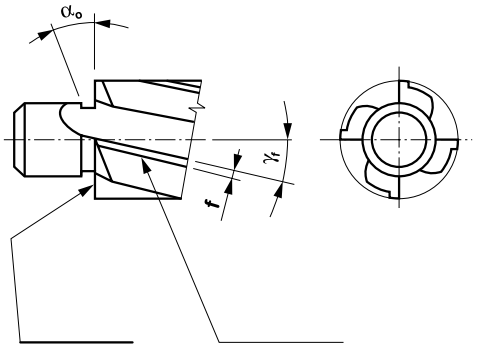
# Technical Section

## APPLICATION RECOMMENDATION FOR DRILLS

| | <10D | | | | | | | >10D | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| ČSN 221125 | PN 2616<br>PN 2921 | ZV 5001 délk.pr.. | PN 2916 T 500 | PN 2617 | PN 2915<br>PN 2920 | PN 2916 T 1000 | ZV 5001 T 1000 délk.pr.. 1 | ZV 3001 | ZV 5001 délk.pr.. 2, 3 | PN 221133 T 1000 | ZV 5001 T 1000 délk.pr.. 2, 3 | |
| HSS | HSS | HSS | HSS | HSS | HSSCo | HSSCo | HSSCo | HSS | HSS | HSSCo | HSSCo | |
| | 25 F | | 25 F | | | | | 20 E | | | | 1 |
| | 20 E | | | | | | | 16 E | | | | |
| | 25 F | | | | | | | 20 D | | | | 2 |
| | 20 E | | | | | 22 E | | 16 E | | 18 D | | |
| | 25 E | | | | | | | 20 D | | | | 3 |
| | 20 E | | | | | 22 E | | 16 E | | | | |
| | | | | | | 14 D | | | | 12 C | | |
| | | | | | | 14 D | | 10 C | | 12 C | | 4 |
| | | | | | | 10 C | | | | 8 B | | |
| | | | | | | | | 20 E | | | | 5 |
| | | | | | | 12 D | | 8 C | | 10 C | | 6 |
| | | | | | | 8 C | | | | 8 B | | |
| | | | | | | 10 D | | 7 C | | 8 B | | 7 |
| | | | | | | 7 C | | | | 7 C | | |
| | | | | | | 14 D | | 10 C | | 12 C | | 8 |
| | | | | | | 7 C | | 5 B | | 7 B | | |
| | | | | | | 7 C | | 5 B | | 7 B | | 9 |
| | | | | | | 5 B | | | | 5 A | | 10 |
| | | | | | | 10 D | | 7 C | | 8 C | | 11 |
| | | | | | | 7 C | | | | 7 B | | |
| | | | | | | 8 C | | | | 8 B | | |
| | | | | | | 5 A | | | | 5 A | | 12 |
| | 25 f | | | | | 27 F | | 20 E | | | | 13 |
| | 20 F | | | | | 22 F | | 16 E | | 18 E | | |
| | 20 F | | | | | 22 F | | 18 E | | | | 14 |
| | 16 F | | | | | 18 F | | 12 E | | 14 E | | |
| | | | | | | 8 B | | | | 7 A | | 15 |
| | | | | | | 6 B | | | | 5 A | | |
| | | | 60 G | 60 G | | | | | | | | 16 |
| | | | 60 G | 60 G | | | | | | | | 17 |
| | 50 G | | | 50 G | | 50 G | | 40 F | | 45 F | | 18 |
| | 40 F | | | | | 45 F | | 33 F | | 36 F | | |
| | 25 E | | | 25 E | | 27 E | | 20 D | | 22 D | | 19 |
| | | | | | | | | 40 D | | | | 20 |
| | 30 E | | | | | 34 E | | 25 D | | 27 D | | |
| | 25 D | | | | | 27 D | | 20 C | | | | 21 |
| | 20 D | | | | | 20 D | | 16 C | | 18 C | | |
| | 12 D | | | | | 15 D | | 10 C | | 12 C | | 22 |
| | 20 E | | 20 E | 20 E | | | | 16 D | | | | |

## DEFINITION, DIMENSIONS AND ANGLES




| | | | | | |
|---|---|---|---|---|---|
| $\kappa_r$ | face setting angle | $\alpha_o$ | clerence angle | $\alpha_p$ | clerence angle of minor cutting edge |
| $\gamma_f$ | helix angle | $\gamma_o$ | orthogonal rake angle | $\gamma_p$ | back rake angle |
| | | | | f | circular land width |

# Technical Section

## COMMENTS, SYMBOLS

### Manufacturing Mode

**F -** milled
**V -** ground from solid
**T -** rollforged or extruded

### Material

**HSS -** high-speed steel
**HSS Co - (HSSE)** super high-speed steel (5%Co)
**HSS Co8 - (HSS E Co8)** super high-speed steel (8%Co)
**SK -** sintered carbide
**HCS -** alloy tool steel

### Grinding Mode

**N** - conical lip relief
**A** - conical lip relief, split point - form-A
**B** - conical lip relief, split point with rake correction - form B
**C** - conical lip relief, split point - form-C
**D** - conical lip relief with bevelled outer corners - form D
**E** - point angle 180° with centre point - form E
**M** - flat lip relief
**S** - special grinding

### Twist drills - Definition

$\varepsilon$ - Point angle (position 41, page 108)
$\lambda$ - Helixt angle (position 38, page 108)

### Surface Treatment of Tool

○ - without treatment
● - black oxide coated or steam tempered
◑ - black oxide coated or steam tempered, so-called two-coloured execution
◎ - TiN-coated

### Note

✷ - made-to-order
**ČSN** - Czech standard
**PN, ZVSE** - STIM ZET standard