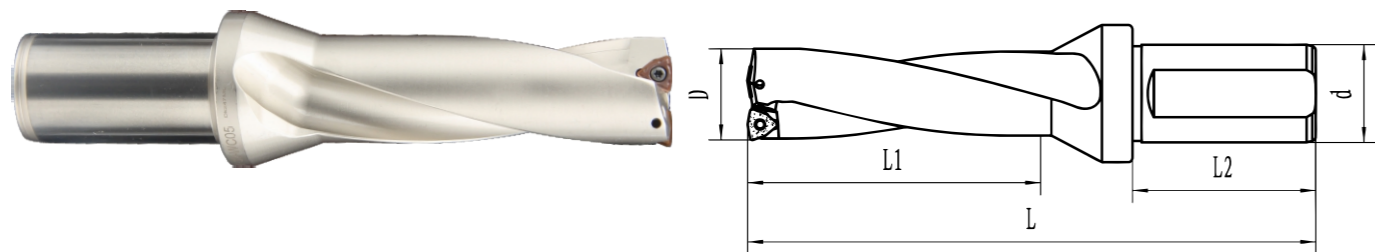


快速钻

3倍WC快速钻



3D-WC快速钻

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-------|-----|----|----|------------|----------|-----|
| ZD03-14.0-XP25-WC03-02 | 14 | 42 | 120 | 56 | 25 | WCMT030208 | M2.5*6.5 | T8 |
| ZD03-14.5-XP25-WC03-02 | 14.5 | 43.5 | 122 | | | | | |
| ZD03-15.0-XP25-WC03-02 | 15 | 45 | 123 | | | | | |
| ZD03-15.5-XP25-WC03-02 | 15.5 | 46.5 | 124 | | | | | |
| ZD03-16.0-XP25-WC03-02 | 16 | 48 | 126 | | | | | |
| ZD03-16.5-XP25-WC03-02 | 16.5 | 49.5 | 127 | | | | | |
| ZD03-17.0-XP25-WC03-02 | 17 | 51 | 129 | | | | | |
| ZD03-17.5-XP25-WC03-02 | 17.5 | 52.5 | 130 | | | | | |
| ZD03-18.0-XP25-WC03-02 | 18 | 54 | 132 | | | | | |
| ZD03-18.5-XP25-WC03-02 | 18.5 | 55.5 | 133 | | | | | |
| ZD03-19.0-XP25-WC03-02 | 19 | 57 | 135 | | | | | |
| ZD03-19.5-XP25-WC03-02 | 19.5 | 58.5 | 135 | | | | | |
| ZD03-20.0-XP25-WC03-02 | 20 | 60 | 139 | | | | | |
| ZD03-20.5-XP25-WC03-02 | 20.5 | 61.5 | 140 | | | | | |
| ZD03-21.0-XP25-WC04-02 | 21 | 63 | 142 | | | | | |
| ZD03-21.5-XP25-WC04-02 | 21.5 | 64.5 | 143 | | | | | |
| ZD03-22.0-XP25-WC04-02 | 22 | 66 | 145 | | | | | |
| ZD03-22.5-XP25-WC04-02 | 22.5 | 67.5 | 148 | | | | | |
| ZD03-23.0-XP25-WC04-02 | 23 | 69 | 148 | | | | | |
| ZD03-23.5-XP25-WC04-02 | 23.5 | 70.5 | 149 | | | | | |
| ZD03-24.0-XP25-WC04-02 | 24 | 72 | 151 | | | | | |
| ZD03-24.5-XP25-WC04-02 | 24.5 | 73.5 | 152 | | | | | |
| ZD03-25.0-XP32-WC05-02 | 25 | 75 | 166 | 60 | 32 | WCMT050308 | M3*7 | T15 |
| ZD03-25.5-XP32-WC05-02 | 25.5 | 76.5 | 167 | | | | | |
| ZD03-26.0-XP32-WC05-02 | 26 | 78 | 169 | | | | | |
| ZD03-26.5-XP32-WC05-02 | 26.5 | 79.5 | 170 | | | | | |
| ZD03-27.0-XP32-WC05-02 | 27 | 81 | 172 | | | | | |
| ZD03-27.5-XP32-WC05-02 | 27.5 | 82.5 | 173 | | | | | |
| ZD03-28.0-XP32-WC05-02 | 28 | 84 | 175 | | | | | |
| ZD03-28.5-XP32-WC05-02 | 28.5 | 85.5 | 176 | | | | | |
| ZD03-29.0-XP32-WC05-02 | 29 | 87 | 178 | | | | | |
| ZD03-29.5-XP32-WC05-02 | 29.5 | 88.5 | 179 | | | | | |
| ZD03-30.0-XP32-WC05-02 | 30 | 90 | 181 | | | | | |
| ZD03-30.5-XP32-WC05-02 | 30.5 | 91.5 | 182 | | | | | |
| ZD03-31.0-XP32-WC05-02 | 31 | 93 | 184 | | | | | |
| ZD03-31.5-XP32-WC05-02 | 31.5 | 94.5 | 185 | | | | | |
| ZD03-32.0-XP32-WC06-02 | 32 | 96 | 187 | | | | | |
| ZD03-32.5-XP32-WC06-02 | 32.5 | 97.5 | 188 | | | | | |
| ZD03-33.0-XP32-WC06-02 | 33 | 99 | 190 | | | | | |
| ZD03-33.5-XP32-WC06-02 | 33.5 | 100.5 | 191 | | | | | |
| ZD03-34.0-XP32-WC06-02 | 34 | 102 | 193 | | | | | |
| ZD03-34.5-XP32-WC06-02 | 34.5 | 103.5 | 194 | | | | | |
| ZD03-35.0-XP32-WC06-02 | 35 | 105 | 196 | | | | | |
| ZD03-35.5-XP32-WC06-02 | 35.5 | 106.5 | 197 | | | | | |
| ZD03-36.0-XP32-WC06-02 | 36 | 108 | 199 | | | | | |
| ZD03-36.5-XP32-WC06-02 | 36.5 | 109.5 | 200 | | | | | |

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-------|-----|----|----|------------|--------|-----|
| ZD03-37.0-XP32-WC06-02 | 37 | 111 | 202 | 60 | 32 | WCMT06T308 | M3.5*8 | T15 |
| ZD03-37.5-XP32-WC06-02 | 37.5 | 112.5 | 203 | | | | | |
| ZD03-38.0-XP32-WC06-02 | 38 | 114 | 205 | | | | | |
| ZD03-38.5-XP32-WC06-02 | 38.5 | 115.5 | 206 | | | | | |
| ZD03-39.0-XP32-WC06-02 | 39 | 117 | 206 | | | | | |
| ZD03-39.5-XP32-WC06-02 | 39.5 | 118.5 | 209 | | | | | |
| ZD03-40.0-XP32-WC06-02 | 40 | 120 | 211 | | | | | |
| ZD03-41.0-XP32-WC06-02 | 41 | 123 | 214 | | | | | |
| ZD03-42.0-XP32-WC06-02 | 42 | 126 | 217 | | | | | |
| ZD03-43.0-XP40-WC08-02 | 43 | 129 | 229 | | | | | |
| ZD03-44.0-XP40-WC08-02 | 44 | 132 | 232 | | | | | |
| ZD03-45.0-XP40-WC08-02 | 45 | 135 | 235 | | | | | |
| ZD03-46.0-XP40-WC08-02 | 46 | 138 | 238 | | | | | |
| ZD03-47.0-XP40-WC08-02 | 47 | 141 | 241 | | | | | |
| ZD03-48.0-XP40-WC08-02 | 48 | 144 | 244 | | | | | |
| ZD03-49.0-XP40-WC08-02 | 49 | 147 | 247 | | | | | |
| ZD03-50.0-XP40-WC08-02 | 50 | 150 | 250 | 65 | 40 | WCMT080412 | M4*10 | T15 |
| ZD03-51.0-XP40-WC08-02 | 51 | 153 | 253 | | | | | |
| ZD03-52.0-XP40-WC08-02 | 52 | 156 | 256 | | | | | |
| ZD03-53.0-XP40-WC08-02 | 53 | 159 | 259 | | | | | |
| ZD03-54.0-XP40-WC08-02 | 54 | 162 | 262 | | | | | |
| ZD03-55.0-XP40-WC08-02 | 55 | 165 | 265 | | | | | |
| ZD03-56.0-XP40-WC08-02 | 56 | 168 | 268 | | | | | |
| ZD03-57.0-XP40-WC08-02 | 57 | 171 | 271 | | | | | |
| ZD03-58.0-XP40-WC06-04 | 58 | 174 | 274 | | | | | |
| ZD03-59.0-XP40-WC06-04 | 59 | 177 | 277 | | | | | |
| ZD03-60.0-XP40-WC06-04 | 60 | 180 | 280 | | | | | |
| | | | | | | | | |

快速钻相关参数计算方法

钻头转速

$$S = \frac{V_c \times 1000}{\pi \times D_c}$$

V_c (m/min):线速度
 D_c (mm):钻头
 S (rev/min):转速

实例:
刀片线速度120m/min, 钻头直径为Φ20mm, 其钻头转速: $S = \frac{120 \times 1000}{3.14 \times 20} = 1900 \text{ rev/min}$

进给速度

$$V_f = F_r \times S$$

V_f (mm/min):进给速度
 F_r (mm/rev):每转进给量
 S (rev/min):主轴转速

实例
主轴转速1900rev/min, 每转进给量为0.1mm/rev.其他进给速度: $V_f = F_r \times S = 1900 \times 0.1 = 190 \text{ mm/min}$

孔加工时间

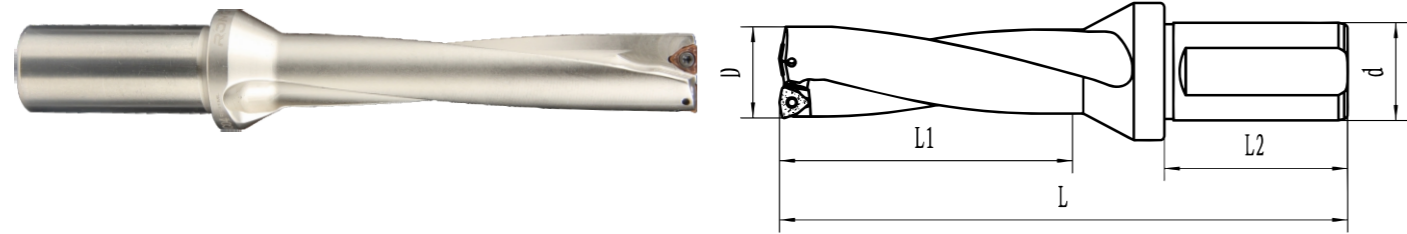
$$T_c = \frac{H}{V_f} \times 60$$

T_c (s):加工时间
 H (mm):钻孔深

实例
钻一个直径为φ20mm, 深为40mm的孔, 进给速度为190mm/min: $T_c = \frac{H}{V_f} \times 60 = \frac{40}{190} \times 60 = 13 \text{ s}$

快速钻

4倍WC快速钻



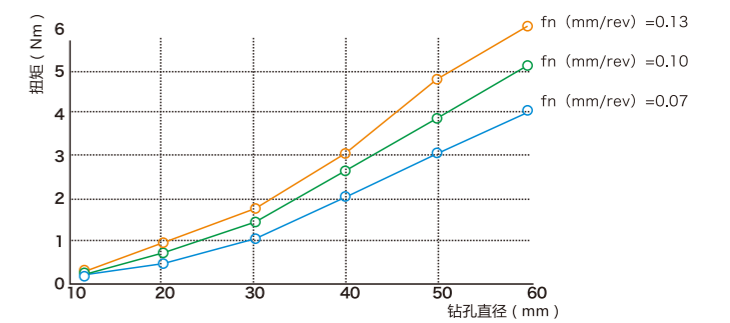
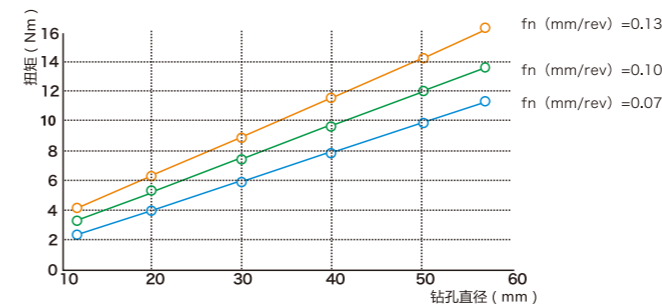
4D-WC快速钻

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-----|-----|----|----|------------|----------|-----|
| ZD04-14.0-XP25-WC03-02 | 14 | 56 | 134 | 56 | 25 | WCMT030208 | M2.5*6.5 | T8 |
| ZD04-14.5-XP25-WC03-02 | 14.5 | 58 | 136 | | | | | |
| ZD04-15.0-XP25-WC03-02 | 15 | 60 | 138 | | | | | |
| ZD04-15.5-XP25-WC03-02 | 15.5 | 62 | 140 | | | | | |
| ZD04-16.0-XP25-WC03-02 | 16 | 64 | 142 | | | | | |
| ZD04-16.5-XP25-WC03-02 | 16.5 | 66 | 144 | | | | | |
| ZD04-17.0-XP25-WC03-02 | 17 | 68 | 146 | | | | | |
| ZD04-17.5-XP25-WC03-02 | 17.5 | 70 | 148 | | | | | |
| ZD04-18.0-XP25-WC03-02 | 18 | 72 | 150 | | | | | |
| ZD04-18.5-XP25-WC03-02 | 18.5 | 74 | 152 | | | | | |
| ZD04-19.0-XP25-WC03-02 | 19 | 76 | 154 | | | | | |
| ZD04-19.5-XP25-WC03-02 | 19.5 | 78 | 155 | | | | | |
| ZD04-20.0-XP25-WC03-02 | 20 | 80 | 159 | | | | | |
| ZD04-20.5-XP25-WC03-02 | 20.5 | 82 | 161 | | | | | |
| ZD04-21.0-XP25-WC04-02 | 21 | 84 | 163 | | | | | |
| ZD04-21.5-XP25-WC04-02 | 21.5 | 86 | 165 | | | | | |
| ZD04-22.0-XP25-WC04-02 | 22 | 88 | 167 | | | | | |
| ZD04-22.5-XP25-WC04-02 | 22.5 | 90 | 169 | | | | | |
| ZD04-23.0-XP25-WC04-02 | 23 | 92 | 171 | | | | | |
| ZD04-23.5-XP25-WC04-02 | 23.5 | 94 | 173 | | | | | |
| ZD04-24.0-XP25-WC04-02 | 24 | 96 | 175 | | | | | |
| ZD04-24.5-XP25-WC04-02 | 24.5 | 98 | 177 | | | | | |
| ZD04-25.0-XP32-WC05-02 | 25 | 100 | 191 | | | | | |
| ZD04-25.5-XP32-WC05-02 | 25.5 | 102 | 193 | | | | | |
| ZD04-26.0-XP32-WC05-02 | 26 | 104 | 195 | | | | | |
| ZD04-26.5-XP32-WC05-02 | 26.5 | 106 | 197 | | | | | |
| ZD04-27.0-XP32-WC05-02 | 27 | 108 | 199 | | | | | |
| ZD04-27.5-XP32-WC05-02 | 27.5 | 110 | 201 | | | | | |
| ZD04-28.0-XP32-WC05-02 | 28 | 112 | 203 | | | | | |
| ZD04-28.5-XP32-WC05-02 | 28.5 | 114 | 205 | | | | | |
| ZD04-29.0-XP32-WC05-02 | 29 | 116 | 207 | | | | | |
| ZD04-29.5-XP32-WC05-02 | 29.5 | 118 | 209 | | | | | |
| ZD04-30.0-XP32-WC05-02 | 30 | 120 | 211 | | | | | |
| ZD04-30.5-XP32-WC05-02 | 30.5 | 122 | 213 | | | | | |
| ZD04-31.0-XP32-WC05-02 | 31 | 124 | 215 | | | | | |
| ZD04-31.5-XP32-WC05-02 | 31.5 | 126 | 217 | | | | | |
| ZD04-32.0-XP32-WC06-02 | 32 | 128 | 219 | | | | | |
| ZD04-32.5-XP32-WC06-02 | 32.5 | 130 | 221 | | | | | |
| ZD04-33.0-XP32-WC06-02 | 33 | 132 | 223 | | | | | |
| ZD04-33.5-XP32-WC06-02 | 33.5 | 134 | 225 | | | | | |
| ZD04-34.0-XP32-WC06-02 | 34 | 136 | 227 | | | | | |
| ZD04-34.5-XP32-WC06-02 | 34.5 | 138 | 229 | | | | | |
| ZD04-35.0-XP32-WC06-02 | 35 | 140 | 231 | | | | | |
| ZD04-35.5-XP32-WC06-02 | 35.5 | 142 | 233 | | | | | |
| ZD04-36.0-XP32-WC06-02 | 36 | 144 | 235 | | | | | |
| ZD04-36.5-XP32-WC06-02 | 36.5 | 146 | 237 | | | | | |
| | | | | 60 | 32 | WCMT050308 | M3*7 | |
| | | | | | | WCMT06T308 | M3.5*8 | T15 |

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-----|-----|----|----|------------|--------|-----|
| ZD04-37.0-XP32-WC06-02 | 37 | 148 | 239 | 60 | 32 | WCMT06T308 | M3.5*8 | T15 |
| ZD04-37.5-XP32-WC06-02 | 37.5 | 150 | 241 | | | | | |
| ZD04-38.0-XP32-WC06-02 | 38 | 152 | 243 | | | | | |
| ZD04-38.5-XP32-WC06-02 | 38.5 | 154 | 245 | | | | | |
| ZD04-39.0-XP32-WC06-02 | 39 | 156 | 247 | | | | | |
| ZD04-39.5-XP32-WC06-02 | 39.5 | 158 | 249 | | | | | |
| ZD04-40.0-XP32-WC06-02 | 40 | 160 | 251 | | | | | |
| ZD04-41.0-XP32-WC06-02 | 41 | 164 | 255 | | | | | |
| ZD04-42.0-XP32-WC06-02 | 42 | 168 | 259 | | | | | |
| ZD04-43.0-XP40-WC08-02 | 43 | 172 | 272 | | | | | |
| ZD04-44.0-XP40-WC08-02 | 44 | 176 | 276 | | | | | |
| ZD04-45.0-XP40-WC08-02 | 45 | 180 | 280 | | | | | |
| ZD04-46.0-XP40-WC08-02 | 46 | 184 | 284 | | | | | |
| ZD04-47.0-XP40-WC08-02 | 47 | 188 | 288 | | | | | |
| ZD04-48.0-XP40-WC08-02 | 48 | 192 | 292 | | | | | |
| ZD04-49.0-XP40-WC08-02 | 49 | 196 | 296 | | | | | |
| ZD04-50.0-XP40-WC08-02 | 50 | 200 | 300 | | | | | |
| ZD04-51.0-XP40-WC08-02 | 51 | 204 | 304 | | | | | |
| ZD04-52.0-XP40-WC08-02 | 52 | 208 | 308 | | | | | |
| ZD04-53.0-XP40-WC08-02 | 53 | 212 | 312 | | | | | |
| ZD04-54.0-XP40-WC08-02 | 54 | 216 | 316 | | | | | |
| ZD04-55.0-XP40-WC08-02 | 55 | 220 | 320 | | | | | |
| ZD04-56.0-XP40-WC08-02 | 56 | 224 | 324 | | | | | |
| ZD04-57.0-XP40-WC08-02 | 57 | 228 | 328 | | | | | |
| ZD04-58.0-XP40-WC06-04 | 58 | 232 | 332 | | | | | |
| ZD04-59.0-XP40-WC06-04 | 59 | 236 | 336 | | | | | |
| ZD04-60.0-XP40-WC06-04 | 60 | 240 | 340 | | | | | |
| | | | | 65 | 40 | WCMT080412 | M4*10 | |
| | | | | | | WCMT06T308 | M3.5*8 | |

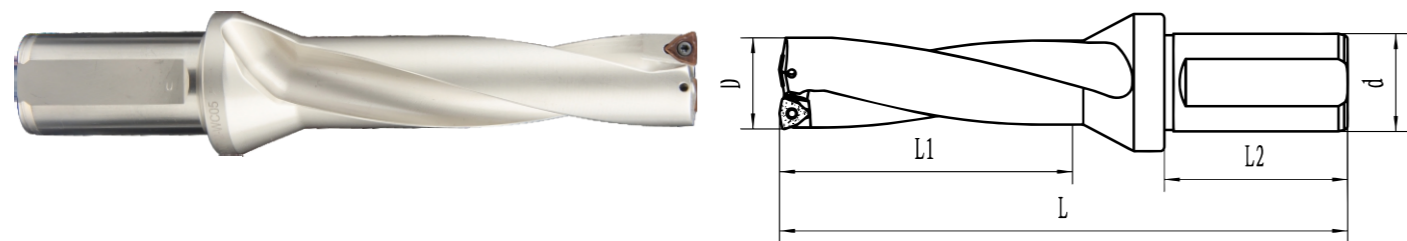
加工功率要求

- 以下图表为钻削加工所需切削力
- U-Dri钻头适用于高刚性高功率机床



快速钻

5倍WC快速钻

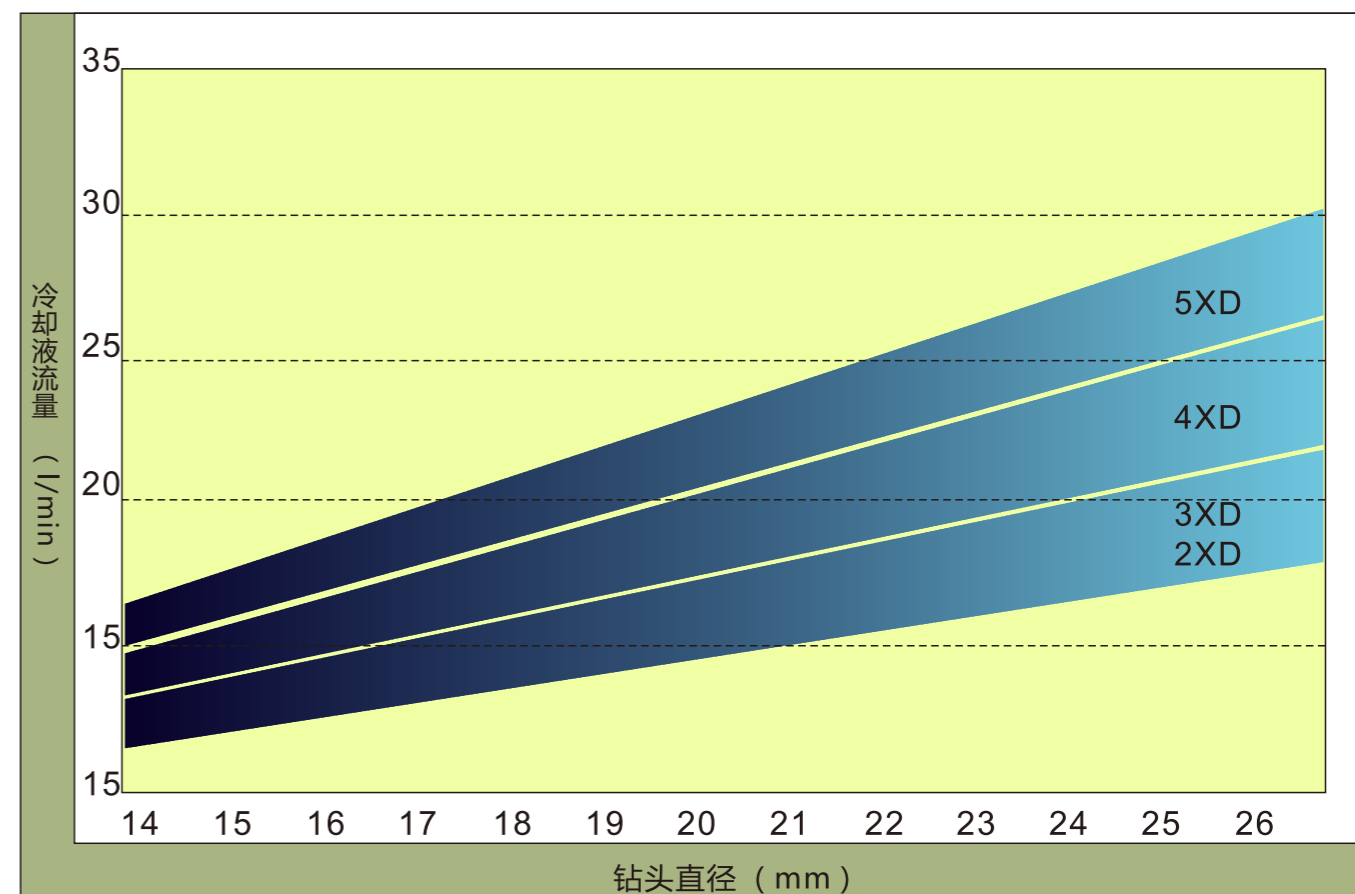


5D-WC快速钻

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-------|-----|----|----|------------|----------|-----|
| ZD05-20.0-XP25-WC03-02 | 20 | 100 | 179 | 56 | 25 | WCMT030208 | M2.5*6.5 | T8 |
| ZD05-20.5-XP25-WC03-02 | 20.5 | 102.5 | 181 | | | | | |
| ZD05-21.0-XP25-WC04-02 | 21 | 105 | 184 | | | | | |
| ZD05-21.5-XP25-WC04-02 | 21.5 | 107.5 | 186 | | | | | |
| ZD05-22.0-XP25-WC04-02 | 22 | 110 | 189 | | | | | |
| ZD05-22.5-XP25-WC04-02 | 22.5 | 112.5 | 193 | | | | | |
| ZD05-23.0-XP25-WC04-02 | 23 | 115 | 194 | | | | | |
| ZD05-23.5-XP25-WC04-02 | 23.5 | 117.5 | 196 | | | | | |
| ZD05-24.0-XP25-WC04-02 | 24 | 120 | 199 | | | | | |
| ZD05-24.5-XP25-WC04-02 | 24.5 | 122.5 | 201 | | | | | |
| ZD05-25.0-XP32-WC05-02 | 25 | 125 | 216 | | | | | |
| ZD05-25.5-XP32-WC05-02 | 25.5 | 127.5 | 218 | | | | | |
| ZD05-26.0-XP32-WC05-02 | 26 | 130 | 221 | | | | | |
| ZD05-26.5-XP32-WC05-02 | 26.5 | 132.5 | 223 | | | | | |
| ZD05-27.0-XP32-WC05-02 | 27 | 135 | 226 | | | | | |
| ZD05-27.5-XP32-WC05-02 | 27.5 | 137.5 | 228 | | | | | |
| ZD05-28.0-XP32-WC05-02 | 28 | 140 | 231 | | | | | |
| ZD05-28.5-XP32-WC05-02 | 28.5 | 142.5 | 233 | | | | | |
| ZD05-29.0-XP32-WC05-02 | 29 | 145 | 236 | | | | | |
| ZD05-29.5-XP32-WC05-02 | 29.5 | 147.5 | 238 | | | | | |
| ZD05-30.0-XP32-WC05-02 | 30 | 150 | 241 | | | | | |
| ZD05-30.5-XP32-WC05-02 | 30.5 | 152.5 | 243 | | | | | |
| ZD05-31.0-XP32-WC05-02 | 31 | 155 | 246 | | | | | |
| ZD05-31.5-XP32-WC05-02 | 31.5 | 157.5 | 248 | | | | | |
| ZD05-32.0-XP32-WC06-02 | 32 | 160 | 251 | | | | | |
| ZD05-32.5-XP32-WC06-02 | 32.5 | 162.5 | 253 | | | | | |
| ZD05-33.0-XP32-WC06-02 | 33 | 165 | 256 | | | | | |
| ZD05-33.5-XP32-WC06-02 | 33.5 | 167.5 | 258 | | | | | |
| ZD05-34.0-XP32-WC06-02 | 34 | 170 | 261 | | | | | |
| ZD05-34.5-XP32-WC06-02 | 34.5 | 172.5 | 263 | | | | | |
| ZD05-35.0-XP32-WC06-02 | 35 | 175 | 266 | | | | | |
| ZD05-35.5-XP32-WC06-02 | 35.5 | 177.5 | 268 | | | | | |
| ZD05-36.0-XP32-WC06-02 | 36 | 180 | 271 | | | | | |
| ZD05-36.5-XP32-WC06-02 | 36.5 | 182.5 | 273 | | | | | |
| ZD05-37.0-XP32-WC06-02 | 37 | 185 | 276 | | | | | |
| ZD05-37.5-XP32-WC06-02 | 37.5 | 187.5 | 278 | | | | | |
| ZD05-38.0-XP32-WC06-02 | 38 | 190 | 281 | | | | | |
| ZD05-38.5-XP32-WC06-02 | 38.5 | 192.5 | 283 | | | | | |
| ZD05-39.0-XP32-WC06-02 | 39 | 195 | 284 | | | | | |
| ZD05-39.5-XP32-WC06-02 | 39.5 | 197.5 | 288 | | | | | |
| ZD05-40.0-XP32-WC06-02 | 40 | 200 | 291 | | | | | |
| ZD05-41.0-XP32-WC06-02 | 41 | 205 | 296 | | | | | |
| ZD05-42.0-XP32-WC06-02 | 42 | 210 | 301 | | | | | |
| ZD05-43.0-XP40-WC08-02 | 43 | 215 | 315 | | | | | |
| ZD05-44.0-XP40-WC08-02 | 44 | 220 | 320 | | | | | |
| ZD05-45.0-XP40-WC08-02 | 45 | 225 | 325 | | | | | |
| | | | | 60 | 32 | WCMT06T308 | M3.5*8 | T15 |
| | | | | 65 | 40 | WCMT080412 | M4*10 | |
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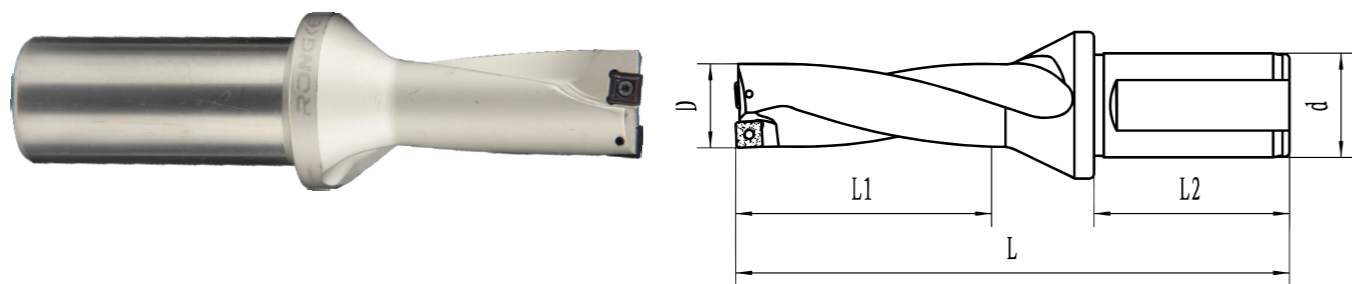
| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|----|-----|-----|----|----|------------|--------|-----|
| ZD05-46.0-XP40-WC08-02 | 46 | 230 | 330 | 65 | 40 | WCMT080412 | M4*10 | T15 |
| ZD05-47.0-XP40-WC08-02 | 47 | 235 | 335 | | | | | |
| ZD05-48.0-XP40-WC08-02 | 48 | 240 | 340 | | | | | |
| ZD05-49.0-XP40-WC08-02 | 49 | 245 | 345 | | | | | |
| ZD05-50.0-XP40-WC08-02 | 50 | 250 | 350 | | | | | |
| ZD05-51.0-XP40-WC08-02 | 51 | 255 | 355 | | | | | |
| ZD05-52.0-XP40-WC08-02 | 52 | 260 | 360 | | | | | |
| ZD05-53.0-XP40-WC08-02 | 53 | 265 | 365 | | | | | |
| ZD05-54.0-XP40-WC08-02 | 54 | 270 | 370 | | | | | |
| ZD05-55.0-XP40-WC08-02 | 55 | 275 | 375 | | | | | |
| ZD05-56.0-XP40-WC08-02 | 56 | 280 | 380 | | | | | |
| ZD05-57.0-XP40-WC08-02 | 57 | 285 | 385 | | | | | |
| ZD05-58.0-XP40-WC06-04 | 58 | 290 | 390 | | | | | |
| ZD05-59.0-XP40-WC06-04 | 59 | 295 | 395 | | | | | |
| ZD05-60.0-XP40-WC06-04 | 60 | 300 | 400 | | | | | |
| | | | | | | WCMT06T308 | M3.5*8 | |

冷却液流量



快速钻

2倍SP快速钻

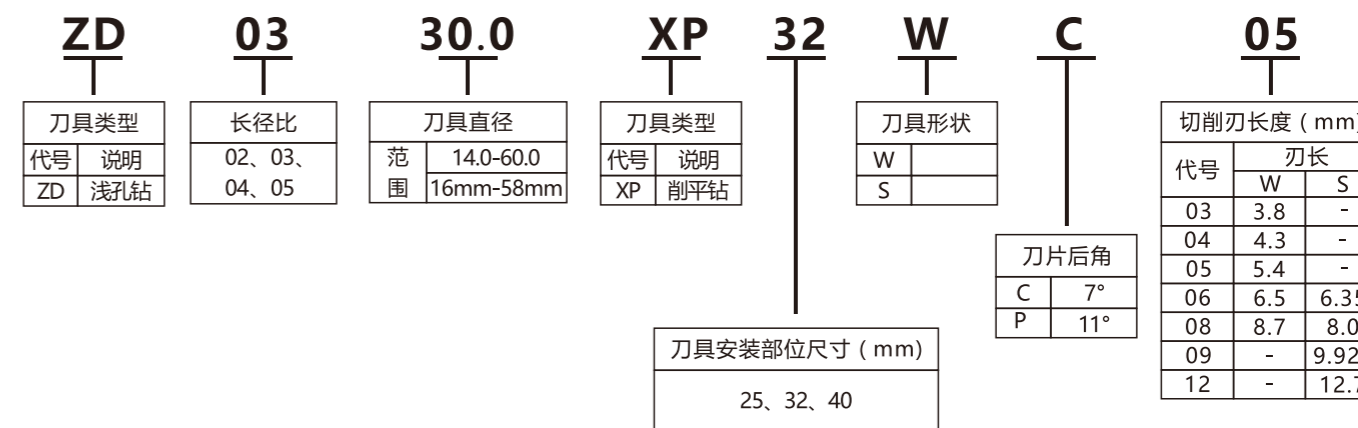


2D-SP快速钻

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|----|-----|----|----|------------|--------|-----|
| ZD02-13.0-XP25-SP05-02 | 13 | 26 | 104 | 56 | 25 | SPMG050204 | M2*5 | T6 |
| ZD02-13.5-XP25-SP05-02 | 13.5 | 27 | 105 | | | | | |
| ZD02-14.0-XP25-SP05-02 | 14 | 28 | 106 | | | | | |
| ZD02-14.5-XP25-SP05-02 | 14.5 | 29 | 107 | | | | | |
| ZD02-15.0-XP25-SP05-02 | 15 | 30 | 108 | | | | | |
| ZD02-15.5-XP25-SP06-02 | 15.5 | 31 | 109 | | | | | |
| ZD02-16.0-XP25-SP06-02 | 16 | 32 | 110 | | | | | |
| ZD02-16.5-XP25-SP06-02 | 16.5 | 33 | 111 | | | | | |
| ZD02-17.0-XP25-SP06-02 | 17 | 34 | 112 | | | | | |
| ZD02-17.5-XP25-SP06-02 | 17.5 | 35 | 113 | | | | | |
| ZD02-18.0-XP25-SP06-02 | 18 | 36 | 114 | | | | | |
| ZD02-18.5-XP25-SP06-02 | 18.5 | 37 | 115 | | | | | |
| ZD02-19.0-XP25-SP06-02 | 19 | 38 | 116 | | | | | |
| ZD02-19.5-XP25-SP06-02 | 19.5 | 39 | 117 | | | | | |
| ZD02-20.0-XP25-SP06-02 | 20 | 40 | 119 | | | | | |
| ZD02-20.5-XP25-SP06-02 | 20.5 | 41 | 120 | | | | | |
| ZD02-21.0-XP25-SP06-02 | 21 | 42 | 121 | | | | | |
| ZD02-21.5-XP25-SP06-02 | 21.5 | 43 | 122 | | | | | |
| ZD02-22.0-XP25-SP07-02 | 22 | 44 | 123 | | | | | |
| ZD02-22.5-XP25-SP07-02 | 22.5 | 45 | 124 | | | | | |
| ZD02-23.0-XP25-SP07-02 | 23 | 46 | 125 | | | | | |
| ZD02-23.5-XP25-SP07-02 | 23.5 | 47 | 126 | | | | | |
| ZD02-24.0-XP25-SP07-02 | 24 | 48 | 127 | | | | | |
| ZD02-24.5-XP25-SP07-02 | 24.5 | 49 | 128 | | | | | |
| ZD02-25.0-XP32-SP07-02 | 25 | 50 | 141 | 60 | 32 | SPMG07T308 | M2.5*6 | T8 |
| ZD02-25.5-XP32-SP07-02 | 25.5 | 51 | 142 | | | | | |
| ZD02-26.0-XP32-SP07-02 | 26 | 52 | 143 | | | | | |
| ZD02-26.5-XP32-SP07-02 | 26.5 | 53 | 144 | | | | | |
| ZD02-27.0-XP32-SP07-02 | 27 | 54 | 145 | | | | | |
| ZD02-27.5-XP32-SP09-02 | 27.5 | 55 | 146 | | | | | |
| ZD02-28.0-XP32-SP09-02 | 28 | 56 | 147 | | | | | |
| ZD02-28.5-XP32-SP09-02 | 28.5 | 57 | 148 | | | | | |
| ZD02-29.0-XP32-SP09-02 | 29 | 58 | 149 | | | | | |
| ZD02-29.5-XP32-SP09-02 | 29.5 | 59 | 150 | | | | | |
| ZD02-30.0-XP32-SP09-02 | 30 | 60 | 151 | 60 | 32 | SPMG090408 | M3.5*8 | T15 |
| ZD02-30.5-XP32-SP09-02 | 30.5 | 61 | 152 | | | | | |
| ZD02-31.0-XP32-SP09-02 | 31 | 62 | 153 | | | | | |
| ZD02-31.5-XP32-SP09-02 | 31.5 | 63 | 154 | | | | | |
| ZD02-32.0-XP32-SP09-02 | 32 | 64 | 155 | | | | | |
| ZD02-32.5-XP32-SP09-02 | 32.5 | 65 | 156 | | | | | |
| ZD02-33.0-XP32-SP09-02 | 33 | 66 | 157 | | | | | |
| ZD02-33.5-XP32-SP11-02 | 33.5 | 67 | 158 | | | | | |
| ZD02-34.0-XP32-SP11-02 | 34 | 68 | 159 | | | | | |
| ZD02-34.5-XP32-SP11-02 | 34.5 | 69 | 160 | | | | | |
| ZD02-35.0-XP32-SP11-02 | 35 | 70 | 161 | 60 | 32 | SPMG110408 | M4*10 | T15 |
| ZD02-35.5-XP32-SP11-02 | 35.5 | 71 | 162 | | | | | |

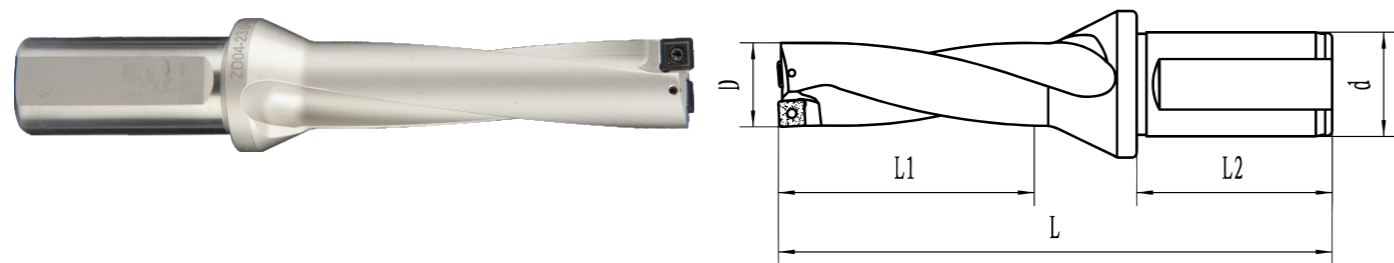
| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-----|-----|----|----|------------|--------|-----|
| ZD02-36.0-XP32-SP11-02 | 36 | 72 | 163 | 60 | 65 | SPMG110408 | M4*10 | T15 |
| ZD02-36.5-XP32-SP11-02 | 36.5 | 73 | 164 | | | | | |
| ZD02-37.0-XP32-SP11-02 | 37 | 74 | 165 | | | | | |
| ZD02-37.5-XP32-SP11-02 | 37.5 | 75 | 166 | | | | | |
| ZD02-38.0-XP32-SP11-02 | 38 | 76 | 167 | | | | | |
| ZD02-38.5-XP32-SP11-02 | 38.5 | 77 | 168 | | | | | |
| ZD02-39.0-XP32-SP11-02 | 39 | 78 | 169 | | | | | |
| ZD02-39.5-XP32-SP11-02 | 39.5 | 79 | 170 | | | | | |
| ZD02-40.0-XP32-SP11-02 | 40 | 80 | 171 | | | | | |
| ZD02-41.0-XP32-SP14-02 | 41 | 82 | 173 | | | | | |
| ZD02-42.0-XP32-SP14-02 | 42 | 84 | 175 | 65 | 40 | SPMG140412 | M5*10 | T20 |
| ZD02-43.0-XP40-SP14-02 | 43 | 86 | 186 | | | | | |
| ZD02-44.0-XP40-SP14-02 | 44 | 88 | 188 | | | | | |
| ZD02-45.0-XP40-SP14-02 | 45 | 90 | 190 | | | | | |
| ZD02-46.0-XP40-SP14-02 | 46 | 92 | 192 | | | | | |
| ZD02-47.0-XP40-SP14-02 | 47 | 94 | 194 | | | | | |
| ZD02-48.0-XP40-SP14-04 | 48 | 96 | 196 | | | | | |
| ZD02-49.0-XP40-SP14-04 | 49 | 98 | 198 | | | | | |
| ZD02-50.0-XP40-SP14-04 | 50 | 100 | 200 | | | | | |
| ZD02-51.0-XP40-SP14-04 | 51 | 102 | 202 | | | | | |
| ZD02-52.0-XP40-SP09-04 | 52 | 104 | 204 | 65 | 40 | SPMG090408 | M3.5*8 | T15 |
| ZD02-53.0-XP40-SP09-04 | 53 | 106 | 206 | | | | | |
| ZD02-54.0-XP40-SP09-04 | 54 | 108 | 208 | | | | | |
| ZD02-55.0-XP40-SP09-04 | 55 | 110 | 210 | | | | | |
| ZD02-56.0-XP40-SP09-04 | 56 | 112 | 212 | | | | | |
| ZD02-57.0-XP40-SP09-04 | 57 | 114 | 214 | | | | | |
| ZD02-58.0-XP40-SP09-04 | 58 | 116 | 216 | | | | | |
| ZD02-59.0-XP40-SP09-04 | 59 | 118 | 218 | | | | | |
| ZD02-60.0-XP40-SP09-04 | 60 | 120 | 220 | | | | | |

型号命名规则



快速钻

3倍SP快速钻



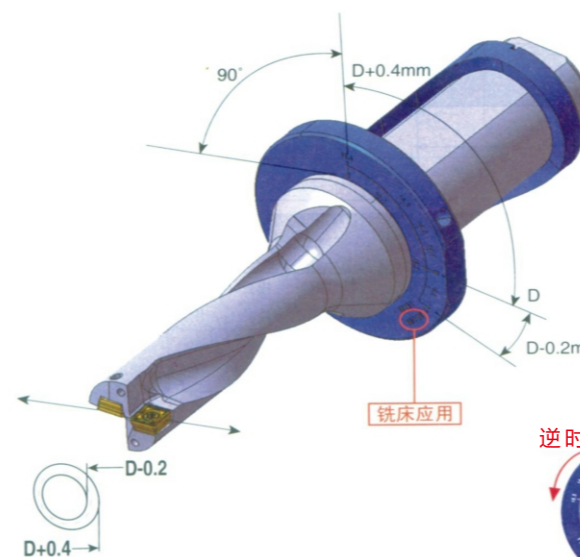
3D-SP快速钻

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-------|-----|----|----|------------|--------|-----|
| ZD03-13.0-XP25-SP05-02 | 13 | 39 | 117 | 56 | 25 | SPMG050204 | M2*5 | T6 |
| ZD03-13.5-XP25-SP05-02 | 13.5 | 40.5 | 118 | | | | | |
| ZD03-14.0-XP25-SP05-02 | 14 | 42 | 120 | | | | | |
| ZD03-14.5-XP25-SP05-02 | 14.5 | 43.5 | 122 | | | | | |
| ZD03-15.0-XP25-SP05-02 | 15 | 45 | 123 | | | | | |
| ZD03-15.5-XP25-SP06-02 | 15.5 | 46.5 | 124 | | | | | |
| ZD03-16.0-XP25-SP06-02 | 16 | 48 | 126 | | | | | |
| ZD03-16.5-XP25-SP06-02 | 16.5 | 49.5 | 127 | | | | | |
| ZD03-17.0-XP25-SP06-02 | 17 | 51 | 129 | | | | | |
| ZD03-17.5-XP25-SP06-02 | 17.5 | 52.5 | 130 | | | | | |
| ZD03-18.0-XP25-SP06-02 | 18 | 54 | 132 | | | | | |
| ZD03-18.5-XP25-SP06-02 | 18.5 | 55.5 | 133 | | | | | |
| ZD03-19.0-XP25-SP06-02 | 19 | 57 | 135 | | | | | |
| ZD03-19.5-XP25-SP06-02 | 19.5 | 58.5 | 135 | | | | | |
| ZD03-20.0-XP25-SP06-02 | 20 | 60 | 139 | | | | | |
| ZD03-20.5-XP25-SP06-02 | 20.5 | 61.5 | 140 | | | | | |
| ZD03-21.0-XP25-SP06-02 | 21 | 63 | 142 | | | | | |
| ZD03-21.5-XP25-SP06-02 | 21.5 | 64.5 | 143 | | | | | |
| ZD03-22.0-XP25-SP07-02 | 22 | 66 | 145 | | | | | |
| ZD03-22.5-XP25-SP07-02 | 22.5 | 67.5 | 148 | | | | | |
| ZD03-23.0-XP25-SP07-02 | 23 | 69 | 148 | | | | | |
| ZD03-23.5-XP25-SP07-02 | 23.5 | 70.5 | 149 | | | | | |
| ZD03-24.0-XP25-SP07-02 | 24 | 72 | 151 | | | | | |
| ZD03-24.5-XP25-SP07-02 | 24.5 | 73.5 | 152 | | | | | |
| ZD03-25.0-XP32-SP07-02 | 25 | 75 | 166 | | | | | |
| ZD03-25.5-XP32-SP07-02 | 25.5 | 76.5 | 167 | | | | | |
| ZD03-26.0-XP32-SP07-02 | 26 | 78 | 169 | | | | | |
| ZD03-26.5-XP32-SP07-02 | 26.5 | 79.5 | 170 | | | | | |
| ZD03-27.0-XP32-SP07-02 | 27 | 81 | 172 | | | | | |
| ZD03-27.5-XP32-SP09-02 | 27.5 | 82.5 | 173 | | | | | |
| ZD03-28.0-XP32-SP09-02 | 28 | 84 | 175 | | | | | |
| ZD03-28.5-XP32-SP09-02 | 28.5 | 85.5 | 176 | | | | | |
| ZD03-29.0-XP32-SP09-02 | 29 | 87 | 178 | | | | | |
| ZD03-29.5-XP32-SP09-02 | 29.5 | 88.5 | 179 | | | | | |
| ZD03-30.0-XP32-SP09-02 | 30 | 90 | 181 | | | | | |
| ZD03-30.5-XP32-SP09-02 | 30.5 | 91.5 | 182 | | | | | |
| ZD03-31.0-XP32-SP09-02 | 31 | 93 | 184 | | | | | |
| ZD03-31.5-XP32-SP09-02 | 31.5 | 94.5 | 185 | | | | | |
| ZD03-32.0-XP32-SP09-02 | 32 | 96 | 187 | | | | | |
| ZD03-32.5-XP32-SP09-02 | 32.5 | 97.5 | 188 | | | | | |
| ZD03-33.0-XP32-SP09-02 | 33 | 99 | 190 | | | | | |
| ZD03-33.5-XP32-SP11-02 | 33.5 | 100.5 | 191 | | | | | |
| ZD03-34.0-XP32-SP11-02 | 34 | 102 | 193 | | | | | |
| ZD03-34.5-XP32-SP11-02 | 34.5 | 103.5 | 194 | | | | | |
| ZD03-35.0-XP32-SP11-02 | 35 | 105 | 196 | | | | | |
| ZD03-35.5-XP32-SP11-02 | 35.5 | 106.5 | 197 | | | | | |
| | | | | 60 | 32 | SPMG090408 | M3.5*8 | T15 |
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| | | | | 56 | 25 | SPMG07T308 | M2.5*6 | T8 |
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| | | | | | | | | |
| | | | | 60 | 32 | SPMG110408 | M4*10 | T15 |
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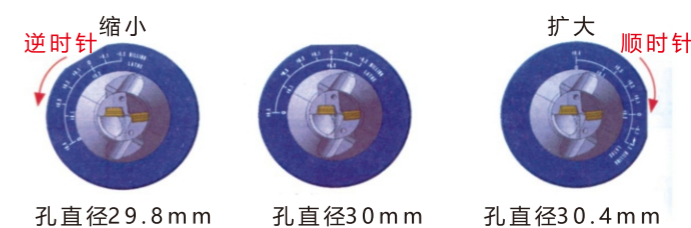
| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-------|-----|----|----|------------|-------|-----|
| ZD03-36.0-XP32-SP11-02 | 36 | 108 | 199 | 60 | 32 | SPMG110408 | M4*10 | T15 |
| ZD03-36.5-XP32-SP11-02 | 36.5 | 109.5 | 200 | | | | | |
| ZD03-37.0-XP32-SP11-02 | 37 | 111 | 202 | | | | | |
| ZD03-37.5-XP32-SP11-02 | 37.5 | 112.5 | 203 | | | | | |
| ZD03-38.0-XP32-SP11-02 | 38 | 114 | 205 | | | | | |
| ZD03-38.5-XP32-SP11-02 | 38.5 | 115.5 | 206 | | | | | |
| ZD03-39.0-XP32-SP11-02 | 39 | 117 | 206 | | | | | |
| ZD03-39.5-XP32-SP11-02 | 39.5 | 118.5 | 209 | | | | | |
| ZD03-40.0-XP32-SP11-02 | 40 | 120 | 211 | | | | | |
| ZD03-41.0-XP32-SP14-02 | 41 | 123 | 214 | | | | | |
| ZD03-42.0-XP32-SP14-02 | 42 | 126 | 217 | | | | | |
| ZD03-43.0-XP40-SP14-02 | 43 | 129 | 229 | | | | | |
| ZD03-44.0-XP40-SP14-02 | 44 | 132 | 232 | | | | | |
| ZD03-45.0-XP40-SP14-02 | 45 | 135 | 235 | | | | | |
| ZD03-46.0-XP40-SP14-02 | 46 | 138 | 238 | | | | | |
| ZD03-47.0-XP40-SP14-02 | 47 | 141 | 241 | | | | | |
| ZD03-48.0-XP40-SP14-04 | 48 | 144 | 244 | | | | | |
| ZD03-49.0-XP40-SP14-04 | 49 | 147 | 247 | | | | | |
| ZD03-50.0-XP40-SP14-04 | 50 | 150 | 250 | | | | | |
| ZD03-51.0-XP40-SP14-04 | 51 | 153 | 253 | | | | | |
| ZD03-52.0-XP40-SP09-04 | 52 | 156 | 256 | | | | | |
| ZD03-53.0-XP40-SP09-04 | 53 | 159 | 259 | | | | | |
| ZD03-54.0-XP40-SP09-04 | 54 | 162 | 262 | | | | | |
| ZD03-55.0-XP40-SP09-04 | 55 | 165 | 265 | | | | | |
| ZD03-56.0-XP40-SP09-04 | 56 | 168 | 268 | | | | | |
| ZD03-57.0-XP40-SP09-04 | 57 | 171 | 271 | | | | | |
| ZD03-58.0-XP40-SP09-04 | 58 | 174 | 274 | | | | | |
| ZD03-59.0-XP40-SP09-04 | 59 | 177 | 277 | | | | | |
| ZD03-60.0-XP40-SP09-04 | 60 | 180 | 280 | | | | | |

铣削应用：

在铣床加工时，如需改变正常加工孔的直径，可调整偏心套的轴心位置。

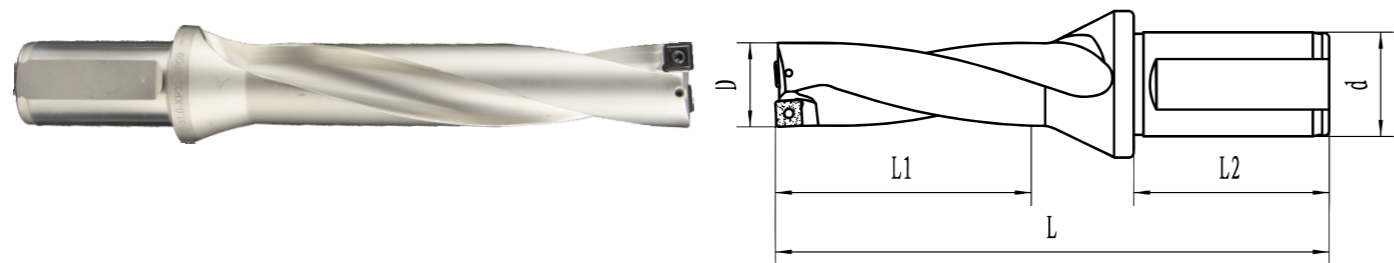


如想扩大孔径顺时针旋转套筒；
如想缩小孔径逆时针旋转套筒；
具体如下：
钻头直径：30mm



快速钻

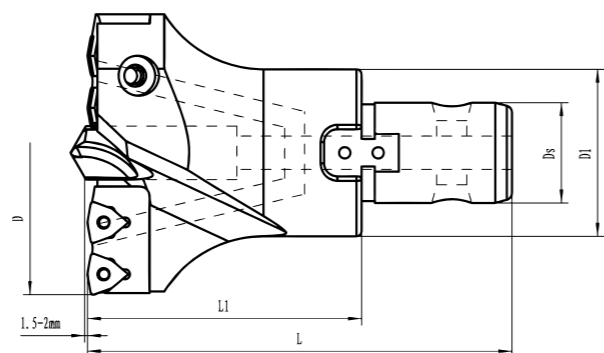
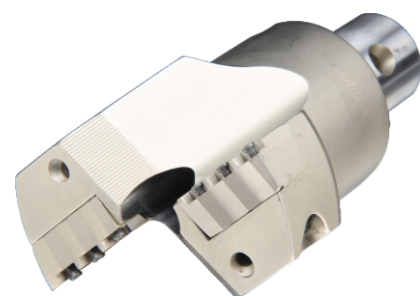
5倍SP快速钻



5D-SP快速钻

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|------|-------|-----|----|----|------------|--------|-----|
| ZD05-20.0-XP25-SP06-02 | 20 | 100 | 179 | 56 | 25 | SPMG060204 | M2.2*5 | T6 |
| ZD05-20.5-XP25-SP06-02 | 20.5 | 102.5 | 181 | | | | | |
| ZD05-21.0-XP25-SP06-02 | 21 | 105 | 184 | | | | | |
| ZD05-21.5-XP25-SP06-02 | 21.5 | 107.5 | 186 | | | | | |
| ZD05-22.0-XP25-SP07-02 | 22 | 110 | 189 | | | | | |
| ZD05-22.5-XP25-SP07-02 | 22.5 | 112.5 | 193 | | | | | |
| ZD05-23.0-XP25-SP07-02 | 23 | 115 | 194 | | | | | |
| ZD05-23.5-XP25-SP07-02 | 23.5 | 117.5 | 196 | | | | | |
| ZD05-24.0-XP25-SP07-02 | 24 | 120 | 199 | | | | | |
| ZD05-24.5-XP25-SP07-02 | 24.5 | 122.5 | 201 | | | | | |
| ZD05-25.0-XP32-SP07-02 | 25 | 125 | 216 | | | | | |
| ZD05-25.5-XP32-SP07-02 | 25.5 | 127.5 | 218 | | | | | |
| ZD05-26.0-XP32-SP07-02 | 26 | 130 | 221 | | | | | |
| ZD05-26.5-XP32-SP07-02 | 26.5 | 132.5 | 223 | | | | | |
| ZD05-27.0-XP32-SP07-02 | 27 | 135 | 226 | | | | | |
| ZD05-27.5-XP32-SP09-02 | 27.5 | 137.5 | 228 | | | | | |
| ZD05-28.0-XP32-SP09-02 | 28 | 140 | 231 | | | | | |
| ZD05-28.5-XP32-SP09-02 | 28.5 | 142.5 | 233 | | | | | |
| ZD05-29.0-XP32-SP09-02 | 29 | 145 | 236 | | | | | |
| ZD05-29.5-XP32-SP09-02 | 29.5 | 147.5 | 238 | | | | | |
| ZD05-30.0-XP32-SP09-02 | 30 | 150 | 241 | | | | | |
| ZD05-30.5-XP32-SP09-02 | 30.5 | 152.5 | 243 | | | | | |
| ZD05-31.0-XP32-SP09-02 | 31 | 155 | 246 | | | | | |
| ZD05-31.5-XP32-SP09-02 | 31.5 | 157.5 | 248 | | | | | |
| ZD05-32.0-XP32-SP09-02 | 32 | 160 | 251 | | | | | |
| ZD05-32.5-XP32-SP09-02 | 32.5 | 162.5 | 253 | | | | | |
| ZD05-33.0-XP32-SP09-02 | 33 | 165 | 256 | | | | | |
| ZD05-33.5-XP32-SP11-02 | 33.5 | 167.5 | 258 | | | | | |
| ZD05-34.0-XP32-SP11-02 | 34 | 170 | 261 | | | | | |
| ZD05-34.5-XP32-SP11-02 | 34.5 | 172.5 | 263 | | | | | |
| ZD05-35.0-XP32-SP11-02 | 35 | 175 | 266 | | | | | |
| ZD05-35.5-XP32-SP11-02 | 35.5 | 177.5 | 268 | | | | | |
| ZD05-36.0-XP32-SP11-02 | 36 | 180 | 271 | | | | | |
| ZD05-36.5-XP32-SP11-02 | 36.5 | 182.5 | 273 | | | | | |
| ZD05-37.0-XP32-SP11-02 | 37 | 185 | 276 | | | | | |
| ZD05-37.5-XP32-SP11-02 | 37.5 | 187.5 | 278 | | | | | |
| ZD05-38.0-XP32-SP11-02 | 38 | 190 | 281 | | | | | |
| ZD05-38.5-XP32-SP11-02 | 38.5 | 192.5 | 283 | | | | | |
| ZD05-39.0-XP32-SP11-02 | 39 | 195 | 284 | | | | | |
| ZD05-39.5-XP32-SP11-02 | 39.5 | 197.5 | 288 | | | | | |
| ZD05-40.0-XP32-SP11-02 | 40 | 200 | 291 | | | | | |
| ZD05-41.0-XP32-SP14-02 | 41 | 205 | 296 | | | | | |
| ZD05-42.0-XP32-SP14-02 | 42 | 210 | 301 | | | | | |
| ZD05-43.0-XP40-SP14-02 | 43 | 215 | 315 | | | | | |
| ZD05-44.0-XP40-SP14-02 | 44 | 220 | 320 | | | | | |
| ZD05-45.0-XP40-SP14-02 | 45 | 225 | 325 | | | | | |
| | | | | 60 | 32 | SPMG090408 | M3.5*8 | T15 |
| | | | | 65 | 40 | SPMG140412 | M5*10 | T20 |

| 型号 | D | L1 | L | L2 | d | 适用刀片 | 螺丝 | 扳手 |
|------------------------|----|-----|-----|----|----|------------|-------|-----|
| ZD05-46.0-XP40-SP14-02 | 46 | 230 | 330 | 65 | 40 | SPMG140412 | M5*10 | T20 |
| ZD05-47.0-XP40-SP14-02 | 47 | 235 | 335 | | | | | |
| ZD05-48.0-XP40-SP14-04 | 48 | 240 | 340 | | | | | |
| ZD05-49.0-XP40-SP14-04 | 49 | 245 | 345 | | | | | |
| ZD05-50.0-XP40-SP14-04 | 50 | 250 | 350 | | | | | |
| ZD05-51.0-XP40-SP14-04 | 51 | 255 | 355 | | | | | |
| ZD05-52.0-XP40-SP09-04 | 52 | 260 | 360 | | | | | |
| ZD05-53.0-XP40-SP09-04 | 53 | 265 | 365 | | | | | |
| ZD05-54.0-XP40-SP09-04 | 54 | 270 | 370 | | | | | |
| ZD05-55.0-XP40-SP09-04 | 55 | 275 | 375 | | | | | |
| ZD05-56.0-XP40-SP09-04 | 56 | 280 | 380 | | | | | |
| ZD05-57.0-XP40-SP09-04 | 57 | 285 | 385 | | | | | |
| ZD05-58.0-XP40-SP09-04 | 58 | 290 | 390 | | | | | |
| ZD05-59.0-XP40-SP09-04 | 59 | 295 | 395 | | | | | |
| ZD05-60.0-XP40-SP09-04 | 60 | 300 | 400 | | | | | |



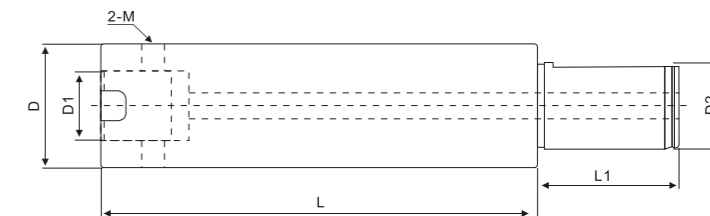
VMD整体系列

| 型号 | D | DS | D1 | L1 | L | 内刃 | 外刃 | 导向钻 | 刀片 | 刀刃数 |
|------------|---------|----|----|-----|-----|-------------|-------------|----------------|------------|-----|
| VMD-045050 | 45-50 | 16 | 30 | 60 | 95 | VNC-045050N | VNC-045050T | PLS-1035-TiN-H | WCMT030208 | 2 |
| VMD-050055 | 50-55 | | | | | VNC-050055N | VNC-050055T | | | |
| VMD-055060 | 55-60 | | | | | VNC-055060N | VNC-055060T | | | |
| VMD-060065 | 60-65 | 25 | 45 | 82 | 127 | VNC-060065N | VNC-060065T | PLS-1238-TiN-H | WCMT050308 | 2 |
| VMD-065070 | 65-70 | | | | | VNC-065070N | VNC-065070T | | | |
| VMD-070075 | 70-75 | | | | | VNC-070075N | VNC-070075T | | | |
| VMD-075080 | 75-80 | 30 | 50 | 82 | 139 | VNC-075080N | VNC-075080T | PLS-1645-TiN-H | WCMT06T308 | 2 |
| VMD-080085 | 80-85 | | | | | VNC-080085N | VNC-080085T | | | |
| VMD-085090 | 85-90 | | | | | VNC-085090N | VNC-085090T | | | |
| VMD-090095 | 90-95 | 32 | 58 | 94 | 154 | VNC-090095N | VNC-090095T | PLS-2045-TiN-H | WCMT050308 | 3 |
| VMD-095100 | 95-100 | | | | | VNC-095100N | VNC-095100T | | | |
| VMD-100105 | 100-105 | | | | | VNC-100105N | VNC-100105T | | | |
| VMD-105110 | 105-110 | 40 | 70 | 104 | 154 | VNC-105110N | VNC-105110T | PLS-2556-TiN-H | WCMT06T308 | 3 |
| VMD-110115 | 110-115 | | | | | VNC-110115N | VNC-110115T | | | |
| VMD-115120 | 115-120 | | | | | VNC-115120N | VNC-115120T | | | |
| VMD-120125 | 120-125 | 50 | 80 | 116 | 176 | VNC-120125N | VNC-120125T | PLS-2556-TiN-H | WCMT06T308 | 4 |
| VMD-125130 | 125-130 | | | | | VNC-125130N | VNC-125130T | | | |
| VMD-130135 | 130-135 | | | | | VNC-130135N | VNC-130135T | | | |
| VMD-135140 | 135-140 | 50 | 80 | 116 | 176 | VNC-135140N | VNC-135140T | PLS-2556-TiN-H | WCMT06T308 | 5 |
| VMD-140145 | 140-145 | | | | | VNC-140145N | VNC-140145T | | | |
| VMD-145150 | 145-150 | | | | | VNC-145150N | VNC-145150T | | | |
| VMD-150155 | 150-155 | 50 | 80 | 116 | 176 | VNC-150155N | VNC-150155T | PLS-2556-TiN-H | WCMT080408 | 3 |
| VMD-155160 | 155-160 | | | | | VNC-155160N | VNC-155160T | | | |
| VMD-160165 | 160-165 | | | | | VNC-160165N | VNC-160165T | | | |
| VMD-165170 | 165-170 | 50 | 80 | 116 | 176 | VNC-165170N | VNC-165170T | PLS-2556-TiN-H | WCMT06T308 | 5 |
| VMD-170175 | 170-175 | | | | | VNC-170175N | VNC-170175T | | | |
| VMD-175180 | 175-180 | | | | | VNC-175180N | VNC-175180T | | | |



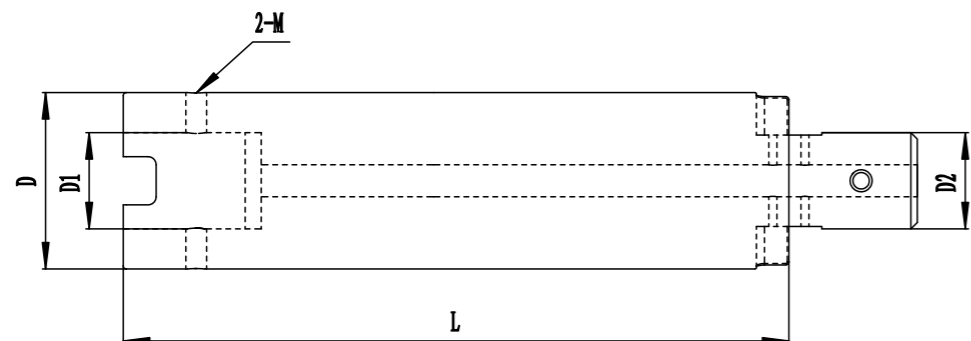
定心钻

| 型号 | D | L |
|----------------|----|----|
| PLD-V1035TiN-H | 10 | 35 |
| PLD-V1238TiN-H | 12 | 38 |
| PLD-V1645TiN-H | 16 | 45 |
| PLD-2045TiN-H | 20 | |
| PLD-2556TiN-H | 25 | 56 |
| PLD-3068TiN-H | 30 | 68 |



VMD整体系列

| 型号 | D | D1 | D2 | L | L2 | M | M |
|-------------|----|----|----|-----|----|-------|------------|
| DXZ-3016100 | 30 | 16 | 32 | 100 | 75 | M8x1 | Φ45--Φ55 |
| DXZ-3013150 | 30 | 16 | 32 | 150 | 75 | M8x1 | |
| DXZ-3016200 | 30 | 16 | 32 | 200 | 75 | M8x1 | |
| DXZ-3016250 | 30 | 16 | 32 | 250 | 75 | M8x1 | |
| DXZ-3016300 | 30 | 16 | 32 | 300 | 75 | M8x1 | |
| DXZ-3016400 | 30 | 16 | 32 | 400 | 75 | M8x1 | Φ60--Φ80 |
| DXZ-4525100 | 45 | 25 | 40 | 100 | 75 | M10x1 | |
| DXZ-4525150 | 45 | 25 | 40 | 150 | 75 | M10x1 | |
| DXZ-4525200 | 45 | 25 | 40 | 200 | 75 | M10x1 | |
| DXZ-4525250 | 45 | 25 | 40 | 250 | 75 | M10x1 | |
| DXZ-4525300 | 45 | 25 | 40 | 300 | 75 | M10x1 | Φ85--Φ95 |
| DXZ-4525400 | 45 | 25 | 40 | 400 | 75 | M10x1 | |
| DXZ-5030100 | 50 | 30 | 40 | 100 | 75 | M12x1 | |
| DXZ-5030150 | 50 | 30 | 40 | 150 | 75 | M12x1 | |
| DXZ-5030200 | 50 | 30 | 40 | 200 | 75 | M12x1 | |
| DXZ-5030250 | 50 | 30 | 40 | 250 | 75 | M12x1 | Φ100--Φ110 |
| DXZ-5030300 | 50 | 30 | 40 | 300 | 75 | M12x1 | |
| DXZ-5030400 | 50 | 30 | 40 | 400 | 75 | M12x1 | |
| DXZ-5832100 | 58 | 32 | 40 | 100 | 75 | M12x1 | |
| DXZ-5832150 | 58 | 32 | 40 | 150 | 75 | M12x1 | |
| DXZ-5832200 | 58 | 32 | 40 | 200 | 75 | M12x1 | Φ115--Φ135 |
| DXZ-5832250 | 58 | 32 | 40 | 250 | 75 | M12x1 | |
| DXZ-5832300 | 58 | 32 | 40 | 300 | 75 | M12x1 | |
| DXZ-5832400 | 58 | 32 | 40 | 400 | 75 | M12x1 | |
| DXZ-7040100 | 70 | 40 | 50 | 100 | 80 | M12x1 | |
| DXZ-7040150 | 70 | 40 | 50 | 150 | 80 | M12x1 | Φ140--Φ195 |
| DXZ-7040200 | 70 | 40 | 50 | 200 | 80 | M12x1 | |
| DXZ-7040250 | 70 | 40 | 50 | 250 | 80 | M12x1 | |
| DXZ-7040300 | 70 | 40 | 50 | 300 | 80 | M12x1 | |
| DXZ-7040400 | 70 | 40 | 50 | 400 | 80 | M12x1 | |
| DXZ-8050100 | 80 | 50 | 50 | 100 | 80 | M12x1 | Φ140--Φ195 |
| DXZ-8050150 | 80 | 50 | 50 | 150 | 80 | M12x1 | |
| DXZ-8050200 | 80 | 50 | 50 | 200 | 80 | M12x1 | |
| DXZ-8050250 | 80 | 50 | 50 | 250 | 80 | M12x1 | |
| DXZ-8050300 | 80 | 50 | 50 | 300 | 80 | M12x1 | |
| DXZ-8050400 | 80 | 50 | 50 | 400 | 80 | M12x1 | |



延长杆系列

| 型号 | D | D1 | L | M | M |
|-------------|----|----|-----|-------|-----------|
| YXZ-3016100 | 30 | 16 | 100 | M8*1 | φ45-φ55 |
| YXZ-3016200 | 30 | 16 | 200 | M8*1 | |
| YXZ-3016300 | 30 | 16 | 300 | M8*1 | |
| YXZ-4525100 | 45 | 25 | 100 | M10*1 | φ60-φ80 |
| YXZ-4525200 | 45 | 25 | 200 | M10*1 | |
| YXZ-4525300 | 45 | 25 | 300 | M10*1 | |
| YXZ-5030100 | 50 | 25 | 100 | M12*1 | φ85-φ95 |
| YXZ-5030200 | 50 | 25 | 200 | M12*1 | |
| YXZ-5030300 | 50 | 25 | 300 | M12*1 | |
| YXZ-5832100 | 58 | 32 | 100 | M12*1 | φ100-φ110 |
| YXZ-5832200 | 58 | 32 | 200 | M12*1 | |
| YXZ-5832300 | 58 | 32 | 300 | M12*1 | |
| YXZ-7040200 | 70 | 40 | 200 | M12*1 | φ115-φ135 |
| YXZ-7040300 | 70 | 40 | 300 | M12*1 | |
| YXZ-7040400 | 70 | 40 | 400 | M12*1 | φ140-φ195 |
| YXZ-8050200 | 80 | 50 | 200 | M12*1 | |
| YXZ-8050300 | 80 | 50 | 300 | M12*1 | |
| YXZ-8050400 | 80 | 50 | 400 | M12*1 | |



VMD可转位大钻头大幅提高加工效率



| 工艺 | 工艺过程 | 转速 | 进给 | 加工时间 | 总用时长 |
|------|---------------|-----|----|---------|-------|
| 传统工艺 | ①φ60麻花钻 | 80 | 16 | 1小时10分钟 | 150分钟 |
| | ②粗镗刀一 | 200 | 30 | 40分钟 | |
| | ③粗镗刀二 | 200 | 30 | 40分钟 | |
| 新工艺 | VMD可转位大钻头φ105 | 280 | 45 | 18分钟 | 18分钟 |

加工 φ105mm 孔深 550mm, 材 42Crmo、HB 220

在石油、煤矿等机械行业中，打空加工越来越普遍，应用VMD可转位大钻头可大幅提高加工效率。VMD可转位大钻头的亮点：

- 一、采用中心导向钻结构，有较好的定心效果，从而保证孔位有良好的直线度。
- 二、内外刀刃采用可替换小刀夹结构。在实际使用中，最易损坏的是外刀刃夹。通过替换小刀夹，避免了整支钻头的报废，节省了刀具成本。
- 三、通过调整外刀夹，钻头加工尺寸可以在0-5mm内变动。
- 四、刀头和刀柄采用组合式结构。加工不同孔的深度，只需更换不同长度的刀柄即可。
- 五、钻头有中心出水孔，可以较好的冷却刀片，延长刀片的使用寿命，同时有利于排屑。
- 六、采用可转位硬质合金刀片切削，有较高的转速和进给，孔壁光洁度有大幅提升。
- 七、加工过程中，铁屑均为断屑状态，没有传统麻花钻的细长缠绕的铁屑，安全性大大提高。
- 八、加工中，自动连续进刀，不需要每次退刀回屑，效率大幅提升。

钻头速度

$$S = \frac{V_c \times 1000}{\pi \times D_c}$$

Vc=线速度 100m/min
Dc(mm): 钻头
S=主轴转速

实例：以钻头直径φ100为例

$$S = \frac{100 \times 1000}{3.14 \times 100} = 318 \text{ rev/min}$$

进给速度

$$V_f = F_r \times S$$

Vf=进给速度
Fr=每转进给量
S=主轴转速

实例：以钻头直径φ100为例，每转进给量0.15mm/rev

$$V_f = 0.15 \times 318 = 47.7 \text{ mm/min}$$

钻头速度

$$T_c = \frac{H}{V_f} \times 60$$

Tc(s): 加工时间
H=孔的加工深度

实例：以钻头直径φ100为例，孔加工深度为100mm。

$$T_c = \frac{100 \times 60}{47.7} = 126 \text{ (s)}$$

| Crafts | Crafts process | Speed | Feed | Process Time | Total Time |
|--------------------|---------------------------|-------|------|--------------|------------|
| Traditional Crafts | ① φ60 twist drill | 80 | 16 | 1h10min | 150min |
| | ② rough boring tool 1 | 200 | 30 | 40min | |
| | ③ rough boring tool 2 | 200 | 30 | 40min | |
| New Crafts | VMD index able drill φ105 | 280 | 45 | 18min | 18min |

Machining φ105mm depth 550mm, material 42Crmo, HB220

In the oil, coal and other machine industries, as oversize hole machining becomes more and more common, the application of VMD indexable drill can greatly improve the machining efficiency.

The bright spot of VMD indexable drill:

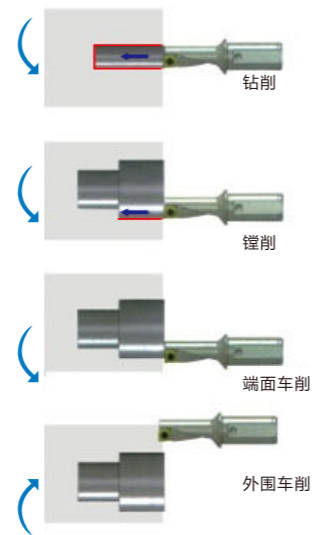
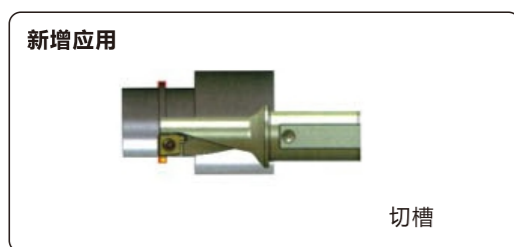
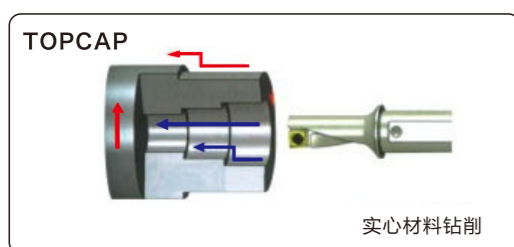
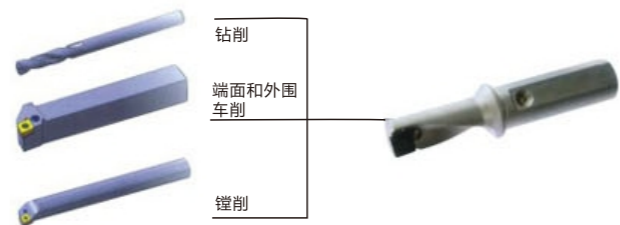
- ① Using the structure of center guide drill with better centering effect to make sure hole site a good straightness.
- ② Internal and External cutter edge is applied to the structure of replaceable clamp tool. In practical using, the most vulnerable is external edge clamp. Replacing clamp can avoid the drill scrapped to save the tool cost.
- ③ Adjusting external clamp, the dimension of drill machining can vary within 0-5 mm.
- ④ Cutter head and shank are modular structure. Only change different length shank during processing the different depth of the hole.
- ⑤ Drill with center water hole can cool insert better, extend insert life and accelerate chip evacuation.
- ⑥ Using indexable carbide insert cutting with high speed and feed, surface finish has greatly improved.
- ⑦ In the process, security is greatly improved as chip is breaker not slender twining of traditional twist drill.
- ⑧ In the process, automatic continuous feed, and don't need tool back off to chip, and efficiency is greatly improved.

多功能钻杆 偏心套-变径套

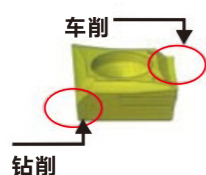
多功能系列产品

- ◆ 车削、镗削、钻削功能，使用一种刀具加工
- ◆ 传统方式
- ◆ 节约安装时间，缩短节拍
- ◆ 减少刀具使用效果，节约刀具成本

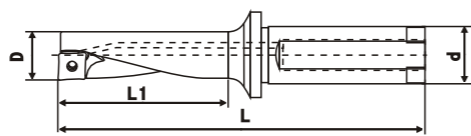
应用



特点

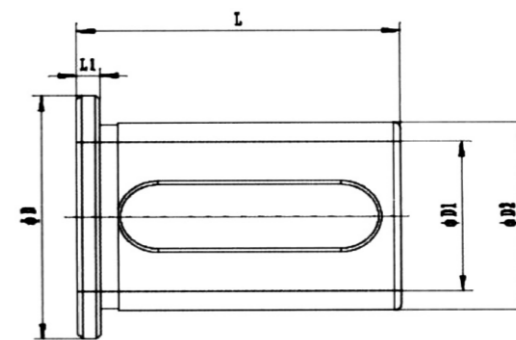


- ◆ 内冷型
- ◆ 大螺旋槽易于排屑
- ◆ 大排屑槽排屑流畅
- ◆ 刀片两张功效设计适于钻削和车削
- ◆ 大螺旋角切削刃降低切削力
- ◆ 小进给、小切深时排屑流畅



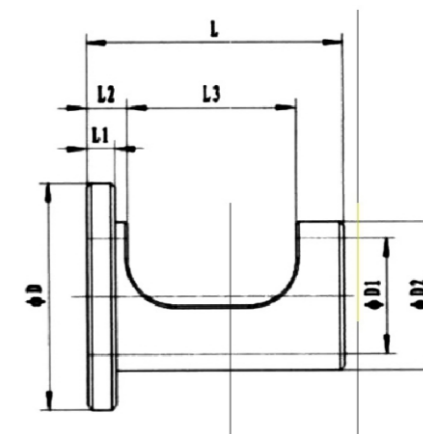
| 型号 | D | d | L1 | L | 适用刀片 | 螺丝 | 扳手 |
|-------------------|----|----|------|----|---------------|----------|----|
| TCAP-08R/L-3.0DN | 8 | 12 | 24 | 75 | XCMT 04 D1 04 | M1.8×3.5 | T6 |
| TCAP-09R/L-3.0DN | 9 | 12 | 27 | 75 | XCMT 05 D2 04 | M2×5 | T6 |
| TCAP-10R/L-3.0DN | 10 | 12 | 30 | 75 | XCMT 05 D2 04 | M2×5 | T6 |
| TCAP-11R/L-3.0DN | 11 | 16 | 33 | 75 | XCMT 06 D2 04 | M2.2×5 | T6 |
| TCAP-12R/L-3.0DN | 12 | 16 | 36 | 75 | XCMT 06 D2 04 | M2.2×5 | T6 |
| TCAP-13R/L-3.0DN | 13 | 16 | 39 | 75 | XCMT 07 D3 04 | M2.5×6.5 | T6 |
| TCAP-14R/L-3.0DN | 14 | 16 | 42 | 75 | XCMT 07 D3 04 | M2.5×6.5 | T6 |
| TCAP-08R/L-2.25DN | 8 | 12 | 18 | 75 | XCMT 04 D1 04 | M1.8×3.5 | T6 |
| TCAP-09R/L-2.25DN | 9 | 12 | 20.5 | 75 | XCMT 05 D2 04 | M2×5 | T6 |
| TCAP-10R/L-2.25DN | 10 | 12 | 22.5 | 75 | XCMT 05 D2 04 | M2×5 | T6 |
| TCAP-11R/L-2.25DN | 11 | 16 | 25 | 75 | XCMT 06 D2 04 | M2.2×5 | T6 |
| TCAP-12R/L-2.25DN | 12 | 16 | 27 | 75 | XCMT 06 D2 04 | M2.2×5 | T6 |
| TCAP-13R/L-2.25DN | 13 | 16 | 29.5 | 75 | XCMT 07 D3 04 | M2.5×6.5 | T8 |
| TCAP-14R/L-2.25DN | 14 | 16 | 31.5 | 75 | XCMT 07 D3 04 | M2.5×6.5 | T8 |

变径套



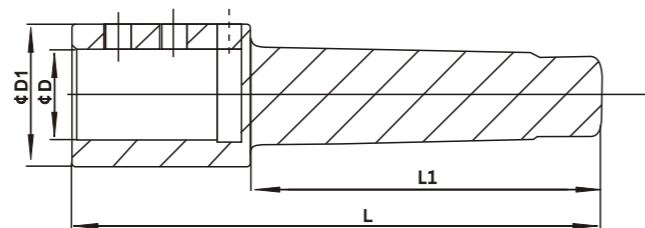
| 型号 | 尺寸 (mm) | | | | |
|------------|---------|----|----|----|----|
| | D | D1 | D2 | L | L1 |
| BJT-322062 | 49 | 20 | 32 | 62 | 5 |
| BJT-322562 | 49 | 25 | 32 | 62 | 5 |
| BJT-402065 | 58 | 20 | 40 | 65 | 6 |
| BJT-402565 | 58 | 25 | 40 | 65 | 6 |
| BJT-403265 | 58 | 32 | 40 | 65 | 6 |
| BJT-502572 | 65 | 25 | 50 | 70 | 6 |
| BJT-503272 | 65 | 32 | 50 | 70 | 6 |
| BJT-504072 | 65 | 40 | 50 | 70 | 6 |

偏心套

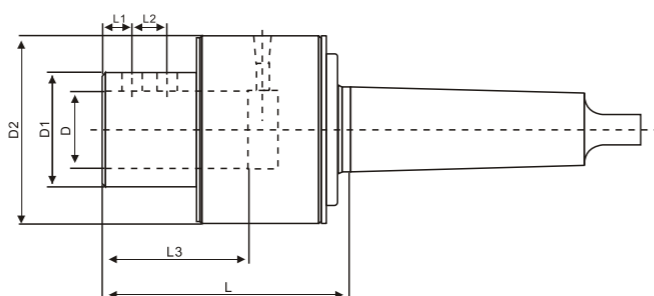
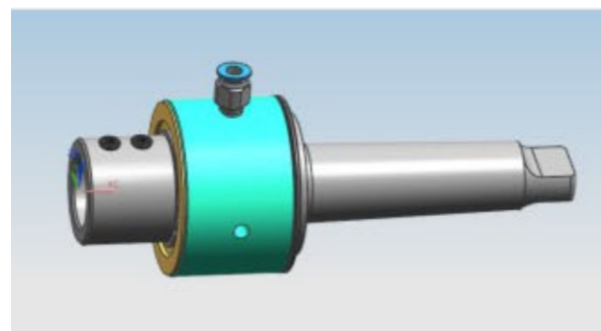


| 型号 | 尺寸 (mm) | | | | | | | 加工直径调整范围内 | 中心高调整范围 |
|---------|---------|-----|----|----|----|----|----|-----------|-----------|
| | φD1 | φD2 | φD | L | L1 | L2 | L3 | | |
| 2025-43 | 20 | 25 | 41 | 47 | 6 | 11 | 33 | +0.4-0.2 | +0.2-0.15 |
| 2532-48 | 25 | 32 | 49 | 60 | 6 | 11 | 45 | +0.4-0.2 | +0.2-0.15 |
| 3240-53 | 32 | 40 | 58 | 65 | 6 | 11 | 50 | +0.4-0.2 | +0.2-0.15 |
| 4050-63 | 40 | 50 | 68 | 76 | 6 | 11 | 61 | +0.4-0.2 | +0.2-0.2 |

莫氏转换柄

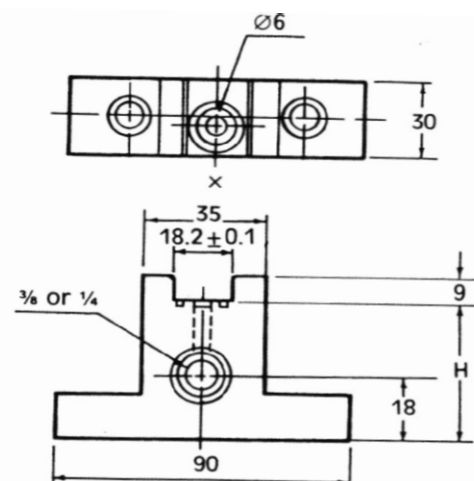
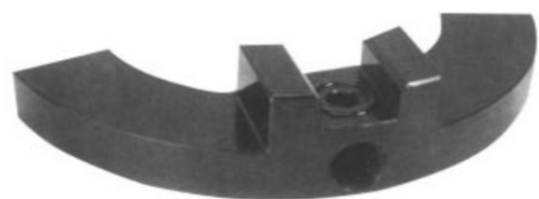


| 型号 | D | D1 | L | L1 |
|------------------|----|----|-----|-----|
| DIN228-B-32-MTA4 | 32 | 64 | 204 | 124 |
| DIN228-B-40-MTA4 | 40 | 64 | 204 | 124 |
| DIN228-B-32-MTA5 | 32 | 64 | 204 | 156 |
| DIN228-B-40-MTA5 | 40 | 64 | 204 | 156 |
| DIN228-B-32-MTA6 | 32 | 64 | 303 | 218 |
| DIN228-B-40-MTA6 | 40 | 64 | 303 | 218 |
| DIN228-B-50-MTA6 | 50 | 74 | 303 | 218 |

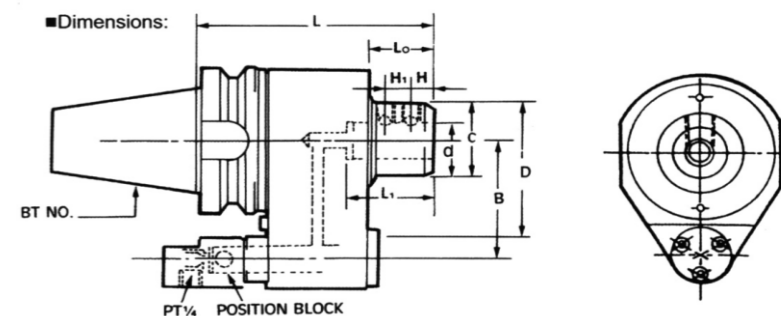


| 型号 | D | D1 | D2 | L | L1 | L2 | L3 |
|-------------|----|----|-----|-----|----|----|----|
| MT5-YLDB-32 | 32 | 55 | 92 | 127 | 15 | 18 | 60 |
| MT5-YLDB-40 | 40 | 60 | 98 | 127 | 15 | 18 | 65 |
| MT6-YLDB-32 | 32 | 55 | 92 | 127 | 15 | 18 | 60 |
| MT6-YLDB-40 | 40 | 60 | 98 | 127 | 15 | 18 | 65 |
| MT6-YLDB-50 | 50 | 70 | 108 | 127 | 15 | 18 | 70 |

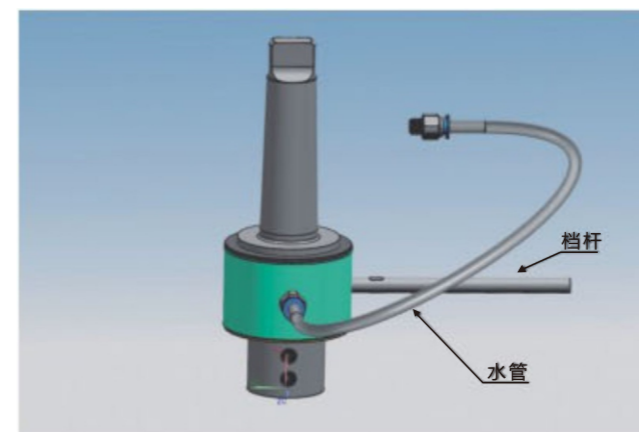
固定座



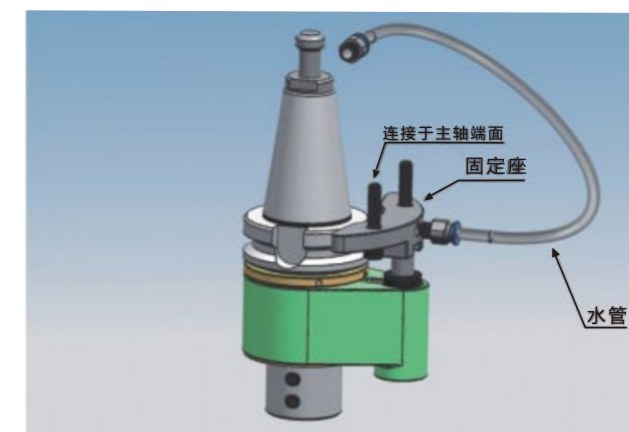
油路刀柄



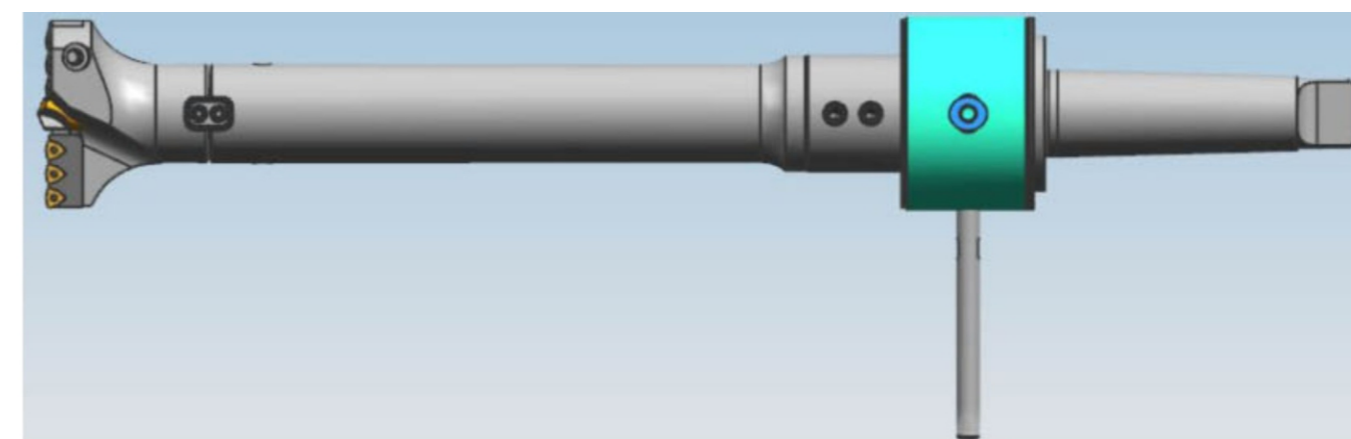
| 型号 | d | L | B | C | D | L0 | L1 | H | H1 |
|----------------|----|-----|----|----|-----|----|----|----|----|
| BT40-OSL32-155 | 32 | 155 | 65 | 53 | 90 | 50 | 60 | 15 | 15 |
| BT40-OSL40-155 | 40 | 155 | 65 | 70 | 90 | 50 | 70 | 19 | 18 |
| BT50-OSL32-160 | 32 | 160 | 80 | 54 | 100 | 50 | 60 | 15 | 15 |
| BT50-OSL40-160 | 40 | 160 | 80 | 64 | 100 | 50 | 70 | 19 | 18 |



莫氏柄安装示意图



BT柄安装示意图

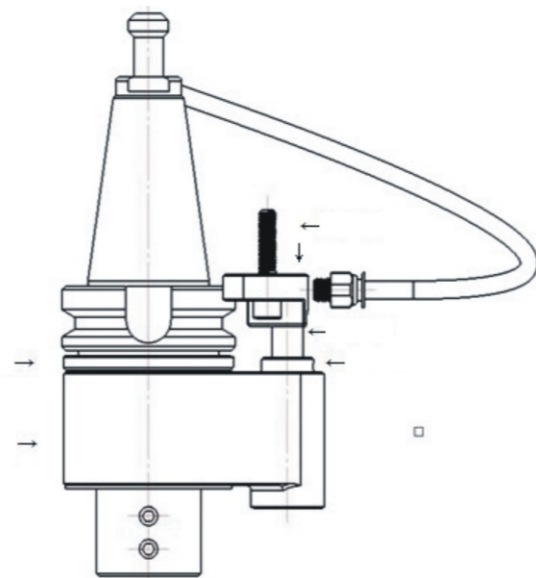


油路刀柄安装调整步骤

1. 确认刀柄中心至定位柱的距离：BT40=65mm；BT50=80mm,再与机床主轴中心至固定座距离作对比。若距离不符，使用厂家调整固定座进水孔位置，再安装（固定块需要根据机床主轴端面的防尘盖螺孔配）。
2. a. 首先把固定座安装在机床端面磨固定块进水管接上。（如图）
b. 油路刀柄安装，先把定位键上的M6螺纹松开，使定位柱能自由上下移动（注：定位柱下有弹簧,定位环上3只M6螺纹松开使之与油路刀柄主柄自由转动（注：螺纹不能松太出）。
c. 机床主轴锁紧，调整油路刀柄键槽与机床主轴键位置，使其对齐同时调整定位柱角度，使其对齐定位块出水孔，压进定位柱后羿把油路刀柄装上机床主轴（注：装完后要检查定位柱与定位块进水是否对齐且定位柱上端面要与定位块下端贴紧，否则会出现漏水）。如不能贴紧，需调整定位块向下的距离或定位块厚度）
d. 检查是否装好后打开出水，检查出水是否是从油路刀柄中心出或其他地方是否漏水。机床主轴后油路刀柄主柄转动时外壳是否紧固（第一次使用时建议用手动）。
3. 以上完成后，先用S100-300-500进行油路刀柄跑合（10分钟）在使用过程中最高转速不得超过BT40 S3500，BT50 S3000。
示意图如下：

The procedure of monting and adjusting for oil feed holder

1. To confirm the shank center positioning column distance: BT40=65mm; BT50=80mm, and machine tool spindle center to a fixed distance comparison. If the distance is inconsistent, manufacturers use the adjusting fixing seat water inlet hole position, and then install the (fixed block according to the needs of the end surface of the machine tool spindle dustproof cap screw with).
2. A. first put the fixed seat installed in the machine end on the water inlet pipe is connected with the fixed block mushroom. (Figure)
3. B. oil way tool shank installation, the positioning of the keys on the M6 screw loosen, the positioning column can move freely up and down (Note: the positioning column with spring), positioning ring 3 M6 thread loosening to rotation and oil way tool shank main handle free (Note: threads do not loose too).
4. C. machine tool spindle locking, adjust oil way tool shank keyway and machine tool spindle key position, its alignment angle positioning columns are adjusted at the same time, the alignment block water outlet, pressed into a positioning column Hou Yi to handle circuit mounted on the machine tool spindle (Note: after loading to check the positioning column and the positioning block into the water is aligned and the upper end face of the positioning column to and lower end of the positioning block is tightly, otherwise it will appear the water leakage. If not affixed, to adjust the positioning of the positioning block down the distance or the thickness of the block
5. D. check whether installed after open water, check if the water is from oil or other places is the central Water Leakage. The spindle rotates the main handle handle after the oil casing is fastened (the first use of that manual). After the completion of the above, first S100-300-500 to handle circuit run (10 minutes) in the use of the maximum speed should not exceed BT40 S3500 and BT50 S3000. Schematic diagram is as follows:



| 刀具实物 Product | 图纸要求 Drawings | 说明 Instruction |
|--------------|---------------|--|
| | | 打眼、倒角、沉孔三个工序集中在一把刀上面，一气呵成 Three process, boring, chamfer, counterbore concentrates in one tool. |
| | | 打眼后通过小刀夹精镗确保尺寸精度 After boring through clamp finishing boring to ensure dimensional accuracy. |
| | | 优化刀片角度，使之能打叠加板随后小刀夹精镗尺寸。 Optimizing insert angle to play overlay board, then clamp finishing boring dimension. |
| | | 打眼、倒角、镗平面高效、快捷。莫氏连接柄，可在立钻，普车尾架等工作 Efficiently and conveniently boring, chamfer, spot facing With Morse shank, and work in vertical drill, tailstock, etc.. |
| | | 风力发电轴承孔专用钻杆，特殊排屑槽，对称双刃，针对性优化设计，42CrMo, HB280, S1000, F200 低转速，高进给，低磨损，高效率 Wind power bearing bore dedicate holder, special chip-breaker, symmetrical double blade, targeted and optimized desingn, 42CrMo, HB280, S1000, F200, low speed, high feed, low wear, high efficiency. |
| | | 游艇玻璃钢打眼专用。特殊材质，双吹气设计，产品尺寸稳定不变形。 Dedicated boring for yacht FRP. Special material, designed in double blow, product dimension for stability, no deformation. |
| | | 组合式结构，配合普通麻花钻，解决小孔的复合刀问题 Modular structure match twish drill to the problem of compound tool of keyhole. |

备注：所有列复合刀具，均实际生产使用过

我们一直在努力,不断研发,敬请期待.....

We have been efforts, continuous research and development, stay tuned.....