



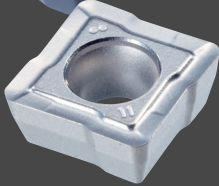
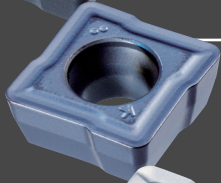
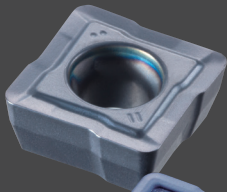
Indexable Drills Series

P2D P3D P4D P5D

Volume 5.2



KEY FEATURES: PHOENIX P2D P3D P4D P5D



● New chipbreakers available for a wide variety of materials

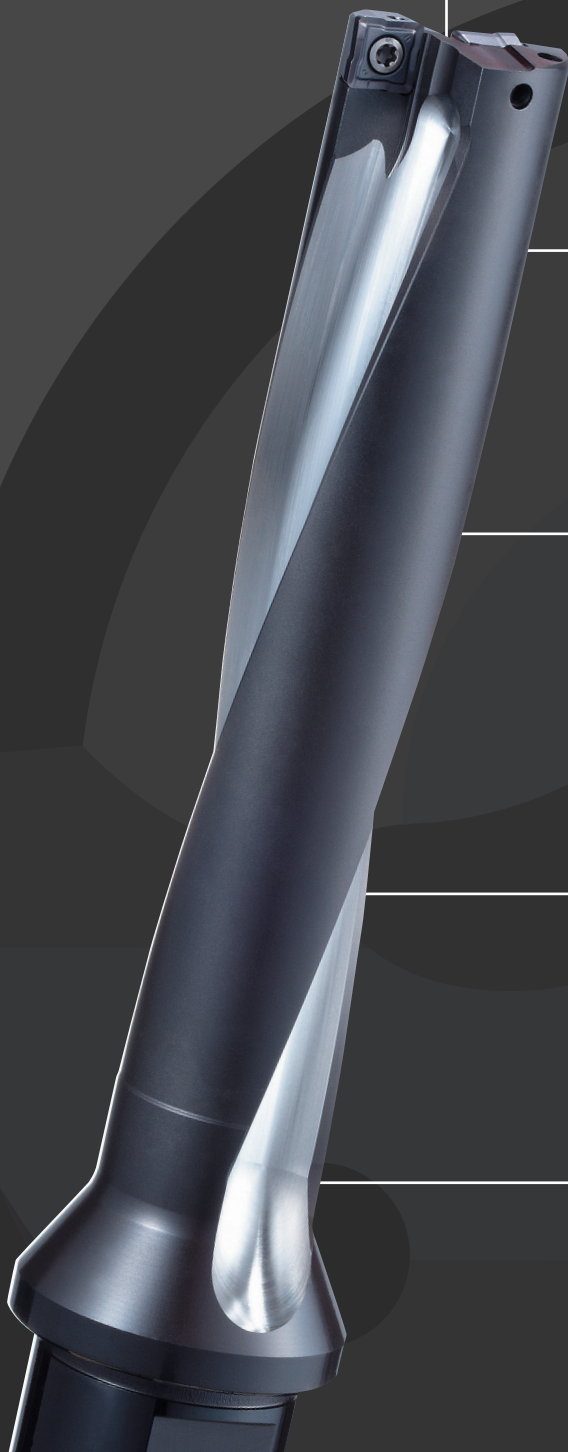
1 Economical 4-corner design

2 Unique flute design enables stable drilling

3 Using same insert to both center and peripheral cutting edge simplify tool management

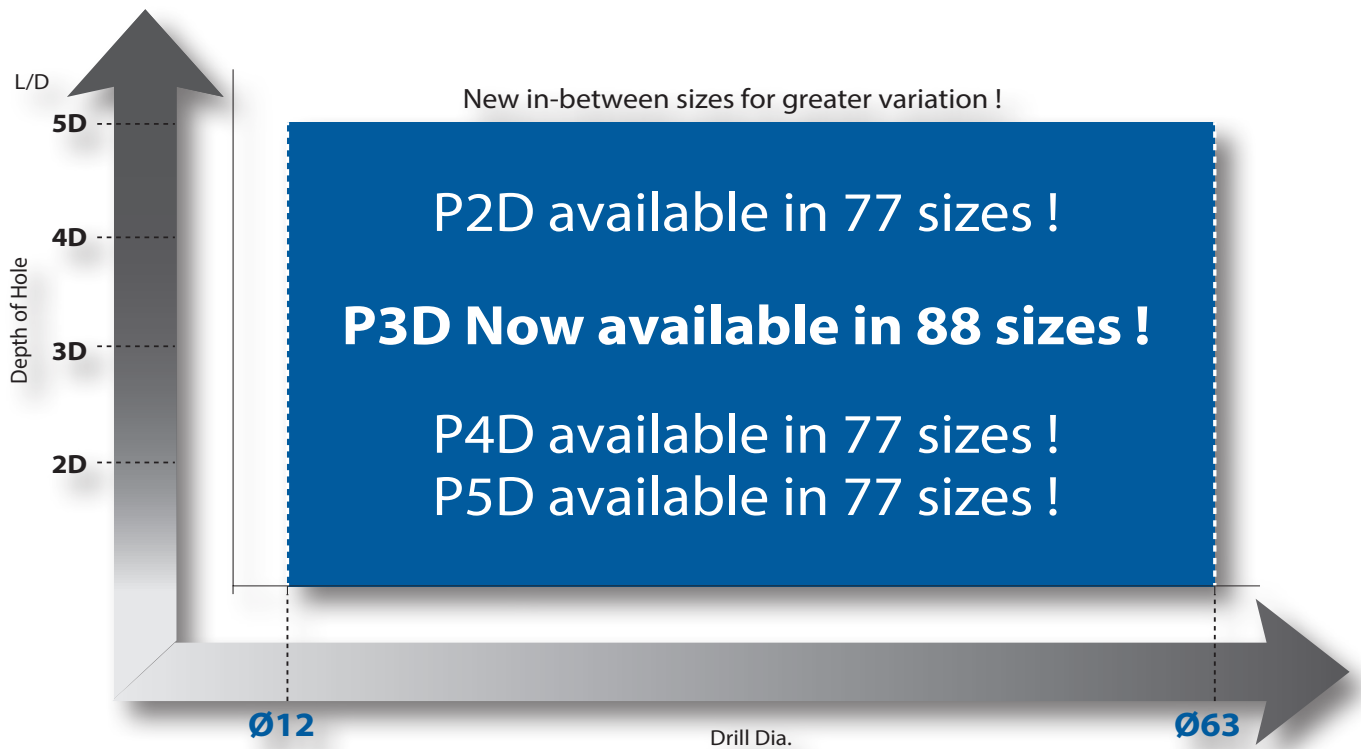
4 High precision finishing of the flute surface improves chip evacuation

5 Internal coolant system



PD-SERIES: NEW SIZES AVAILABLE NOW

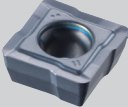
3 types of chipbreakers for a variety of work material in large size range



PHOENIX XCMT INSERTS


Drilling | Indexable | Inserts

Three types of chipbreakers are available for a wide variety of work material




For Steel and Stainless Steel (DM)

- Well balanced insert with sharpness and rigidity



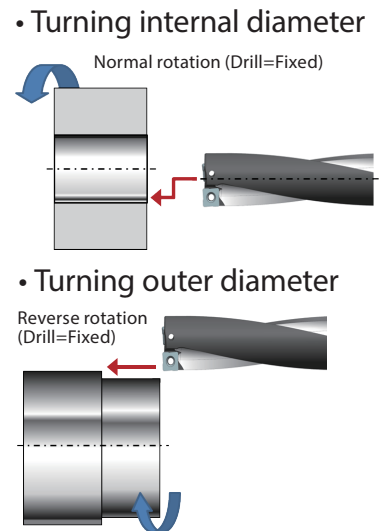
For Cast Iron (DR)



- Strong cutting edge acquired by rake angle and land



For Aluminum Alloy and Nonferrous Metal (DN)

- Excellent chip evacuation is acquired by sharp cutting edges and polishing treatment



| Chipbreaker | Classification | Grades | Coating Method | (HRA) Hardness | Surface Treatment | |
|----------------------------------------------------------------------------------------|----------------|--------|----------------|----------------|-------------------|-------------------|
| | | | | | Main Component | Coating Thickness |
| DM | P | XP9020 | PVD | 91.9 | TiAlN | 3µm |
|  DR | K | XP1010 | PVD | 91.4 | TiAlN | 6µm |
|  DN | N | CK110 | — | 92.2 | — | — |

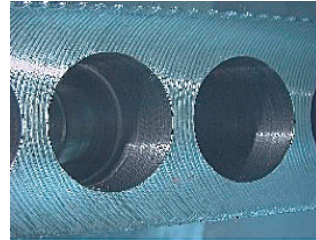
MATERIAL OVERVIEW

| Work Material | | DIN |
|---------------|----------------|-------------------------------------------------------|
| P | C: ≤0,2% | Low carbon steel 1.0116 (S235J2G3) 1.0401 (C15) |
| | C: 0,25-0,45% | Medium carbon steel 1.0501 (C35) |
| | C: ≥0,45% | High carbon steel 1.0535 (C55) 1.0553 (S355J0) |
| | SCM | Alloy steel 1.7225 (42CrMo4) |
| M | INOX | Stainless steel 1.4301 (X5CrNi18-10) |
| K | GG | Cast iron 0.6025 (EN-GJL-250/GG25) |
| | GGG | Ductile cast iron 0.7040 (EN-GJS-400-15/GGG-40) |
| N | Al | Aluminium 3.0205 (Al99) |
| | AC, ADC | Cast aluminium alloys 3.2581 (G-AlSi12) |
| S | Ti | Titanium 3.7164 (Ti6Al4V) |
| | Ni | Nickel alloys 2.4816 (NiCr15Fe/Inconel® 600) |
| H | 25-35HRC | Hardened steel |
| | 35-45HRC | |
| | 45-52HRC | |
| | 52-62HRC | |

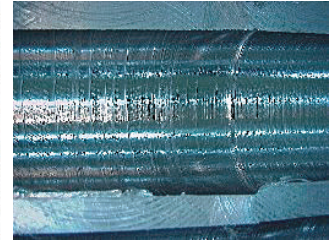
Achieves stable drilling, even when making rigorous 5xD deep holes

| | |
|-------------------|---------------------------------------------|
| Work Material | S50C |
| Drill Diameter | Ø 25 |
| Depth of hole | 125 mm |
| Cutting Condition | $V_C=150\text{m/min}$ $f=0,12\text{mm/rev}$ |
| Coolant | Water soluble |
| Machine | Horizontal Machining Center (BT50) |

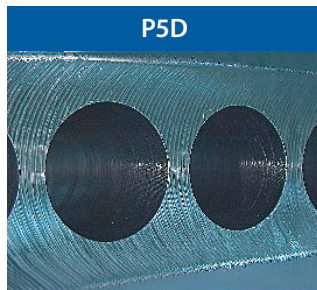
Conventional Indexable drill



Cross-sectional



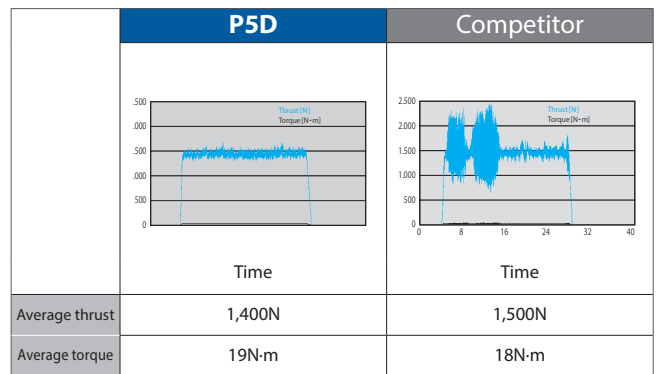
- 5xD deep hole drilling was an extremely difficult process for conventional indexable drills.
 - Since conventional indexable drills are constructed of two flutes and a cutting edge, its load balance is relatively poor especially when drilling deep holes.



Achieves stable drilling with minimal irregularity. The P5D is designed specifically for stable drilling of 5xD deep holes

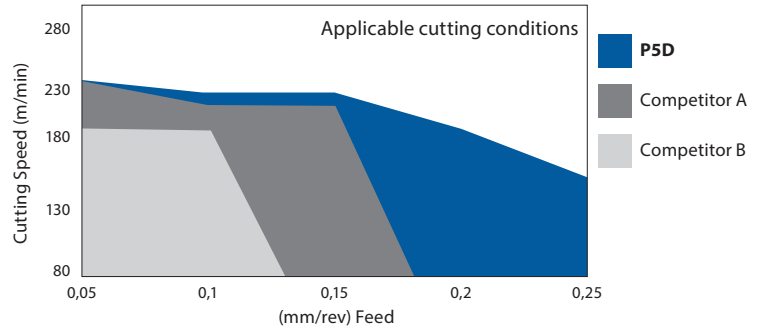
Stable cutting load

| | |
|-------------------|---------------------------------------------|
| Work Material | S50C |
| Drill Diameter | Ø 21 |
| Depth of hole | 50 mm |
| Cutting Condition | $V_C=120\text{m/min}$ $f=0,12\text{mm/rev}$ |
| Coolant | Water soluble |
| Machine | Horizontal Machining Center (BT50) |

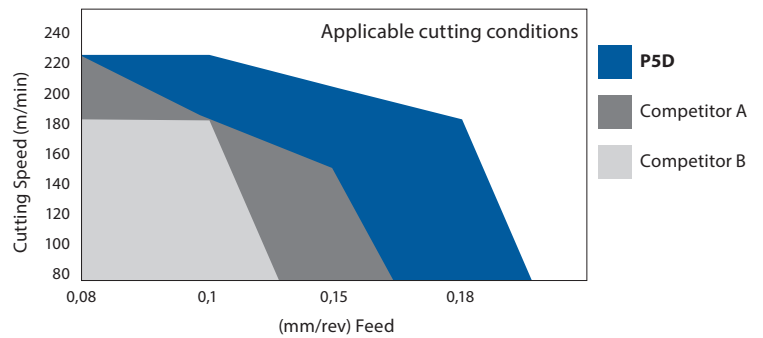


High efficiency even when drilling deep holes

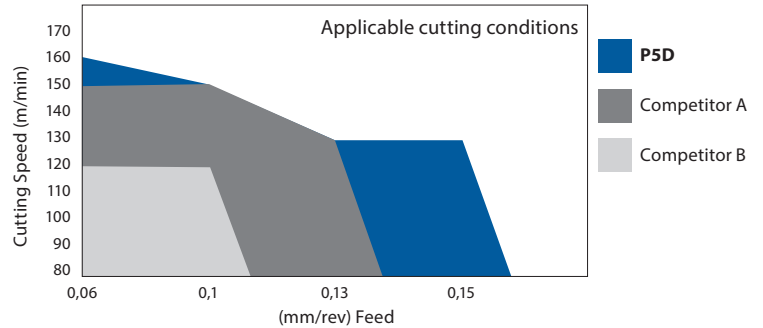
| | |
|---------------|----------------------------------|
| Tool | P5D2500FS32M08 (Ø25) |
| Insert Grade | XCMT083508ER-DM |
| Work Material | S50C |
| Depth of Hole | 120 mm |
| Coolant | Water soluble (Internal) |
| Machine | BT50 Horizontal Machining Center |



| | |
|---------------|----------------------------------|
| Tool | P5D2500FS32M08 (Ø25) |
| Insert Grade | XCMT083508ER-DM |
| Work Material | SCM440 (30HRC) |
| Depth of Hole | 120 mm |
| Coolant | Water soluble (Internal) |
| Machine | BT50 Horizontal Machining Center |



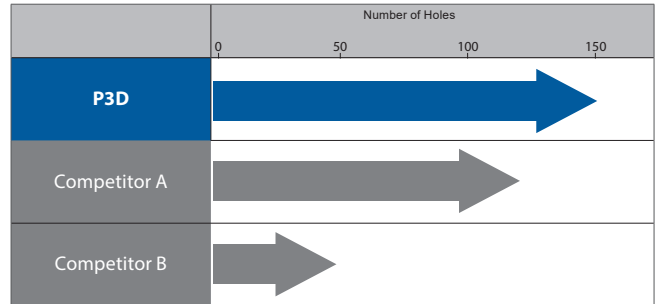
| | |
|---------------|----------------------------------|
| Tool | P5D2500FS32M08 (Ø25) |
| Insert Grade | XCMT083508ER-DM |
| Work Material | SUS304 |
| Depth of Hole | 120 mm |
| Coolant | Water soluble (Internal) |
| Machine | BT50 Horizontal Machining Center |



High efficiency drilling in SUS304 (P3D)

| | |
|---------------|------------------------------------|
| Tool | P3D2500FS32M08 (Ø25) |
| Insert Grade | XCMT083508ER-DM (XP9020) |
| Work Material | SUS304 |
| Cutting Speed | 160m/min (2.040min ⁻¹) |
| Feed | 400mm/min (0,2mm/rev) |
| Depth of Hole | 75mm (Blind) |
| Coolant | Water Soluble |
| Machine | Horizontal Machining Center |

The P3D was able to achieve long tool life by drilling SUS 304.



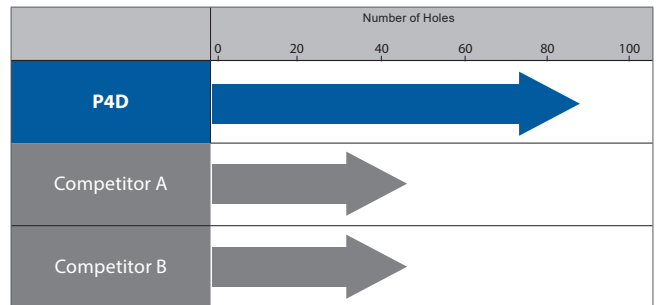
Wear comparison after drilling 48 holes



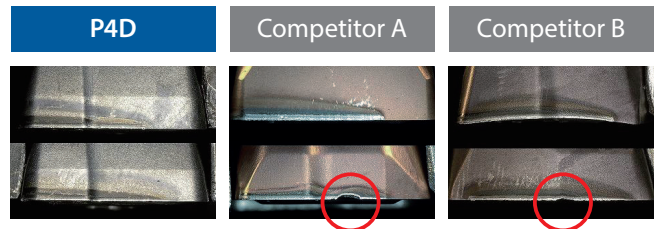
High efficiency drilling in SUS304 (P4D)

| | |
|---------------|------------------------------------|
| Tool | P4D2500FS32M08 (Ø25) |
| Insert Grade | XCMT083508ER-DM (XP9020) |
| Work Material | SUS304 |
| Cutting Speed | 160m/min (2.040min ⁻¹) |
| Feed | 245mm/min (0,12mm/rev) |
| Depth of Hole | 100mm(Blind) |
| Coolant | Water Soluble |
| Machine | Horizontal Machining Center |

Long tool life was able to achieve by stable drilling.



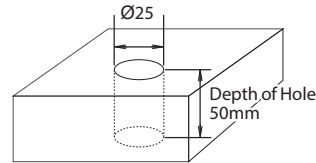
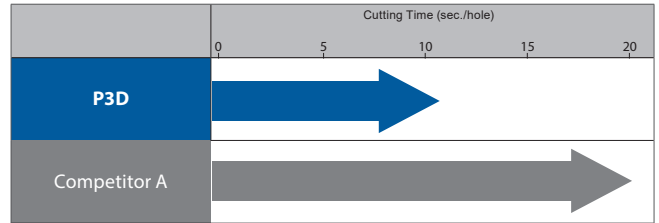
Wear comparison after drilling 45 holes



High efficiency drilling in mold parts (P3D)

| Tool | P3D2500FS32M08 (Ø25) | Competitor's Indexable Drill |
|---------------|------------------------------------|------------------------------------|
| Insert Grade | XCMT083508ER-DM (XP9020) | Coated Carbide Insert |
| Work Material | S50C | |
| Cutting Speed | 200m/min (2.550min ⁻¹) | 167m/min (2.100min ⁻¹) |
| Feed | 300mm/min (0,12mm/rev) | 170mm/min (0,08mm/rev) |
| Depth of Hole | 50mm (Through) | |
| Coolant | Water Soluble (Internal) | |
| Machine | Vertical Machining Center | |

The competitor product exhibited difficulties in the separation of cutting chips, whereas the P3D was able to break chips into small pieces for trouble-free evacuation, reducing processing time significantly.

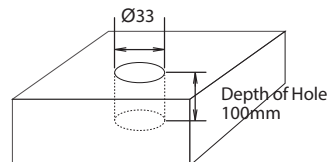
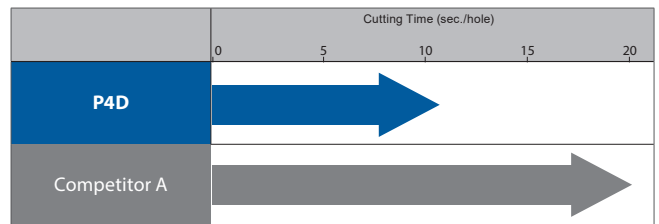


Cutting Chips of P3D

High efficiency drilling of structural parts (P4D)

| Tool | P4D3300FS40M09 (Ø33) | Competitor's Indexable Drill |
|---------------|------------------------------------|------------------------------------|
| Insert Grade | XCMT094008ER-DM (XP9020) | Coated Carbide Insert |
| Work Material | SS400 | |
| Cutting Speed | 220m/min (2.100min ⁻¹) | 165m/min (1.600min ⁻¹) |
| Feed | 150mm/min (0,07mm/rev) | 110mm/min (0,07mm/rev) |
| Depth of Hole | 100mm (Blind) | |
| Coolant | Water Soluble (Internal) | |
| Machine | Horizontal Machining Center | |

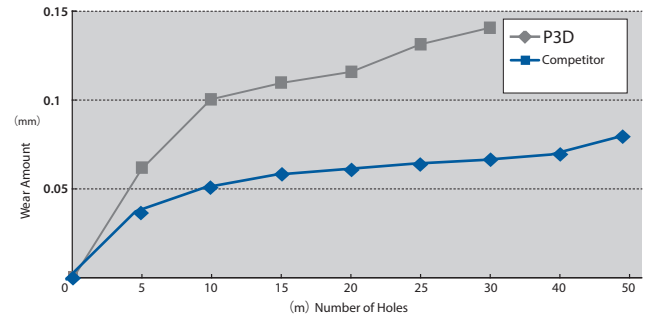
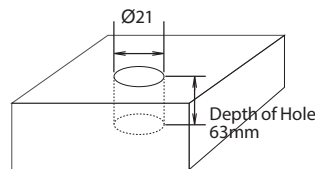
To prevent chip clogging, 2mm step-drilling was commonly required for applications with a depth of over 70mm. The P4D, however, was able to demonstrate excellent chip evacuation even in deep-hole with no step processing required, improving performance with the reduction of machining time by 45% per hole.



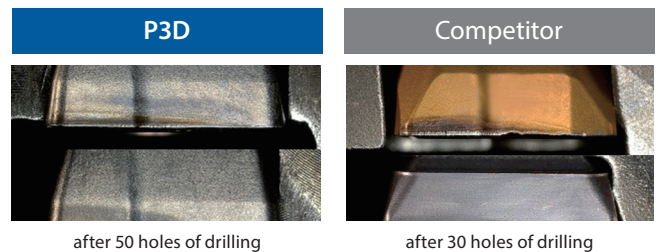
Drilling with long tool life in high-hardened material (P3D)

| | | |
|---------------|-----------------------------------|------------------------------|
| Tool | P3D2100FS25M07 (Ø25) | Competitor's Indexable Drill |
| Insert Grade | XCMT073106ER-DM (XP9020) | Coated Carbide Insert |
| Work Material | SKD61 (50HRC) | |
| Cutting Speed | 80m/min (1.200min ⁻¹) | |
| Feed | 100mm/min (0,08mm/rev) | |
| Depth of Hole | 63mm (Blind) | |
| Coolant | Water Soluble (Internal) | |
| Machine | Horizontal Machining Center | |

The competitor product exhibited chipping of the center blade after processing 30 holes in a high hardness material of HRC50. The P3D, on the other hand, was able to continue processing even after 50 holes with minimal wear.



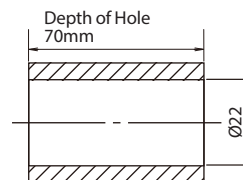
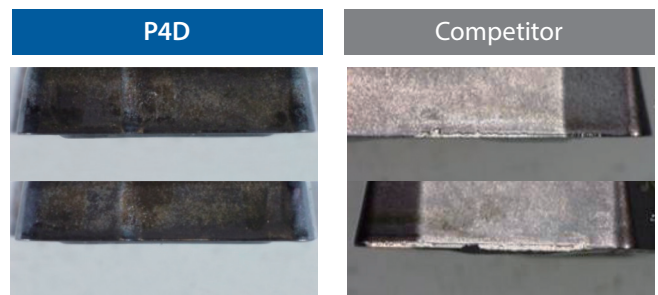
Wear comparison



Turning of building component (P4D)

| | | |
|---------------|------------------------------------|------------------------------|
| Tool | P4D2200FS25M07 (Ø22) | Competitor's Indexable Drill |
| Insert Grade | XCMT073106ER-DM (XP9020) | Coated Carbide Insert |
| Work Material | SCM415 | |
| Cutting Speed | 104m/min (1.500min ⁻¹) | |
| Feed | 300mm/min (0,2mm/rev) | |
| Depth of Hole | 70mm (Through) | |
| Coolant | Water Soluble (Internal) | |
| Machine | Horizontal NC Lathe | |

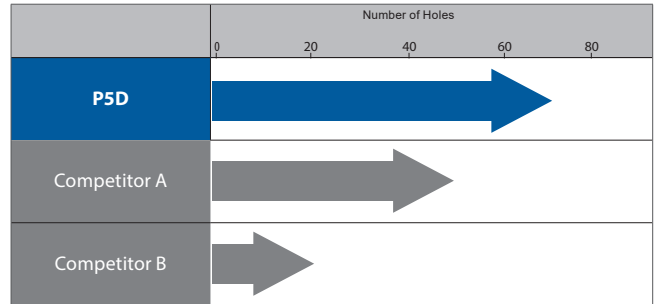
The insert of the competitor tool exhibited chipping during the processing of a 70mm deep-hole turning application while the P4D was able to continue processing with minimal wear shown.



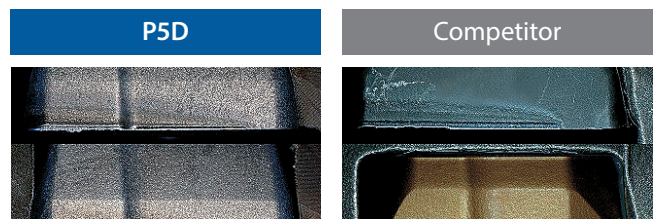
High efficiency drilling in S50C (P5D)

| | |
|---------------|------------------------------------|
| Tool | P5D2700FS32M08 (Ø27) |
| Insert Grade | XCMT083508ER-DM (XP9020) |
| Work Material | S50C |
| Cutting Speed | 150m/min (1,800min ⁻¹) |
| Feed | 216mm/min (0.12mm/rev) |
| Depth of Hole | 120mm (Through) |
| Coolant | Water Soluble |
| Machine | Horizontal Machining Center |

High efficiency can be achieved even when drilling 5xD deep holes. With stable performance, tool life can be prolonged.



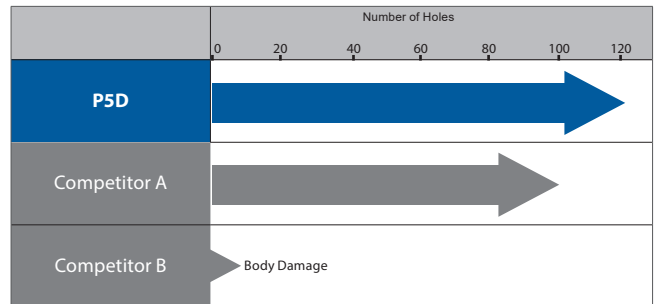
Wear comparison after drilling 40 holes



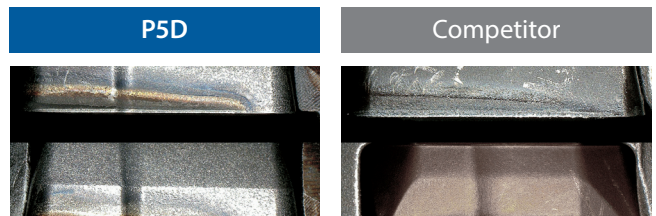
Stable performance even in stainless steel (P5D)

| | |
|---------------|------------------------------------|
| Tool | P5D2700FS32M08 (Ø27) |
| Insert Grade | XCMT083508ER-DM (XP9020) |
| Work Material | SUS304 |
| Cutting Speed | 120m/min (1,400min ⁻¹) |
| Feed | 140mm/min (0,1mm/rev) |
| Depth of Hole | 120mm (Through) |
| Coolant | Water Soluble |
| Machine | Horizontal Machining Center |

The P5D is able to achieve great chip evacuation and stable performance even in SUS304, where chip packing is a common problem.



Wear comparison after drilling 100 holes

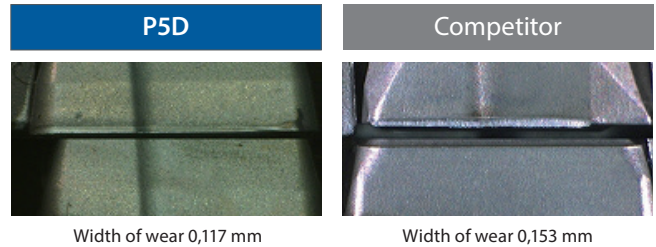


Drilling with long tool life in ADC12 (P5D)

| | |
|---------------|------------------------------------|
| Tool | P5D2500FS32M8 (Ø25) |
| Insert Grade | XCMT083508ER-DN (CK110) |
| Work Material | ADC12 |
| Cutting Speed | 250m/min (3.185min ⁻¹) |
| Feed | 320mm/min (0,1mm/rev) |
| Depth of Hole | 100mm (Blind) |
| Coolant | Water Soluble |
| Machine | Horizontal Machining Center |

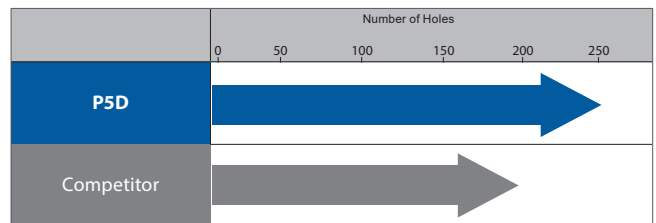
Long tool life was achieved in machining ADC12 by using inserts for aluminium alloy and non-ferrous materials.

Wear comparison after drilling 200 holes



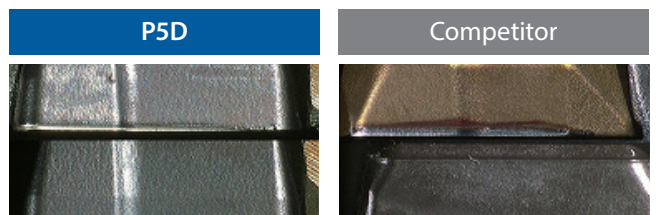
Drilling with long tool life in FC250 (P5D)

| | |
|---------------|------------------------------------|
| Tool | P5D2500FS32M08 (Ø25) |
| Insert Grade | XCMT083508ER-DR (XP1010) |
| Work Material | FC250 |
| Cutting Speed | 150m/min (1,910min ⁻¹) |
| Feed | 200mm/min (0.1mm/rev) |
| Depth of Hole | 100mm (Blind) |
| Coolant | Water Soluble |
| Machine | Horizontal Machining Center |



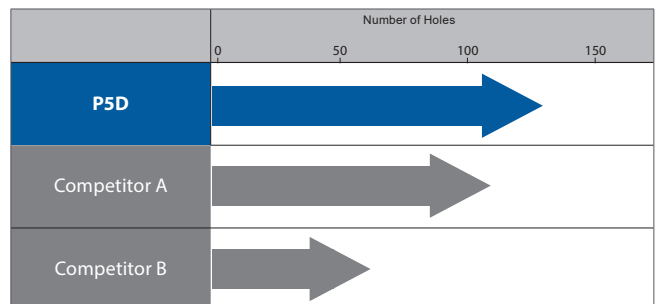
P5D achieved stable drilling of 250holes, which was over 1,3 times, versus the competition.

Wear comparison after drilling 150 holes

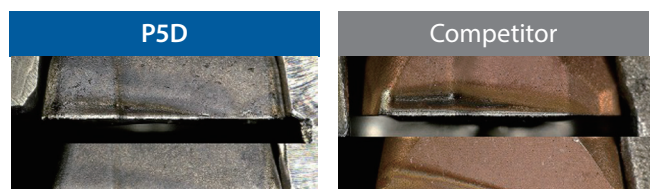


Stable performance even in SUS304 (P5D)

| | | | |
|---------------|------------------------------------|-----------------------|--------------|
| Tool | P5D1500FS20M04 (Ø15) | Competitor A | Competitor B |
| Insert Grade | XCMT042204ER-DM (XP9020) | Coated Carbide Insert | |
| Work Material | SUS304 | | |
| Cutting Speed | 120m/min (2.550min ⁻¹) | | |
| Feed | 150mm/min (0,06mm/rev) | | |
| Depth of Hole | 75mm (Blind) | | |
| Coolant | Water Soluble (internal) | | |
| Machine | Horizontal Machining Center | | |

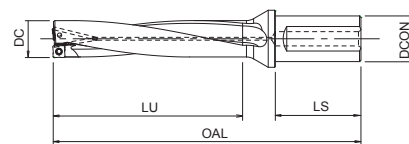


Wear comparison after 9m of drilling

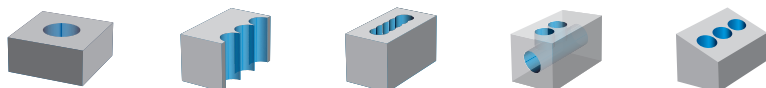


P2D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 2xD
- 3 different insert grades available
- 77 sizes



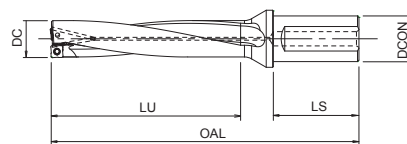
| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|------|-------------------------|-----|----|----|------|
| 7803180 | P2D1200FS20M03 | 12 | XCMT03 | 87 | 24 | 50 | 20 |
| 7803181 | P2D1250FS20M03 | 12,5 | XCMT03 | 88 | 25 | 50 | 20 |
| 7803182 | P2D1300FS20M03 | 13 | XCMT03 | 89 | 26 | 50 | 20 |
| 7803183 | P2D1350FS20M03 | 13,5 | XCMT03 | 90 | 27 | 50 | 20 |
| 7803184 | P2D1400FS20M03 | 14 | XCMT03 | 91 | 28 | 50 | 20 |
| 7803185 | P2D1450FS20M03 | 14,5 | XCMT03 | 92 | 29 | 50 | 20 |
| 7803117 | P2D1500FS20M04 | 15 | XCMT04 | 95 | 30 | 50 | 20 |
| 7803118 | P2D1550FS20M04 | 15,5 | XCMT04 | 96 | 31 | 50 | 20 |
| 7803119 | P2D1600FS20M04 | 16 | XCMT04 | 97 | 32 | 50 | 20 |
| 7803120 | P2D1650FS20M04 | 16,5 | XCMT04 | 98 | 33 | 50 | 20 |
| 7803121 | P2D1700FS20M05 | 17 | XCMT05 | 102 | 34 | 50 | 20 |
| 7803122 | P2D1750FS20M05 | 17,5 | XCMT05 | 103 | 35 | 50 | 20 |
| 7803190 | P2D1750FS25M05 | 17,5 | XCMT05 | 109 | 35 | 56 | 25 |
| 7803123 | P2D1800FS25M05 | 18 | XCMT05 | 110 | 36 | 56 | 25 |
| 7803124 | P2D1850FS25M05 | 18,5 | XCMT05 | 111 | 37 | 56 | 25 |
| 7803125 | P2D1900FS25M06 | 19 | XCMT06 | 112 | 38 | 56 | 25 |
| 7803126 | P2D1950FS25M06 | 19,5 | XCMT06 | 113 | 39 | 56 | 25 |
| 7803127 | P2D2000FS25M06 | 20 | XCMT06 | 114 | 40 | 56 | 25 |
| 7803128 | P2D2050FS25M06 | 20,5 | XCMT06 | 115 | 41 | 56 | 25 |
| 7803129 | P2D2100FS25M07 | 21 | XCMT07 | 121 | 42 | 56 | 25 |
| 7803130 | P2D2150FS25M07 | 21,5 | XCMT07 | 122 | 43 | 56 | 25 |
| 7803131 | P2D2200FS25M07 | 22 | XCMT07 | 123 | 44 | 56 | 25 |
| 7803132 | P2D2250FS25M07 | 22,5 | XCMT07 | 124 | 45 | 56 | 25 |
| 7803133 | P2D2300FS25M07 | 23 | XCMT07 | 125 | 46 | 56 | 25 |
| 7803134 | P2D2350FS32M07 | 23,5 | XCMT07 | 130 | 47 | 60 | 32 |
| 7803191 | P2D2350FS25M07 | 23,5 | XCMT07 | 126 | 47 | 56 | 25 |
| 7803135 | P2D2400FS32M07 | 24 | XCMT07 | 131 | 48 | 60 | 32 |
| 7803192 | P2D2400FS25M07 | 24 | XCMT07 | 127 | 48 | 56 | 25 |
| 7803136 | P2D2450FS32M07 | 24,5 | XCMT07 | 132 | 49 | 60 | 32 |
| 7803193 | P2D2450FS25M07 | 24,5 | XCMT07 | 128 | 49 | 56 | 25 |
| 7803137 | P2D2500FS32M08 | 25 | XCMT08 | 133 | 50 | 60 | 32 |
| 7803194 | P2D2500FS25M08 | 25 | XCMT08 | 129 | 50 | 56 | 25 |
| 7803138 | P2D2550FS32M08 | 25,5 | XCMT08 | 134 | 51 | 60 | 32 |
| 7803195 | P2D2550FS25M08 | 25,5 | XCMT08 | 130 | 51 | 56 | 25 |
| 7803139 | P2D2600FS32M08 | 26 | XCMT08 | 135 | 52 | 60 | 32 |
| 7803140 | P2D2650FS32M08 | 26,5 | XCMT08 | 136 | 53 | 60 | 32 |
| 7803141 | P2D2700FS32M08 | 27 | XCMT08 | 137 | 54 | 60 | 32 |
| 7803142 | P2D2800FS32M08 | 28 | XCMT08 | 139 | 56 | 60 | 32 |
| 7803143 | P2D2850FS32M08 | 28,5 | XCMT08 | 140 | 57 | 60 | 32 |
| 7803144 | P2D2900FS32M09 | 29 | XCMT09 | 141 | 58 | 60 | 32 |
| 7803145 | P2D3000FS32M09 | 30 | XCMT09 | 143 | 60 | 60 | 32 |
| 7803146 | P2D3100FS32M09 | 31 | XCMT09 | 145 | 62 | 60 | 32 |
| 7803196 | P2D3100FS40M09 | 31 | XCMT09 | 155 | 62 | 70 | 40 |
| 7803147 | P2D3200FS32M09 | 32 | XCMT09 | 147 | 64 | 60 | 32 |
| 7803197 | P2D3200FS40M09 | 32 | XCMT09 | 157 | 64 | 70 | 40 |
| 7803148 | P2D3300FS40M09 | 33 | XCMT09 | 159 | 66 | 70 | 40 |
| 7803149 | P2D3350FS40M09 | 33,5 | XCMT09 | 160 | 67 | 70 | 40 |
| 7803150 | P2D3400FS40M10 | 34 | XCMT10 | 161 | 68 | 70 | 40 |
| 7803151 | P2D3500FS40M10 | 35 | XCMT10 | 163 | 70 | 70 | 40 |
| 7803152 | P2D3600FS40M10 | 36 | XCMT10 | 165 | 72 | 70 | 40 |
| 7803153 | P2D3700FS40M10 | 37 | XCMT10 | 167 | 74 | 70 | 40 |
| 7803154 | P2D3800FS40M10 | 38 | XCMT10 | 169 | 76 | 70 | 40 |
| 7803155 | P2D3900FS40M12 | 39 | XCMT12 | 178 | 78 | 70 | 40 |
| 7803156 | P2D4000FS40M12 | 40 | XCMT12 | 180 | 80 | 70 | 40 |

Drilling | Indexable

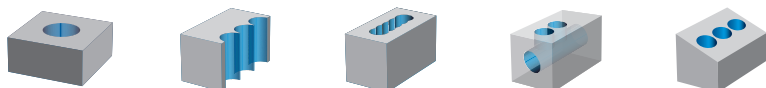
Body

P2D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 2xD
- 3 different insert grades available
- 77 sizes



| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|----|-------------------------|-----|-----|----|------|
| 7803157 | P2D4100FS40M12 | 41 | XCMT12 | 182 | 82 | 70 | 40 |
| 7803158 | P2D4200FS40M12 | 42 | XCMT12 | 184 | 84 | 70 | 40 |
| 7803159 | P2D4300FS40M12 | 43 | XCMT12 | 186 | 86 | 70 | 40 |
| 7803160 | P2D4400FS40M12 | 44 | XCMT12 | 188 | 88 | 70 | 40 |
| 7803161 | P2D4500FS40M13 | 45 | XCMT13 | 190 | 90 | 70 | 40 |
| 7803162 | P2D4600FS40M13 | 46 | XCMT13 | 192 | 92 | 70 | 40 |
| 7803163 | P2D4700FS40M13 | 47 | XCMT13 | 194 | 94 | 70 | 40 |
| 7803164 | P2D4800FS40M13 | 48 | XCMT13 | 196 | 96 | 70 | 40 |
| 7803165 | P2D4900FS40M13 | 49 | XCMT13 | 198 | 98 | 70 | 40 |
| 7803166 | P2D5000FS40M14 | 50 | XCMT14 | 200 | 100 | 70 | 40 |
| 7803167 | P2D5100FS40M14 | 51 | XCMT14 | 202 | 102 | 70 | 40 |
| 7803168 | P2D5200FS40M14 | 52 | XCMT14 | 204 | 104 | 70 | 40 |
| 7803169 | P2D5300FS40M14 | 53 | XCMT14 | 206 | 106 | 70 | 40 |
| 7803170 | P2D5400FS40M14 | 54 | XCMT14 | 208 | 108 | 70 | 40 |
| 7803171 | P2D5500FS40M14 | 55 | XCMT14 | 210 | 110 | 70 | 40 |
| 7803172 | P2D5600FS40M14 | 56 | XCMT14 | 212 | 112 | 70 | 40 |
| 7803173 | P2D5700FS40M16 | 57 | XCMT16 | 214 | 114 | 70 | 40 |
| 7803174 | P2D5800FS40M16 | 58 | XCMT16 | 216 | 116 | 70 | 40 |
| 7803175 | P2D5900FS40M16 | 59 | XCMT16 | 218 | 118 | 70 | 40 |
| 7803176 | P2D6000FS40M16 | 60 | XCMT16 | 220 | 120 | 70 | 40 |
| 7803177 | P2D6100FS40M16 | 61 | XCMT16 | 222 | 122 | 70 | 40 |
| 7803178 | P2D6200FS40M16 | 62 | XCMT16 | 224 | 124 | 70 | 40 |
| 7803179 | P2D6300FS40M16 | 63 | XCMT16 | 226 | 126 | 70 | 40 |

Drilling | Indexable

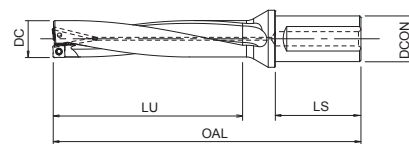
Body

Accessories and spare parts

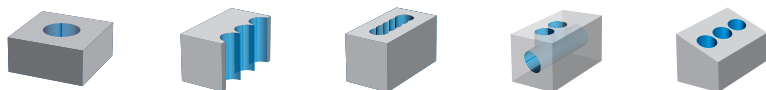
| Applicable drill DC | EDP | Designation | Specification |
|---------------------|---------|--------------------|----------------|
| 12 - 14,5 | 7808096 | FS18536P | Clamping screw |
| 15 - 18,5 | 7808139 | FS20543P | Clamping screw |
| 19 - 20,5 | 7808138 | FS22550P | Clamping screw |
| 21 - 24,5 | 7808136 | FS25560P | Clamping screw |
| 25 - 33,5 | 7808135 | FS30570P | Clamping screw |
| 34 - 44 | 7808137 | FS35586P | Clamping screw |
| 45 - 63 | 7808114 | FS45510P | Clamping screw |
| 12 - 18,5 | 7808223 | 6IP-D (Torx 6IP) | Wrench |
| 19 - 20,5 | 7808224 | 7IP-D (Torx 7IP) | Wrench |
| 21 - 24,5 | 7808225 | 8IP-D (Torx 8IP) | Wrench |
| 25 - 33,5 | 7808226 | 9IP-D (Torx 9IP) | Wrench |
| 34 - 44 | 7808228 | 15IP-D (Torx 15IP) | Wrench |
| 45 - 63 | 7808229 | 20IP-D (Torx 20IP) | Wrench |

P3D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 3xD
- 3 different insert grades available
- 88 sizes



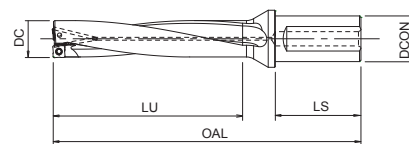
Drilling | Indexable

Body

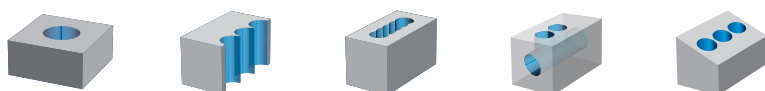
| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|------|-------------------------|-------|------|----|------|
| 7803210 | P3D1200FS20M03 | 12 | XCMT03 | 99 | 36 | 50 | 20 |
| 7803211 | P3D1250FS20M03 | 12,5 | XCMT03 | 100,5 | 37,5 | 50 | 20 |
| 7803212 | P3D1270FS20M03 | 12,7 | XCMT03 | 101,1 | 38,1 | 50 | 20 |
| 7803213 | P3D1300FS20M03 | 13 | XCMT03 | 102 | 39 | 50 | 20 |
| 7803214 | P3D1350FS20M03 | 13,5 | XCMT03 | 103,5 | 40,5 | 50 | 20 |
| 7803215 | P3D1400FS20M03 | 14 | XCMT03 | 105 | 42 | 50 | 20 |
| 7803216 | P3D1450FS20M03 | 14,5 | XCMT03 | 106,5 | 43,5 | 50 | 20 |
| 7803217 | P3D1500FS20M04 | 15 | XCMT04 | 110 | 45 | 50 | 20 |
| 7803218 | P3D1550FS20M04 | 15,5 | XCMT04 | 112 | 47 | 50 | 20 |
| 7803219 | P3D1600FS20M04 | 16 | XCMT04 | 113 | 48 | 50 | 20 |
| 7803220 | P3D1650FS20M04 | 16,5 | XCMT04 | 115 | 50 | 50 | 20 |
| 7803221 | P3D1700FS20M05 | 17 | XCMT05 | 119 | 51 | 50 | 20 |
| 7803222 | P3D1750FS20M05 | 17,5 | XCMT05 | 121 | 53 | 50 | 20 |
| 7803290 | P3D1750FS25M05 | 17,5 | XCMT05 | 127 | 53 | 56 | 25 |
| 7803223 | P3D1800FS25M05 | 18 | XCMT05 | 128 | 54 | 56 | 25 |
| 7803224 | P3D1850FS25M05 | 18,5 | XCMT05 | 130 | 56 | 56 | 25 |
| 7803225 | P3D1900FS25M06 | 19 | XCMT06 | 131 | 57 | 56 | 25 |
| 7803226 | P3D1950FS25M06 | 19,5 | XCMT06 | 133 | 59 | 56 | 25 |
| 7803227 | P3D2000FS25M06 | 20 | XCMT06 | 134 | 60 | 56 | 25 |
| 7803228 | P3D2050FS25M06 | 20,5 | XCMT06 | 136 | 62 | 56 | 25 |
| 7803229 | P3D2100FS25M07 | 21 | XCMT07 | 142 | 63 | 56 | 25 |
| 7803230 | P3D2150FS25M07 | 21,5 | XCMT07 | 144 | 65 | 56 | 25 |
| 7803231 | P3D2200FS25M07 | 22 | XCMT07 | 145 | 66 | 56 | 25 |
| 7803232 | P3D2250FS25M07 | 22,5 | XCMT07 | 147 | 68 | 56 | 25 |
| 7803233 | P3D2300FS25M07 | 23 | XCMT07 | 148 | 69 | 56 | 25 |
| 7803234 | P3D2350FS32M07 | 23,5 | XCMT07 | 154 | 71 | 60 | 32 |
| 7803291 | P3D2350FS25M07 | 23,5 | XCMT07 | 150 | 71 | 56 | 25 |
| 7803235 | P3D2400FS32M07 | 24 | XCMT07 | 155 | 72 | 60 | 32 |
| 7803292 | P3D2400FS25M07 | 24 | XCMT07 | 151 | 72 | 56 | 25 |
| 7803236 | P3D2450FS32M07 | 24,5 | XCMT07 | 157 | 74 | 60 | 32 |
| 7803293 | P3D2450FS25M07 | 24,5 | XCMT07 | 153 | 74 | 56 | 25 |
| 7803237 | P3D2500FS32M08 | 25 | XCMT08 | 158 | 75 | 60 | 32 |
| 7803294 | P3D2500FS25M08 | 25 | XCMT08 | 154 | 75 | 56 | 25 |
| 7803238 | P3D2550FS32M08 | 25,5 | XCMT08 | 160 | 77 | 60 | 32 |
| 7803295 | P3D2550FS25M08 | 25,5 | XCMT08 | 156 | 77 | 56 | 25 |
| 7803239 | P3D2600FS32M08 | 26 | XCMT08 | 161 | 78 | 60 | 32 |
| 7803240 | P3D2650FS32M08 | 26,5 | XCMT08 | 163 | 80 | 60 | 32 |
| 7803241 | P3D2700FS32M08 | 27 | XCMT08 | 164 | 81 | 60 | 32 |
| 7803300 | P3D2750FS32M08 | 27,5 | XCMT08 | 166 | 83 | 60 | 32 |
| 7803242 | P3D2800FS32M08 | 28 | XCMT08 | 167 | 84 | 60 | 32 |
| 7803243 | P3D2850FS32M08 | 28,5 | XCMT08 | 169 | 86 | 60 | 32 |
| 7803244 | P3D2900FS32M09 | 29 | XCMT09 | 170 | 87 | 60 | 32 |
| 7803301 | P3D2950FS32M09 | 29,5 | XCMT09 | 172 | 89 | 60 | 32 |
| 7803245 | P3D3000FS32M09 | 30 | XCMT09 | 173 | 90 | 60 | 32 |
| 7803302 | P3D3050FS32M09 | 30,5 | XCMT09 | 175 | 92 | 60 | 32 |
| 7803246 | P3D3100FS32M09 | 31 | XCMT09 | 176 | 93 | 60 | 32 |
| 7803296 | P3D3100FS40M09 | 31 | XCMT09 | 186 | 93 | 70 | 40 |
| 7803303 | P3D3150FS32M09 | 31,5 | XCMT09 | 178 | 95 | 60 | 32 |
| 7803247 | P3D3200FS32M09 | 32 | XCMT09 | 179 | 96 | 60 | 32 |
| 7803297 | P3D3200FS40M09 | 32 | XCMT09 | 189 | 96 | 70 | 40 |
| 7803304 | P3D3250FS40M09 | 32,5 | XCMT09 | 191 | 98 | 70 | 40 |
| 7803248 | P3D3300FS40M09 | 33 | XCMT09 | 192 | 99 | 70 | 40 |
| 7803249 | P3D3350FS40M09 | 33,5 | XCMT09 | 194 | 101 | 70 | 40 |
| 7803250 | P3D3400FS40M10 | 34 | XCMT10 | 195 | 102 | 70 | 40 |

P3D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 3xD
- 3 different insert grades available
- 88 sizes



| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|------|-------------------------|-----|-----|----|------|
| 7803305 | P3D3450FS40M10 | 34,5 | XCMT10 | 197 | 104 | 70 | 40 |
| 7803251 | P3D3500FS40M10 | 35 | XCMT10 | 198 | 105 | 70 | 40 |
| 7803306 | P3D3550FS40M10 | 35,5 | XCMT10 | 200 | 107 | 70 | 40 |
| 7803252 | P3D3600FS40M10 | 36 | XCMT10 | 201 | 108 | 70 | 40 |
| 7803253 | P3D3700FS40M10 | 37 | XCMT10 | 204 | 111 | 70 | 40 |
| 7803307 | P3D3750FS40M10 | 37,5 | XCMT10 | 206 | 113 | 70 | 40 |
| 7803254 | P3D3800FS40M10 | 38 | XCMT10 | 207 | 114 | 70 | 40 |
| 7803255 | P3D3900FS40M12 | 39 | XCMT12 | 217 | 117 | 70 | 40 |
| 7803256 | P3D4000FS40M12 | 40 | XCMT12 | 220 | 120 | 70 | 40 |
| 7803308 | P3D4050FS40M12 | 40,5 | XCMT12 | 222 | 122 | 70 | 40 |
| 7803257 | P3D4100FS40M12 | 41 | XCMT12 | 223 | 123 | 70 | 40 |
| 7803258 | P3D4200FS40M12 | 42 | XCMT12 | 226 | 126 | 70 | 40 |
| 7803259 | P3D4300FS40M12 | 43 | XCMT12 | 229 | 129 | 70 | 40 |
| 7803260 | P3D4400FS40M12 | 44 | XCMT12 | 232 | 132 | 70 | 40 |
| 7803261 | P3D4500FS40M13 | 45 | XCMT13 | 235 | 135 | 70 | 40 |
| 7803262 | P3D4600FS40M13 | 46 | XCMT13 | 238 | 138 | 70 | 40 |
| 7803263 | P3D4700FS40M13 | 47 | XCMT13 | 241 | 141 | 70 | 40 |
| 7803264 | P3D4800FS40M13 | 48 | XCMT13 | 244 | 144 | 70 | 40 |
| 7803265 | P3D4900FS40M13 | 49 | XCMT13 | 247 | 147 | 70 | 40 |
| 7803266 | P3D5000FS40M14 | 50 | XCMT14 | 250 | 150 | 70 | 40 |
| 7803309 | P3D5050FS40M14 | 50,5 | XCMT14 | 252 | 152 | 70 | 40 |
| 7803267 | P3D5100FS40M14 | 51 | XCMT14 | 253 | 153 | 70 | 40 |
| 7803268 | P3D5200FS40M14 | 52 | XCMT14 | 256 | 156 | 70 | 40 |
| 7803269 | P3D5300FS40M14 | 53 | XCMT14 | 259 | 159 | 70 | 40 |
| 7803270 | P3D5400FS40M14 | 54 | XCMT14 | 262 | 162 | 70 | 40 |
| 7803271 | P3D5500FS40M14 | 55 | XCMT14 | 265 | 165 | 70 | 40 |
| 7803272 | P3D5600FS40M14 | 56 | XCMT14 | 268 | 168 | 70 | 40 |
| 7803273 | P3D5700FS40M16 | 57 | XCMT16 | 271 | 171 | 70 | 40 |
| 7803274 | P3D5800FS40M16 | 58 | XCMT16 | 274 | 174 | 70 | 40 |
| 7803275 | P3D5900FS40M16 | 59 | XCMT16 | 277 | 177 | 70 | 40 |
| 7803276 | P3D6000FS40M16 | 60 | XCMT16 | 280 | 180 | 70 | 40 |
| 7803277 | P3D6100FS40M16 | 61 | XCMT16 | 283 | 183 | 70 | 40 |
| 7803278 | P3D6200FS40M16 | 62 | XCMT16 | 286 | 186 | 70 | 40 |
| 7803279 | P3D6300FS40M16 | 63 | XCMT16 | 289 | 189 | 70 | 40 |

Accessories and spare parts

| Applicable drill DC | EDP | Designation | Specification |
|---------------------|---------|--------------------|----------------|
| 12 - 14,5 | 7808096 | FS18536P | Clamping screw |
| 15 - 18,5 | 7808139 | FS20543P | Clamping screw |
| 19 - 20,5 | 7808138 | FS22550P | Clamping screw |
| 21 - 24,5 | 7808136 | FS25560P | Clamping screw |
| 25 - 33,5 | 7808135 | FS30570P | Clamping screw |
| 34 - 44 | 7808137 | FS35586P | Clamping screw |
| 45 - 63 | 7808114 | FS45510P | Clamping screw |
| 12 - 18,5 | 7808223 | 6IP-D (Torx 6IP) | Wrench |
| 19 - 20,5 | 7808224 | 7IP-D (Torx 7IP) | Wrench |
| 21 - 24,5 | 7808225 | 8IP-D (Torx 8IP) | Wrench |
| 25 - 33,5 | 7808226 | 9IP-D (Torx 9IP) | Wrench |
| 34 - 44 | 7808228 | 15IP-D (Torx 15IP) | Wrench |
| 45 - 63 | 7808229 | 20IP-D (Torx 20IP) | Wrench |

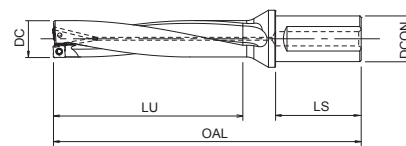
Drilling | Indexable



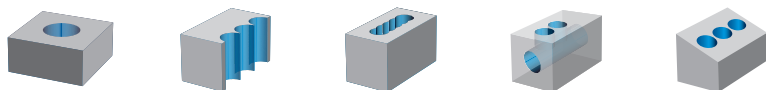
Body

P4D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 4xD
- 3 different insert grades available
- 77 sizes



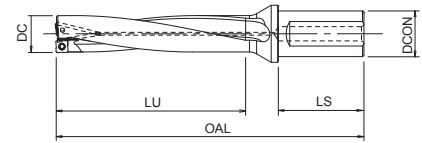
| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|------|-------------------------|-----|-----|----|------|
| 7803311 | P4D1200FS20M03 | 12 | XCMT03 | 111 | 48 | 50 | 20 |
| 7803312 | P4D1250FS20M03 | 12,5 | XCMT03 | 113 | 50 | 50 | 20 |
| 7803313 | P4D1300FS20M03 | 13 | XCMT03 | 115 | 52 | 50 | 20 |
| 7803314 | P4D1350FS20M03 | 13,5 | XCMT03 | 117 | 54 | 50 | 20 |
| 7803315 | P4D1400FS20M03 | 14 | XCMT03 | 119 | 56 | 50 | 20 |
| 7803316 | P4D1450FS20M03 | 14,5 | XCMT03 | 121 | 58 | 50 | 20 |
| 7803317 | P4D1500FS20M04 | 15 | XCMT04 | 125 | 60 | 50 | 20 |
| 7803318 | P4D1550FS20M04 | 15,5 | XCMT04 | 127 | 62 | 50 | 20 |
| 7803319 | P4D1600FS20M04 | 16 | XCMT04 | 129 | 64 | 50 | 20 |
| 7803320 | P4D1650FS20M04 | 16,5 | XCMT04 | 131 | 66 | 50 | 20 |
| 7803321 | P4D1700FS20M05 | 17 | XCMT05 | 136 | 68 | 50 | 20 |
| 7803322 | P4D1750FS20M05 | 17,5 | XCMT05 | 138 | 70 | 50 | 20 |
| 7803390 | P4D1750FS25M05 | 17,5 | XCMT05 | 144 | 70 | 56 | 25 |
| 7803323 | P4D1800FS25M05 | 18 | XCMT05 | 146 | 72 | 56 | 25 |
| 7803324 | P4D1850FS25M05 | 18,5 | XCMT05 | 148 | 74 | 56 | 25 |
| 7803325 | P4D1900FS25M06 | 19 | XCMT06 | 150 | 76 | 56 | 25 |
| 7803326 | P4D1950FS25M06 | 19,5 | XCMT06 | 152 | 78 | 56 | 25 |
| 7803327 | P4D2000FS25M06 | 20 | XCMT06 | 154 | 80 | 56 | 25 |
| 7803328 | P4D2050FS25M06 | 20,5 | XCMT06 | 156 | 82 | 56 | 25 |
| 7803329 | P4D2100FS25M07 | 21 | XCMT07 | 163 | 84 | 56 | 25 |
| 7803330 | P4D2150FS25M07 | 21,5 | XCMT07 | 165 | 86 | 56 | 25 |
| 7803331 | P4D2200FS25M07 | 22 | XCMT07 | 167 | 88 | 56 | 25 |
| 7803332 | P4D2250FS25M07 | 22,5 | XCMT07 | 169 | 90 | 56 | 25 |
| 7803333 | P4D2300FS25M07 | 23 | XCMT07 | 171 | 92 | 56 | 25 |
| 7803334 | P4D2350FS32M07 | 23,5 | XCMT07 | 177 | 94 | 60 | 32 |
| 7803391 | P4D2350FS25M07 | 23,5 | XCMT07 | 173 | 94 | 56 | 25 |
| 7803335 | P4D2400FS32M07 | 24 | XCMT07 | 179 | 96 | 60 | 32 |
| 7803392 | P4D2400FS25M07 | 24 | XCMT07 | 175 | 96 | 56 | 25 |
| 7803336 | P4D2450FS32M07 | 24,5 | XCMT07 | 181 | 98 | 60 | 32 |
| 7803393 | P4D2450FS25M07 | 24,5 | XCMT07 | 177 | 98 | 56 | 25 |
| 7803337 | P4D2500FS32M08 | 25 | XCMT08 | 183 | 100 | 60 | 32 |
| 7803394 | P4D2500FS25M08 | 25 | XCMT08 | 179 | 100 | 56 | 25 |
| 7803338 | P4D2550FS32M08 | 25,5 | XCMT08 | 185 | 102 | 60 | 32 |
| 7803395 | P4D2550FS25M08 | 25,5 | XCMT08 | 181 | 102 | 56 | 25 |
| 7803339 | P4D2600FS32M08 | 26 | XCMT08 | 187 | 104 | 60 | 32 |
| 7803340 | P4D2650FS32M08 | 26,5 | XCMT08 | 189 | 106 | 60 | 32 |
| 7803341 | P4D2700FS32M08 | 27 | XCMT08 | 191 | 108 | 60 | 32 |
| 7803342 | P4D2800FS32M08 | 28 | XCMT08 | 195 | 112 | 60 | 32 |
| 7803343 | P4D2850FS32M08 | 28,5 | XCMT08 | 197 | 114 | 60 | 32 |
| 7803344 | P4D2900FS32M09 | 29 | XCMT09 | 199 | 116 | 60 | 32 |
| 7803345 | P4D3000FS32M09 | 30 | XCMT09 | 203 | 120 | 60 | 32 |
| 7803346 | P4D3100FS32M09 | 31 | XCMT09 | 207 | 124 | 60 | 32 |
| 7803396 | P4D3100FS40M09 | 31 | XCMT09 | 217 | 124 | 70 | 40 |
| 7803347 | P4D3200FS32M09 | 32 | XCMT09 | 211 | 128 | 60 | 32 |
| 7803397 | P4D3200FS40M09 | 32 | XCMT09 | 221 | 128 | 70 | 40 |
| 7803348 | P4D3300FS40M09 | 33 | XCMT09 | 225 | 132 | 70 | 40 |
| 7803349 | P4D3350FS40M09 | 33,5 | XCMT09 | 227 | 134 | 70 | 40 |
| 7803350 | P4D3400FS40M10 | 34 | XCMT10 | 229 | 136 | 70 | 40 |
| 7803351 | P4D3500FS40M10 | 35 | XCMT10 | 233 | 140 | 70 | 40 |
| 7803352 | P4D3600FS40M10 | 36 | XCMT10 | 237 | 144 | 70 | 40 |
| 7803353 | P4D3700FS40M10 | 37 | XCMT10 | 241 | 148 | 70 | 40 |
| 7803354 | P4D3800FS40M10 | 38 | XCMT10 | 245 | 152 | 70 | 40 |
| 7803355 | P4D3900FS40M12 | 39 | XCMT12 | 256 | 156 | 70 | 40 |
| 7803356 | P4D4000FS40M12 | 40 | XCMT12 | 260 | 160 | 70 | 40 |

Drilling | Indexable

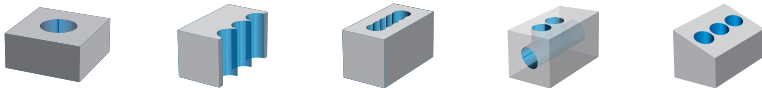
Body

P4D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 4xD
- 3 different insert grades available
- 77 sizes



| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|----|-------------------------|-----|-----|----|------|
| 7803357 | P4D4100FS40M12 | 41 | XCMT12 | 264 | 164 | 70 | 40 |
| 7803358 | P4D4200FS40M12 | 42 | XCMT12 | 268 | 168 | 70 | 40 |
| 7803359 | P4D4300FS40M12 | 43 | XCMT12 | 272 | 172 | 70 | 40 |
| 7803360 | P4D4400FS40M12 | 44 | XCMT12 | 276 | 176 | 70 | 40 |
| 7803361 | P4D4500FS40M13 | 45 | XCMT13 | 280 | 180 | 70 | 40 |
| 7803362 | P4D4600FS40M13 | 46 | XCMT13 | 284 | 184 | 70 | 40 |
| 7803363 | P4D4700FS40M13 | 47 | XCMT13 | 288 | 188 | 70 | 40 |
| 7803364 | P4D4800FS40M13 | 48 | XCMT13 | 292 | 192 | 70 | 40 |
| 7803365 | P4D4900FS40M13 | 49 | XCMT13 | 296 | 196 | 70 | 40 |
| 7803366 | P4D5000FS40M14 | 50 | XCMT14 | 300 | 200 | 70 | 40 |
| 7803367 | P4D5100FS40M14 | 51 | XCMT14 | 304 | 204 | 70 | 40 |
| 7803368 | P4D5200FS40M14 | 52 | XCMT14 | 308 | 208 | 70 | 40 |
| 7803369 | P4D5300FS40M14 | 53 | XCMT14 | 312 | 212 | 70 | 40 |
| 7803370 | P4D5400FS40M14 | 54 | XCMT14 | 316 | 216 | 70 | 40 |
| 7803371 | P4D5500FS40M14 | 55 | XCMT14 | 320 | 220 | 70 | 40 |
| 7803372 | P4D5600FS40M14 | 56 | XCMT14 | 324 | 224 | 70 | 40 |
| 7803373 | P4D5700FS40M16 | 57 | XCMT16 | 328 | 228 | 70 | 40 |
| 7803374 | P4D5800FS40M16 | 58 | XCMT16 | 332 | 232 | 70 | 40 |
| 7803375 | P4D5900FS40M16 | 59 | XCMT16 | 336 | 236 | 70 | 40 |
| 7803376 | P4D6000FS40M16 | 60 | XCMT16 | 340 | 240 | 70 | 40 |
| 7803377 | P4D6100FS40M16 | 61 | XCMT16 | 344 | 244 | 70 | 40 |
| 7803378 | P4D6200FS40M16 | 62 | XCMT16 | 348 | 248 | 70 | 40 |
| 7803379 | P4D6300FS40M16 | 63 | XCMT16 | 352 | 252 | 70 | 40 |

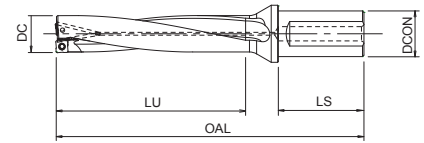
Accessories and spare parts

| Applicable drill DC | EDP | Designation | Specification |
|---------------------|---------|--------------------|----------------|
| 12 - 14,5 | 7808096 | FS18536P | Clamping screw |
| 15 - 18,5 | 7808139 | FS20543P | Clamping screw |
| 19 - 20,5 | 7808138 | FS22550P | Clamping screw |
| 21 - 24,5 | 7808136 | FS25560P | Clamping screw |
| 25 - 33,5 | 7808135 | FS30570P | Clamping screw |
| 34 - 44 | 7808137 | FS35586P | Clamping screw |
| 45 - 63 | 7808114 | FS45510P | Clamping screw |
| 12 - 18,5 | 7808223 | 6IP-D (Torx 6IP) | Wrench |
| 19 - 20,5 | 7808224 | 7IP-D (Torx 7IP) | Wrench |
| 21 - 24,5 | 7808225 | 8IP-D (Torx 8IP) | Wrench |
| 25 - 33,5 | 7808226 | 9IP-D (Torx 9IP) | Wrench |
| 34 - 44 | 7808228 | 15IP-D (Torx 15IP) | Wrench |
| 45 - 63 | 7808229 | 20IP-D (Torx 20IP) | Wrench |

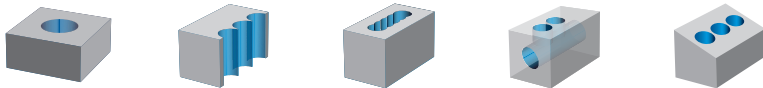


P5D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 5xD
- 3 different insert grades available
- 77 sizes



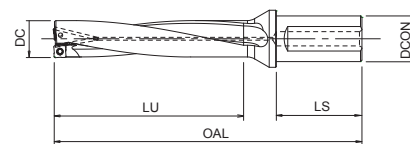
| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|------|-------------------------|-------|------|----|------|
| 7802780 | P5D1200FS20M03 | 12 | XCMT03 | 123 | 60 | 50 | 20 |
| 7802781 | P5D1250FS20M03 | 12,5 | XCMT03 | 125,5 | 62,5 | 50 | 20 |
| 7802782 | P5D1300FS20M03 | 13 | XCMT03 | 128 | 65 | 50 | 20 |
| 7802783 | P5D1350FS20M03 | 13,5 | XCMT03 | 130,5 | 67,5 | 50 | 20 |
| 7802784 | P5D1400FS20M03 | 14 | XCMT03 | 133 | 70 | 50 | 20 |
| 7802785 | P5D1450FS20M03 | 14,5 | XCMT03 | 135,5 | 72,5 | 50 | 20 |
| 7802717 | P5D1500FS20M04 | 15 | XCMT04 | 140 | 75 | 50 | 20 |
| 7802718 | P5D1550FS20M04 | 15,5 | XCMT04 | 143 | 78 | 50 | 20 |
| 7802719 | P5D1600FS20M04 | 16 | XCMT04 | 145 | 80 | 50 | 20 |
| 7802720 | P5D1650FS20M04 | 16,5 | XCMT04 | 148 | 83 | 50 | 20 |
| 7802721 | P5D1700FS20M05 | 17 | XCMT05 | 153 | 85 | 50 | 20 |
| 7802722 | P5D1750FS20M05 | 17,5 | XCMT05 | 156 | 88 | 50 | 20 |
| 7802790 | P5D1750FS25M05 | 17,5 | XCMT05 | 162 | 88 | 56 | 25 |
| 7802723 | P5D1800FS25M05 | 18 | XCMT05 | 164 | 90 | 56 | 25 |
| 7802724 | P5D1850FS25M05 | 18,5 | XCMT05 | 167 | 93 | 56 | 25 |
| 7802725 | P5D1900FS25M06 | 19 | XCMT06 | 169 | 95 | 56 | 25 |
| 7802726 | P5D1950FS25M06 | 19,5 | XCMT06 | 172 | 98 | 56 | 25 |
| 7802727 | P5D2000FS25M06 | 20 | XCMT06 | 174 | 100 | 56 | 25 |
| 7802728 | P5D2050FS25M06 | 20,5 | XCMT06 | 177 | 103 | 56 | 25 |
| 7802729 | P5D2100FS25M07 | 21 | XCMT07 | 184 | 105 | 56 | 25 |
| 7802730 | P5D2150FS25M07 | 21,5 | XCMT07 | 187 | 108 | 56 | 25 |
| 7802731 | P5D2200FS25M07 | 22 | XCMT07 | 189 | 110 | 56 | 25 |
| 7802732 | P5D2250FS25M07 | 22,5 | XCMT07 | 192 | 113 | 56 | 25 |
| 7802733 | P5D2300FS25M07 | 23 | XCMT07 | 194 | 115 | 56 | 25 |
| 7802734 | P5D2350FS32M07 | 23,5 | XCMT07 | 201 | 118 | 60 | 32 |
| 7802791 | P5D2350FS25M07 | 23,5 | XCMT07 | 197 | 118 | 56 | 25 |
| 7802735 | P5D2400FS32M07 | 24 | XCMT07 | 203 | 120 | 60 | 32 |
| 7802792 | P5D2400FS25M07 | 24 | XCMT07 | 199 | 120 | 56 | 25 |
| 7802736 | P5D2450FS32M07 | 24,5 | XCMT07 | 206 | 123 | 60 | 32 |
| 7802793 | P5D2450FS25M07 | 24,5 | XCMT07 | 202 | 123 | 56 | 25 |
| 7802737 | P5D2500FS32M08 | 25 | XCMT08 | 208 | 125 | 60 | 32 |
| 7802794 | P5D2500FS25M08 | 25 | XCMT08 | 204 | 125 | 56 | 25 |
| 7802738 | P5D2550FS32M08 | 25,5 | XCMT08 | 211 | 128 | 60 | 32 |
| 7802795 | P5D2550FS25M08 | 25,5 | XCMT08 | 207 | 128 | 56 | 25 |
| 7802739 | P5D2600FS32M08 | 26 | XCMT08 | 213 | 130 | 60 | 32 |
| 7802740 | P5D2650FS32M08 | 26,5 | XCMT08 | 216 | 133 | 60 | 32 |
| 7802741 | P5D2700FS32M08 | 27 | XCMT08 | 218 | 135 | 60 | 32 |
| 7802742 | P5D2800FS32M08 | 28 | XCMT08 | 223 | 140 | 60 | 32 |
| 7802743 | P5D2850FS32M08 | 28,5 | XCMT08 | 226 | 143 | 60 | 32 |
| 7802744 | P5D2900FS32M09 | 29 | XCMT09 | 228 | 145 | 60 | 32 |
| 7802745 | P5D3000FS32M09 | 30 | XCMT09 | 233 | 150 | 60 | 32 |
| 7802746 | P5D3100FS32M09 | 31 | XCMT09 | 238 | 155 | 60 | 32 |
| 7802796 | P5D3100FS40M09 | 31 | XCMT09 | 248 | 155 | 70 | 40 |
| 7802747 | P5D3200FS32M09 | 32 | XCMT09 | 243 | 160 | 60 | 32 |
| 7802797 | P5D3200FS40M09 | 32 | XCMT09 | 253 | 160 | 70 | 40 |
| 7802748 | P5D3300FS40M09 | 33 | XCMT09 | 258 | 165 | 70 | 40 |
| 7802749 | P5D3350FS40M09 | 33,5 | XCMT09 | 261 | 168 | 70 | 40 |
| 7802750 | P5D3400FS40M10 | 34 | XCMT10 | 263 | 170 | 70 | 40 |
| 7802751 | P5D3500FS40M10 | 35 | XCMT10 | 268 | 175 | 70 | 40 |
| 7802752 | P5D3600FS40M10 | 36 | XCMT10 | 273 | 180 | 70 | 40 |
| 7802753 | P5D3700FS40M10 | 37 | XCMT10 | 278 | 185 | 70 | 40 |
| 7802754 | P5D3800FS40M10 | 38 | XCMT10 | 283 | 190 | 70 | 40 |
| 7802755 | P5D3900FS40M12 | 39 | XCMT12 | 295 | 195 | 70 | 40 |
| 7802756 | P5D4000FS40M12 | 40 | XCMT12 | 300 | 200 | 70 | 40 |

Drilling | Indexable

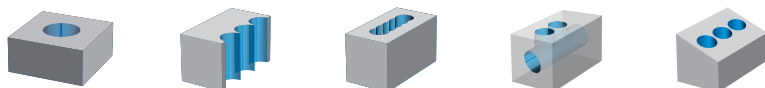
Body

P5D

Drilling | Indexable | Body



- Indexable drill with internal coolant
- Up to 5xD
- 3 different insert grades available
- 77 sizes



| EDP | Designation | DC | Applicable inserts type | OAL | LU | LS | DCON |
|---------|----------------|----|-------------------------|-----|-----|----|------|
| 7802757 | P5D4100FS40M12 | 41 | XCMT12 | 305 | 205 | 70 | 40 |
| 7802758 | P5D4200FS40M12 | 42 | XCMT12 | 310 | 210 | 70 | 40 |
| 7802759 | P5D4300FS40M12 | 43 | XCMT12 | 315 | 215 | 70 | 40 |
| 7802760 | P5D4400FS40M12 | 44 | XCMT12 | 320 | 220 | 70 | 40 |
| 7802761 | P5D4500FS40M13 | 45 | XCMT13 | 325 | 225 | 70 | 40 |
| 7802762 | P5D4600FS40M13 | 46 | XCMT13 | 330 | 230 | 70 | 40 |
| 7802763 | P5D4700FS40M13 | 47 | XCMT13 | 335 | 235 | 70 | 40 |
| 7802764 | P5D4800FS40M13 | 48 | XCMT13 | 340 | 240 | 70 | 40 |
| 7802765 | P5D4900FS40M13 | 49 | XCMT13 | 345 | 245 | 70 | 40 |
| 7802766 | P5D5000FS40M14 | 50 | XCMT14 | 350 | 250 | 70 | 40 |
| 7802767 | P5D5100FS40M14 | 51 | XCMT14 | 355 | 255 | 70 | 40 |
| 7802768 | P5D5200FS40M14 | 52 | XCMT14 | 360 | 260 | 70 | 40 |
| 7802769 | P5D5300FS40M14 | 53 | XCMT14 | 365 | 265 | 70 | 40 |
| 7802770 | P5D5400FS40M14 | 54 | XCMT14 | 370 | 270 | 70 | 40 |
| 7802771 | P5D5500FS40M14 | 55 | XCMT14 | 375 | 275 | 70 | 40 |
| 7802772 | P5D5600FS40M14 | 56 | XCMT14 | 380 | 280 | 70 | 40 |
| 7802773 | P5D5700FS40M16 | 57 | XCMT16 | 385 | 285 | 70 | 40 |
| 7802774 | P5D5800FS40M16 | 58 | XCMT16 | 390 | 290 | 70 | 40 |
| 7802775 | P5D5900FS40M16 | 59 | XCMT16 | 395 | 295 | 70 | 40 |
| 7802776 | P5D6000FS40M16 | 60 | XCMT16 | 400 | 300 | 70 | 40 |
| 7802777 | P5D6100FS40M16 | 61 | XCMT16 | 405 | 305 | 70 | 40 |
| 7802778 | P5D6200FS40M16 | 62 | XCMT16 | 410 | 310 | 70 | 40 |
| 7802779 | P5D6300FS40M16 | 63 | XCMT16 | 415 | 315 | 70 | 40 |
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Accessories and spare parts

| Applicable drill DC | EDP | Designation | Specification |
|---------------------|---------|--------------------|----------------|
| 12 - 14,5 | 7808096 | FS18536P | Clamping screw |
| 15 - 18,5 | 7808139 | FS20543P | Clamping screw |
| 19 - 20,5 | 7808138 | FS22550P | Clamping screw |
| 21 - 24,5 | 7808136 | FS25560P | Clamping screw |
| 25 - 33,5 | 7808135 | FS30570P | Clamping screw |
| 34 - 44 | 7808137 | FS35586P | Clamping screw |
| 45 - 63 | 7808114 | FS45510P | Clamping screw |
| 12 - 18,5 | 7808223 | 6IP-D (Torx 6IP) | Wrench |
| 19 - 20,5 | 7808224 | 7IP-D (Torx 7IP) | Wrench |
| 21 - 24,5 | 7808225 | 8IP-D (Torx 8IP) | Wrench |
| 25 - 33,5 | 7808226 | 9IP-D (Torx 9IP) | Wrench |
| 34 - 44 | 7808228 | 15IP-D (Torx 15IP) | Wrench |
| 45 - 63 | 7808229 | 20IP-D (Torx 20IP) | Wrench |

Drilling | Indexable



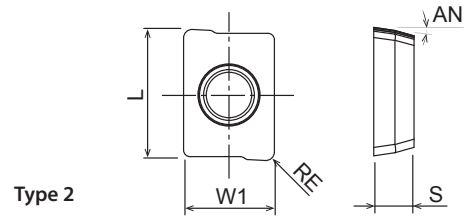
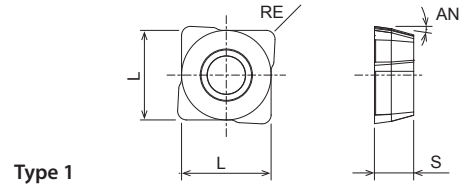
Body

P2D • P3D • P4D • P5D INSERTS

Drilling | Indexable | Inserts and heads



- Applicable insert for PD drill



Drilling | Indexable

Inserts and heads

| EDP | Designation | W1 | L | S | AN | RE | Grade | P | | M | | K | | N | | S | | H | | Applicable body DC |
|---------|-----------------|-----|-------|-----|----|-----|--------|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|--------------------|
| | | | | | | | | dry | oil | dry | oil | GG | GGG | dry | oil | dry | oil | dry | oil | |
| 7823098 | XCMT031904ER-DM | 6,1 | 4,5 | 1,9 | 8 | 0,4 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 12-14,5 |
| 7823064 | XCMT042204ER-DM | - | 5 | 2,2 | 8 | 0,4 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 15-16,5 |
| 7823065 | XCMT052404ER-DM | - | 5,83 | 2,4 | 8 | 0,4 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 17-18,5 |
| 7823066 | XCMT062706ER-DM | - | 6,46 | 2,7 | 8 | 0,6 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 19-20,5 |
| 7823067 | XCMT073106ER-DM | - | 7,11 | 3,1 | 8 | 0,6 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 21-24,5 |
| 7823068 | XCMT083508ER-DM | - | 8,36 | 3,5 | 8 | 0,8 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 25-28,5 |
| 7823069 | XCMT094008ER-DM | - | 9,62 | 4 | 8 | 0,8 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 29-33,5 |
| 7823097 | XCMT104608ER-DM | - | 10,89 | 4,6 | 8 | 0,8 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 34-38 |
| 7823071 | XCMT125010ER-DM | - | 12,57 | 5 | 8 | 1 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 39-44 |
| 7823072 | XCMT135212ER-DM | - | 14,05 | 5,2 | 8 | 1,2 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 45-49 |
| 7823073 | XCMT145612ER-DM | - | 15,58 | 5,6 | 8 | 1,2 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 50-56 |
| 7823075 | XCMT165912ER-DM | - | 17,28 | 5,9 | 8 | 1,2 | XP9020 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 57-63 |
| 7823163 | XCMT031904ER-DR | 6,1 | 4,5 | 1,9 | 8 | 0,4 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 12-14,5 |
| 7823164 | XCMT042204ER-DR | - | 5 | 2,2 | 8 | 0,4 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 15-16,5 |
| 7823165 | XCMT052404ER-DR | - | 5,83 | 2,4 | 8 | 0,4 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17-18,5 |
| 7823166 | XCMT062706ER-DR | - | 6,46 | 2,7 | 8 | 0,6 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 19-20,5 |
| 7823167 | XCMT073106ER-DR | - | 7,11 | 3,1 | 8 | 0,6 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 21-24,5 |
| 7823168 | XCMT083508ER-DR | - | 8,36 | 3,5 | 8 | 0,8 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 25-28,5 |
| 7823169 | XCMT094008ER-DR | - | 9,62 | 4 | 8 | 0,8 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 29-33,5 |
| 7823197 | XCMT104608ER-DR | - | 10,89 | 4,6 | 8 | 0,8 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 34-38 |
| 7823171 | XCMT125010ER-DR | - | 12,57 | 5 | 8 | 1 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 39-44 |
| 7823172 | XCMT135212ER-DR | - | 14,05 | 5,2 | 8 | 1,2 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 45-49 |
| 7823173 | XCMT145612ER-DR | - | 15,58 | 5,6 | 8 | 1,2 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 50-56 |
| 7823175 | XCMT165912ER-DR | - | 17,28 | 5,9 | 8 | 1,2 | XP1010 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 57-63 |
| 7823263 | XCMT031904ER-DN | 6,1 | 4,5 | 1,9 | 8 | 0,4 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 12-14,5 |
| 7823264 | XCMT042204ER-DN | - | 5 | 2,2 | 8 | 0,4 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 15-16,5 |
| 7823265 | XCMT052404ER-DN | - | 5,83 | 2,4 | 8 | 0,4 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 17-18,5 |
| 7823266 | XCMT062706ER-DN | - | 6,46 | 2,7 | 8 | 0,6 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 19-20,5 |
| 7823267 | XCMT073106ER-DN | - | 7,11 | 3,1 | 8 | 0,6 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 21-24,5 |
| 7823268 | XCMT083508ER-DN | - | 8,36 | 3,5 | 8 | 0,8 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 25-28,5 |
| 7823269 | XCMT094008ER-DN | - | 9,62 | 4 | 8 | 0,8 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 29-33,5 |
| 7823297 | XCMT104608ER-DN | - | 10,89 | 4,6 | 8 | 0,8 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 34-38 |
| 7823271 | XCMT125010ER-DN | - | 12,57 | 5 | 8 | 1 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 39-44 |
| 7823272 | XCMT135212ER-DN | - | 14,05 | 5,2 | 8 | 1,2 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 45-49 |
| 7823273 | XCMT145612ER-DN | - | 15,58 | 5,6 | 8 | 1,2 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 50-56 |
| 7823275 | XCMT165912ER-DN | - | 17,28 | 5,9 | 8 | 1,2 | CK110 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 57-63 |

CUTTING CONDITIONS

Drilling | Indexables | Cutting conditions

P2D & P3D

| Work Material | Tensile Strength/Hardness | Vc (m/min) | Feed Rate (mm/rev) | | | | | | | | |
|---------------|---------------------------------------------------|-----------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | | | ø12~ø14.5 | ø15~ø16.5 | ø17~ø18.5 | ø19~ø20.5 | ø21~ø24.5 | ø25~ø28.5 | ø29~ø33.5 | ø34~ø63 | |
| P | Mild Steel-Carbon Steel (SS400-S10C) | ~180HB | 200 (150~250) | 0.06 (0.04~0.08) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.07 (0.04~0.1) | 0.08 (0.04~0.12) | 0.08 (0.04~0.12) | 0.1 (0.05~0.15) | 0.1 (0.05~0.18) |
| | Carbon Steel-Alloy Steel (S50C-SCM440) | ~280HB | 150 (100~220) | 0.08 (0.04~0.12) | 0.08 (0.04~0.14) | 0.09 (0.04~0.16) | 0.1 (0.04~0.18) | 0.14 (0.04~0.2) | 0.18 (0.06~0.25) | 0.2 (0.08~0.3) | 0.2 (0.08~0.35) |
| M | Die steel (SKD11-SKD61) | ~280HB | 120 (80~180) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.07 (0.04~0.1) | 0.08 (0.04~0.12) | 0.12 (0.04~0.15) | 0.14 (0.06~0.2) | 0.18 (0.08~0.25) | 0.18 (0.08~0.25) |
| | Stainless Steel (Dry) (SUS304-SUS420) | ~250HB | 130 (80~180) | 0.07 (0.04~0.1) | 0.07 (0.04~0.1) | 0.08 (0.04~0.1) | 0.09 (0.04~0.12) | 0.1 (0.04~0.15) | 0.13 (0.06~0.2) | 0.15 (0.08~0.25) | 0.15 (0.08~0.25) |
| K | Cast Iron (FC250) | ~350N/mm ² | 200 (150~280) | 0.08 (0.04~0.14) | 0.08 (0.04~0.14) | 0.1 (0.04~0.16) | 0.12 (0.04~0.2) | 0.16 (0.08~0.25) | 0.2 (0.06~0.3) | 0.2 (0.08~0.3) | 0.2 (0.08~0.35) |
| | Ductile Cast Iron (FCD400) | ~800N/mm ² | 160 (100~220) | 0.08 (0.04~0.1) | 0.08 (0.04~0.12) | 0.09 (0.04~0.14) | 0.1 (0.04~0.18) | 0.14 (0.04~0.2) | 0.18 (0.06~0.25) | 0.18 (0.08~0.25) | 0.18 (0.08~0.25) |
| N | Aluminium Alloy | ~13%Si | 200 (100~800) | 0.08 (0.04~0.12) | 0.08 (0.04~0.12) | 0.1 (0.04~0.16) | 0.12 (0.04~0.2) | 0.16 (0.04~0.25) | 0.2 (0.06~0.3) | 0.2 (0.08~0.3) | 0.2 (0.08~0.3) |
| S | Heat Resistant Aluminium Alloy(Wet) (Inconel 718) | - | 30 (15~50) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.05 (0.03~0.06) | 0.05 (0.03~0.06) | 0.06 (0.04~0.08) | 0.08 (0.06~0.1) | 0.1 (0.06~0.12) | 0.1 (0.06~0.12) |
| | Titanium Alloy (Wet) (Ti-6Al-4V) | - | 60 (30~100) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.08 (0.04~0.15) | 0.1 (0.06~0.2) | 0.14 (0.08~0.2) | 0.14 (0.08~0.2) |
| H | Pre-hardened Steel NAK80 | 40~43HRC | 100 (60~120) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.06 (0.04~0.12) | 0.07 (0.04~0.12) | 0.08 (0.04~0.12) | 0.1 (0.06~0.15) | 0.1 (0.06~0.15) | 0.1 (0.06~0.15) |
| | Hardened Steel SKD11 | 50~55HRC | 60 (40~80) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.08 (0.04~0.1) | 0.08 (0.04~0.1) | 0.08 (0.04~0.1) |

P4D

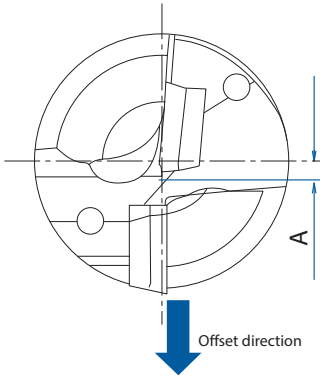
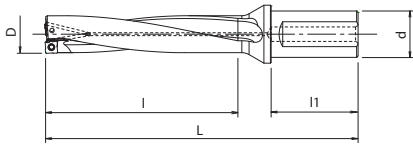
| Work Material | Tensile Strength/Hardness | Vc (m/min) | Feed Rate (mm/rev) | | | | | | | | |
|---------------|---------------------------------------------------|-----------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | | | ø12~ø14.5 | ø15~ø16.5 | ø17~ø18.5 | ø19~ø20.5 | ø21~ø24.5 | ø25~ø28.5 | ø29~ø33.5 | ø34~ø63 | |
| P | Mild Steel-Carbon Steel (SS400-S10C) | ~180HB | 200 (150~250) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.07 (0.04~0.1) | 0.08 (0.04~0.12) | 0.08 (0.04~0.12) | 0.1 (0.05~0.15) | 0.1 (0.05~0.18) |
| | Carbon Steel-Alloy Steel (S50C-SCM440) | ~280HB | 150 (100~220) | 0.07 (0.04~0.1) | 0.08 (0.04~0.14) | 0.08 (0.04~0.16) | 0.09 (0.04~0.18) | 0.12 (0.04~0.15) | 0.18 (0.06~0.25) | 0.2 (0.08~0.25) | 0.2 (0.08~0.3) |
| M | Die steel (SKD11-SKD61) | ~280HB | 120 (80~180) | 0.06 (0.04~0.08) | 0.06 (0.04~0.1) | 0.07 (0.04~0.1) | 0.08 (0.04~0.12) | 0.1 (0.04~0.13) | 0.14 (0.06~0.2) | 0.18 (0.08~0.25) | 0.18 (0.08~0.25) |
| | Stainless Steel (Dry) (SUS304-SUS420) | ~250HB | 130 (80~180) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.07 (0.04~0.1) | 0.08 (0.04~0.1) | 0.08 (0.04~0.1) | 0.13 (0.06~0.2) | 0.15 (0.08~0.2) | 0.15 (0.08~0.2) |
| K | Cast Iron (FC250) | ~350N/mm ² | 200 (150~280) | 0.08 (0.04~0.12) | 0.08 (0.04~0.14) | 0.09 (0.04~0.16) | 0.1 (0.04~0.2) | 0.12 (0.04~0.15) | 0.2 (0.06~0.3) | 0.2 (0.08~0.3) | 0.2 (0.08~0.3) |
| | Ductile Cast Iron (FCD400) | ~800N/mm ² | 160 (100~220) | 0.08 (0.04~0.1) | 0.08 (0.04~0.1) | 0.08 (0.04~0.12) | 0.09 (0.04~0.15) | 0.12 (0.04~0.15) | 0.15 (0.06~0.25) | 0.18 (0.08~0.25) | 0.18 (0.08~0.25) |
| N | Aluminium Alloy | ~13%Si | 200 (100~800) | 0.07 (0.04~0.12) | 0.07 (0.04~0.12) | 0.09 (0.04~0.12) | 0.12 (0.04~0.2) | 0.14 (0.04~0.2) | 0.2 (0.06~0.3) | 0.2 (0.08~0.3) | 0.2 (0.08~0.3) |
| S | Heat Resistant Aluminium Alloy(Wet) (Inconel 718) | - | 30 (15~50) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.05 (0.04~0.08) | 0.07 (0.06~0.1) | 0.08 (0.06~0.12) | 0.08 (0.06~0.12) |
| | Titanium Alloy (Wet) (Ti-6Al-4V) | - | 60 (30~100) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.08 (0.04~0.1) | 0.1 (0.06~0.2) | 0.14 (0.08~0.2) | 0.14 (0.08~0.2) |
| H | Pre-hardened Steel NAK80 | 40~43HRC | 100 (60~120) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.08 (0.04~0.12) | 0.08 (0.06~0.12) | 0.1 (0.06~0.13) | 0.1 (0.06~0.13) |
| | Hardened Steel SKD11 | 50~55HRC | 60 (40~80) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.08 (0.04~0.1) | 0.08 (0.04~0.1) | 0.08 (0.04~0.1) |

PHP instructions also valid for P2D

P5D

| Work Material | Tensile Strength/Hardness | Vc (m/min) | Feed Rate (mm/rev) | | | | | | | | |
|---------------|---------------------------------------------------|-----------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | | | ø12~ø14.5 | ø15~ø16.5 | ø17~ø18.5 | ø19~ø20.5 | ø21~ø24.5 | ø25~ø28.5 | ø29~ø33.5 | ø34~ø63 | |
| P | Mild Steel-Carbon Steel (SS400-S10C) | ~180HB | 200 (150~250) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.06 (0.04~0.08) | 0.07 (0.04~0.1) | 0.08 (0.04~0.12) | 0.08 (0.04~0.12) | 0.1 (0.05~0.15) | 0.1 (0.05~0.18) |
| | Carbon Steel-Alloy Steel (S50C-SCM440) | ~280HB | 150 (100~220) | 0.06 (0.04~0.09) | 0.06 (0.04~0.09) | 0.08 (0.04~0.12) | 0.08 (0.04~0.14) | 0.12 (0.04~0.15) | 0.15 (0.06~0.2) | 0.18 (0.08~0.2) | 0.18 (0.08~0.25) |
| M | Die steel (SKD11-SKD61) | ~280HB | 120 (80~180) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.07 (0.04~0.1) | 0.1 (0.04~0.13) | 0.12 (0.06~0.15) | 0.15 (0.08~0.18) | 0.16 (0.08~0.22) |
| | Stainless Steel (Dry) (SUS304-SUS420) | ~250HB | 130 (80~180) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.07 (0.04~0.09) | 0.08 (0.04~0.1) | 0.1 (0.06~0.15) | 0.12 (0.06~0.18) | 0.12 (0.06~0.2) |
| K | Cast Iron (FC250) | ~350N/mm ² | 200 (150~280) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.08 (0.04~0.12) | 0.08 (0.04~0.13) | 0.12 (0.04~0.15) | 0.15 (0.06~0.2) | 0.18 (0.08~0.2) | 0.18 (0.08~0.25) |
| | Ductile Cast Iron (FCD400) | ~800N/mm ² | 160 (100~220) | 0.06 (0.04~0.09) | 0.06 (0.04~0.09) | 0.08 (0.04~0.12) | 0.08 (0.04~0.12) | 0.1 (0.04~0.13) | 0.12 (0.06~0.15) | 0.15 (0.08~0.18) | 0.18 (0.08~0.25) |
| N | Aluminium Alloy | ~13%Si | 200 (100~800) | 0.06 (0.04~0.1) | 0.06 (0.04~0.1) | 0.09 (0.04~0.12) | 0.1 (0.04~0.15) | 0.12 (0.04~0.15) | 0.15 (0.06~0.25) | 0.2 (0.08~0.3) | 0.2 (0.08~0.3) |
| S | Heat Resistant Aluminium Alloy(Wet) (Inconel 718) | - | 30 (15~50) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.04 (0.02~0.06) | 0.07 (0.06~0.08) | 0.07 (0.06~0.08) | 0.07 (0.06~0.08) |
| | Titanium Alloy (Wet) (Ti-6Al-4V) | - | 60 (30~100) | 0.05 (0.04~0.08) | 0.05 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.1) | 0.08 (0.06~0.15) | 0.1 (0.08~0.15) | 0.1 (0.08~0.15) |
| H | Pre-hardened Steel NAK80 | 40~43HRC | 100 (60~120) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.06 (0.04~0.08) | 0.08 (0.04~0.1) | 0.08 (0.06~0.12) | 0.1 (0.06~0.12) | 0.1 (0.06~0.12) |
| | Hardened Steel SKD11 | 50~55HRC | 60 (40~80) | 0.05 (0.04~0.07) | 0.05 (0.04~0.07) | 0.05 (0.04~0.07) | 0.06 (0.04~0.07) | 0.06 (0.04~0.08) | 0.07 (0.04~0.1) | 0.08 (0.04~0.1) | 0.08 (0.04~0.1) |

MAXIMUM OFFSET AMOUNT FOR DRILLING WITH ROTATION OF WORK MATERIALS



| D | D + A offset Amount | D Max. |
|------|---------------------|--------|
| 12 | 0,4 | 12,8 |
| 12,5 | 0,4 | 13,3 |
| 12,7 | 0,3 | 13,3 |
| 13 | 0,3 | 13,6 |
| 13,5 | 0,2 | 13,9 |
| 14 | 0,2 | 14,4 |
| 14,5 | 0,1 | 14,7 |
| 15 | 0,4 | 15,8 |
| 15,5 | 0,3 | 16,1 |
| 16 | 0,3 | 16,6 |
| 16,5 | 0,3 | 17,1 |
| 17 | 0,6 | 18,2 |
| 17,5 | 0,5 | 18,5 |
| 18 | 0,5 | 19 |
| 18,5 | 0,4 | 19,3 |
| 19 | 0,6 | 20,2 |
| 19,5 | 0,5 | 20,5 |
| 20 | 0,4 | 20,8 |
| 20,5 | 0,4 | 21,3 |
| 21 | 1 | 23 |
| 21,5 | 0,9 | 23,3 |
| 22 | 0,8 | 23,6 |
| 22,5 | 0,7 | 23,9 |
| 23 | 0,5 | 24 |
| 23,5 | 0,4 | 24,3 |
| 24 | 0,3 | 24,6 |
| 24,5 | 0,2 | 24,9 |
| 25 | 1,1 | 27,2 |
| 25,5 | 0,9 | 27,3 |
| 26 | 0,8 | 27,6 |
| 26,5 | 0,7 | 27,9 |
| 27 | 0,6 | 28,2 |
| 28 | 0,3 | 28,6 |
| 28,5 | 0,2 | 28,9 |
| 29 | 1,3 | 31,6 |
| 30 | 1,1 | 32,2 |
| 31 | 0,8 | 32,6 |
| 32 | 0,6 | 33,2 |
| 33 | 0,3 | 33,6 |
| 33,5 | 0,2 | 33,9 |
| 34 | 1,1 | 36,2 |
| 35 | 0,8 | 36,6 |
| 36 | 0,8 | 37,6 |
| 37 | 0,6 | 38,2 |
| 38 | 0,3 | 38,6 |
| 39 | 1,0 | 41,0 |
| 40 | 0,9 | 41,8 |
| 41 | 0,8 | 42,6 |
| 42 | 0,6 | 43,2 |
| 43 | 0,5 | 44,0 |
| 44 | 0,3 | 44,6 |
| 45 | 0,9 | 46,8 |
| 46 | 0,8 | 47,6 |
| 47 | 0,7 | 48,4 |
| 48 | 0,5 | 49,0 |
| 49 | 0,3 | 49,6 |
| 50 | 1,1 | 52,2 |
| 51 | 1,0 | 53,0 |
| 52 | 0,8 | 53,6 |
| 53 | 0,7 | 54,4 |
| 54 | 0,6 | 55,2 |
| 55 | 0,4 | 55,8 |
| 56 | 0,1 | 56,2 |
| 57 | 1,1 | 59,2 |
| 58 | 1,0 | 60,0 |
| 59 | 0,9 | 60,8 |
| 60 | 0,8 | 61,6 |
| 61 | 0,6 | 62,2 |
| 62 | 0,4 | 62,8 |
| 63 | 0,2 | 63,4 |

Drilling | Indexable



Maximum offset

TAP PILOT HOLE SIZE CHART

Drilling | Indexable

| Thread Size | Recommended tap drill hole diameter | Min. drill hole dia | Max. drill hole dia. | Applicable Body | | | Recommended Tap Series | |
|-------------|-------------------------------------|---------------------|----------------------|-----------------|----------------|----------|------------------------|-------|
| | | | | 6H | P2D | P3D | A-SFT | A-POT |
| M14X2 | 12 | 11,84 | 12,21 | P2D1200FS20M03 | P3D1200FS20M03 | 48139191 | 48145191 | |
| M14X1,5 | 12,5 | 12,38 | 12,67 | P2D1250FS20M03 | P3D1250FS20M03 | - | - | |
| M16X2 | 14 | 13,9 | 14,21 | P2D1400FS20M03 | P3D1400FS20M03 | 48139202 | 48145202 | |
| M16X1,5 | 14,5 | 14,4 | 14,67 | P2D1450FS20M03 | P3D1450FS20M03 | - | - | |
| M17X1,5 | 15,5 | 15,4 | 15,67 | P2D1550FS20M04 | P3D1550FS20M04 | - | - | |
| M18X2,5 | 15,5 | 15,3 | 15,74 | | | 48139214 | 48145214 | |
| M18X2 | 16 | 15,9 | 16,21 | P2D1600FS20M04 | P3D1600FS20M04 | - | - | |
| M18X1,5 | 16,5 | 16,4 | 16,67 | P2D1650FS20M04 | P3D1650FS20M04 | 48139216 | 48145216 | |
| M20X2,5 | 17,5 | 17,3 | 17,74 | P2D1750FS20M05 | P3D1750FS20M05 | 48139228 | 48145228 | |
| | | | | P2D1750FS25M05 | P3D1750FS25M05 | | | |
| M20X2 | 18 | 17,9 | 18,21 | P2D1800FS25M05 | P3D1800FS25M05 | 48139220 | 48145220 | |
| M20X1,5 | 18,5 | 18,4 | 18,67 | P2D1850FS25M05 | P3D1850FS25M05 | 48139230 | 48145230 | |
| M22X2,5 | 19,5 | 19,3 | 19,74 | P2D1950FS25M06 | P3D1950FS25M06 | 48139238 | 48145238 | |
| M22X2 | 20 | 19,9 | 20,21 | P2D2000FS25M06 | P3D2000FS25M06 | 48139239 | 48145239 | |
| M22X1,5 | 20,5 | 20,4 | 20,67 | P2D2050FS20M06 | P3D2050FS20M06 | 48139240 | 48145240 | |
| M24X3 | 21 | 20,8 | 21,25 | P2D2100FS25M07 | P3D2100FS25M07 | 48139247 | 48145247 | |
| M24X2 | 22 | 21,9 | 22,21 | P2D2200FS25M07 | P3D2200FS25M07 | 48139249 | 48145249 | |
| M24X1,5 | 22,5 | 22,4 | 22,67 | P2D2250FS25M07 | P3D2250FS25M07 | 48139250 | 48145250 | |
| M27X3 | 24 | 23,8 | 24,25 | P2D2400FS25M07 | P3D2400FS25M07 | 48140262 | - | |
| | | | | P2D2400FS32M07 | P3D2400FS32M07 | | | |
| M27X1,5 | 25,5 | 25,4 | 25,67 | P2D2550FS25M08 | P3D2550FS25M08 | - | - | |
| | | | | P2D2550FS32M08 | P3D2550FS32M08 | | | |
| M30X3,5 | 26,5 | 26,3 | 26,77 | P2D2650FS32M08 | P3D2650FS32M08 | 48140271 | - | |
| M30X3 | 27 | 26,8 | 27,25 | P2D2700FS32M08 | P3D2700FS32M08 | - | - | |
| M30X1,5 | 28,5 | 28,4 | 28,67 | P2D2850FS32M08 | P3D2850FS32M08 | - | - | |
| M36X4 | 32 | 31,7 | 32,27 | P2D3200FS32M09 | P3D3200FS32M09 | 48140294 | - | |
| | | | | P2D3200FS40M09 | P3D3200FS40M09 | | | |
| M36X3 | 33 | 32,8 | 33,25 | P2D3300FS40M09 | P3D3300FS40M09 | - | - | |
| M39X4 | 35 | 34,7 | 35,27 | P2D3500FS40M10 | P3D3500FS40M10 | 48140304 | - | |
| M42X3 | 39 | 38,8 | 39,25 | P2D3900FS40M12 | P3D3900FS40M12 | - | - | |
| M48X5 | 43 | 42,6 | 43,29 | P2D4300FS40M12 | P3D4300FS40M12 | 48140325 | - | |
| M48X3 | 45 | 44,8 | 45,25 | P2D4500FS40M13 | P3D4500FS40M13 | - | - | |

For additional sizes and styles, please refer to the high efficiency, multi-purpose A-Tap series catalog.

Tap recommendation

Need a thread? Please consider trying our A-Tap (cutting tap) and/or XPF Tap series (forming) after drilling

- A-Tap Series



The new industry standard for stable threading.

- XPF Series



Superior forming taps that stably make threads without creating chips.

Drilling | Indexable

Tap pilot hole size chart



shaping your dreams

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