



## Drilling System with Large Diameter for Foundation & Piling



CHANGSHA TIANHE DRILLING TOOLS  
AND MACHINERY CO.,LTD

ADD: No.018, Yaojiapo Rd., Jinzhou New District, Ningxiang  
county, Changsha City, Hunan, China  
TEL: 0731-85853289  
FAX: 0731-85853289  
Email: sales@2002th.com  
WEB: www.thdrillingtools.com  
Zip code: 410600

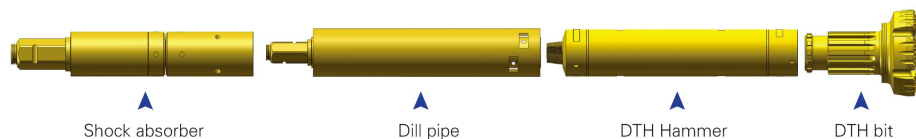
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Teamwhole reserves the right of final explanation of all the product information.



## System introduction

To drill through overburden and into bedrock, The large diameter DTH hammer used on dual-power drill rig, is a better way to save cost than using casing drilling tools. It is applied for drilling through cave, gravel, boulder, weathered bedrock, with single hole depth over 25m. This method is widely used for embedded prefabrication piles, long spiral piles and large diameter end bearing piles.

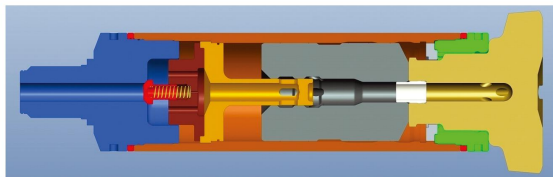


## Features

- Widely applied for complex rock formations like caves, pebbles, fissures etc.
- Drilling through hard rocks with high rate of penetration.
- Low air consumption.

## Advantages

- Simple structure without inner cylinder ensure high reliability and easy maintenance.
- Customized DTH bit steel, reduces rate of body broken and cracking failure.
- Fixed position for the stabilizer for easy modification.

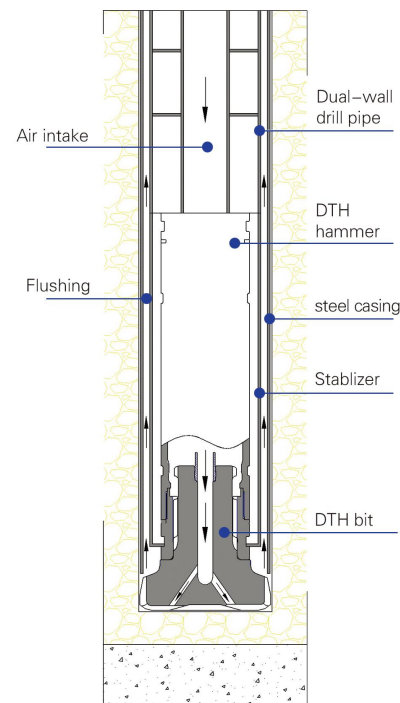


## Applications Range

The large diameter DTH hammer is mainly used in three major areas as , embedded prefabrication piles, long spiral piles and large diameter end bearing piles



## Schematic Diagram Of Plie Foundation



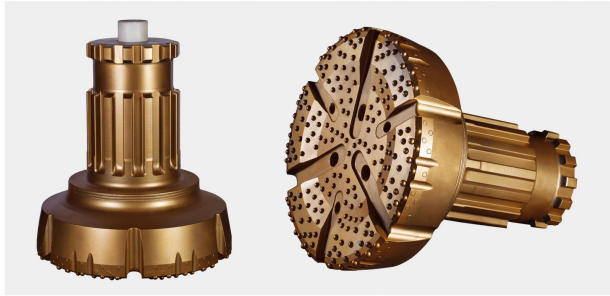
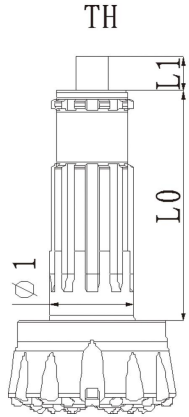
## Advantages of construction method

Using DTH hammer drilling is a good way to drill through cave formation and avoid stuck problem.

Cave: when encountering caves, drill bit inclines to the cave. The stabilizer ensures the hole straightness.

Bit stuck: One reason is cave encountered, The drill bit deviates, and the entire set of drilling tools inclines in the hole. The other, is hole collapse, . A large number of rocks or clay catch the drill pipe, resulting in bit stuck. Steel casing and stabilizer can resolve this problem.

## DTH bit

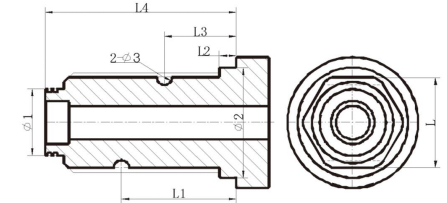


| Diameter(inch) | 12   | 14  | 18    | 24  | 28    | 36  |
|----------------|------|-----|-------|-----|-------|-----|
| L0             | 490  | 520 | 527.5 | 560 | 476   | 570 |
| L1             | 52.2 | —   | 80.7  | 80  | 79    | 82  |
| φ1             | 183  | 235 | 297   | 380 | 464.5 | 557 |
| Splines Qty    | 8    | 10  | 12    | 14  | 16    | 18  |

| Shank  | Bit Diameter<br>mm | Inch   | Face        | Gauge<br>Button | Front<br>Button   | Protection<br>carbides<br>Button | Air<br>holes | Weight | Product code   |
|--------|--------------------|--------|-------------|-----------------|-------------------|----------------------------------|--------------|--------|----------------|
| TH12   | 305                | 12     | concave     | 19*15           | 16*30             | 12*30                            | 3            | 146    | 11-T12A2-305Y1 |
|        | 313                | 12 3/8 | concave     | 19*18           | 18*24+16*9        | 16*9                             | 3            | 150    | 11-T12A2-313Y1 |
|        | 320                | 12 5/8 | concave     | 19*15           | 18*15+16*13       | 12*14                            | 3            | 158    | 11-T12A2-320Y1 |
|        | 350                | 13 3/4 | concave     | 19*24           | 18*15+16*15       | 12*12                            | 3            | 173    | 11-T12A2-350Y1 |
|        | 380                | 15     | Drop center | 19*18           | 18*30             | 16*21                            | 3            | 194    | 11-T12X1-381Y1 |
|        | 400                | 15 3/4 | concave     | 19*18           | 19*30+16*22       | 12*36                            | 3            | 204    | 11-T12A2-400R1 |
|        | 445                | 17 1/2 | Drop center | 19*16           | 19*36+16*34       | 14*24                            | 3            | 228    | 11-T12X1-445R1 |
|        | *500               | 19 5/8 | Drop center | 19*18           | 19*12+18*42+16*33 | 16*36                            | 6            | 259    | 11-T12X1-500S1 |
|        | *550               | 21 5/8 | Drop center | 19*36           | 19*42+16*43       | 16*48                            | 6            | 321    | 11-T12X1-550S1 |
|        | *580               | 23 5/8 | Drop center | 19*24           | 19*60+16*53       | 12*48                            | 6            | 342    | 11-T12X1-600S1 |
| TSW14H | 400                | 15 3/4 | Drop center | 19*18           | 19*30+16*22       | 12*36                            | 3            | 274    | 12-H14X1-400R1 |
|        | 450                | 17 6/8 | Drop center | 19*16           | 19*36+16*34       | 14*24                            | 3            | 305    | 12-H14X1-450R1 |
|        | 500                | 19 5/8 | Drop center | 19*30           | 19*42+16*33       | 16*32                            | 3            | 337    | 12-H14X1-500R1 |
|        | 550                | 21 5/8 | Drop center | 19*36           | 19*42+16*43       | 16*48                            | 6            | 390    | 12-H14X1-550S1 |
|        | *600               | 23 5/8 | Drop center | 19*24           | 19*60+16*65       | 16*48                            | 6            | 429    | 12-H14X1-600S1 |

| Shank | Bit Diameter<br>mm | Inch   | Face        | Gauge<br>Button | Front<br>Button | Protection<br>carbides<br>Button | Air<br>holes | Weight | Product code   |
|-------|--------------------|--------|-------------|-----------------|-----------------|----------------------------------|--------------|--------|----------------|
| TH18  | 500                | 19 5/8 | Drop center | 19*30           | 19*42+16*35     | 16*36                            | 6            | 482    | 11-T18X1-500Y1 |
|       | 550                | 21 5/8 | Drop center | 19*36           | 19*42+16*43     | 16*48                            | 6            | 526    | 11-T18X1-550Y1 |
|       | 600                | 23 5/8 | Drop center | 20*24           | 20*60+18*56     | 16*48                            | 6            | 571    | 11-T18X1-600R1 |
|       | 650                | 25 5/8 | Drop center | 20*24           | 20*60+18*63     | 16*48                            | 6            | 655    | 11-T18X1-650S1 |
|       | 700                | 27 1/2 | Drop center | 20*48           | 20*60+18*73     | 16*48                            | 6            | 708    | 11-T18X1-700S1 |
| TH24  | 600                | 23 5/8 | Drop center | 20*24           | 20*60+18*56     | 14*24                            | 6            | 818    | 11-T24X1-600Y1 |
|       | 650                | 25 5/8 | Drop center | 20*24           | 20*60+18*63     | 16*48                            | 6            | 874    | 11-T24X1-650Y1 |
|       | 700                | 27 1/2 | Drop center | 20*48           | 20*60+18*73     | 16*48                            | 6            | 933    | 11-T24X1-700R1 |
|       | 800                | 31 1/2 | Drop center | 20*54           | 20*66+18*90     | 16*54                            | 6            | 1120   | 11-T24X1-800T1 |
|       | 900                | 38 3/8 | Drop center | 20*60           | 20*66+18*105    | 16*60                            | 6            | 1360   | 11-T24X1-900T1 |
|       | *1000              | 39 3/8 | Drop center | 20*68           | 20*74+18*123    | 16*68                            | 6            | 1600   | 11-T24X1-K00T1 |
| TH28  | 800                | 31 1/2 | Drop center | 20*54           | 20*66+18*90     | 16*54                            | 6            | 1363   | 11-T28X1-800T1 |
|       | 900                | 38 3/8 | Drop center | 20*60           | 20*66+18*105    | 16*60                            | 6            | 1536   | 11-T28X1-900T1 |
|       | 1000               | 39 3/8 | Drop center | 20*68           | 20*74+18*123    | 16*68                            | 6            | 1804   | 11-T28X1-K00T1 |
|       | 1100               | 43 2/8 | Drop center | 22*76           | 20*84+18*140    | 16*75                            | 6            | 2117   | 11-T28X1-K10T1 |
|       | 1200               | 47 1/4 | Drop center | 22*86           | 20*96+18*159    | 18*85                            | 8            | 2300   | 11-T28X1-K20T1 |

## Dth Hammer

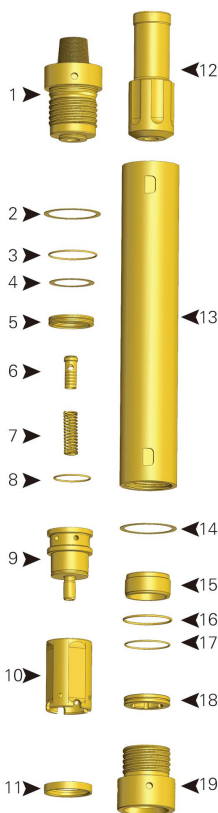


| Hexagonal flats | L1  | L2 | L3  | L4  | L   | φ1  | φ2  | φ3 |
|-----------------|-----|----|-----|-----|-----|-----|-----|----|
| 273             | 240 | 35 | 150 | 400 | 189 | 139 | 230 | 32 |
| 320             | 250 | 35 | 160 | 400 | 209 | 189 | 255 | 40 |





## TH12 DTH hammer



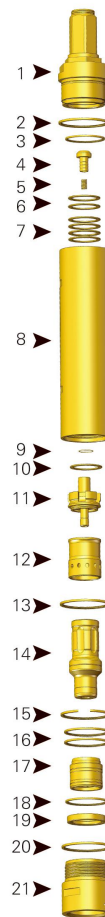
TH12 DTH hammer parts

| No | Items                        | Product code      | Qty | Weight/kg |
|----|------------------------------|-------------------|-----|-----------|
| 1  | Back adapter                 | B1-TH12T-A6001-05 | 1   | 125.5     |
| 2  | Steel pad ring               | B1-TH12T-A6001-06 | 2   | 0.4       |
| 3  | O ring                       | 218*7.2           | 1   | 0.01      |
| 4  | Adjusting pad                | B1-TH12T-A6001-07 | 1   | 0.3       |
| 5  | Belleville spring            | B1-TH12T-A6001-10 | 4   | 0.37      |
| 6  | Check valve                  | T2-129-05501      | 1   | 1.5       |
| 7  | Spring                       | T3-104-04601      | 1   | 0.06      |
| 8  | O ring                       | 165*7             | 1   | 0.01      |
| 9  | Air distributing seat        | B1-TH12T-A6001-20 | 1   | 38.7      |
| 10 | Inner cylinder               | B1-TH12T-A6001-32 | 1   | 29.2      |
| 11 | Check ring of inner cylinder | B1-TH12T-A6001-33 | 1   | 2.2       |
| 12 | Piston                       | B1-TH12T-A6001-42 | 1   | 118.3     |
| 13 | Outer cylinder               | B1-TH12T-A6001-40 | 1   | 249.8     |
| 14 | Rubber Ring of bearing       | B1-TH12T-A6001-41 | 1   | 0.12      |
| 15 | Bush drive sub               | B1-TH12T-A6001-45 | 1   | 11.1      |
| 16 | O ring                       | 235*9.4           | 1   | 0.01      |
| 17 | O ring                       | 195*5.3           | 1   | 0.01      |
| 18 | Chuck ring                   | B1-TH12T-A6001-50 | 1   | 5.6       |
| 19 | Chuck sleeve                 | B1-TH12T-A6001-58 | 1   | 50.5      |

| Description           | Product code                     | Bit shank                  | Thread connection |
|-----------------------|----------------------------------|----------------------------|-------------------|
| TH12T                 | B1-TH12T-A6001                   | TH12Bit shank              | AP1 6 5/8REG      |
| Working pressure(Bar) | Air consumption at 24 Bar m³/min | Rec. rotation speed(r/min) |                   |
| 17-24                 | 62.3                             | 30-40                      |                   |

| Description           | Outside Dia.(mm)          | Length without bit(mm) | Weight(kg)                   |
|-----------------------|---------------------------|------------------------|------------------------------|
| TH12T                 | 274                       | 1938                   | 791                          |
| Working pressure(Bar) | Normal Axial pressure(KN) | Rec.Hole Size(mm)      | Disassembly and assembly(mm) |
| 17-24                 | 30-40                     | 305-445                | 4-φ33                        |

## TSW14H DTH hammer



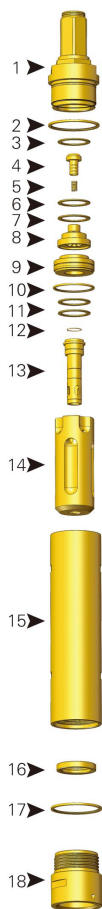
TH14 DTH hammer parts

| No | Items                           | Product code      | Qty | Weight/kg |
|----|---------------------------------|-------------------|-----|-----------|
| 1  | Back adapter                    | B1-SW14H-L1001-05 | 1   | 223       |
| 2  | Steel pad ring                  | B1-SW14H-L1001-06 | 1   | 2.7       |
| 3  | O ring                          | φ258*7            | 1   | -         |
| 4  | Check valve                     | T2-150-07201      | 1   | 4.3       |
| 5  | Spring                          | T3-124-05101      | 1   | -         |
| 6  | Adjusting pad                   | B1-SW14H-L1001-07 | 2   | 1.7       |
| 7  | Belleville spring               | B1-SW14H-L1001-10 | 4   | 5.6       |
| 8  | Outer cylinder                  | B1-SW14H-L1001-40 | 1   | 332       |
| 9  | Adjusting sheet                 | B1-SW14H-L1001-08 | 1   | -         |
| 10 | O ring                          | 212*5.3           | 1   | -         |
| 11 | Air distrusting seat            | B1-SW14H-L1001-20 | 1   | 46.4      |
| 12 | Inner cylinder                  | B1-SW14H-L1001-32 | 1   | 25.9      |
| 13 | Checking ring of inner cylinder | B1-SW14H-L1001-35 | 1   | 3.7       |
| 14 | Piston                          | B1-SW14H-L1001-42 | 1   | 160       |
| 15 | Checking ring                   | B1-SW14H-L1001-48 | 1   | 3.1       |
| 16 | O ring                          | 243*5.3           | 2   | -         |
| 17 | Bush drive sub                  | B1-SW14H-L1001-45 | 1   | 39.8      |
| 18 | O ring                          | 236*7             | 1   | -         |
| 19 | Chuck ring                      | B1-SW14H-L1001-50 | 1   | 8.8       |
| 20 | Steel pad ring                  | B1-SW14H-L1001-55 | 1   | 2.7       |
| 21 | Chuck sleeve                    | B1-SW14H-L1001-58 | 1   | 76.8      |

| Description           | Product code                     | Bit shank                  | Thread connection |
|-----------------------|----------------------------------|----------------------------|-------------------|
| TSW14H                | B1-SW14H-L1001                   | SW14H Bit shank            | 273               |
| Working pressure(Bar) | Air consumption at 24 Bar m³/min | Rec. rotation speed(r/min) |                   |
| 17-24                 | 70.3                             | 30-40                      |                   |

| Description           | Outside Dia.(mm)          | Length without bit(mm) | Weight(kg)                   |
|-----------------------|---------------------------|------------------------|------------------------------|
| TSW14H                | 330                       | 2235                   | 950                          |
| Working pressure(Bar) | Normal Axial pressure(KN) | Rec.Hole Size(mm)      | Disassembly and assembly(mm) |
| 17-24                 | 31.5                      | 400-550                | 4-φ40                        |

## TH18 DTH hammer



TH18 DTH hammer parts

| No | Items                   | Product code      | Qty | Weight/kg |
|----|-------------------------|-------------------|-----|-----------|
| 1  | Back adapter            | B1-TH18T-L1001-05 | 1   | 325       |
| 2  | Steel pad ring          | B1-TH18T-L1001-06 | 1   | 3         |
| 3  | O ring                  | φ335*7            | 1   | -         |
| 4  | Check valve             | T2-116-06801      | 1   | 5         |
| 5  | Spring                  | T3-172-05101      | 1   | -         |
| 6  | Adjusting pad           | B1-TH18T-L1001-13 | 1   | 1.65      |
| 7  | Belleville spring       | B1-TH18T-L1001-10 | 4   | -         |
| 8  | Check valve guide       | B1-TH18T-L1001-30 | 1   | 25.5      |
| 9  | Feed tube guide         | B1-TH18T-L1001-37 | 1   | 50        |
| 10 | O ring                  | 300*7             | 1   | -         |
| 11 | Pressure bearing washer | B1-TH18T-L1001-14 | 2   | 0.15      |
| 12 | O ring                  | 132*5.3           | 1   | 37.6      |
| 13 | Feed tube               | B1-TH18T-L1001-38 | 1   | 22        |
| 14 | Piston                  | B1-TH18T-L1001-42 | 1   | 335       |
| 15 | Outer cylinder          | B1-TH18T-L1001-40 | 1   | 565.5     |
| 16 | Chuck ring              | B1-TH18T-L1001-50 | 1   | 10.5      |
| 17 | Steel pad ring          | B1-TH18T-L1001-55 | 1   | 3         |
| 18 | Chuck sleeve            | B1-TH18T-L1001-58 | 1   | 145       |

| Description           | Product code                     | Bit shank                  | Thread connection |
|-----------------------|----------------------------------|----------------------------|-------------------|
| TH18                  | B1-TH18T-L1001                   | TH18 Bit shank             | 273or320          |
| Working pressure(Bar) | Air consumption at 24 Bar m³/min | Rec. rotation speed(r/min) |                   |
| 14-24                 | 78.8                             | 30-40                      |                   |

| Description           | Outside Dia.(mm)          | Length without bit(mm) | Weight(kg)                   |
|-----------------------|---------------------------|------------------------|------------------------------|
| TH18                  | 406                       | 2425                   | 1530                         |
| Working pressure(Bar) | Normal Axial pressure(KN) | Rec.Hole Size(mm)      | Disassembly and assembly(mm) |
| 14-24                 | 34.5                      | 500-700                | 2-φ36                        |

## TH24 DTH hammer



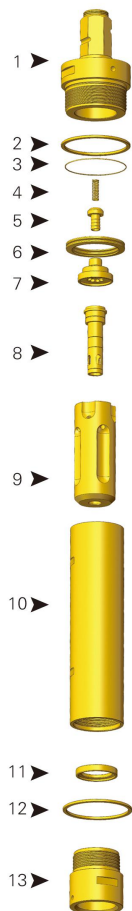
TH24 DTH hammer parts

| No | Items             | Product code      | Qty | Weight/kg |
|----|-------------------|-------------------|-----|-----------|
| 1  | Back adapter      | B1-TH24T-L2001-05 | 1   | 532       |
| 2  | O ring            | φ437*7            | 1   | -         |
| 3  | Steel pad ring    | B1-TH24T-L2001-06 | 1   | 6.65      |
| 4  | Check valve       | T2-116-06801      | 1   | 5         |
| 5  | Spring            | T3-172-05101      | 1   | 0.33      |
| 6  | Belleville spring | B1-TH24T-L2001-10 | 4   | 15.2      |
| 7  | Check valve guide | B1-TH24T-L2001-30 | 1   | 43.5      |
| 8  | Feed tube         | B1-TH24T-L2001-38 | 1   | 112       |
| 9  | Piston            | B1-TH24T-L2001-42 | 1   | 670       |
| 10 | Outer cylinder    | B1-TH24T-L2001-40 | 1   | 820       |
| 11 | Chuck ring        | B1-TH24T-L2001-50 | 1   | 28.5      |
| 12 | Steel pad ring    | B1-TH24T-L2001-55 | 1   | 6.65      |
| 13 | Chuck sleeve      | B1-TH24T-L2001-58 | 1   | 300       |

| Description           | Product code                     | Bit shank                  | Thread connection |
|-----------------------|----------------------------------|----------------------------|-------------------|
| TH24                  | B1-TH24T-L2001                   | TH24 Bit shank             | 320               |
| Working pressure(Bar) | Air consumption at 24 Bar m³/min | Rec. rotation speed(r/min) |                   |
| 17-24                 | 95                               | 25-35                      |                   |

| Description           | Outside Dia.(mm)          | Length without bit(mm) | Weight(kg)                   |
|-----------------------|---------------------------|------------------------|------------------------------|
| TH24                  | 525                       | 2495                   | 2450                         |
| Working pressure(Bar) | Normal Axial pressure(KN) | Rec.Hole Size(mm)      | Disassembly and assembly(mm) |
| 17-24                 | 34.5                      | 600-800                | 2-φ42                        |

## TH28 DTH hammer



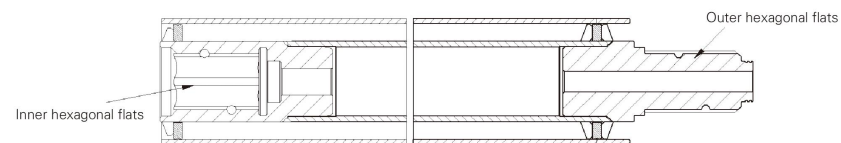
TH28 DTH hammer parts

| No | Items             | Product code      | Qty | Weight/kg |
|----|-------------------|-------------------|-----|-----------|
| 1  | Back adapter      | B1-TH28T-L2001-05 | 1   | 715       |
| 2  | O ring            | φ580*7            | 1   | -         |
| 3  | Steel pad ring    | B1-TH28T-L2001-06 | 1   | 8.5       |
| 4  | Check valve       | T2-128-09001      | 1   | 9         |
| 5  | Spring            | T3-198-07101      | 1   | 0.8       |
| 6  | Belleville spring | B1-TH28T-L2001-10 | 4   | 48        |
| 7  | Check valve guide | B1-TH28T-L2001-30 | 1   | 65        |
| 8  | Feed tube         | B1-TH28T-L2001-38 | 1   | 175       |
| 9  | Piston            | B1-TH28T-L2001-42 | 1   | 1235      |
| 10 | Outer cylinder    | B1-TH28T-L2001-40 | 1   | 1430      |
| 11 | Chuck ring        | B1-TH28T-L2001-50 | 1   | 43        |
| 12 | Steel pad ring    | B1-TH28T-L2001-55 | 1   | 8.5       |
| 13 | Chuck sleeve      | B1-TH28T-L2001-58 | 1   | 500       |

| Description           | Product code                     | Bit shank                  | Thread connection |
|-----------------------|----------------------------------|----------------------------|-------------------|
| TH28T                 | B1-TH28T-L2001                   | TH28Bit shank              | 320               |
| Working pressure(Bar) | Air consumption at 24 Bar m³/min | Rec. rotation speed(r/min) |                   |
| 17-24                 | 105                              | 15-25                      |                   |

| Description           | Outside Dia.(mm)          | Length without bit(mm) | Weight(kg)                   |
|-----------------------|---------------------------|------------------------|------------------------------|
| TH28T                 | 650                       | 2610                   | 4236                         |
| Working pressure(Bar) | Normal Axial pressure(KN) | Rec.Hole Size(mm)      | Disassembly and assembly(mm) |
| 17-24                 | 42                        | 800-1000               | 2-φ50                        |

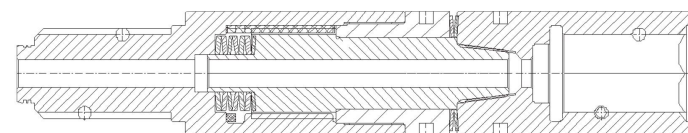
## Drill Pipe



| Product  | O.D.  | Adapter type  | Length | Weight | Product code   |
|----------|-------|---------------|--------|--------|----------------|
| 426Drill | 426mm | 273 hexagonal | 4M     | 1070   | D2-426L1-400T0 |
| 450Drill | 450mm | 273 hexagonal | 4M     | 1093   | D2-450L1-400K2 |
| 508Drill | 508mm | 273 hexagonal | 4M     | 1146   | D2-508L1-400T0 |
| 610Drill | 610mm | 273 hexagonal | 4M     | 1241   | D2-610L1-400T0 |
| 711Drill | 711mm | 320 hexagonal | 6M     | 1943   | D2-711L2-600T0 |
| 813Drill | 813mm | 320 hexagonal | 6M     | 2087   | D2-813L2-600T0 |
| 914Drill | 914mm | 320 hexagonal | 6M     | 2230   | D2-914L2-600T0 |



## Shock Absorber



| Product               | Adapter type  | Diameter*length | Weight | Product code   |
|-----------------------|---------------|-----------------|--------|----------------|
| 12inch Shock absorber | 6 5/8 API     | 270*795         | 429    | G2-A6TA6-27001 |
| 14inch Shock absorber | 273 hexagonal | 355*882         | 515    | G2-L1GL1-35501 |
| 18inch Shock absorber | 273 hexagonal | 457*1110        | 668    | G2-L1GL1-45701 |
| 24inch Shock absorber | 320 hexagonal | 600*1344        | 868    | G2-L2GL2-60001 |
| 28inch Shock absorber | 320 hexagonal | 640*1540        | 954    | G2-L2GL2-64001 |

