

# Atlas Copco Blasthole Drills

## T4BH series



### DTH and Rotary drilling – Multi pass

Hole diameter 5  $\frac{5}{8}$  in – 9  $\frac{7}{8}$  in (143 – 251 mm)

Maximum hole depth for 25 ft tower: 147 ft (45 m)

Maximum hole depth for 30 ft tower: 177 ft (54 m)

*Sustainable Productivity*

**Atlas Copco**

# Combining high mobility with power and productivity

**The T4BH is designed for multi-pass, high pressure, DTH drilling. The rugged and reliable T4BH features a 25 ft (7.6 m) tower and can drill a 22' 6" (6.8 m) clean hole in a single pass, while multi-pass drilling can reach to a total depth of 147' 6" (45 m) through a 5 rod carousel.**

The Atlas Copco T4BH is synonymous with mobility, power, performance, and productivity. Mounted on a custom carrier, the T4BH is designed to perform in rough terrain and has been the leading blasthole drill in its class in the quarry and mining industries for over 35 years. The T4BH is a truck mounted, hydraulic tophead drive, specifically designed for DTH high pressure blasthole drilling. An optional 30 ft (9.1m) tower is also available with the 8 x 4 carrier option.

## **Tower and feed system**

Raising the tower with a full complement of up to five 25 ft (7.6 m) drill pipes in the carousel can be accomplished in less than one minute. The tower is raised and lowered by two hydraulic cylinders. Tower pinning, pipe changing and drilling are performed remotely from within the operator's cab. The feed system is powered by two hydraulic feed cylinders that raise and lower the rotary head smoothly and positively by way of heavy duty feed chain for pulldown and pullback. The high-speed feed functions increase drilling efficiency and give the operators faster drill feed rates. Standard rotation on the T4BH is supplied by a hydraulic rotary tophead. The rotary head is mounted to the feed chains by way of a mounting plate and two pins on both sides of the head, allowing the head to "float". This helps to prevent thread wear or damage during joint make up.

## **Rotary or DTH drilling**

The T4BH is designed to handle 4" (102 mm) to 7" (178 mm) drill pipes and can be used for DTH or rotary drilling of holes with diameters from 5 5/8" (143 mm) up to 9 7/8" (251 mm). Three different high pressure compressors can be provided for the T4BH, ranging from 900 cfm up to 1,250 cfm. The "on-off" regulation system of the high pressure compressor can remove load during non-drilling operations. This extends compressor life, saves energy and provides an easier startup. With a weight on bit force of up to 30,000 lbf (133 kN), the reliable T4BH is well matched for rotary drilling as well.

## **Compressor range**

|                   |  |
|-------------------|--|
| High pressure DTH | 900 cfm @ 350 psi / 25.4 m3/min @ 24 bar   |
| High pressure DTH | 1,070 cfm @ 350 psi / 30.3 m3/min @ 24 bar |
| High pressure DTH | 1,250 cfm @ 350 psi / 35.4 m3/min @ 24 bar |





## Operator comfort

All operational functions are controlled from the driller's console within the cab of the T4BH. The operator has an excellent visibility with an unobstructed view of the drill table. The cab is thermally insulated, sound-attenuated, heated, ventilated and is equipped with tinted safety glass, kick plates, an adjustable swivel seat, and two lockable doors. A six-light halogen night lighting system is provided as standard for operator visibility under low light operating conditions. External 70-watt halogen lights illuminate each of the following components: Power pack, tower and drill table.



## Heavy duty concept

The T4BH in-line drive train consists of a diesel engine directly coupled to a compressor on one end and a hydraulic pump drive on the other. This configuration maximizes mechanical efficiency. The T4BH is built with a "floating" engine sub base which aids in isolation of the engine and mainframe from shock loads, while also maintaining optimal engine alignment. A heavy-duty engine silencer/muffler is also provided to reduce power pack noise emission. Separate air inlet cleaners are standard for both engine and air compressor intake. Coolers for the hydraulic oil, compressor oil, and diesel engine coolant are provided. All coolers are mounted side by side in one package and each section can be individually removed for easy maintenance. The T4BH utilizes a custom built, 3-axle carrier designed to Atlas Copco specifications. The rigid 16 in. "H" beam frame provides a solid base to handle tough blasthole drilling conditions.



## Efficient drill pipe handling

The carousel drill pipe changer is part of the tower assembly and is located on the outside of the tower frame. The tower is raised and lowered by two hydraulic cylinders. Tower pinning and pipe changing is performed remotely from within the operator's cab. Breaking pipe joints are done by a hydraulic positioned sliding fork wrench with limited impact, that minimizes shock loads on the tower, carousel, rotary head and feed components. Hydraulic cylinders swing the carousel into and out from the loading position under the rotary head. A hydraulic cylinder and ratchet rotate the carousel to index the drill pipe under the rotary head for changing. An exclusive "keylock" carousel design securely locks in the drill pipe at both the bottom and the top of the carousel to ensure maximum safety for drill pipe storage and changing. An auxiliary hoist with a capacity of 2,500 lbf (11.1 kN) is provided as standard for drill pipe and accessory handling.



## Standard Equipment

- Spacious, thermal insulated sound-attenuated cab
- Six quartz halogen night lighting package
- Rectangular dust hood with skirting
- Auxiliary hoist for drill pipe and accessory handling
- Cooling package rated up to 125°F (52°C) ambient
- Heavy-duty engine silencer/muffler
- Separate air intake filters for engine and air compressor
- Power indexed carousel for five 4 ½ in OD x 25 ft pipe
- Remote hydraulic fork chuck for drill pipe breakout
- Hydraulically powered auxiliary chain wrench
- 225-gallon (852 l) fuel tank
- 4SV-2-10 spur gear 2-motor rotary tophead with 0 to 160 RPM, and maximum torque 6,000 lbf•ft
- Three 48 in. (1,219 mm) stroke leveling jacks
- Custom designed 3-axle carrier with wide flange H-beam frame
- Remote tower pinning
- Back-up alarm



# A selection of options for the T4BH series

For a more comprehensive options list, please contact your local Atlas Copco Customer Center.



## Angle drilling package

The two optional 20 and 30 degree angle drill packages allows the tower to be positioned from vertical in 5 degree increments. Both packages include a drill rod support and an angle drill tie bar. All controls are located at the control console inside the cab.



## Remote Propel

When positioning the T4BH from hole to hole, this option allows the operator to tram the drill rig from the drilling cab console instead of the main truck cab. Included are clutch, accelerator, brake, steering and ignition switch.



## Central Lubrication

The optional automatic central machine lube system has an air pump and timer that provides lubrication to all non-traveling grease points on the machine through metered injectors. The centralized manifold or hand pump option are other alternatives.



## Water injection system

The water injection system injects a regulated quantity of water into the air flow going to the drill pipe. The water content suppresses the dust created by the drilling operation.

## Technical data T4BH

### Technical data

|                     |                              |                    |
|---------------------|------------------------------|--------------------|
| Drilling Method     | DTH and Rotary - Multi pass  |                    |
| Hole Diameter       | 5 5/8 in - 9 7/8 in          | 143 mm - 251 mm    |
| Hydraulic Pulldown  | 30,000 lbf                   | 133 kN             |
| Weight on bit       | 30,000 lb                    | 30,600 kg          |
| Hydraulic Pullback  | 22,000 lbf                   | 97 kNm             |
| Single pass depth   | 22 ft 6 in or 27 ft 6 in     | 6.8 m or 8.4 m     |
| Maximum hole depth* | 147 ft 6 in or 177 ft 6 in   | 45 m or 54.1 m     |
| Feed speed          | 60 ft/min                    | 18.3 m/min         |
| Rotary head, torque | 6,500 lbf-ft<br>7,165 lbf-ft | 8.8 kNm<br>9.7 kNm |
| Estimated weight    | 58,000 lb                    | 26 tonnes          |

### Dimensions tower up

|        |            |        |
|--------|------------|--------|
| Length | 27 ft 6 in | 8.4 m  |
| Height | 36 ft 6 in | 11.1 m |
| Width  | 8 ft       | 2.4 m  |

### Dimensions tower down

|        |            |        |
|--------|------------|--------|
| Length | 35 ft      | 10.7 m |
| Height | 13 ft 6 in | 4.1 m  |

### Engine (TierII<sup>2</sup>, Tier III<sup>3</sup>)

|         |                     |                                  |
|---------|---------------------|----------------------------------|
| Cummins | QSX15 <sup>3</sup>  | 525HP / 391 kW@1800RPM (HP 900)  |
| Cummins | QSX15 <sup>3</sup>  | 600HP / 447 kW@1800RPM (HP 1070) |
| Cummins | QSK19C <sup>2</sup> | 760HP / 567 kW@1800RPM (HP 1250) |

### Drill pipe specification

| Drill pipe diameter | Suggested bit diameters | Thread             |
|---------------------|-------------------------|--------------------|
| 4" (102 mm)         | 5 5/8" - 6"             | 2 7/8" API         |
| 4 1/2" (114 mm)     | 5 7/8" - 6 3/4"         | 3 1/2" API         |
| 5" (127 mm)         | 6 3/4" - 7 3/8"         | 3 1/2" API or BECO |
| 5 1/2" (140 mm)     | 6 3/4" - 7 7/8"         | 3 1/2" BECO        |
| 6 1/4" (159 mm)     | 7 7/8" - 9"             | 4" BECO            |
| 7" (178 mm)         | 9"-9 7/8"               | 4 1/2" BECO        |

### High pressure DTH drilling

Up to 7" DTH hammer and max. 9" bit diameter

\* Maximum hole depth only achieved with certain pipe sizes and wall thicknesses