

**BBM1500**

# RAPID AND SAFE DRILLING



## Boxhole Boring Machine BBM1500

- › Drilling of boreholes and shafts with a diameter of 1.5 m and a length of up to 70 m
- › Designed for stable rock with up to 180 MPa and more
- › High mobility thanks to compact machine design and quick relocation with independent crawler carrier vehicle
- › Improved working conditions due to fully remote operation and lower risk exposure for the personnel



**PIONEERING  
UNDERGROUND  
TECHNOLOGIES**





# Boxhole Boring Machine BBM1500

## Technical specifications

The **BBM technology** was developed by Herrenknecht for the rapid and safe construction of vertical and inclined boreholes and shafts. It can be used in stable rock formations and enables drilling diameters of up to 1.5 meters (4.92 ft) with a maximum drilling length of 70 meters (229.66 ft). In developing this technology, a particular focus was placed on improved occupational safety, higher productivity and an optimum mobility of the rig. The time-consuming preparation measures typically required for conventional methods are no longer necessary.



Quick relocation and set-up, no foundations needed.



High accuracy and reduced risk of overbreak.



Vertical and inclined boreholes in confined spaces.

### BBM1500

- › Diameter: 1,535 mm (5.04ft)
- › Drill angle (from horizontal): 90°–60°
- › Borehole length: up to 70 m (229.66ft)
- › Min. transport dimensions (l/w/h): 6.3m/3.1m/2.9m (20.7ft/10.17ft/9.51ft)
- › Total weight: 60,000 kg (132,277 lb)

High level of safety due to fully-remote operation. Set-up in confined spaces thanks to compact construction and modular design. High advance rates through pipe jacking technology and full-face cutterhead. Jacking frame and boring unit are part of the crawler carrier featuring quick relocation and set-up.

### BORING UNIT

- › Rotational speed: 0 rpm–20 rpm
- › Max. torque: 115 kNm (84,820 lbf.ft)
- › Drive type: hydraulic
- › Gearbox: water-cooled
- › Cutterhead: adjustable to rock condition

Borehole deviation of less than 1% thanks to the mechanized excavation process and the high stiffness of the boring unit and the thrust pipes. Exactly round borehole with a largely smooth surface and little overcut.

### JACKING FRAME

- › Thrust force: 3,000 kN (674,427 lbf)
- › Pull force: 1,000 kN (224,809 lbf)
- › Drift height: 4.1 m–7.0 m (13.45 ft–22.97 ft)

Fully remote-controlled operation. 4x hydraulic jacks for levelling the jacking frame, no concrete platform required. 4x hydraulic stingers for bracing the jacking frame to the back for thrust and torque transfer.

### THRUST PIPE

- › Diameter: 1,510 mm (4.95 ft)
- › Height: 1,000 mm (3.28 ft)
- › Weight: 1,800 kg (3,968 lb)

Fully-sealed borehole with pipe string minimizing the risk of breakouts and rock fall. Handling and transport with fork lift/loader or optional pipe handler.

### TRANSPORT SYSTEM

- › System: diesel-powered crawler, 129 kW (175,4 hp)
- › Max. speed: 2 km/h (1.24 mph)
- › Control system: radio remote control

Compact crawler carrier provides a high degree of flexibility for quick relocation and minimum space requirements. All movements are hydraulically operated.

### POWER PACK

- › Total installed power: 200 kW (268 hp)
- › Voltage: 400 V–1,000 V
- › Frequency: 50 Hz or 60 Hz
- › Power requirement: 250 kVA
- › Cooling system: water-cooled
- › Water booster pump: integrated
- › Dimensions (l/w/h): 3.1m/1.7m/1.8m (10.17ft/5.58ft/5.91ft)
- › Weight: 6,200 kg (13,669 lb)

Compact design of the electro-hydraulic driven power pack enables flexible positioning in all drifts. High noise protection by fully-enclosed system.

### HOSE REEL UNIT

- › Energy chain length: 70 m (229.66 ft)
- › Drive: hydraulic motor
- › Dimensions (l/w/h): 3.0m/2.0m/2.7m (9.84ft/6.56ft/8.85ft)
- › Weight: 5,000 kg (11,023 lb)

### CONTROL SYSTEM

- › Radio remote control panels
- › BBM Safety-PLC system
- › Data visualization
- › Data recording system