Production drilling rig with water-driven In The Hole hammer, ITH, for long straight holes. The Rig Control System (RCS) provides efficient long hole drilling, and also ensures an ergonomic working environment and longer consumable life. Ring drilling with possibility to drill parallel holes upwards/downwards up to 3 m apart.

Standard features

» Rock drill
  • Wassara ITH water hammer with guide skirt
  • Wassara guide extension piece

» Drilling unit
  • Mechanized rod handling system
  • Feed with hydraulic two-stage cylinder
  • Front- and rear-mounted stingers
  • Breakout table for guidance during collaring and as support during rod handling

» Positioning unit
  • Tilt, rotation and pendulum arm
  • Accurate, smooth and proportional movements
  • Mine-adapted, sturdy components

» Drilling system
  • Rig Control System (RCS)
  • Automation level: ABC Basic
  • Angle reading instrument
  • Rotation Pressure Controlled Feed (RPCF)
  • Pre-set parameters for different drilling conditions

» Carrier
  • Mine-adapted carrier with articulated steering and four-wheel drive
  • Low-emission, turbo-charged diesel engine

» General
  • Operator panel mounted under canopy
  • FOPS-approved protective roof
  • Cable and water hose reels
  • Working lights on protective roof
Specifications

<table>
<thead>
<tr>
<th>ROTATION UNIT</th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>DHR 6W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length with fixed adapter</td>
<td>534 mm</td>
<td></td>
</tr>
<tr>
<td>Torque, max</td>
<td>3 300–5 100 Nm</td>
<td></td>
</tr>
<tr>
<td>Rotation speed</td>
<td>60–90 rpm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>164 kg</td>
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</table>

<table>
<thead>
<tr>
<th>FEED</th>
<th>BMH 200-series</th>
<th>BMH 235</th>
<th>BMH 236</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length</td>
<td>3 300 mm</td>
<td>3 600 mm</td>
<td></td>
</tr>
<tr>
<td>Drill pipe length</td>
<td>1 800 mm</td>
<td>1 800 mm</td>
<td></td>
</tr>
</tbody>
</table>

» Drilling unit
- Rod Handling System, RHS 35……………….35+1 pipes
- Adaptable to 5’ and 6’ pipes
- Pipe diameter………………………………102 mm
- Mechanized drilling up to 63 m
- Drill steel support and break-out table

» Positioning system
- Feed extension…………………………….1 200 mm
- Rotary acurator BHR 60–2 for 360° ring drilling
- I-frame
- Pendulum arm …………………………………+1.5 m
- Stinger backward on feed ……………………2 x BSJ 8-200
- Stinger forward on feed ……………………..2 x BSJ 8–115
- Feed dump, drilling………………….+45° forward and -30° backward

» Control system
- Rig Control System (RCS) – versatile and upgradeable to a higher degree of automation
- USB-memory for transfer of data and storage of drill parameters
- Integrated diagnostic and statistic system
- Angle reading instrument
- Drill settings for up to five different drill bits and/or various rock conditions
- Exposed components are designed and tested acc. to IP 65

» Power pack
- Hydraulic pumps for rotation, positioning and feed
- Pumps unloaded at start
- System pressure, max……………………..250 bar
- Hydraulic oil tank, volume max/min ………250/200 l
- Low oil level indicator and shut-down
- Oil temperature gauge on oil tank, electronically supervised
- Smart oil leakage shut-down system
- Filtration, absolute………………………….16 μm
- Oil filter indicator
- Water cooled oil cooler in stainless steel
- Mineral hydraulic oil

» Electrical system
- Total installed power…………………………193 kW
- Main motors
- Hydraulic pumps…………………………..55 kW
- Water pump, 400 V DC……………………..130 kW
- Voltage……………………………………..400–1000 V
- Frequency………………………………….50/60 Hz
- Starting method…………………………..star/delta (400–690 V/55 kW)
- Electronic overloading protection for electric motors
- Digital volt/amperage meter in electric cabinet
- Phase sequence indicator
- Earth fault indicator
- Battery charger
- Transformer……………………………….8 kVA
- Halogen working lights, mounted on roof……2 x 1 000 W
- Cable reel with limit switch

» Water system
- Water booster pump on board
- Capacity…………………………………….max 350 l/min
- Filter units…………………………………..50 μm
- Automatic filter surveillance and cleaning
- Air separator/Pulsation damper
- Recycling system
- Water pressure gauge
- Water hose reel …………………………………3”/120 m
- Minimum water inlet pressure……………………2 bar

» Carrier
- Engine……………………………………..Deutz TCD 2013 L06 2V
- Power rating at 2 300 rpm……………………175 kW (238 hp)
- Torque at 1 400 rpm………………………….572 Nm
- Swingable seat for trampling, incl. safety belt
- Articulated steering………………………..±41° steering angle
- Four-wheel drive
- FOPS-approved protective roof
- Hydrostatic power steering system
- Hydrodynamic transmission………………….Clark 24000
- Front axle ………………………………….DANA Spicer 123/90
- Rear axle………………………….DANA Spicer 123/90, ±8° oscillation
- Automatic differential lock on front axle, limited slip
- Tyres……………………………………….Michelin 12.00 R24 XZM
- Hydraulic jacks, front………………………..2 extendable
- Hydraulic jacks, rear……………………..2
- Service brakes 2 separate circuits (hydraulically applied, fully enclosed wet disc brakes)
- Emergency and parking brakes……………………SAHR
- Fuel tank, volume…………………………100 l
- Electric system……………………………24 V
- Batteries…………………………………..2 x 125 Ah
- Tramming lights……………………………8 x 7W
- Illuminated stairs for platform
- Central lubrication system
- Silencer
- Catalyst
- Fire extinguisher
- Spirit levels one for longitudinal and one for sideways
- Gradeability at max load on drive wheels…………1:4
- Tramming speed on flat ground ………..>15 km/h
- Tramming speed on incline 1:8 ………..>5 km/h
- Horn
- Beacon warning lamp
- Reverse alarm
- Rack for spare hammers and pipes
- Shelf for tools and bits
- Manual rig washing kit
- Rig alignment laser
Specifications

**DRILL STEEL**

<table>
<thead>
<tr>
<th>Rock drill</th>
<th>Hole diameter, mm</th>
<th>Drill pipe diameter, mm</th>
<th>Drill pipe length, mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hammer W100</td>
<td>115</td>
<td>102</td>
<td>1500/1800</td>
</tr>
<tr>
<td>Hammer W120 (slot drilling)</td>
<td>165</td>
<td>102</td>
<td>1500/1800</td>
</tr>
</tbody>
</table>

**Optional equipment**

- **Drilling system**
  - Slot drilling

- **Positioning system**
  - Automatic lubrication for positioning system
  - Central lubrication for positioning system
  - Short pendulum arm

- **Automation**
  - Simba ABC Regular
  - Simba ABC Total
  - Drill Plan Handling
  - Full Drill Data Handling
  - Rig Remote Access
  - Breakthrough Automatic Stop
  - Text Message System
  - Remote Cradle Control/Remote Feed Control
  - Mine Navigation
  - Void Detection

- **Cabin**
  - FOPS-approved cabin:
    - Fixed seat
    - CD-changer
  - Air conditioning unit without heating
  - Stainless steel cabin
  - Air conditioner with heating
  - Front window, 24 mm
  - FOPS-approved grizzly bar for front window
  - Cabin lift/tilt system, 375 mm/15°
  - Reversing camera with monitor
  - Joystick controlled spotlight

- **Carrier**
  - Fire suppression system, manual
  - Fire suppression system, automatic (check-fire)
  - Fire suppression system, full automatic
  - Particle filter UNIKAT
  - Brake lights

- **Electrical system**
  - Electrical cable on reel, Buflex
  - Plug PC5
  - Socket PC5
  - Switch gear
  - Electrical outlet, 16 A
  - Extra transformer, 15 kVA
  - Extra transformer, 10 kVA
  - Metal halogen working lights, 2 x 400 W
  - Extra working lights, 2 x 200 W, 24 V (on tripod)
  - Extra working lights, 2 x 500 W, 230 V (on tripod)
  - Electrics according to local standards

- **Miscellaneous**
  - Electric lubrication kit
  - Remote operating kit, Line of Sight (LOS)
  - Additional panel
  - Pipe handling crane
  - Cuttings deflector for upwards drilling
Measurements

SIDE VIEW

COVERAGE AREA

TURNING RADIUS

depending on surface

<table>
<thead>
<tr>
<th>mm</th>
<th>Outer</th>
<th>Inner</th>
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<tbody>
<tr>
<td></td>
<td>7 985</td>
<td>4 330</td>
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DIMENSIONS

<table>
<thead>
<tr>
<th>mm</th>
<th>Width</th>
<th>Height tramming</th>
<th>Length tramming</th>
<th>Ground clearance</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2 600</td>
<td>3 500</td>
<td>12 100</td>
<td>300</td>
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</table>

WEIGHT

gross weight

<table>
<thead>
<tr>
<th>kg</th>
<th>Total</th>
<th>Boom side</th>
<th>Engine side</th>
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<tbody>
<tr>
<td></td>
<td>28 500</td>
<td>17 000</td>
<td>11 500</td>
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RECOMMENDED CABLE SIZE AND LENGTH

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Type</th>
<th>Dimension, mm²</th>
<th>Diameter, mm</th>
<th>Length, m</th>
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</thead>
<tbody>
<tr>
<td>400 V</td>
<td>Buflex</td>
<td>3x240+3x50</td>
<td>68</td>
<td>60</td>
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<tr>
<td>440–460 V</td>
<td>Buflex</td>
<td>3x240+3x50</td>
<td>68</td>
<td>60</td>
</tr>
<tr>
<td>500–550 V</td>
<td>Buflex</td>
<td>3x185+3x35</td>
<td>56</td>
<td>90</td>
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<tr>
<td>660–690 V</td>
<td>Buflex</td>
<td>3x120+3x25</td>
<td>46</td>
<td>135</td>
</tr>
<tr>
<td>1 000 V</td>
<td>Buflex</td>
<td>3x95+3x16</td>
<td>45</td>
<td>150</td>
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Recommendations are given for surrounding temperature of 40°C.