BAUER BG 30
Rotary Drilling Rig
Base Carrier BT 80
The BAUER BG ValueLine

The BG ValueLine

*Perfection is achieved when there is nothing left to take away.*

Drilling uncased deep boreholes stabilized by drilling fluid, or drilling cased boreholes with installing casings by the rotary drive or by a hydraulic casing oscillator. If Kelly drilling is your task, then the BG ValueLine is our solution. The machines of the ValueLine are specifically adapted to no other purpose than Kelly drilling – and that perfectly.

You can expect superior Bauer performance and customary Bauer durability at affordable costs for acquisition and operation. How do we do it? By applying cutting-edge technology, reduced to nothing less than the essentials.

- Long mast for more drilling depth
- Large drill axis for big diameters
- Well balanced concept for high productivity and economic operation
- Hydraulic system for high dynamic performance
- Easy handling, easy maintenance
- Variable transport concept
Maximal rig configuration
Drilling diameter: 2,500 mm
Drilling depth: 87.0 m
Torque: 300 kNm
Engine: CAT C 9.3
            310 kW @ 1,800 U/min
Height: 26.9 m

The Rotary Drilling Rig
BG 30 ValueLine (BT 80)

1 Under carriage
2 Upper carriage
3 Main winch
4 Auxiliary winch
5 Kinematic system
6 Mast
7 Crowd cylinder
8 Mast head
9 Kelly bar
10 Rotary drive (KDK)
11 Drilling tool

BG 38
BS 80
**Spotlights**

**Kinematic system**
- Proven Bauer kinematic system with support trestle and backstay cylinders for maximum stability
- Heavy-duty base frame optimized for attachment of front-end equipment
- Easy rigging due to graduated pins

**KDK rotary drive**
- High dynamic performance
- Single-gear drive with strong and robust design and high mechanical and hydraulic efficiency
- Adjustment to various soil conditions and Kelly bars with 3 selectable modes of operation
- Protection of the rotary drive by an integrated Kelly damping system
- User-friendly assembly of rotary drive

**Winches**
- High, measured effective line pull and line speed
- Load classification M6 / L3 / T5 for heavy-duty, continuous operation
- A special grooving system on the drum and a rope pressure roller reduce wear on the wire rope
- Pinned connection for easy mounting and demounting

**Undercarriage**
- Solid Bauer design for 360° working radius
- Hydraulically extendable tracks
- Large footprint to resist high overturning moments
- High traction forces
- Optional: UW 100, optimized for oscillator attachment
Modern, ergonomic cabin
- FOPS compliant
- Bauer comfort cabin meets highest comfort standards
- High-resolution 7” color screen
- Clear layout of instruments and display screens
- Excellent view of drilling position
- Easy operation

High-performance CAT engine
- Conforming to exhaust emission standards Stage III A / Tier 3, China Stage III or Stage V / Tier 4 final
- Low fuel consumption due to optimized design of the hydraulic system
- Low noise emissions due to clever sound protection installation
- Worldwide CAT service partner network
- Entire exhaust gas treatment enclosed in upper carriage

HSE safety features
- Integrated service platform for easy and safe maintenance work
- Maintenance work can be carried out from ground or platform level
- Hydraulic connections on rotary drive can be mounted from ground level
- Variably stackable counterweight elements
- Patented inclination monitoring system
- Continuous control of mast inclination for operator and banksman

Final inspection and test run
- Comprehensive Bauer test program
- Optimal adjustment and calibration of all main functions
- Heat transfer test
- Noise emission measurements
- Electromagnetic compatibility test
Operating weight: approx. 102 t
(as shown)
### Technical specifications

<table>
<thead>
<tr>
<th>Rotary drive</th>
<th>KDK 300 K</th>
<th>KDK 300 S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torque (nominal) at 350 bar</td>
<td>294 kNm</td>
<td>300 kNm</td>
</tr>
<tr>
<td>Max. speed</td>
<td>30 U/rpm</td>
<td>49 U/rpm</td>
</tr>
</tbody>
</table>

#### KDK 300 K

- **Torque (nominal) at 350 bar**: 294 kNm
- **Max. speed**: 30 U/rpm

#### KDK 300 S

- **Torque (nominal) at 350 bar**: 300 kNm
- **Max. speed**: 49 U/rpm

### Crowd cylinder

<table>
<thead>
<tr>
<th>Standard</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crowd force push / pull (effective)</td>
<td>200 / 350 kN</td>
</tr>
<tr>
<td>Crowd force / line pull (measured at the casing drive adapter KDK)</td>
<td>260 / 290 kN</td>
</tr>
<tr>
<td>Speed (down / up)</td>
<td>4.5 / 7.0 m/rpm</td>
</tr>
<tr>
<td>Fast speed (down / up)</td>
<td>20 / 20 m/rpm</td>
</tr>
<tr>
<td>Stroke</td>
<td>6,500 mm</td>
</tr>
</tbody>
</table>

### Main winch – single layer

- **Engine**: CAT C 9.3
- **Rated output ISO 3046-1**: 310 kW
- **Engine conforms to EU 2016/1628 ORA * EPA/CARB**: Stage V
- **Base carrier**: BT 80
- **Sound power level (2000/14/EG and EN 16228, Annex B)**: LWA 109 dB (A)
- **Sound pressure level in cabin (EN 16228, Annex B)**: LPA 80 dB (A)
- **Exhaust emission equivalent Tier 3 / Stage III A emission standards**

### Undercarriage (selectable)

- **Crawler type**: B 7
- **Traction force effective / nominal**: 730 / 860 kN

* * Exhaust emission equivalent Tier 3 / Stage III A emission standards
**Technical equipment**

### Base carrier

**Standard**
- Removable counterweights 14.9 t, Fig. A
- Engine diagnostic system
- Gratings on side and in front of operator’s cabin
- Integrated service platform
- Camera system for rear area surveillance
- Multigrade hydraulic oil
- Bauer comfort operator’s cabin (FOPS Standard), Fig. B
- On-board lighting set
- Air-conditioning system
- Radio with CD, MP3, USB and Bluetooth c/w hands-free kit
- Transport securing lugs on crawler unit
- On-board tool kit

**Optional**
- Counterweight variably adjustable (max. 19.7 t)
- Air compressor 1,000 l/min
- Central lubrication system
- Bauer service kit
- Arctic kit
- Bio oil for hydraulic system
- Protective roof guard
- Protective front windscreens guard
- Cab space heater with automatic timer
- Undercarriage UW 100
- Triple grouser track shoes 900 mm
- Quick-release couplings for removable crawler side frames
- Service tool kit

### BG attachment

**Standard**
- Bauer V-type kinematic system
- Mast head, for optional use with drill axis 1,150 oder 1,350 mm, Fig. C
- Inverted crowd cylinder
- Crowd speed fast and slow mode
- Swivel for main rope
- Pivoted anchor point for main and auxiliary rope
- Transport supports for upper and lower mast section
- Centering device for rapid pin handling
- Graduated pins used on all mast joints
- Hydraulically controlled freewheeling

**Optional**
- Swivel for auxiliary rope
- Upper Kelly guide
- Drill axis 1,350 mm
- Attachment of casing oscillator up to BV 1500 HD-07 (with UW 80), Fig. D
- Thrust rods 1,300 or 2,000 mm
### Rotary drive (KDK)

**Standard**
- Integrated Kelly damping system
- Exchangeable Kelly drive adapter assembly KA 500/419
- Exchangeable Kelly drive keys
- Quick-release couplings on hydraulic hoses
- 3 selectable modes of operation
- Easy assembly of rotary drive
- Wear pads exchangeable without removal of rotary drive
- Transport supports
- Trigger plate
- Lifting gear for rotary drive

**Optional**
- Rotary drive KDK 300 S (multi-gear)
- Cardanic joint
- Brake kit for automatic casing drive adapter, 
  - Fig. E
- Kelly drive adapter assembly KA 500/394
- Torque multiplier BTM 720 (Torque: 400 kNm), 
  - Fig. F

### Measuring and control equipment

**Standard**
- Bauer extended monitor incl. Integrated diagnostic capability, 
  - Fig. G
- Display of faulty messages as plain text
- Digital display of pump pressures
- Mast inclination measurement on x/y (digital/analogous display)
- Automatic vertical alignment of mast
- Optical mast inclination monitoring system
- Hydraulic load sensing on auxiliary winch
- Speed sensing device on KDK
- Hoist limit switch on main and auxiliary winch
- Defined torque setting for KDK
- Kelly drilling assistant
- Automatic crowd control
- One-directional spoil discharge assistant
- Bi-directional spoil discharge assistant
- Casing extraction assistant
- Automatic swivel alignment
- Elektronic load sensing

**Optional**
- Remote transmission of machine data (DTR-Module)
- Slewing angle display for upper carriage
Overview drilling capabilities (uncase)

### Rig configurations

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>Upgrade 1</th>
<th>Upgrade 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drill axis</td>
<td>1,150 mm</td>
<td>1,350 mm</td>
<td>1,350 mm</td>
</tr>
<tr>
<td>Counterweight</td>
<td>14.9 t</td>
<td>17.3 t</td>
<td>19.7 t</td>
</tr>
<tr>
<td>Undercarriage</td>
<td>UW 95</td>
<td>UW 95</td>
<td>UW 100</td>
</tr>
<tr>
<td>Stroke</td>
<td>6,500 mm</td>
<td>6,500 mm</td>
<td>8,500 mm</td>
</tr>
</tbody>
</table>

- **Standard**: Basic model for all-round use
- **Upgrade 1**: for fluid-supported deep Kelly drilling
- **Upgrade 2**: for cased Kelly drilling (also with casing oscillator)

Data shown are valid for minimum horizontal mast reach and using BAUER attachment. Other configurations possible on request.
### Uncased Kelly drilling

#### Standard configuration

<table>
<thead>
<tr>
<th>Drilling diameter (mm)</th>
<th>Drilling depth (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-part Kelly</td>
<td>0</td>
</tr>
<tr>
<td>4-part Kelly</td>
<td>10</td>
</tr>
<tr>
<td>5-part Kelly</td>
<td>20</td>
</tr>
</tbody>
</table>

- Drill axis 1,150 mm

#### Upgrade 1

<table>
<thead>
<tr>
<th>Drilling diameter (mm)</th>
<th>Drilling depth (m)</th>
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</thead>
<tbody>
<tr>
<td>3-part Kelly</td>
<td>0</td>
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<tr>
<td>4-part Kelly</td>
<td>10</td>
</tr>
<tr>
<td>5-part Kelly</td>
<td>20</td>
</tr>
</tbody>
</table>

- Drill axis 1,350 mm
Cased Kelly drilling

**Standard configuration with rotary drive KDK**

- **Drill axis 1,150 mm**

**Upgrade 2 with rotary drive KDK**

- **Drill axis 1,350 mm**

**Length of casing section (m)**

- **Kelly bar BK 300/419/3...**

- **Kelly bar BK 280/419/4...**

**Drill axis 1,150 mm**

- Ø ≤ 1,800

**Drill axis 1,350 mm**

- Ø 2,000
- Ø ≤ 1,800
<table>
<thead>
<tr>
<th>Lenght of casing section (m)</th>
<th>Kelly bar BK 300/419/3/3...</th>
<th>Kelly bar BK 280/419/4/4...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø ≤ 1,300</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
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<td>27</td>
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<tr>
<td>63</td>
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</tr>
</tbody>
</table>

Applicability up to BV 1300 L 03

Drill axis 1,150 mm

Drill axis 1,350 mm

Applicability up to BV 1500 HD-07

Ø ≤ 1,500

Drill axis 1,500 mm
Health and safety features
- All hydraulic hoses of the KDK can be attached from ground level
- The permissible mast inclination is displayed by the inclination monitoring system
- No overflow of hydraulic oil
- Applicable with all thrust rods

Safe and simple disassembly of inverted crowd cylinder system
- Easy disassembly by removing one pin only
- No disconnection of hydraulic lines
- No hydraulic line in upper mast section
- Hydraulic hoses remain connected
  (minimized risk of leakages developing at couplings)

Transport weight (without upper mast section)

\[ G = 61.5 \, \text{t} \]
**Transport – dimensions and weights**

Weights shown are approximate values; optional equipment may change the overall weight and dimensions.

### Base carrier with lower mast section

\[ \text{G} = 57.8 \text{ t} \]

### Upper mast section

\[ \text{G} = 4.8 \text{ t} \quad \text{B} = 1,560 \text{ mm} \]

- Mast head tilted
- Telescopic transport supports

### Rotary drive

\[ \text{G} = 5.6 \text{ t} \]

### Counterweight

\[ \text{G} = 1 \times 4.9 + 4 \times 2.5 \text{ t} \quad \text{B} = 3,000 \text{ mm} \]

### Lower mast section

\[ \text{G} = 13.3 \text{ t} \quad \text{B} = 2,450 \text{ mm} \]

### Base carrier with main winch, w/o counterweight

\[ \text{G} = 48.2 \text{ t} \]

### Optional

\[ \text{G} = 14.2 \text{ t} \quad \text{B} = 2,450 \text{ mm} \]

### Base carrier without counterweight

\[ \text{G} = 44.5 \text{ t} \]

\[ \text{G} = \text{weight} \quad \text{B} = \text{width} \]
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