BAUER BG 24 H
Rotary Drilling Rig
Base Carrier BT 75
We could start by telling you about Sebastian Bauer, who founded a copper forge in the German town of Schrobenhausen some 200 years ago. We could then move on to how his workshop prospered and developed to a leading construction company for specialist foundation engineering. The story would continue to the mid 20th century, when innovation and the drive for perfection prompted Bauer to develop and build their own high-quality and high-performance machinery. And it still wouldn’t end in the 21st century, Bauer now family-run in the seventh generation and meanwhile a globally operating group with more than 100 branches and subsidiaries operating in the fields of special foundation engineering (Bauer Spezialtiefbau), in manufacturing of foundation equipment (Bauer Maschinen) and focusing on products and services in the fields of water, energy, mineral resources and environmental technology (Bauer Resources).

But we think what really matters about us and to our customers is this:

We are a strong partner with face and values, we are down to earth, and we are dedicated to perfection in everything we touch.

“100 years of drilling, 4 decades of building machines, and still down to the earth”  Prof. Thomas Bauer
More than machines: Competent consulting

Quality is not an act, it is a habit.

Of the thousands of machines Bauer Maschinen has built since production started in the 1970’s with the first rotary drill rig BG 7, many of them are still in operation all over the world – in Siberia as well as in the desert. State of the art technology developed end-to-end by our inhouse engineers and full machine tests prior to delivery are one side of the coin. Bauer Maschinen can serve any customer need with the most comprehensive product portfolio. The other side is project-specific consulting by highly trained experts, with a focus on your special requirements.

- Quality and experience in specialist foundation engineering
- Global operation – local contacts in over 70 countries
- Reliability in technology, service
- Customized solutions
- On-site support over entire machine service life
The BAUER BG PremiumLine

The BG Premium Line stands for multifunction equipment for a variety of foundation construction systems. The selection between two model ranges allows an optimum choice for differing project or transportation requirements.

Specific highlights of the BG Premium Line are:
- High safety standards
- Environmental sustainability, economic efficiency and performance
- Easy to transport and short rigging time
- High quality standard
- Long lifetime and excellent resale value

Special features of the H-model line are:
- Fast loading onto transport vehicles
- Easy rigging on-site due to compact design
- Rapid shifting to new working positions at construction sites with underpasses or below low bridges

Special features of the V-model line are:
- Big borehole diameters
- Large drilling depths
- Extended service intervals and power transmission with low vibrations due to the robust design of the kinematic system
The Rotary drilling rig
BG 24 H PremiumLine (BT 75)

Max. drilling diameter: 2,500 mm
Max. drilling depth: 65.7 m
Max. torque: 277 kNm
Engine: CAT C 9 – Stage III A
280 kW @ 1,850 rpm
CAT C 9.3 – Stage IV
298 kW @ 1,850 rpm
Max. height: 23.9 m

1 Undercarriage
2 Upper carriage
3 Main winch
4 Auxiliary winch
5 Crowd winch
6 Kinematic system
7 Mast
8 Masthead
9 Kelly bar
10 KDK Rotary drive
11 Drilling tool
Modern, ergonomic operator cab
- FOPS compliant with additional protective roof guard
- Sliding door with sliding window
- Premium comfort seat, air-sprung and heatable
- High-precision electronic pre-control system
- Joystick controls with high functionality
- B-TRONIC 4.1 control module with color touch screen and a multitude of assistant and automatic systems
- The machine is linked via the Internet to site and service management systems through integrated DTR module and tablet

Flexible mast concept
- Sectional mast
  - Low Head version (min. rig height 8.5 m)
  - Lower mast extension demountable for drilling diameter up to 3 m (Giant Drill option)
  - Lower mast extension foldable for minimized transport length
- Upper mast extension 2 m (hydraulically foldable and lockable)
  - Easy and safe rigging, no working at height
  - Increased stroke for Single-Pass systems
  - Use of longer Kelly bars and casing tubes
  - Reduction of transport length
- Masthead for drill axis distance 1,000 and 1,400 mm
- Lattice mast extension (optional)

Patented Kelly visualization with spring compression sensing
- Display of lock recesses of the Kelly bar
- Increase in drilling performance
- Reduced wear on Kelly bar and Kelly drive keys
- Display and supervision of correct lowering and retracting of the Kelly bar

Spotlights
- Reduction of fuel consumption by up to 30%
- Increased productivity through improved efficiency
- Significantly reduced noise levels
- Tried and proven suitability for practical application
- Optimized parallel operation of main and auxiliary consumers
Variably stackable counterweight elements
- Constant tail radius (irrespective of number of counterweights)
- Small weight of individual elements (4.9 t or 2.5 t)
- Flexible arrangement, adjustable to application
- Mounting and demounting with rig
- Transport of machine possible without removing counterweights

Safety equipment
- Integrated service platforms in upper carriage for easy and safe maintenance work
- Retractable grating on side of cab
- Guardrails upper level (foldable for transport)
- 2 rear view cameras
- Flashing warning lights and audible reverse warning system
- Electronic mast reach limiter
- Slewing angle display for upper carriage

Powerful CAT engines
- C 9 (280 kW, Tier 3) or C 9.3 (298 kW, Tier 4 final)
- Diesel particulate filter in Exhaust Emission Standard Tier 4 final
- Automatic idling mode
- Modern engine diagnostic system
- Low noise emission
- Low fuel consumption due to individual consumer control
- Worldwide CAT-service partners

Rotary drive KDK 280
- Optional single-gear drive KDK 280 K or multi-gear drive KDK 280 S
- Max. torque on casing 277 kNm
- Max. rotation speed 54 rpm (with KDK 280 S)
Dimensions – Basic version

Operating weight (as shown)  82.2 t

* depending on configuration
### Technical specifications

#### Rotary drive

<table>
<thead>
<tr>
<th>Model</th>
<th>Torque (nominal) for casing operation at 350 bar</th>
<th>Torque (nominal) for drilling at 350 bar</th>
<th>Speed of rotation (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KDK 280 K</td>
<td>277 kNm</td>
<td>240 kNm</td>
<td>30 rpm</td>
</tr>
<tr>
<td>KDK 280 S</td>
<td>276 kNm</td>
<td>240 kNm</td>
<td>55 rpm</td>
</tr>
</tbody>
</table>

#### Crowd winch

- Crowd force push / pull, effective / nominal: 330 / 423 kN
- Speed (down / up): 7.5 / 7.5 m/min
- Fast speed (down / up): 29.5 / 29.5 m/min

#### Main winch

- Line pull (1st layer) effective / nominal: 200 / 250 kN
- Rope diameter: 28 mm
- Line speed (max.): 85 m/min

#### Auxiliary winch

- Line pull (1st layer) effective / nominal: 80 / 100 kN
- Rope diameter: 20 mm
- Line speed (max.): 55 m/min

#### Base carrier (EEP)

- Engine: CAT C 9 / CAT C 9.3
- Rated output ISO 3046-1: 280 / 298 kW
- Engine conforms to EEC 97/68 EC: Stage III A / Stage IV
- Diesel tank capacity / AdBlue tank: 600 / – / 600 / 34.5 l
- Ambient air temperature (at full power) up to: 45 °C
- Sound pressure level in cabin (EN 16228, Annex B): LP, 80 dB (A)
- Sound power level (2000/14/EG and EN 16228, Annex B): LW, 113 dB (A)
- Hydraulic pressure: 350 bar
- Hydraulic oil tank capacity: 650 l
- Flow rates: 2 x 250 + 1 x 400 + 1 x 135 l/min

#### Undercarriage (selectable)

- UW: 65 / 80
- Crawler type: B 6 / B 7
- Traction force effective / nominal: 450 / 530 / 520 / 610 kN
Technical equipment

**Base carrier BT 75**

**Standard**
- Removable counterweight elements
- Protective roof guard
- Radio with CD, MP3, USB and Bluetooth c/w hands-free kit
- Grating in front of cab
- Retractable grating on side of cab
- Electric refueling pump
- Energy Efficiency grating (EEP)
- Air conditioning system
- Premium comfort seat
- 2 rear view cameras
- Integrated service platform
- Central lubrication system

**Optional**
- Counterweight variably adjustable to max. 12.3 t
- Guardrails upper level (foldable for transport)
- Integrated service platform (electrically retractable/extendable)
- High-pressure cleaner with water tank
- Compressor 1,000 l/min
- Electric generator 13 kVA
- Bio-degradable hydraulic oil
- Arctic kit / Arctic kit plus
- Cab space heater with automatic timer
- LED spotlights
- Additional camera (at customer-specific location)
- Rear support unit, Fig. A
- Front screen guard
- Sun blind small or big
- Climatronic

**BG attachment**

**Standard**
- Main winch with hydraulically operated freewheeling
- Swivel for main rope
- Masthead (tiltable for transport)
- Mast support unit
- Mast extension 2 m hydraulically foldable and lockable
- Sectional mast for Low Head and Giant Drill applications
- Main winch for auxiliary rope
- Counterweight variably adjustable to max. 12.3 t
- Swivel for auxiliary rope
- Additional auxiliary winch 20 kN
- Auxiliary winch 20 kN
- Attachment of casing oscillator up to BV 1300 L-03 with UW 65 or BV 1500 HD-07 with UW 80
  - Powered by on-board hydraulics of base machine
  - Controlled from operator’s cab
  - Weight of drill rig can be activated through mechanical fixing (UW 80)
- Attachment of automatic casing drive adapter
- Sling for counterweight handling
- Auger cleaner attachment for Kelly system
- Personnel hoist system with lift cage, Fig. B
Rotary drive KDK 280 K
(single-gear drive)

**Standard**
- Selectable modes of operation
- Kelly drive adapter for outer Kelly tube 394 mm
- Integrated Kelly damping system
- Exchangeable Kelly equipment KA 500/394
- Exchangeable Kelly drive keys
- Cardanic joint
- Quick-release hydraulic couplers
- Transport supports
- Lifting gear

**Optional**
- Rotary drive KDK 280 S (multi-gear)
- Torque multiplier BTM 720 K for Kelly drilling
  - Torque 400 kNm (nominal)
  - Increasing of torque for casing installation
  - Easy attachment
  - Separate sledge
  - Connection to rotary drive with cardanic joint
- Torque multiplier BTM 200 for CCFA, Fig. C
- Additional oil cooler for rotary drive
- KDK 280 S
- Kelly equipment KA 500/419

Measuring and control system

**Standard**
- PLC processor for all electrically actuated functions
- Automatic mast alignment with memory-recall
- Depth measuring device on main winch
- Distance measuring device on crowd winch
- Main winch with electronic load sensing
- Slack rope prevention
- Automatic swivel alignment function
- Hoist limit switch on main and auxiliary winch
- Auxiliary winch with hydraulic load sensing
- Crowd stroke monitoring
- Crowd speed control
- Speed measuring control on rotary drive (KDK)
- Automatic torque setting (KDK)
- Hold-Back control
- Electronic mast reach limiter
- Bauer B-Tronic 4.1
- Tablet
- DTR module
- Assistants:
  - Kelly drilling assistant
  - Automatic crowd control
  - One-directional spoil discharge assistant
  - Bi-directional spoil discharge assistant
  - Casing extraction assistant

**Optional**
- Electronic load-sensing for auxiliary winch
- Drilling and pulling assistant for Single-Pass processes
- Recording of concrete pressure and volume for Single-Pass processes
- Software modules for further applications
- B-APS Satellite-based positioning system
Operating, Evaluation and Transfer Systems

**Standard**

- Bauer B-TRONIC 4.1
  - High-resolution 10.4" touch screen for high operating comfort, Fig. D
  - High contrast display easy to read in daylight
  - Variable display of machine and process-specific production parameters in line with selected operating techniques
  - Main parameters, such as pump pressures, torque and drilling depth at a glance
  - Kelly visualization for displaying the actual position of lock recesses and drive keys
  - Recording of machine and process-specific production parameters (Fig. E) for documentation of the construction progress and external processing with the evaluation software B-Report
  - Data transfer to external data storage device (USB memory stick) or online access via WEB-BGM
  - Display of machine status and fault messages in plain text
  - Fault diagnosis

- Tablet
  - Fully-fledged tablet with numerous apps, (such as camera, processor, notebook etc.), Fig. F
  - Internet access via DTR module
  - Copy (mirroring) of operator screen
  - Offline availability of machine-specific documents, such as manuals and spare parts lists
  - Mobile tool for service engineers

- DTR module
  - Online Internet connection for the drilling rig via mobile communications network (GSM)
  - GPS receiver for positioning
  - WLAN connection for the tablet
  - Internet data transfer to BAUER webservice (WEB-BGM) for protected customer access to their own machine and production process data.
Multi-function equipment

Kelly drilling
Cased Kelly drilling (installation with BTM)
Cased Kelly drilling (installation with oscillator)
CFA
CCFA
Cased CFA system with KDK + BTM
VDW
FDP
Standard or Lost Bit
Pile driving with hydraulic driving or Pileco Diesel hammer
TR
Depth vibrator
CSM
Cutter Soil Mixing
SCM
Single mixing paddle
Jet Grouting
Application – Kelly drilling

### Basic version
- Undercarriage: UW 65 (B6)
- Upper mast extension: without
- Upper Kelly guide: without
- Drilling axis: 1,000 mm
- Max. drilling diameter:
  - uncased: 1,700 mm
  - cased: 1,400 mm
- Operating weight:
  - with Kelly: 82.2 t
  - with bucket: KB 1180
  - with counterweight: 9.9 t

### Upgraded version
- Undercarriage: UW 80 (B7)
- Upper mast extension: 2.0 m
- Upper Kelly guide: with
- Drilling axis: 1,400 mm
- Max. drilling diameter:
  - uncased: 2,500 mm
  - cased: 2,200 mm
- Operating weight:
  - with Kelly: 100.2 t
  - with bucket: KB 1830
  - with counterweight: 12.3 t

* depending on configuration
Drilling data as shown are based on tool length NL = 1.9 m, minimum horizontal mast reach and using Bauer attachment.

Further drilling depth, diameter and other Kelly types on request.

Auger cleaner for Kelly-drilling application
Drilling diameter 520 to 1060 mm

Cased Kelly drilling with Casing oscillator up to BV 1300 (UW 65) or BV 1500 HD-07 (UW 80)

Casing length
without BV = Hw - 0.5 m
with BV = Hw - 1.6 m
**BG 24 H PremiumLine**

Application – CFA-drilling

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<table>
<thead>
<tr>
<th>Basic version</th>
<th>Upgraded version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undercarriage</td>
<td>UW 65</td>
</tr>
<tr>
<td>Mast extension</td>
<td>without</td>
</tr>
<tr>
<td>Kelly extension</td>
<td>without</td>
</tr>
<tr>
<td>Max. drilling diameter</td>
<td>900 mm</td>
</tr>
<tr>
<td>Max. drilling depth (with auger cleaner)</td>
<td>14.3 m</td>
</tr>
<tr>
<td>Max. extraction force with crowd- and main winch (effective)</td>
<td>730 kN</td>
</tr>
</tbody>
</table>
Further applications

Jet Grouting – Upgraded version

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undercarriage</td>
<td>UW 80</td>
</tr>
<tr>
<td>Lattice mast extension</td>
<td>24.5 m</td>
</tr>
<tr>
<td>Rod diameter</td>
<td>89 – 133 mm</td>
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<tr>
<td>Max. jetting depth</td>
<td>35.3 m</td>
</tr>
<tr>
<td>Rotary drive</td>
<td>KDK 10 S</td>
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<tr>
<td>Max. extraction force with crowd winch (effective)</td>
<td>330 kN</td>
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</table>

FDP- / SCM drilling – Upgraded version

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undercarriage</td>
<td>UW 80</td>
</tr>
<tr>
<td>Mast extension</td>
<td>2.0m</td>
</tr>
<tr>
<td>Kelly extension</td>
<td>13.0m</td>
</tr>
<tr>
<td>Max. drilling diameter (FDP)</td>
<td>620 mm</td>
</tr>
<tr>
<td>Max. mixing diameter (SCM)</td>
<td>800 – 1,600 mm</td>
</tr>
<tr>
<td>Max. drilling depth</td>
<td>30.0 m</td>
</tr>
<tr>
<td>Max. extraction force with crowd- and main winch (effective)</td>
<td>730 kN</td>
</tr>
</tbody>
</table>

* Further mixing diameters on request
### VDW drilling – Upgraded version

<table>
<thead>
<tr>
<th>Specification</th>
<th>UW 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undercarriage</td>
<td>UW 80</td>
</tr>
<tr>
<td>Mast extension</td>
<td>2.0 m</td>
</tr>
<tr>
<td>Drilling diameter</td>
<td>406 – 610 mm</td>
</tr>
<tr>
<td>Max. drilling depth</td>
<td>17.3 m</td>
</tr>
<tr>
<td>Rotary drive</td>
<td>DKS 50/100</td>
</tr>
<tr>
<td>Max. extraction force with crowd- and main winch (effective)</td>
<td>500 kN</td>
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</table>

### CCFA drilling – Upgraded version

<table>
<thead>
<tr>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Undercarriage</td>
<td>UW 80</td>
</tr>
<tr>
<td>Mast extension</td>
<td>2.0 m</td>
</tr>
<tr>
<td>Max. drilling diameter</td>
<td>750 mm</td>
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<tr>
<td>Max. drilling depth</td>
<td>16.4 m</td>
</tr>
<tr>
<td>Drive units:</td>
<td></td>
</tr>
<tr>
<td>Auger (right-hand rotation)</td>
<td>KDK 280</td>
</tr>
<tr>
<td>Casing (left-hand rotation)</td>
<td>BTM 200</td>
</tr>
<tr>
<td>Max. extraction force with crowd- and main winch (effective)</td>
<td>730 kN</td>
</tr>
</tbody>
</table>
Further applications

**Giant Drill – Basic version**
- **Undercarriage**: UW 65
- **Lower mast extension**: without
- **Drilling axis**: 1,000 mm
- **Max. drilling diameter**: 3,000 mm

**Low Headroom-System**
- **Undercarriage**: UW 65 / UW 80
- **Drilling axis**: 1,000 / 1,400 mm
- **Max. drilling diameter**: 1,700 / 2,500 mm
- **Max. drilling depth (BK28/419/5/19)**: 19.5 m
Transport – Dimensions and weights

G = Weight (t)  
B = Width, overall (mm)

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

### Basic version

| G = 58.6 | B = 3,000 |

### Upper mast extension folded

| G = 59.7 | B = 3,000 |

### Lower and upper mast extension folded

| G = 74.7 | B = 3,000 |

with KDK and counterweight

### Base carrier with UW 65 (Basic version)

### Counterweight *

| G = 1 x 4.9 + 2 x 2.5  
B = 3,000 |

* depending on application

### Rotary drive

| G = 5.1  
B = 1,200 |
**Upgraded version**

G = 62.9  B = 3,000

**Upper mast extension folded**

G = 64.0  B = 3,000

**Lower and upper mast extension folded**

G = 64.0  B = 3,000

* depending on application

**Base carrier with UW 80 (Upgraded version)**

**Counterweight**

G = 81.4  with KDK and counterweight

**UW 65**

<table>
<thead>
<tr>
<th>Track shoes</th>
<th>Overall width of crawlers retracted / extended</th>
</tr>
</thead>
<tbody>
<tr>
<td>700 mm</td>
<td>3,000 – 4,400 mm</td>
</tr>
<tr>
<td>800 mm</td>
<td>–</td>
</tr>
<tr>
<td>900 mm</td>
<td>3,400 – 4,600 mm</td>
</tr>
</tbody>
</table>

**UW 80**

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<tr>
<td>700 mm</td>
<td>3,000 – 4,400 mm</td>
</tr>
<tr>
<td>800 mm</td>
<td>3,300 – 4,500 mm</td>
</tr>
<tr>
<td>900 mm</td>
<td>3,400 – 4,600 mm</td>
</tr>
</tbody>
</table>

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Global operation and local contact
Long-term customer care and relationship
Flexibility in providing customized solutions
Strong customer orientation
Unique combination of equipment knowledge and application competency
Application and process consulting based on knowledge from a variety of projects

If you need more information, please contact us: BMA@bauer.de
Regional organizations and contacts
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