BAUER BG 36

Drilling Rig

Base Carrier BT 90

KellyLine

BAUER

Experience for you!

"Technology market leader and pioneer for innovations, at the same time down-to-earth with responsibility towards society and environment - that's our goal." Prof. Dr. Sebastian Bauer

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.

1790
Foundation as a copper forge in Schrobenhausen, Germany

1928
Well drilling in Bavaria, Germany

1958
Invention of the ground anchor by Dr.-Ing. K.H. Bauer

1976
First hydraulic rotary drill rig BAUER BG 7

1984
First diaphragm wall trench cutter BC 30

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**

1980´s
Start of international equipment sales

2001
Bauer Maschinen established as independent company within the Bauer Group

2006
Stock market launch of BAUER AG, directed by Prof. Thomas Bauer

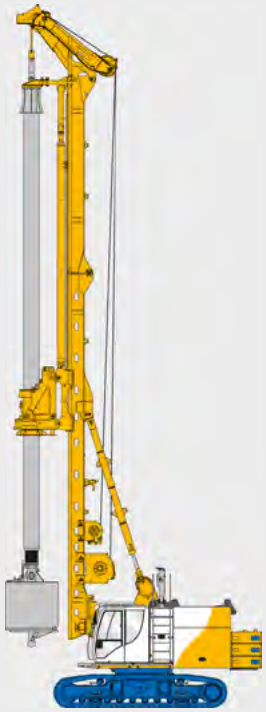
2011
Introduction of BG ValueLine and BG PremiumLine

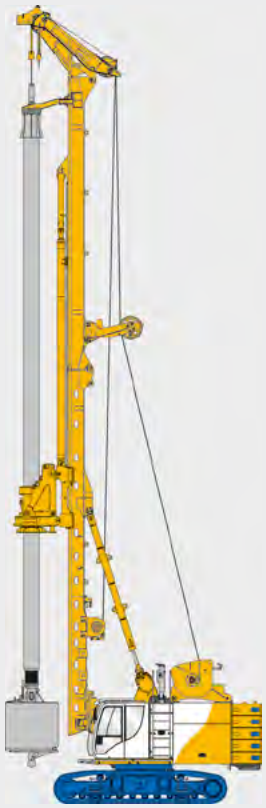
2014
With EEP Bauer sets new standards for efficiency

Bauer Drilling Rigs KellyLine

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

You are drilling uncased deep boreholes stabilized by drilling fluid, or cased boreholes either with installing casings by the rotary drive or by a hydraulic casing oscillator?
If Kelly drilling is your task, then the drilling rig KellyLine is your solution.
The machines of the KellyLine are specifically adapted to no other purpose than Kelly drilling - and that perfectly.

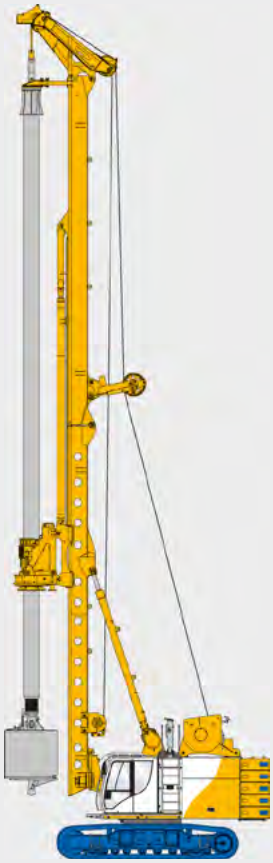


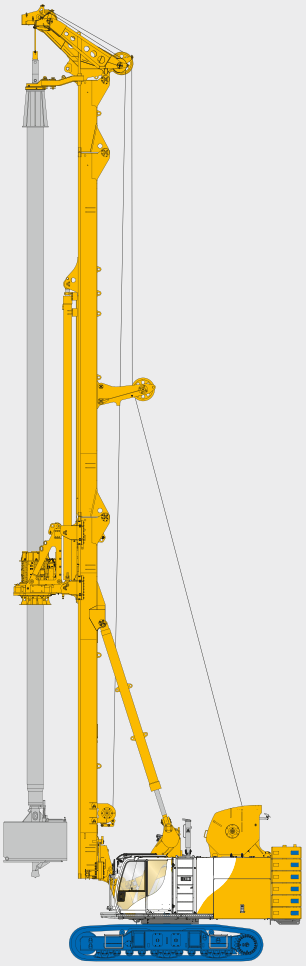


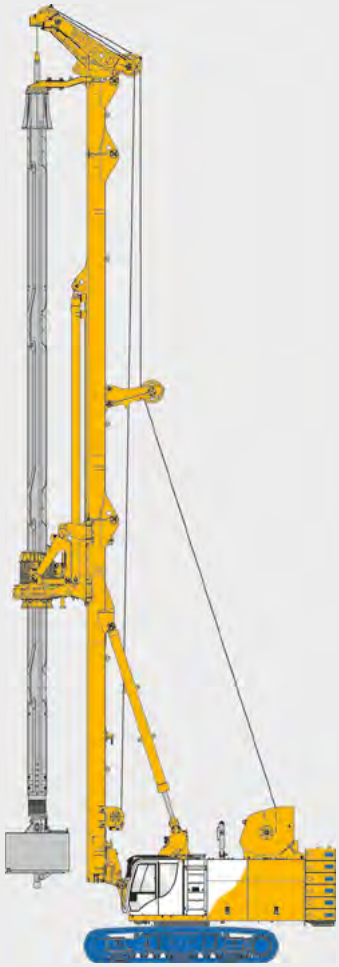
	BG 26 BT 70	BG 28 BT 70
Max. drilling diameter	2,500 mm	2,500 mm
Max. drilling depth	77 m	77 m
Torque	264 kNm	280 kNm
Engine power*	280 kW	280 kW
Max. height	25.1 m	25.1 m
Weight w/o drill string	68 t	70 t

* depending on emission standard

- **Long mast for more drilling depth**
- **Large drill axis for big diameters**
- **Well balanced concept for high productivity and economic operation**
- **Optimized hydraulic system for high dynamic performance**
- **Easy handling, easy maintenance**
- **Variable transport concept**

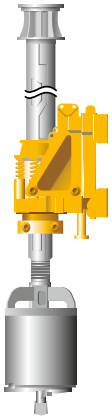




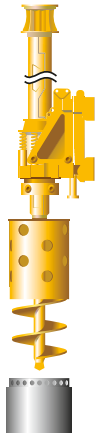


BG 30 BT 80	BG 36 BT 90	BG 42 BT 110
2,500 mm	3,000 mm	3,000 mm
87 m	115 m	115 m
300 kNm	355 kNm	420 kNm
310 kW	345 kW	405 kW
26.9 m	33.3 m	33.3 m
91 t	127 t	140 t

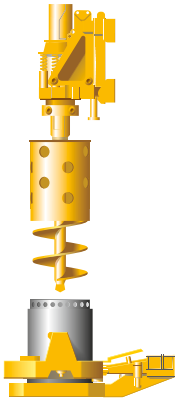
The Drilling Rig
BG 36 KellyLine (BT 90)



Kelly Drilling



Cased Kelly Drilling



Cased Kelly Drilling
Installation with Oscillator

Technical Specifications

Rotary drive		**KDK 360 K**
Torque (nominal) at 320 bar	355 kNm	
Speed of rotation (max.)		26 rpm
Mast system		
Effective Crowd force for tool pushing		230 kN
Effective crowd force for pulling casings		460 kN
Crowd stroke		8,500 mm
Mast inclination backward / forward / lateral		15° / 5° / 5°
Main winch – single layer		
Winch classification		M6 / L3 / T5
Line pull (1st layer), effective		360 kN
Rope diameter		36 mm
Line speed (max.)		63 m/min
Auxiliary winch		
Line pull (1st layer), effective		100 kN
Rope diameter		20 mm
Line speed (max.)		55 m/min
Base carrier		**BT 90**
Engine	Volvo TAD 13	Volvo TAD 13
Rated output ISO 3046-1	345 kW @ 1,900 rpm	345 kW @ 1,900 rpm
Engine conforms to		
EEC 97/68 EC		Stage V
EPA/CARB	ORA	Tier 4 final
GB20891-2014	Stage III	
Diesel tank / AdBlue tank capacity	700 l / –	700 l / 70 l
Ambient air temperature (at full power) up to		45 °C
Sound pressure level in cabin (EN 16228, Annex B)		LP_A 80 dB(A)
Sound power level (2000/14/EC and EN 16228, Annex B)		LW_A 110 dB(A)
Undercarriage		**UW 115**
Crawler type		B7
Traction force, effective		730 kN
Overall width of crawler (retracted / extended)		3,380 mm / 4,780 mm
Width of track shoes		800 mm

Applications – Recommended Rig Configurations

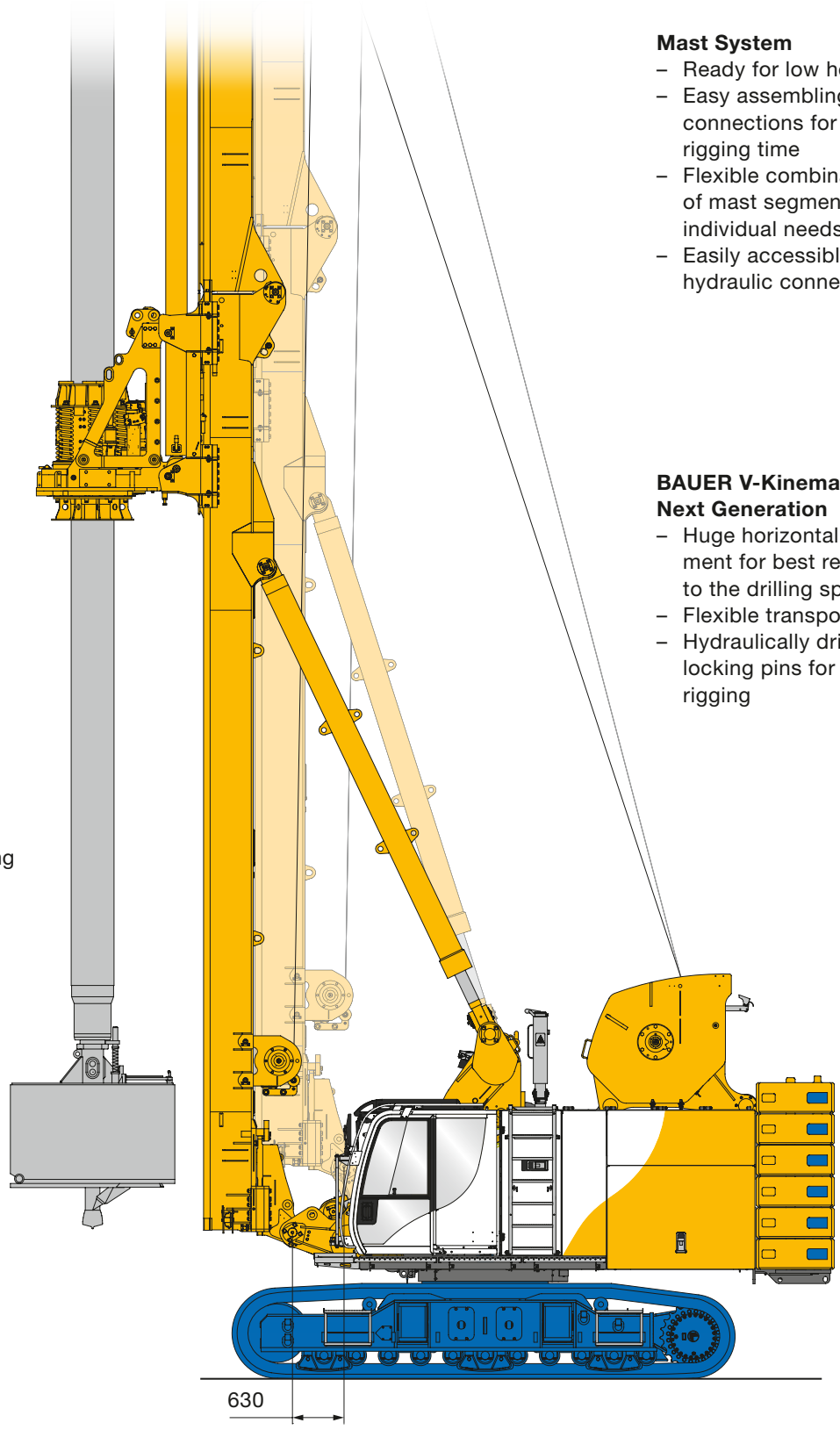
	Allround	**Big Drilling**	**Deep Drilling**	**Low-Headroom**
Drilling axis	1,350 mm	1,550 mm	1,350 mm	1,350 or 1,550 mm
Mast extension	2.3 m	2.3 m	5.4 m	without upper mast
Counterweight	29.4 t	29.4 t	34.3 t	24.5 t
Operating weight*	122 t	122 t	127 t	111 t
Operating height	30.2 m	30.2 m	33.3 m	16.4 m
Max. Kelly bar length ("A")	23.25 m	23.25 m	26.25 m	9.75 m
Max. depth x diameter	60 x 2.5 m 80 x 2.5 m 100 x 2.0 m	60 x 3.0 m 80 x 3.0 m 100 x 2.0 m	80 x 2.5 m 92 x 2.0 m 115 x 1.5 m	19.5 x 3.0 m 26 x 3.0 m 32.5 x 3.0 m
Attachment of casing drive adapter	yes	yes	yes	yes
Add-on kit for BV-usage	can be installed	can be installed	can be installed	can be installed
Conversion kit low-headroom	can be used	can be used	can be used	applied

* without Kelly

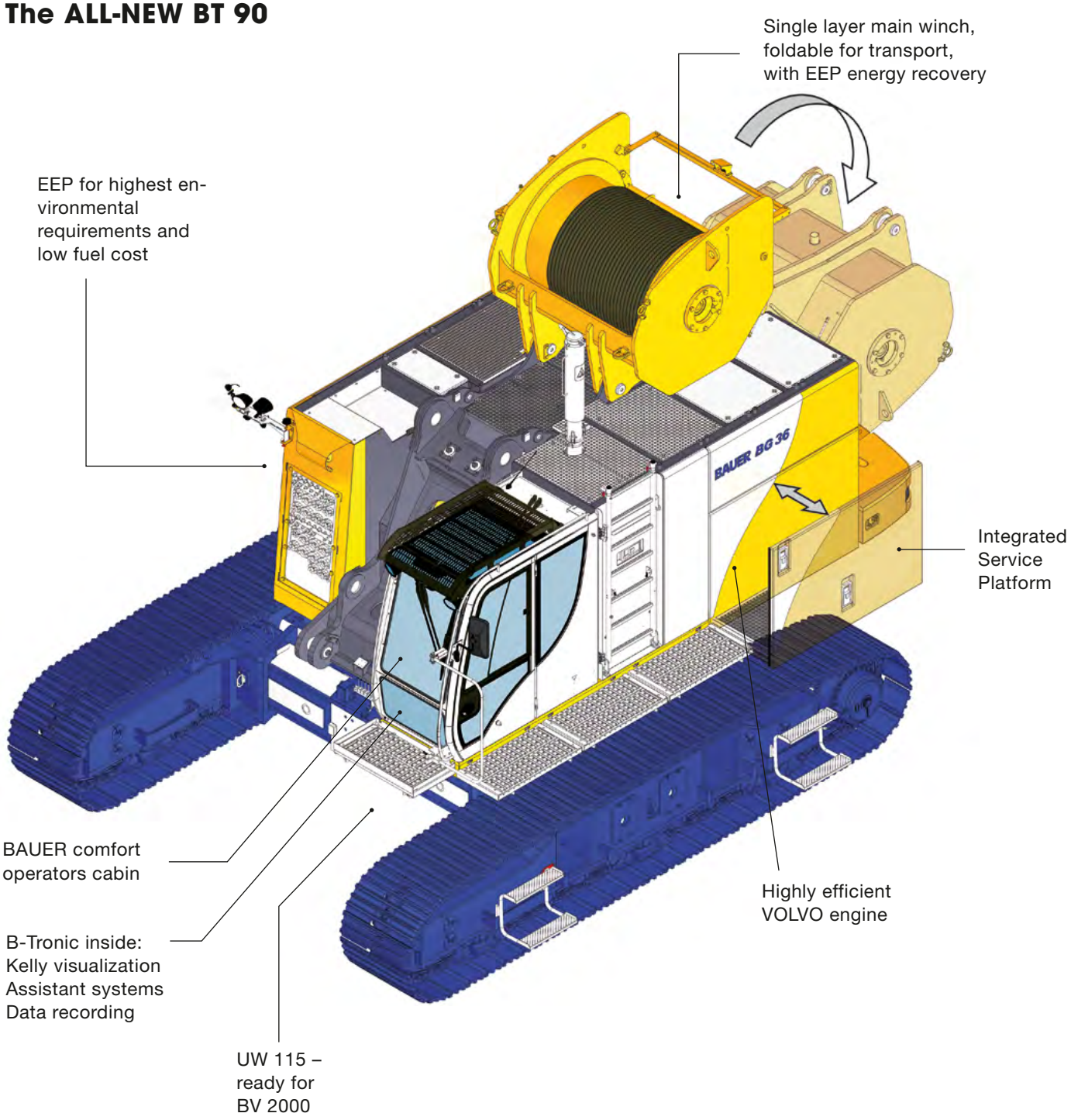
Mast System
- Ready for low head
- Easy assembling connections for fast rigging time
- Flexible combination of mast segments for individual needs
- Easily accessible hydraulic connections

BAUER V-Kinematic – Next Generation
- Huge horizontal movement for best reach to the drilling spot
- Flexible transport system
- Hydraulically driven locking pins for easy rigging

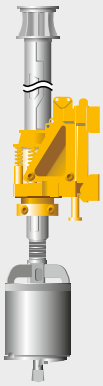
Rotary Head
- very robust rotary head
- Bauer Kelly damping system
- Kelly visualization system



The ALL-NEW BT 90

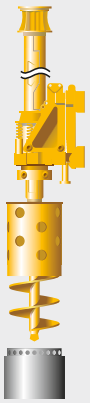


Spotlights



Kelly Drilling
Kelly drilling is the most versatile drilling method.
Telescopic Kelly bars (3-fold, 4-fold, 5-fold) can reach a high depth.
The quickly exchangeable tools can adapt to the varying soil conditions in the different soil layers.
Bauer provides all high quality Kelly bars and high performance drilling tools.

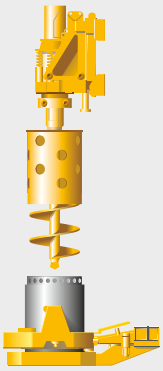
The KDK is normally equipped purely with the trigger plate.



Cased Kelly Drilling
If the soil is not very stable or if there is ground water or if jobsites require it e.g. for secant pile wall, then the BG also can drive the casings.

To do this method, the BG just has to be equipped with
– a cardan joint below the KDK,
– the casing drive adapter for the required diameter. Bauer offers manually or automated locking casing drive adapters.

You flexibly adapt it to the BG only when you need it.



Cased Kelly Drilling with Casing Oscillator (BV)
To drive extremely big diameter casings or do very deep casings, an oscillator (BV) can be attached to the BG.*
The casings are firstly driven by the KDK, and when the KDK comes to the limit, the BV takes over.

To do this method, the BG just has to be equipped with
– a cardan joint below the KDK,
– the casing drive adapter for the required diameter,
– a BV with the correct reduction insert for the required diameter.

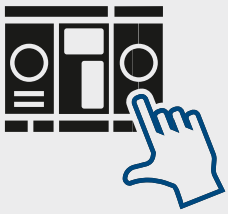
You flexibly adapt it to the BG only when you need it.

* The BG has to be pre-equipped for BV operation

One-Stop Shop
We offer the rig itself, components for the different methods as well as Kelly bars and the appropriate drilling tools.
Suppling wear parts and providing customer service rounds up the complete system solution for your success.

B-Tronic System

B-Tronic
The BAUER B-Tronic system allows completion of contruction tasks in a reliable and accurate manner, even under extreme operating conditions.
- The high-resolution touchscreen display ensures excellent user-friendliness.
- The display can be optimally adapted to the operating situation and the amount of light present by changing the brightness level, the color scheme and the day/night mode.
- The main parameters such as pump pressure, torque and drilling depths can be viewed at a glance.



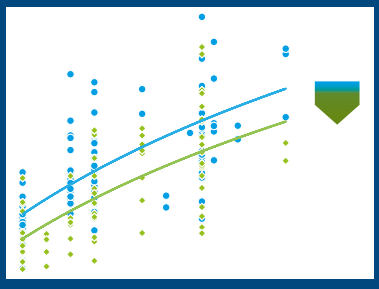
Assist!
- Kelly visualization
- Kelly drilling assistant
- Spoil discharge assistant
- Adaptive Kelly speed assistant (optional)

Operate!
- B-Tronic display
- Remote control for rigging process
- Operators cabin with streamline concept

Manage!
WEB BGM online portal:
- Fleet management system
- Fuel consumption recording
- Production data recording

Energy-Efficient PowerEEP

- **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**



Technical Equipment

Base Carrier

Standard
- Undercarriage UW 115
- Removable counterweight
- Engine diagnostic system
- Walkway at the side and in front of the cabin, **Fig. A**
- Rear view camera
- Electric refuelling pump
- Multigrade hydraulic oil
- Bauer comfort operator's cab with roof guard (FOPS compliant), **Fig. A**
- On-board lighting set
- Air conditioning system
- Radio with CD, MP3 and USB
- Lashing lugs on crawler units
- Comfort handling package
- Central lubrication system
- Assistance system
- Guard rails on top of upper carriage
- Integrated service platform, **Fig. B**

Optional
- Air compressor 1,000 l/min, 12 bar
- Hydraulic powered electric generator (230 V AC, 13 kW)
- Vise attachment
- Arctic kit
- Cab space heater with automatic timer
- Remote Control Basic for rigging, **Fig. E**
- Foldable guard rails on top of upper carriage
- Hydraulic locking device for support trestle
- Bauer service tool kit
- Quick-release couplings for removable crawler side frames

BG attachment

Standard
- Bauer V-type kinematic system
- Inverted crowd cylinder
- Crowd speed fast and slow mode
- Swivel for main rope
- Pivoted anchor point for main rope and auxiliary rope
- Transport supports for upper and lower mast sections
- Crowd cylinder stroke 8,500 mm
- Drilling axis 1,350 mm
- Mast extension 2.3 m

Optional
- Drilling axis 1,550 mm
- Mast extension 5.4 m
- Upper Kelly guide
- Add-on kit for casing oscillator usage up to BV 2000, **Fig. D**
- Low-headroom package
- Predrill CFA package
- Swivel for auxiliary rope

KDK rotary drive

Standard
- Integrated Kelly damping system
- Wear pads of base sled exchangeable without removal of the rotary drive
- Exchangeable Kelly drive adapter assembly KA 671/470
- Exchangeable Kelly drive keys
- Quick-release couplers on hydraulic hoses
- Transport supports
- Trigger plate
- Lifting sling set for rotary drive

Optional
- Cardanic joint
- Torque multiplier BTM 720 K (torque 500 kNm)

Main winch, Fig. C

Standard
- Hydraulically controlled freewheeling
- Automatic rope tensioning function
- Swivel alignment function
- Depth sensing device on main rope
- Electronic load measuring
- Overload detection system
- Winch drum with special grooving
- Pin connection
- Transparent ring for easy oil check
- Camera for main winch surveillance
- Single layer operation down to 115 m
- Foldable for transport

Measuring and control equipment

Standard
- Bauer B-Tronic incl. integrated diagnostic capability, **Fig. F**
- Display of fault messages as plain text
- Mast inclination measurement on x/y axis (digital/analog display)
- Automatic vertical alignment of mast
- Optical mast inclination monitoring system
- Spoil discharge assistant
- Hydraulic load sensing on auxiliary winch
- Speed sensing device on KDK
- Hoist limit switch on main and auxiliary winch

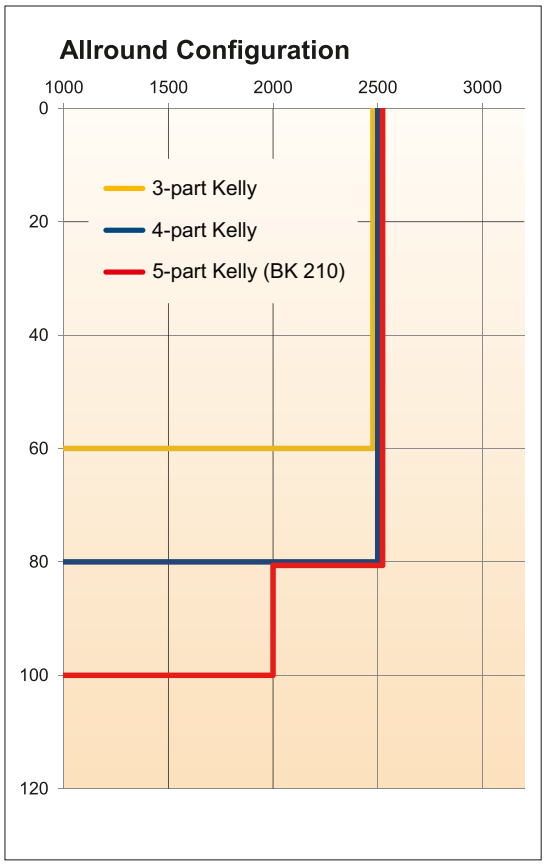
Optional
- Remote transmission of rig data (DTR-module)
- Electronic load sensing on auxiliary rope

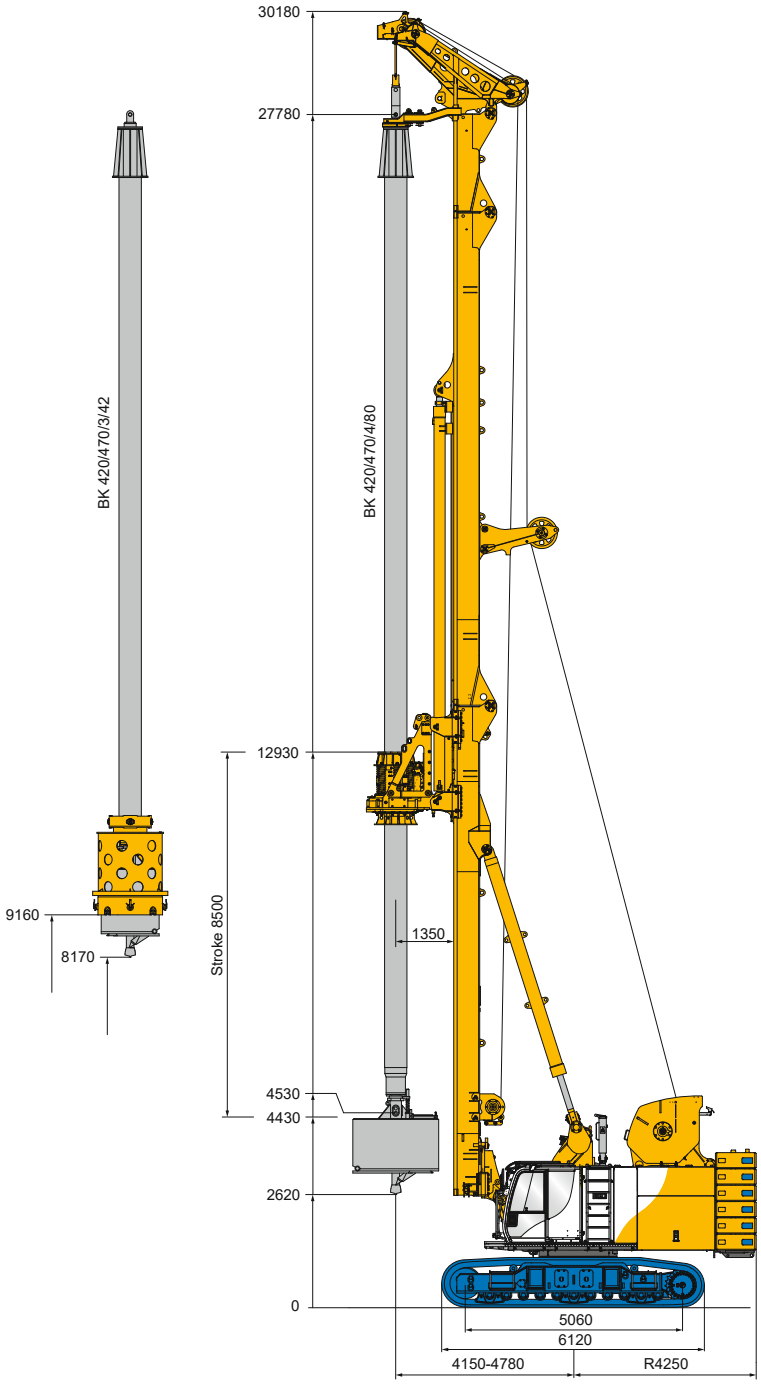
Application – Allround

Performance data	
Drill axis	1,350 mm
Counterweight	29.4 t
Mast extension	2.3 m
Operating weight*	122 t
Machine height	30.2 m
Horizontal reach	630 mm
Cylinder stroke	8,500 mm
Max. Kelly bar length (“A”)	23.25 m
Max. depth x diameter	80 x 2.5 m
	100 x 2.0 m

* Weight w/o drill string

Energy-Efficient PowerEEP





Application – Big Drilling

Performance data	
Drill axis	1,550 mm
Counterweight	29.4 t
Mast extension	2.3 m
Operating weight*	122 t
Machine height	30.2 m
Horizontal reach	630 mm
Cylinder stroke	8,500 mm
Max. Kelly bar length (“A”)	23.25 m
Max. depth x diameter	80 x 3.0 m
	100 x 2.0 m

* Weight w/o drill string

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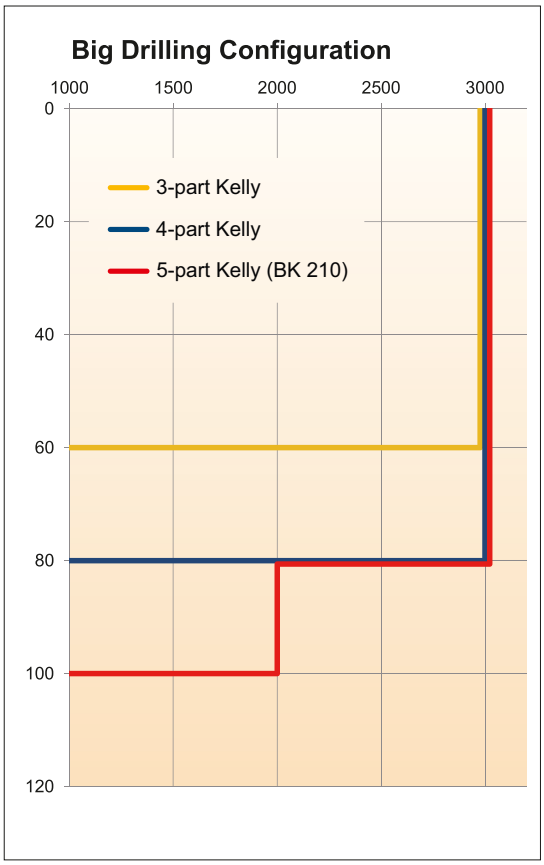
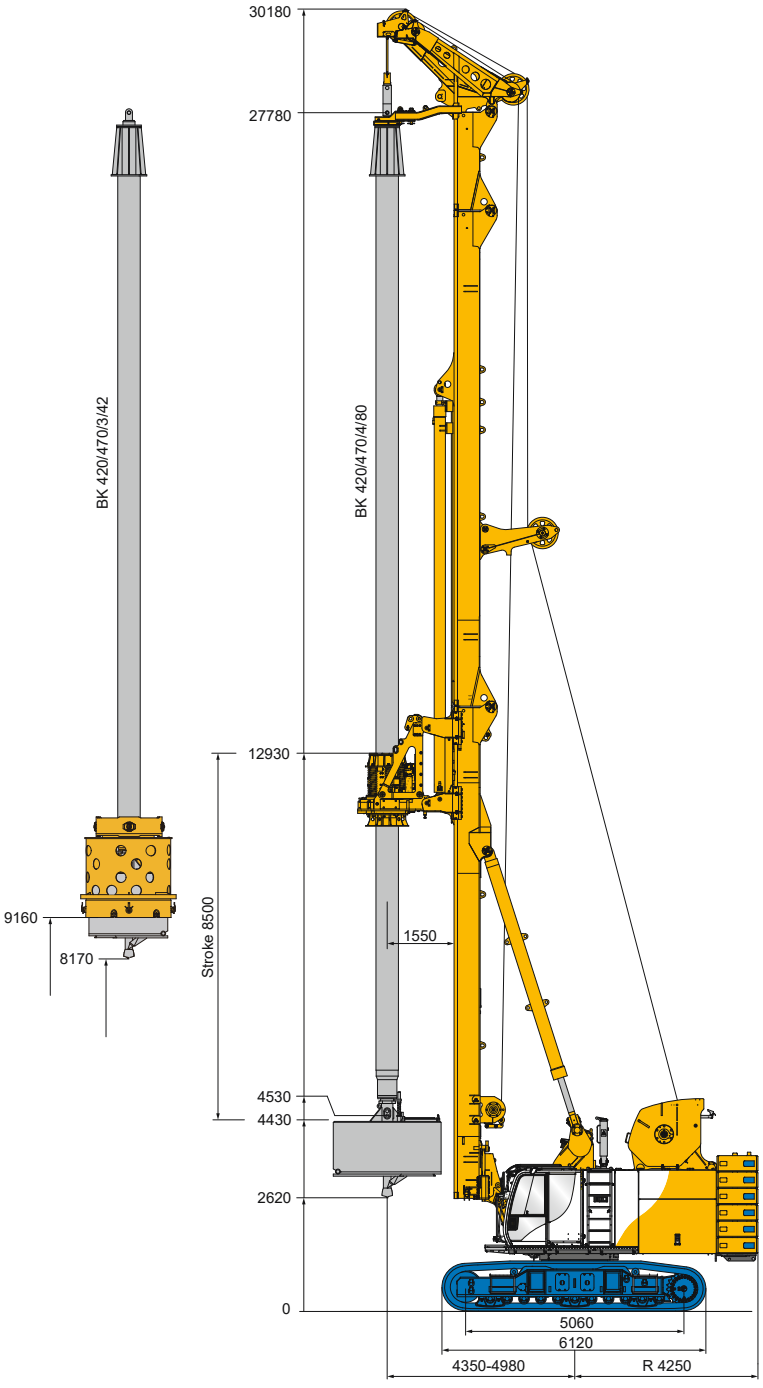
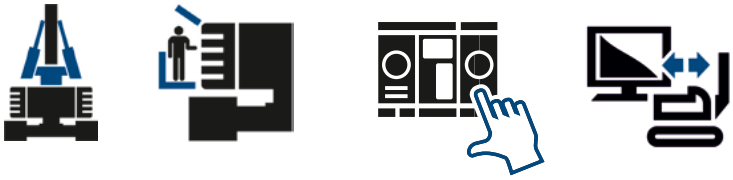




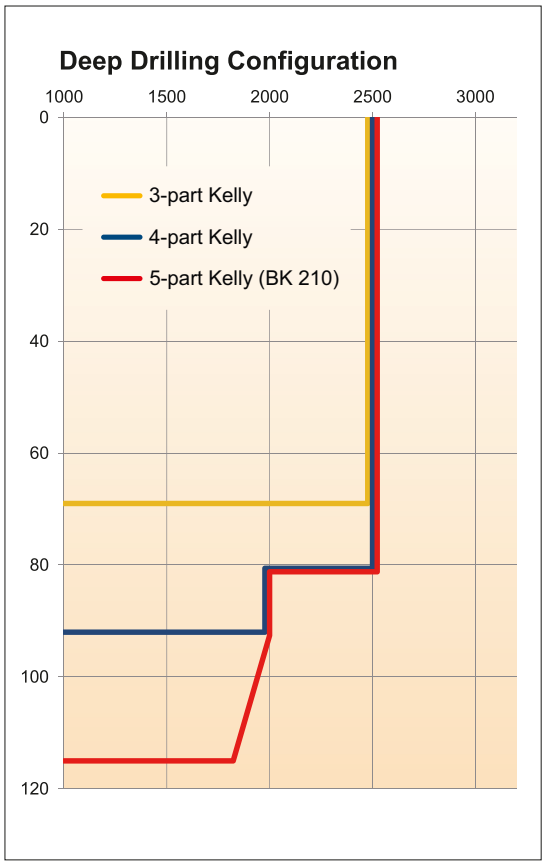


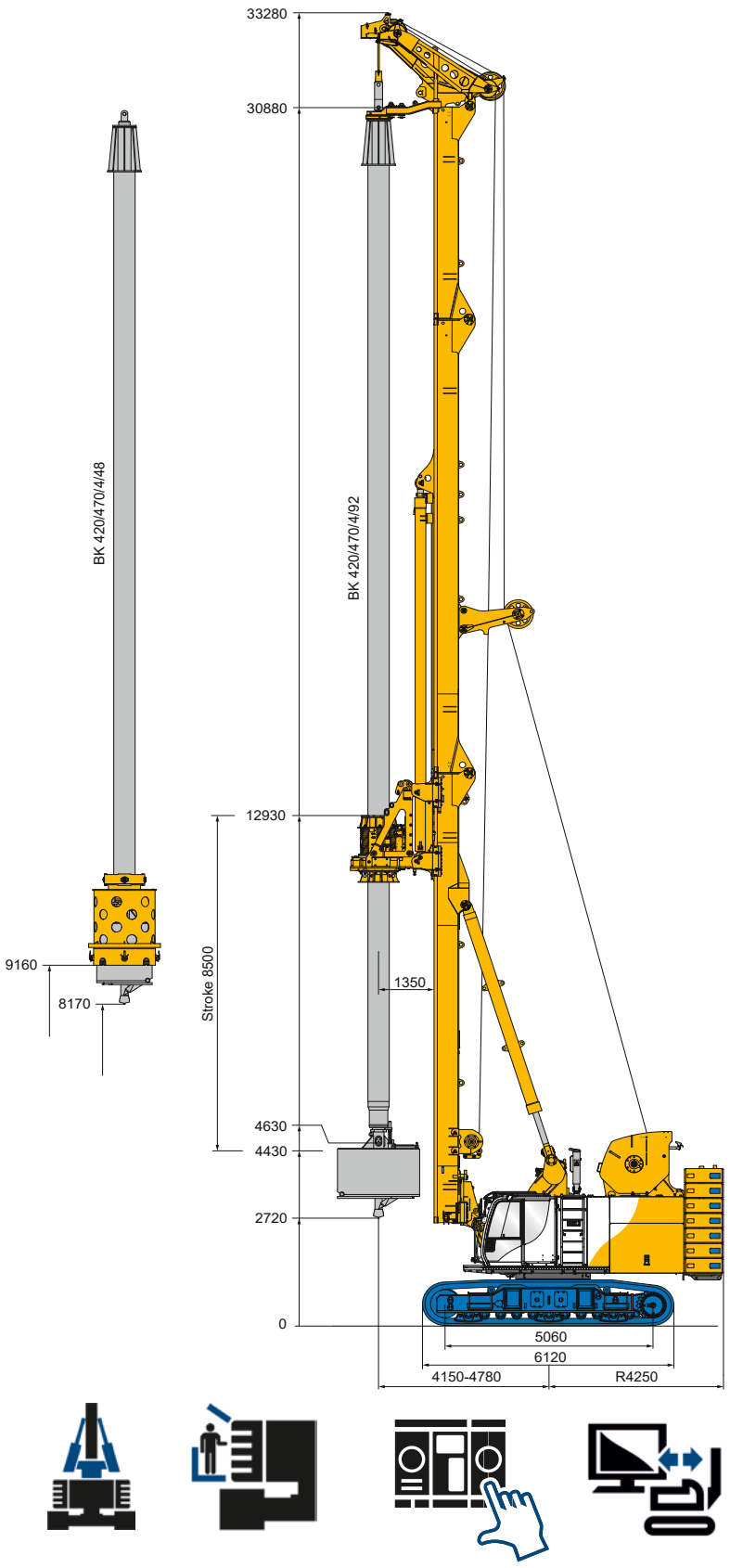
Application – Deep Drilling

Performance data	
Drill axis	1,350 mm
Counterweight	34.3 t
Mast extension	5.4 m
Operating weight*	127 t
Machine height	33.3 m
Horizontal reach	630 mm
Cylinder stroke	8,500 mm
Max. Kelly bar length (“A”)	26.25 m
Max. depth x diameter	80 x 2.5 m
	92 x 2.0 m
	115 x 1.5 m

* Weight w/o drill string

Energy-Efficient PowerEEP





Applications – simply adaptable

Cased Kelly Drilling with Casing Oscillator (BV)

To enable the BG 36 on BT 90 for BV-usage, an **add-on kit** is available. It consists of:
- Hydraulic installation set
- Software update

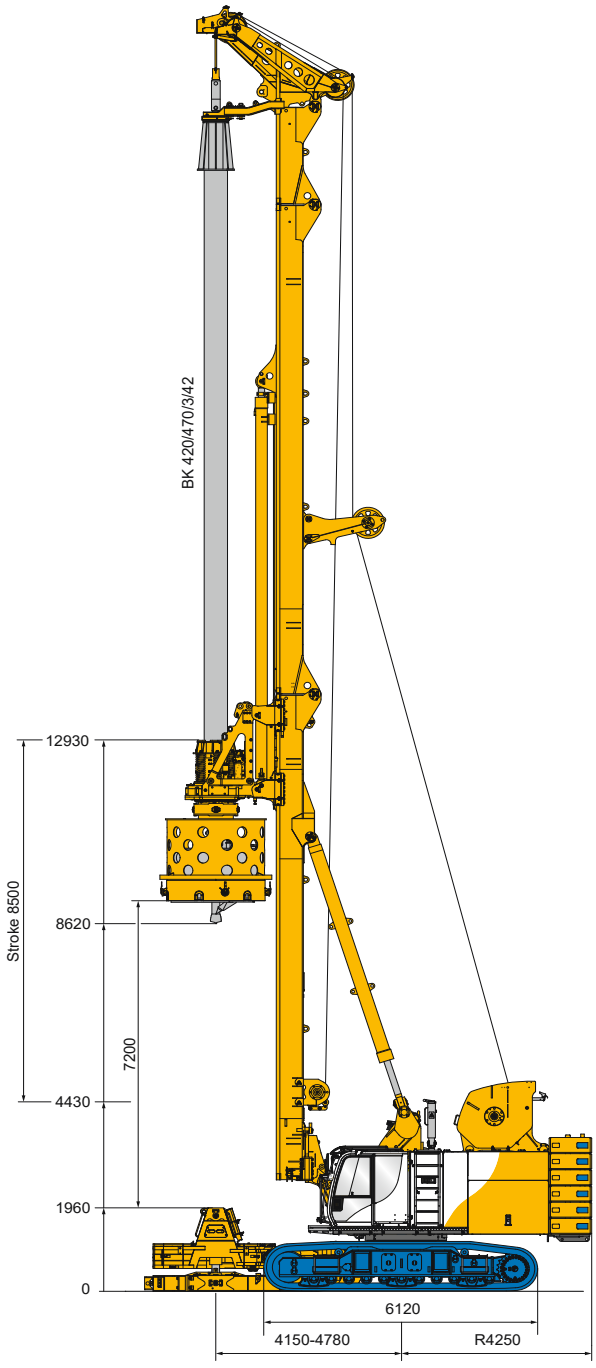
The BG 36 on BT 90 can work together with a BV 1500 or BV 2000 having this add-on installed.

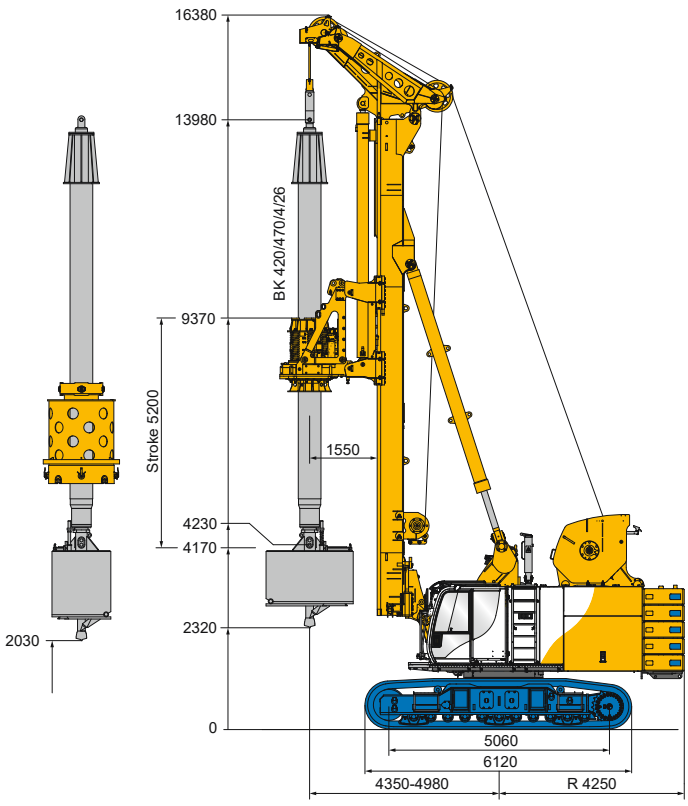
Low-headroom Operation

The BG 36 on BT 90 can be converted to low-headroom at any time when the jobsite requires it.
The **conversion kit** consists of:
- low-headroom crowd cylinder
- low-headroom main rope
- low-headroom auxiliary rope

Performance data		
Drill axis		1,350 mm or 1,550 mm
Counterweight		24.5 t
Operating weight*		111 t
Machine height		16.4 m
Horizontal reach		630 mm
Cylinder stroke		5,200 mm
Max. Kelly bar length (“A”)		9.75 m
Max. depth	3-part Kelly	19.5 m
	4-part Kelly	26 m
	5-part Kelly (BK 210)	32.5 m

* Weight w/o drill string

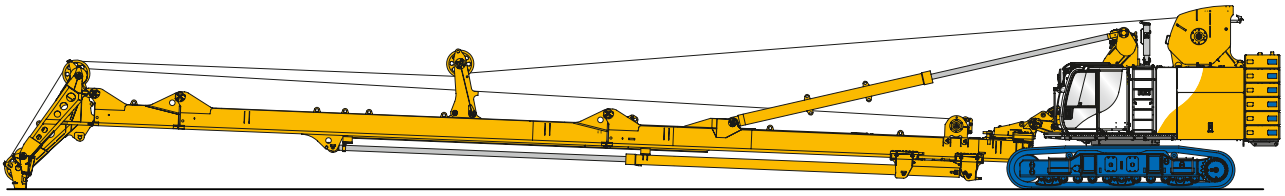


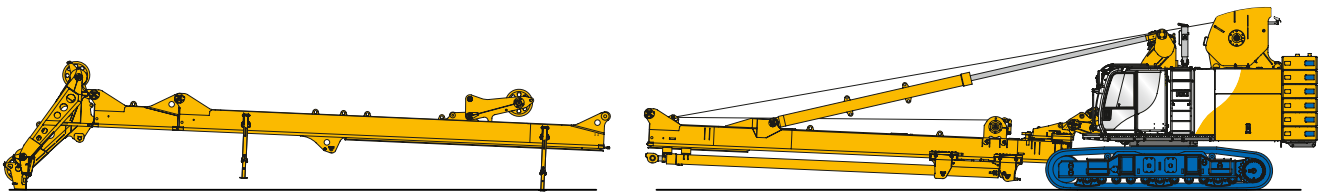


Transport Dimensions and Weights

G = Weight
B = Width, overall

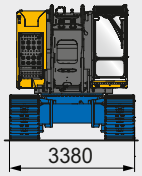
Weights shown are approximate values; optional equipment may change the overall weight and dimensions.

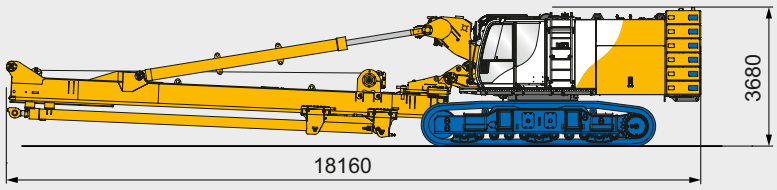




Transport without upper mast section and winch, with 29.4 t counterweight

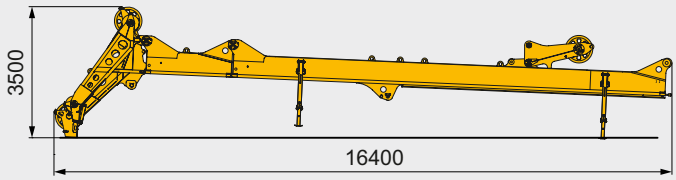
G = 100.0 t



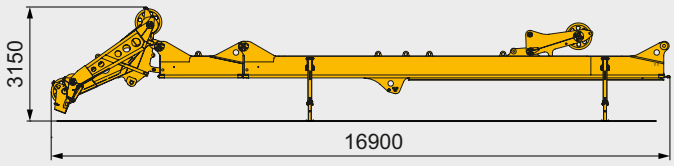


Upper mast section with 2.3 m mast extension and mast head

G = 7.7 t
B = 1,900 mm

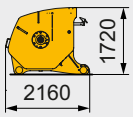


Telescopic transport supports
Mast head tilted



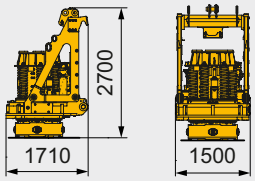
Main winch

G = 7.6 t
B = 2,400 mm



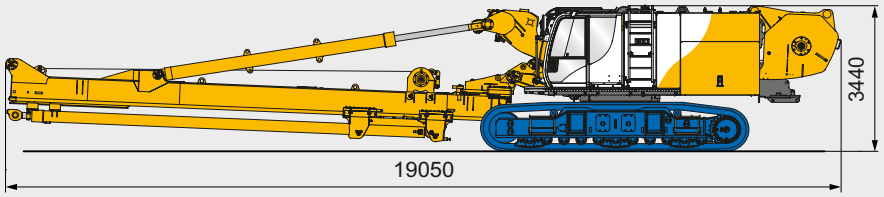
Rotary drive KDK

G = 6.5 t



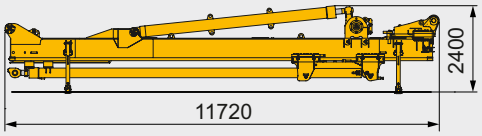
Transport without counterweights

G = 77.0 t



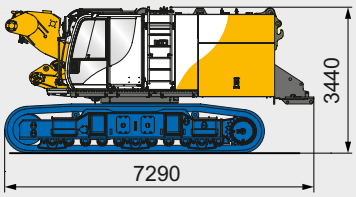
Lower mast section

G = 19.0 t
B = 2,300 mm



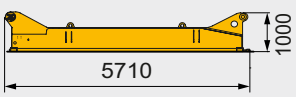
Base machine

G = 51.0 t
B = 3,380 mm



Mast extension (optional)

G = 2.0 t
B = 900 mm



Counterweight

G = 6 x 4.9 t
B = 3,000 mm

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905.924.2 03/2025