

BAUER BG 45

Rotary Drilling Rig

Base Carrier BS 95

PremiumLine



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

The BG PremiumLine 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 PremiumLine 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

The H-model line

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



**BG 23 H
BT 65**



**BG 23 H
BT 75**

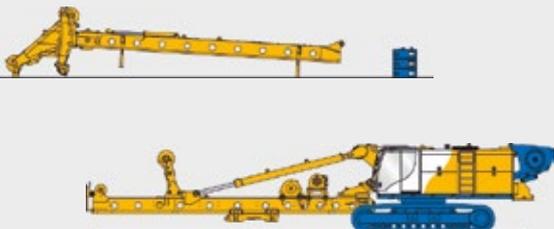


**BG 28 H
BT 75**

The V-model line

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



**BG 28
BS 80**



**BG 33
BT 85**



**BG 36
BS 95**



**BG 45
BS 95**

The Rotary Drilling Rig BG 45 PremiumLine (BS 95)

Max. drilling diameter: 3,700 mm
 Max. drilling depth: 100.0 m
 Torque (nominal): 461 kNm
 Max. height: 42.0 m
 Engine: CAT C 15 – Stage III A/Tier 3
 – Stage V/Tier 4 final
 433 kW @ 1,850 U/min



**BG 28 H
BT 85**



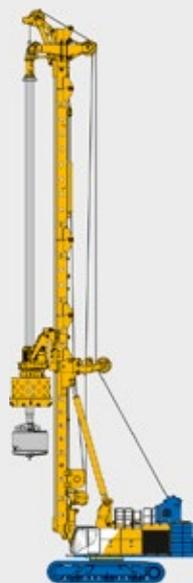
**BG 33 H
BT 85**



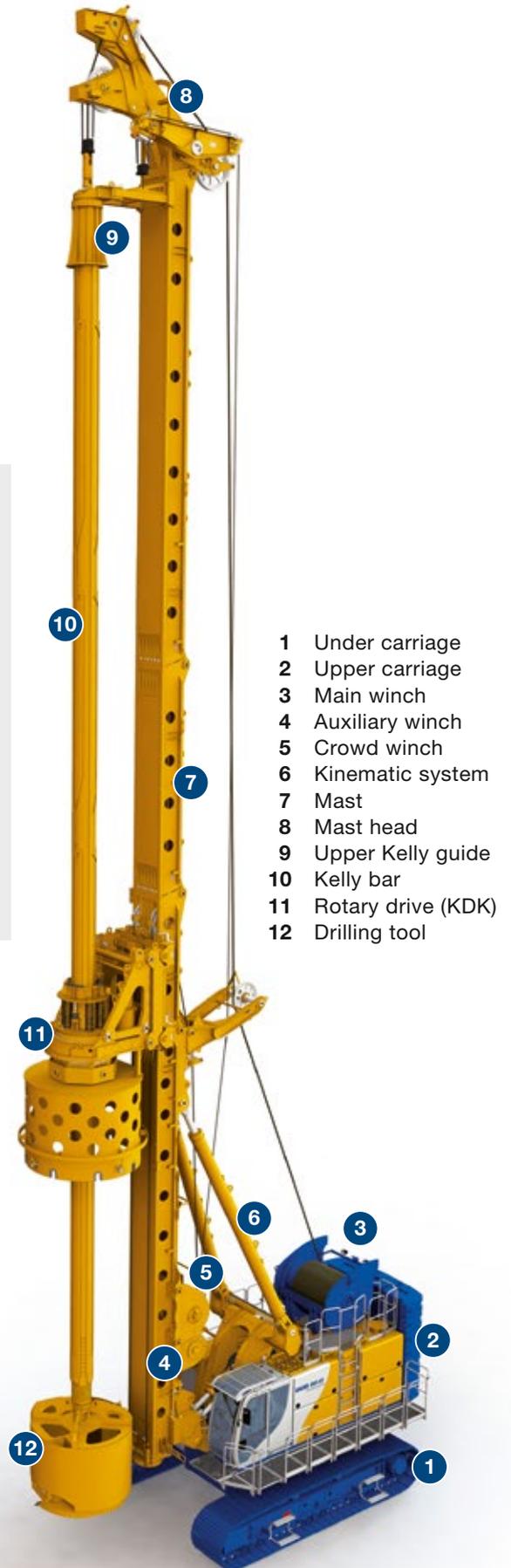
**BG 36 H
BS 95**



**BG 55
BS 115**



**BG 72
BT 180**



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

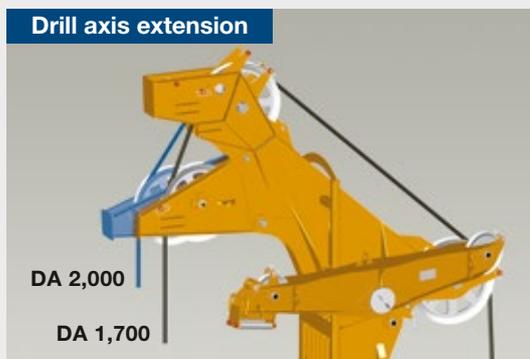
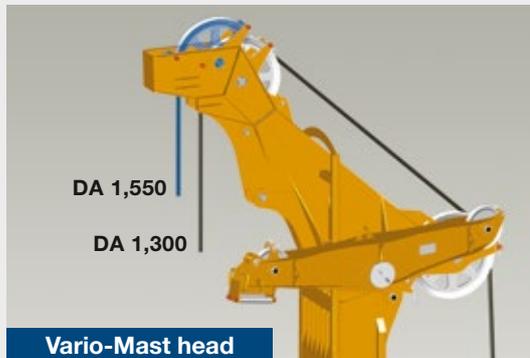
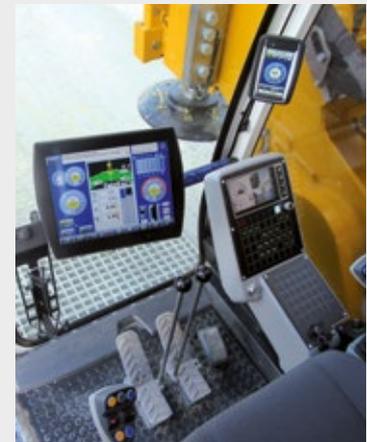


Remote control for rigging the machine

- The remote control can be used to perform numerous rigging functions outside the danger zone, such as moving the drilling rig, telescoping the under carriage, etc.
 - Operation within sight of the controlled rigging functions
 - Rugged and compact wireless remote control Multi with LCD screen
 - Lockable storage box for the remote control can be accessed from the ground

Modern, ergonomic operator's cab

- FOPS compliant with additional protective roof guard
- Premium operator seat, air-sprung and heatable
- Joystick controls with high functionality
- B-Drive combines adjustable potentiometer values on one display



Flexible mast concept

- Vario-mast head
 - Mast head for drill axis distance 1,300 / 1,550 mm, expandable to 1,700 / 2,000 mm
 - Increased stroke for Kelly bars when using an upper Kelly guide
- Vario-crowd winch system
 - Transport possible with built-in crowd ropes (Kelly method)
 - Reduced headroom version, min. rig height of 18.6 m possible by means of integrated Vario-mast section
- Mast extension 3 m or 5 m
 - Mast erection without auxiliary crane
 - Mast extensions can be combined with all drill axes
- Mast extension 5 + 5 m and 5 + 5 + 3 m for CFA, FDP drilling as well as SCM mixing



- 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



Safe and easy transport

- Mobilization kit with hydraulically operated pin connection for fast and save demounting of lower mast section
- Hydraulic locking of support trestle
- Activated by remote control multi

Main winch (on upper carriage)

- Single layer winch for minimized rope wear
- Constant line pull
- Service-friendly winch position
- Swing down mechanism for transport



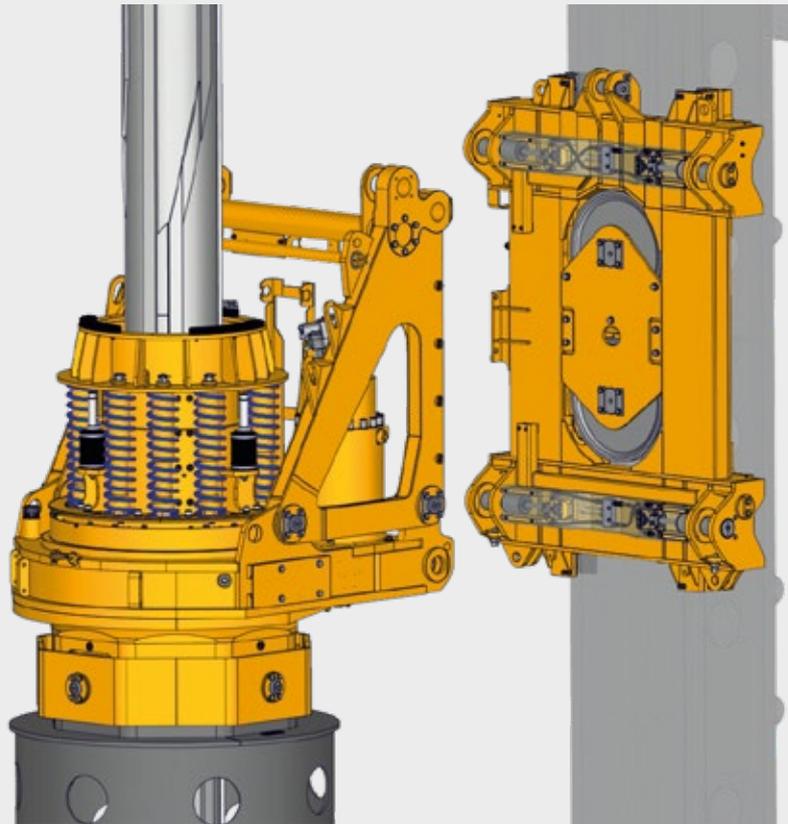
Safety equipment

- Guardrails on upper level (foldable for transport)
- Walking platform with handrail (foldable for transport)
- Upward folding service doors
- Closed circuit cameras for rear area and main winch surveillance with display on integrated screen in operator's cab

Powerful engine CAT C 15

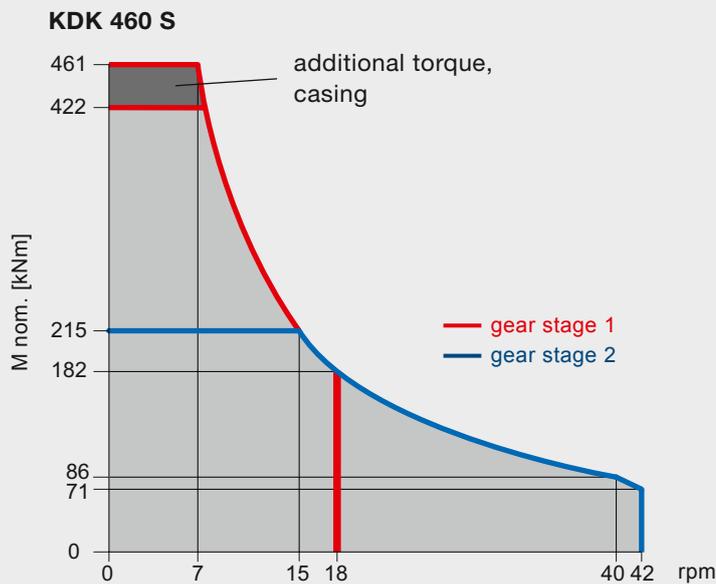
- For Exhaust Emission Standards Stage III A / Tier 3 or Stage V / Tier 4 final
- Diesel particulate filter in Exhaust Emission Standard Stage V / Tier 4 final
- Low noise emission
- Worldwide CAT service partners
- AdBlue level indicator is standard equipment for exhaust emission standard Stage V / Tier 4 final





Hydraulically operated pin connection on the crowd sledge

- Pin connection controlled via the remote control
- Simple and secure attachment of the rotary drive, no working at heights unsecured
- Various modes of operation, partially selectable speed of rotation and torque



* Not to scale



Kelly Drilling



Cased Kelly Drilling
Installation with BTM



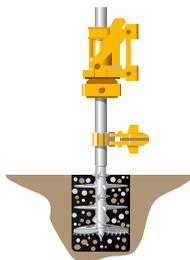
Cased Kelly Drilling
Installation with Oscillator



CFA
Continuous Flight Auger Method



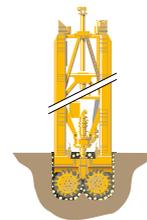
CCFA
Cased CFA system
with KDK + BTM /
Double Rotary System



SCM
Single Column Mixing



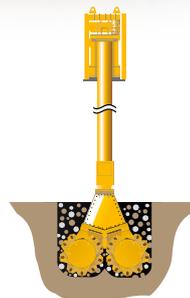
FDP
Full Displacement Piling
(Standard or Lost Bit)



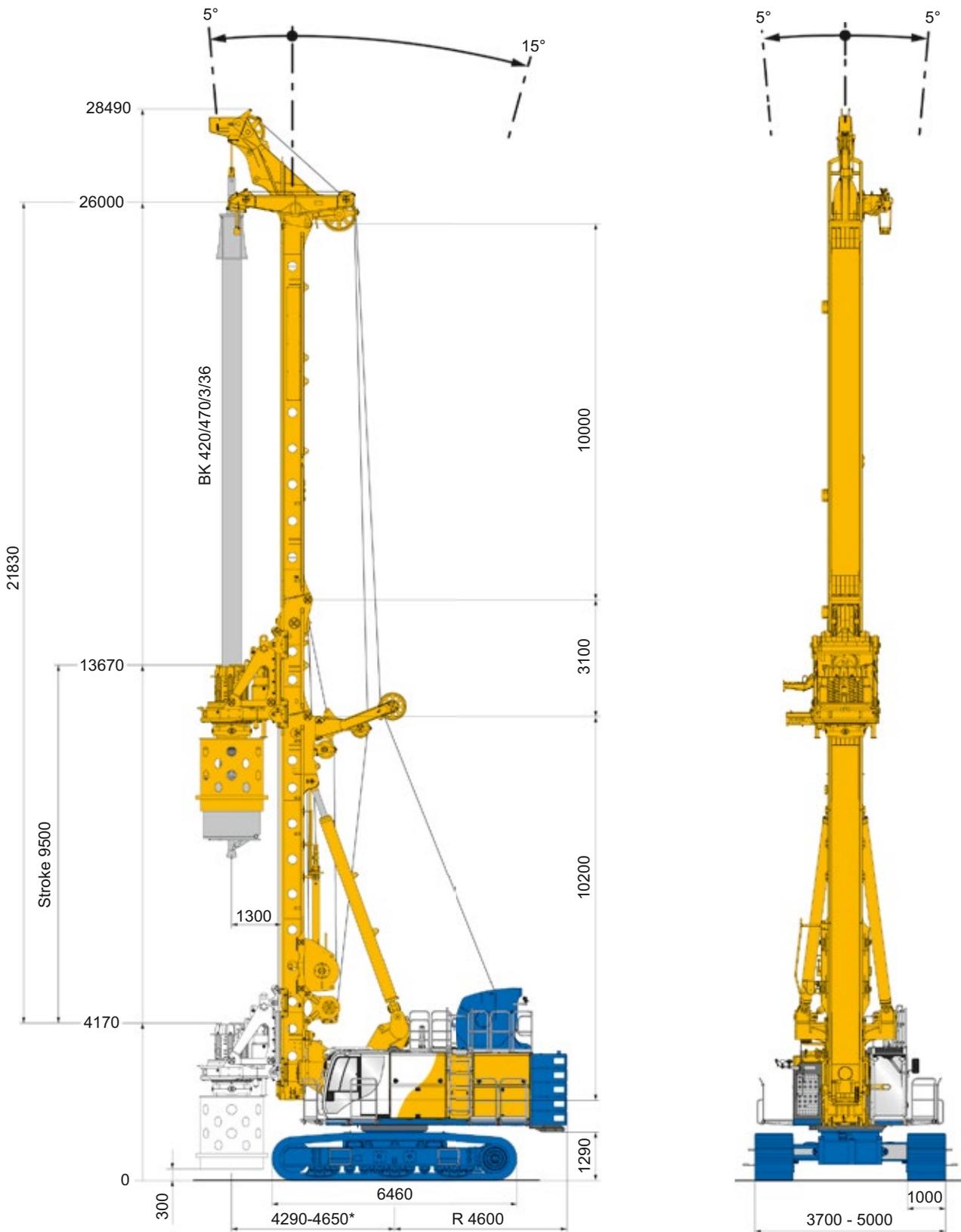
BC
Trench Cutter



TR
Vibrator



CSM
Cutter Soil Mixing



Operating weight 150 t
(as shown)

* depending on equipment

Rotary drive		KDK 460 S	
Torque casing (nominal) at 350 bar		461 kNm	
Torque drilling (nominal) at 350 bar		422 kNm	
Speed of rotation (max.)		42 rpm	
Crowd winch system			
Max. stroke of sledge		32,500 mm	
Max. stroke of Kelly		13,500 mm	
Crowd force push and pull, effective / nominal		464 / 595 kN	
Rope diameter		28 mm	
Speed (down/up)		10.0 m/min	
Fast speed (down/up)		30.0 m/min	
Main winch		single-layer	
Winch classification		M6 / L3 / T5	
Line pull (1st layer) effective / nominal		380 / 480 kN	
Rope diameter		40 mm	
Line speed (max.)		63 m/min	
Auxiliary winch (selectable)			
Winch classification		M6 / L3 / T5	
Line pull (1st layer) effective / nominal	100 / 127 kN	140 / 177 kN	
Rope diameter	20 mm	22 mm	
Line speed (max.)		55 m/min	
Base carrier (EEP)		BS 95	
Engine		CAT C 15	
Rated output ISO 3046-1		433 kW @ 1,850 rpm	
Exhaust Emission Standard acc. to EEC 97/68EC EPA/CARB	Stage III A Tier 3	Stage V Tier 4 final	
Diesel tank capacity / AdBlue tank	1,000 / – l	840 / 35 l	
Sound pressure level in cabin (EN 16228, Annex B)		L _{PA} 80 dB(A)	
Sound power level (2000/14/EC and EN 16228, Annex B)		L _{WA} 112 dB(A)	
Hydraulic pressure		350 bar	
Hydraulic oil tank capacity		1,000 l	
Flow rates		2 x 430 + 1 x 565 + 1 x 215 l/min	
Under carriage		UW 130	
Crawler type		B8B	
Traction force effective / nominal		880 / 1,030 kN	
Track shoes		1,000 mm	

Base carrier BS 95, Fig. A

Standard

- Removable counterweight elements
- Removable crawler side frames
- Protective roof guard
- Radio with MP3, USB and Bluetooth c/w hands-free kit
- Platforms with handrail (on both sides and at the cabin)
- Guardrails upper level (foldable for transport)
- Cameras for rear area and main winch surveillance
- Central lubrication system
- Premium comfort seat
- Electric refueling pump
- LED spotlights
- Climatronic
- Hydraulic system with quick-release hydraulic couplers (socket bank)

Optional

- Counterweight variably adjustable
- Walking platform with handrail (continuous on both sides, at cabin level, optional foldable for transport, **Fig. A**)
- Compressor 1,000 l/min
- Electric generator 13 kVA
- Bio-degradable hydraulic oil
- Arctic kit
- Hydraulic system with quick-release hydraulic couplers (under carriage)
- Cab space heater
- Flat track shoes
- Additional camera (at customer-specific location)
- Front screen guard
- Weather protection
- Remote control basic, **Fig. C**
- Remote control multi

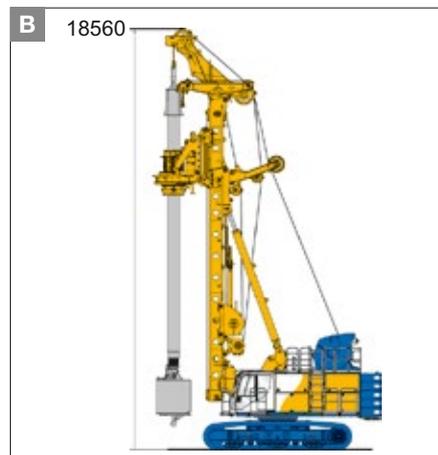
Drilling rig attachment

Standard

- Sturdy V-type mast kinematic system
- Main winch with hydraulically operated freewheeling
- Swivel for main rope
- Pivoted anchor points for main and auxiliary rope
- Boom with hydraulic cylinders for vertical and horizontal mast alignment
- Hydraulic locking for support trestle
- Flexible mast concept (Vario-mast, Vario-mast head)
- Reduced headroom version possible by means of Vario-mast section, **Fig. B**

Optional

- Upper Kelly guide
- Extension of drill axis to 1,550 / 1,700 / 2,000 mm
- Mast support unit
- Mast extension 3 m / 5 m (Kelly method)
- Mast extension 5 + 5 m / 5 + 5 + 3 m (CFA, FDP, SCM method)
- Swivel for auxiliary rope
- Attachment of casing oscillator (up to BV 2000), **Fig. D**
 - Powered by on-board hydraulics of base machine
 - Controlled from operator's cab
 - Weight of drill rig can be activated through mechanical fixing
- Attachment of casing oscillator possible up to 2,500 mm drilling diameter
- Attachment of automatic casing drive adapter
- Concrete line
- Air line attachment
- Mobilization kit
- Hydraulically operated pin connection on the crowd sledge



Rotary drive

Standard

- Rotary drive KDK 460 S (multi-gear)
- Selectable modes of operation
- Kelly equipment for outer Kelly tube 470 mm
- Integrated Kelly damping system
- Exchangeable Kelly drive adapter
- Exchangeable Kelly drive keys
- Cardanic joint
- Quick-release hydraulic couplers
- Transport supports
- Lifting gear

Optional

- Kelly equipment for outer Kelly tube 559 mm
- Torque multiplier BTM 720 K
 - Torque 600 kNm
 - Increasing of torque for casing installation
 - Easy attachment
 - Separate sledge
 - Connection to rotary drive with cardanic joint

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 for main and auxiliary winch
- Auxiliary winch with hydraulic load sensing
- Crowd stroke monitoring
- Crowd speed control
- Speed measuring control for rotary drive (KDK)
- Hold-back control
- Casing length monitoring

Optional

- Electronic load sensing for auxiliary winch
- Recording of concrete pressure and volume for Single-Pass processes
- Software modules for further applications
- Adaptive Kelly speed assistant



B-Tronic

The BAUER B-Tronic system allows completion of construction 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



B-Drive

The B-Drive is a central operating and visualization system

- B-Drive combines adjustable potentiometer values on one display
- Ergonomic positioning of the display on the right column of the operator's cab

Tablet

The tablet is the multi-functional tool for the Bauer machine

- Online access to the customer portal, handbooks, equipment management systems and much more
- Standard internet connection via the DTR module, which is located in the machine
- The operator's screen can be mirrored live on the tablet to track the operating process



Device networking

DTR module

- The DTR module allows equipment and production data to be made available to a wide variety of users

WEB-BGM

- WEB-BGM is a software used to retrieve equipment data and establish the locations of various machines, even if you are not on site

B-Report

- Standardized reports for the documentation of drilling progress and verification of performance and quality

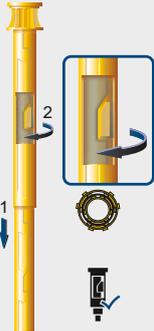


Adaptive Kelly speed assistant

The assistant raises and lowers the Kelly bar safely and quickly and allows an easy operation.

The automatic control of the speed of the main winch reduces the speed at the transition points of the Kelly sections.

This provides maximum safety with minimum wear. The permanent monitoring of the parameters prevents a locked Kelly bar from being raised or lowered accidentally and thus causing damage.



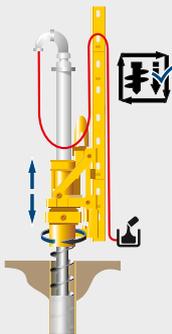
Kelly visualization

Display of the locking recesses, as well as representation of the controlled extension and retraction of the Kelly bar on the B-Tronic system. The rapid approach of the locking position results in a considerably enhanced drilling performance. In addition, the level of wear that the Kelly bar and drive keys are subject to is significantly reduced.



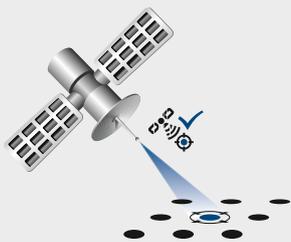
Kelly drilling assistant

Saves the current crowd speed and the speed of the rotary drive. It enhances drilling performance with simultaneous hands-free operation. Drilling parameters can be adjusted during the automated drilling procedure.



Automatic drilling and extraction control for Single-Pass processes

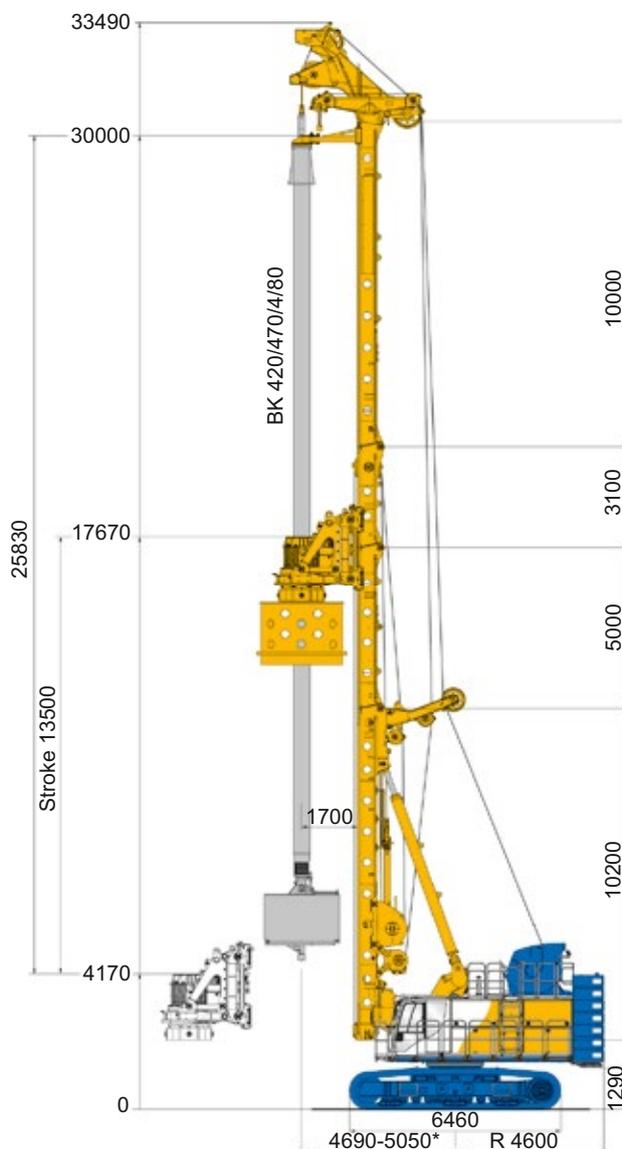
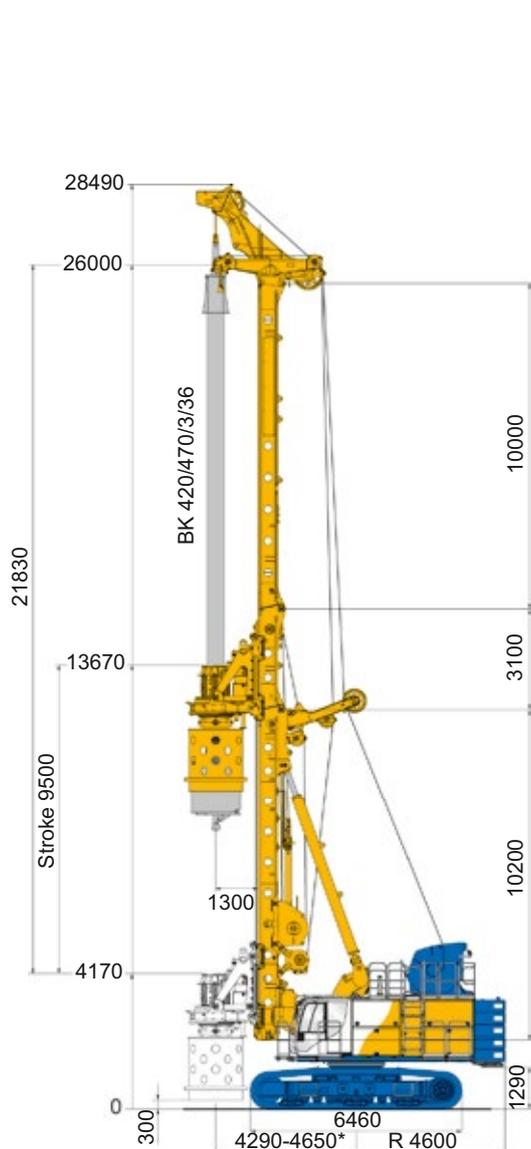
The system controls the drilling and/or extraction speed of the crowd system and enables hands-free operation. This ensures the production of a high-quality pile while simultaneously minimizing the amount of concrete.



Satellite-based positioning

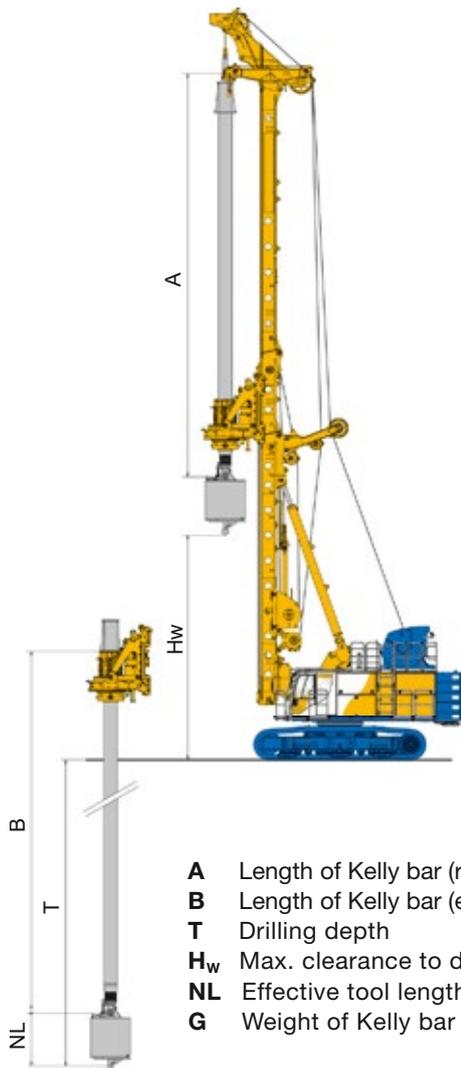
The BAUER Assistant Positioning System (B-APS) allows the position of a bored pile to be located extremely accurately. Documentation is provided for the nominal and actual coordinates, as well as the corresponding accuracy of each bored pile. Manual marking of the piles is no longer required.

Numerous other assistance systems are available in our portfolio.



	Basic version		Upgraded version	
Mast extension	without		5 m	
Upper Kelly guide	without		with	
Drilling axis	1,300 mm	1,550 mm	1,700 mm	2,000 mm
Max. drilling diameter uncased	2,300 mm	2,800 mm	3,100 mm	3,700 mm
Max. drilling diameter cased	2,000 mm	2,500 mm	2,800 mm	3,400 mm
Operating weight approx. with Kelly BK 420/470/... with bucket with counterweight *	150 t ...3/36 Ø 1,500 mm 19.7 t	180 t ...4/94 Ø 1,800 mm 29.4 t	180 t ...4/80 Ø 2,320 mm 29.4 t	185 t ...4/80 Ø 3,500 mm 34.3 t

* depending on equipment



- A** Length of Kelly bar (retracted)
- B** Length of Kelly bar (extended, unlocked)
- T** Drilling depth
- H_w** Max. clearance to drilling tool
- NL** Effective tool length
- G** Weight of Kelly bar

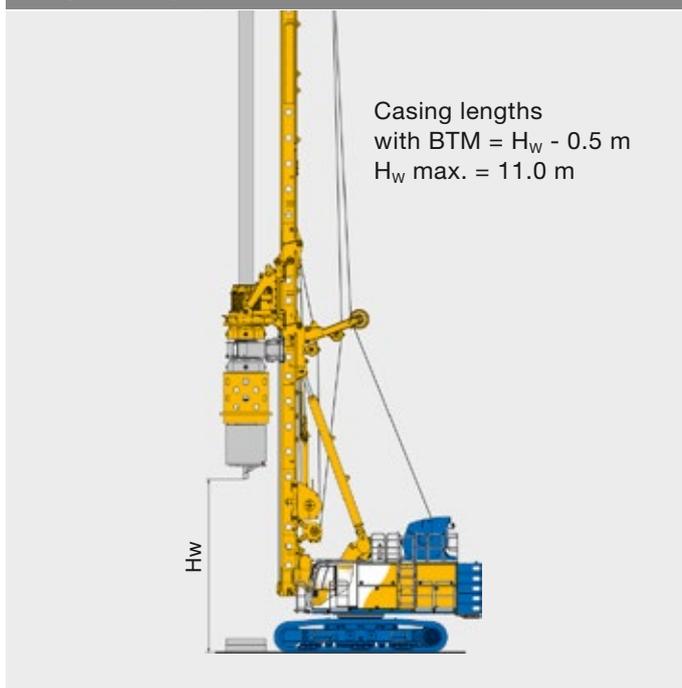
Drilling depth – uncased Kelly drilling

			DA 1,300 mm		DA 1,550 mm		
3-part Kelly bar	A (m)	B (m)	G (kg)	H _w (m)	T (m)	H _w (m)	T (m)
BK420/470/3/36	15.2	38.2	9,400	8.5	35.9	12.7	35.9
BK420/470/3/42	17.2	44.2	10,500	6.5	41.9	11.5	41.9
BK420/470/3/48	19.2	50.2	11,600	4.5	47.9	9.5	47.9
BK420/470/3/52	20.6	54.2	12,300	3.1	51.9	8.2	51.9
4-part Kelly bar							
BK420/470/4/56	17.2	57.8	14,400	6.5	55.5	11.5	55.5
BK420/470/4/64	19.2	65.8	16,000	4.5	63.5	9.5	63.5
BK420/470/4/72	21.2	73.8	17,600	2.5	71.5	7.5	71.5
BK420/470/4/80	23.2	81.8	19,200	–	–	5.5	79.5
BK420/470/4/84	24.2	85.8	20,000	–	–	4.5	83.5
BK420/470/4/88	25.2	89.8	20,800	–	–	3.5	87.5
BK420/470/4/92	26.2	93.8	21,600	–	–	2.5	91.5
BK420/470/4/94	26.7	95.8	22,100	–	–	2.2	93.5
5-part Kelly bar*							
BK210/470/5/80	19.0	82.6	15,300	4.8	80.3	10.0	80.3
BK210/470/5/90	21.0	92.6	16,800	2.8	90.3	8.0	90.3
BK210/470/5/95	22.0	97.6	17,600	–	–	7.0	95.3

Drilling data as shown are based on tool length NL = 1.9 m, minimum horizontal mast reach and using Bauer attachment. Drilling depth is increased by 0.39 m when using maximum horizontal mast reach.

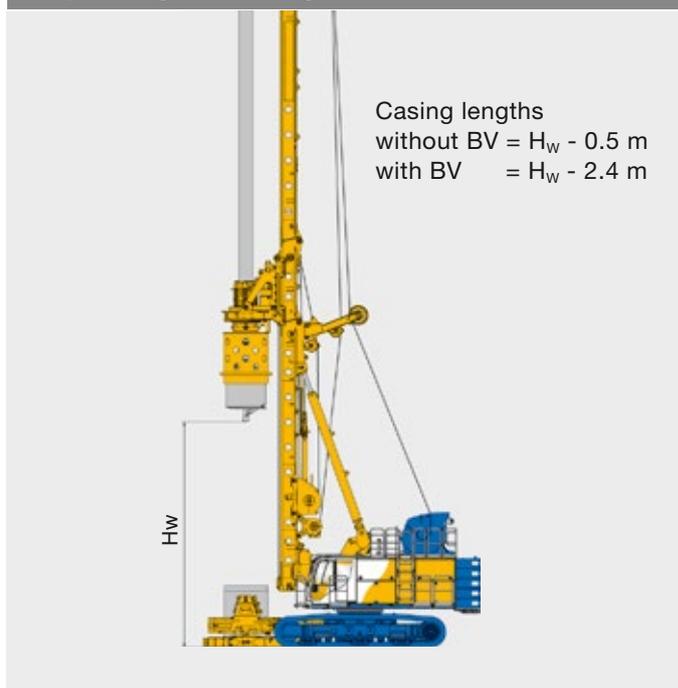
Further drilling depths, diameters and other Kelly types on request.

Torque multiplier BTM 720 K



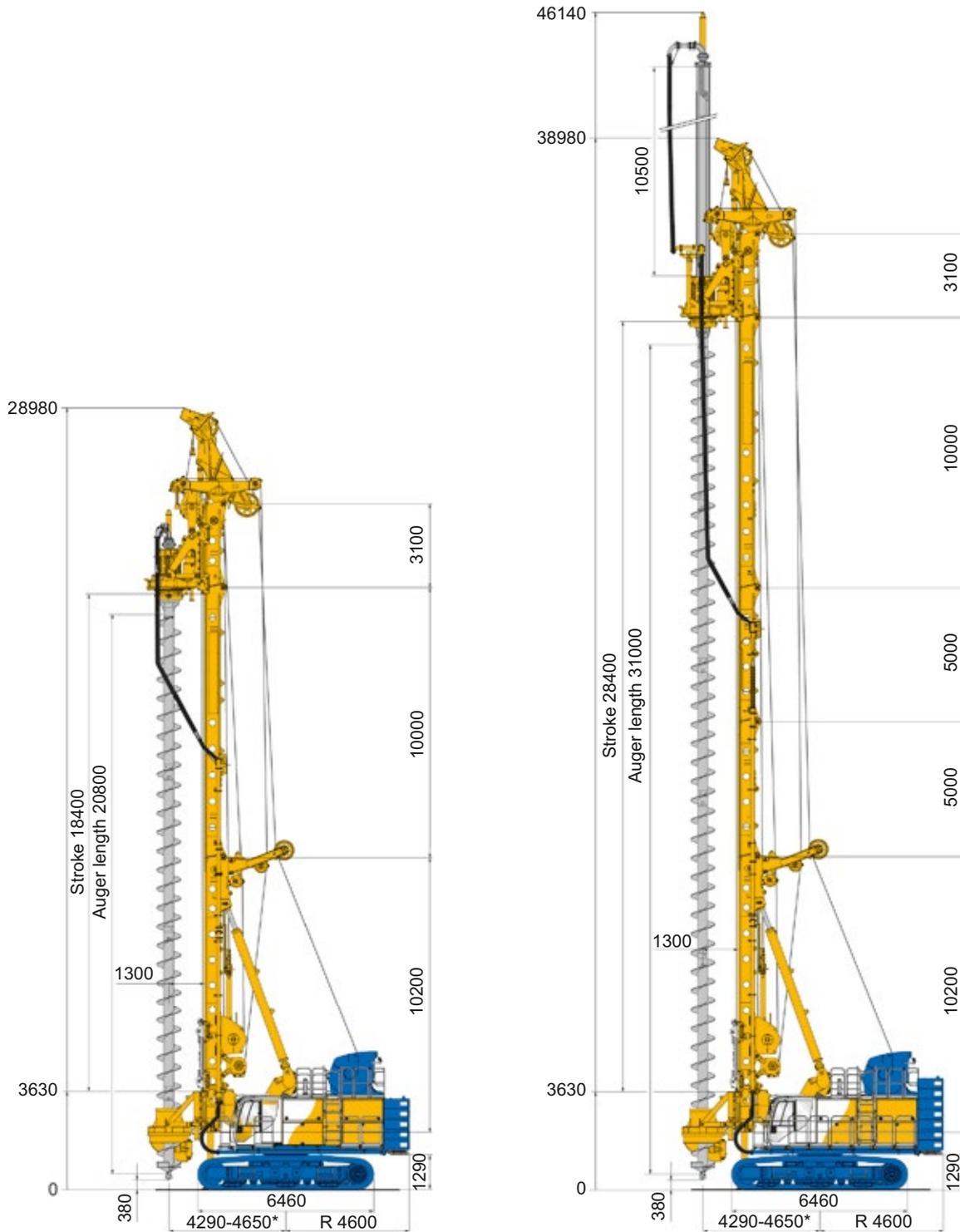
Casing lengths with BTM = $H_w - 0.5$ m
 H_w max. = 11.0 m

Kelly drilling with casing oscillator BV 2000



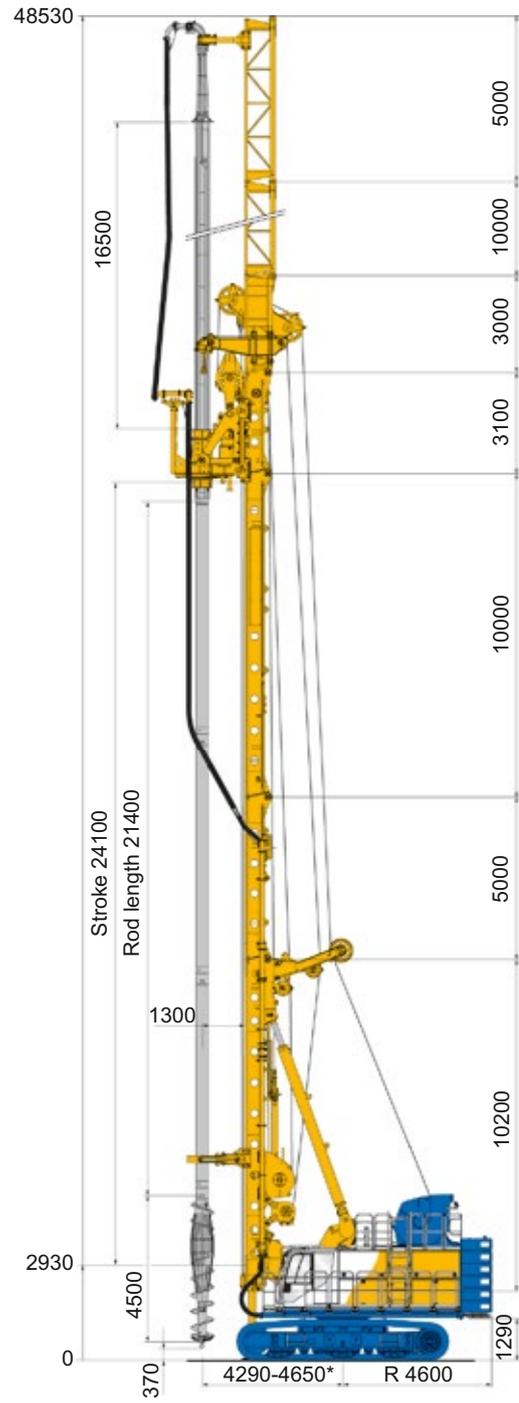
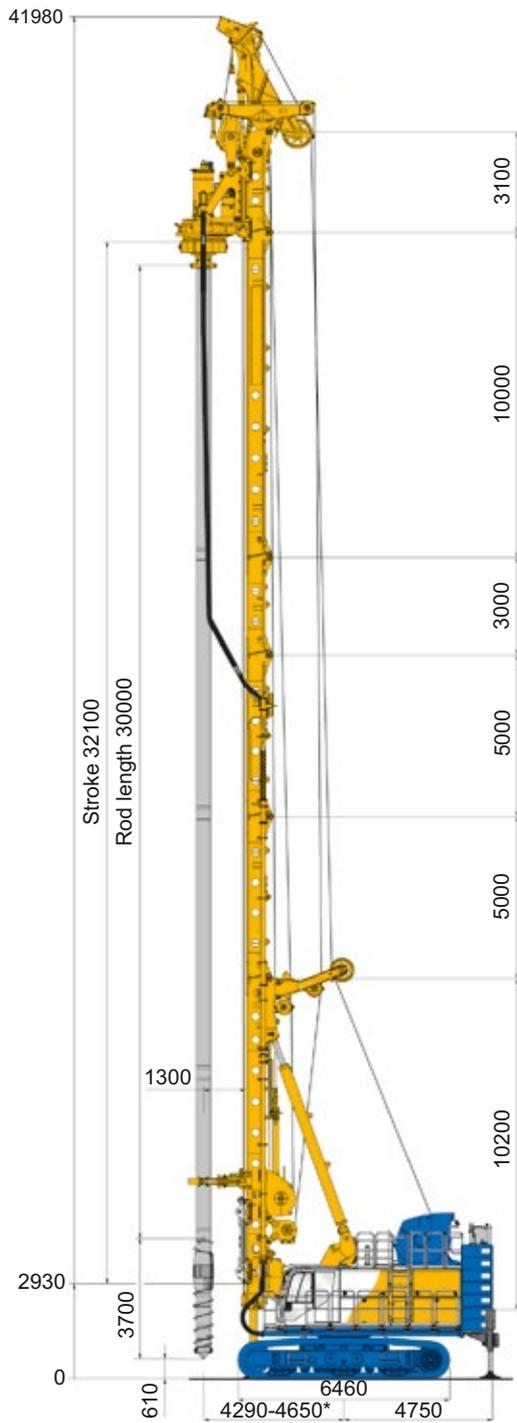
Casing lengths without BV = $H_w - 0.5$ m
 with BV = $H_w - 2.4$ m

* Reduction of torque to 210 kNm for Kelly type BK 210



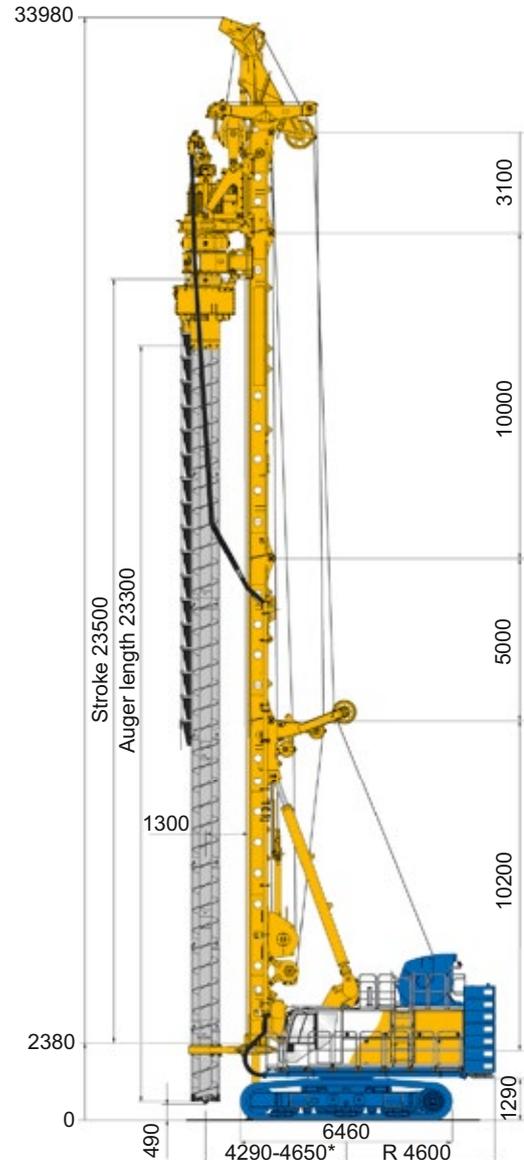
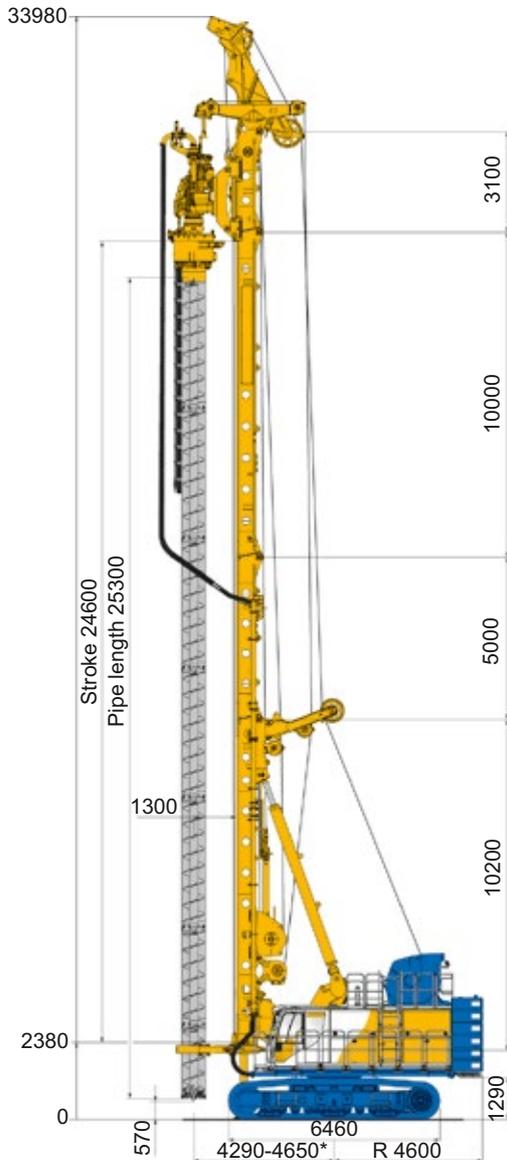
	Basic version	Upgraded version
Kelly extension	without	10.5 m
Max. drilling depth (with auger cleaner)	18.0 m	38.5 m
Max. drilling diameter	1,200 mm	1,200 mm
Max. extraction force with main and crowd winch (effective)	1,160 kN	1,160 kN
Mast extension	without	5 + 5 m
Counterweight *	19.7 t	34.3 t

* depending on equipment



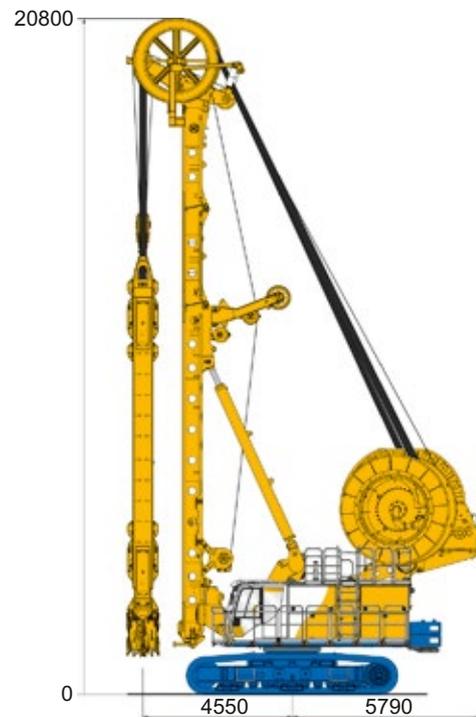
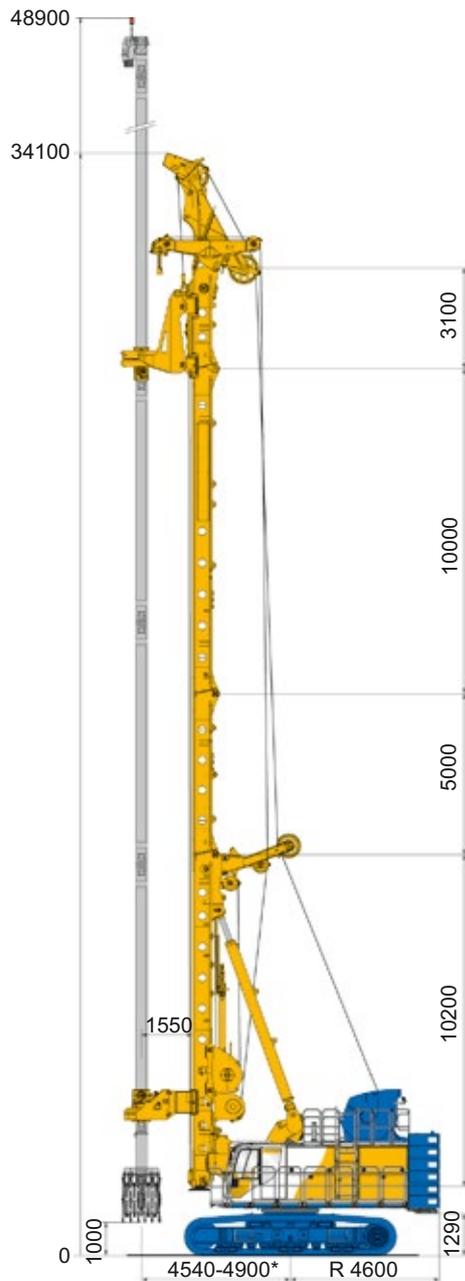
	FDP Lost-Bit *	FDP with lattice mast extension
Kelly extension	not applicable	16.5 m
Max. drilling depth	31.5 m	40.2 m
Max. drilling diameter	710 mm	710 mm
Max. extraction force with main and crowd winch (effective)	1,160 kN	1,160 kN
Mast extension	5 + 5 + 3 m	5 m
Counterweight **	34.3 t	29.4 t

* Optional: Rear support unit, high-pressure cleaner with water tank
 ** depending on equipment



	Upgraded version with DKS 100 / 200	Upgraded version with KDK / BTM 400	
Max. drilling depth	23.6 m	22.9 m	
Max. drilling diameter	750 mm	880 mm	1,000 mm
Max. extraction force with main and crowd winch (effective)	530 kN	1,160 kN	
Mast extension	5 m	5 m	
Counterweight *	29.4 t	29.4 t	34.3 t
Spoil discharge system	Optional	Standard	
Max. torque:			
Auger (right-hand rotation)	100 kNm	200 kNm	
Casing (left-hand rotation)	200 kNm	400 kNm	

* depending on equipment



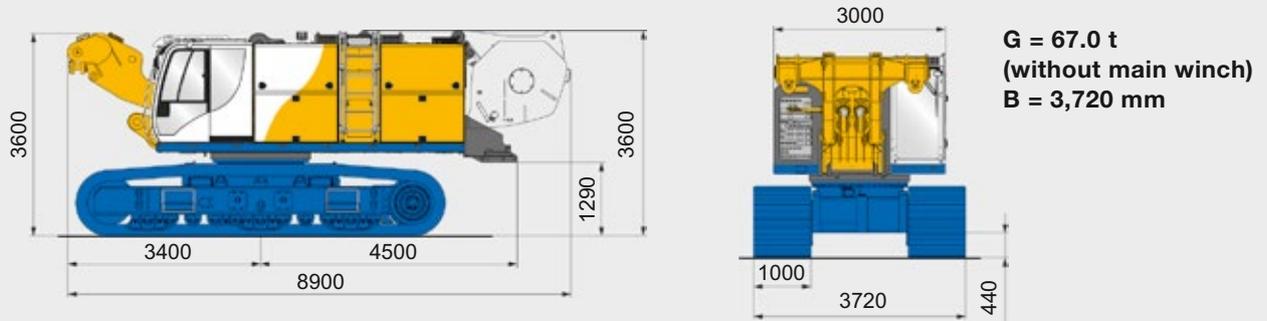
	CSM – Cutter Soil Mixing	
Cutting/Mixing head	BCM 5	BCM 10
Panel width	1,000 mm	1,200 mm
Panel length	2,400 mm	2,800 mm
Max. panel depth	42.8 m	
Counterweight	29.4 t	

	Trench Cutter System	
Trench cutter	BC 35 / BC 40	
Max. cutting width	1,200 mm	
Max. cutting depth	48 m	100 m
Hose handling system	HSS 48	HDS 100

G = Weight
B = Width, overall

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

Base carrier



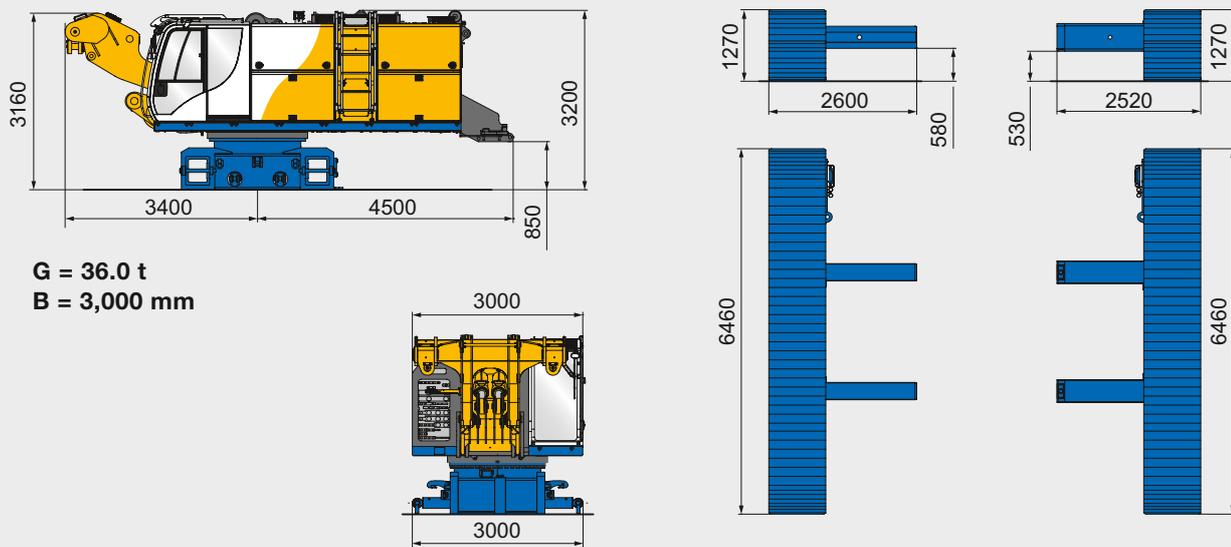
Base carrier with lower mast section

G = 91.0 t (without main winch)
B = 3,720 mm

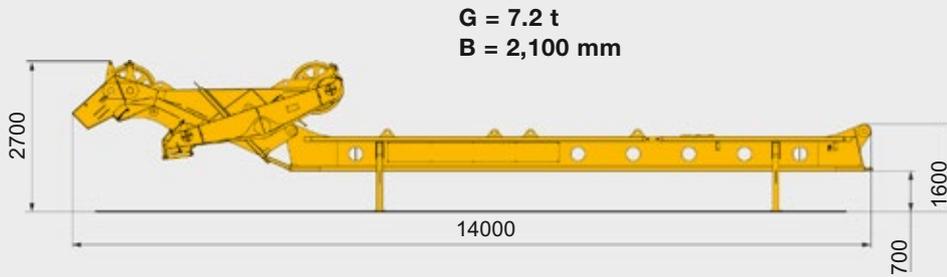


Base carrier without crawlers

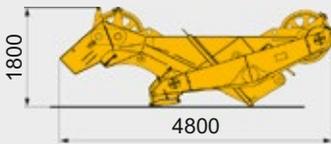
G = 2 x 15.5 t



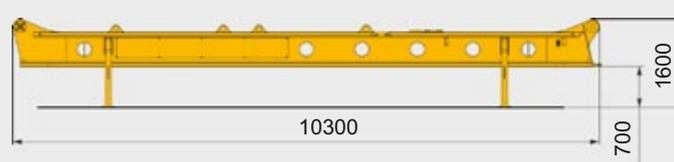
Upper mast section with mast head



G = 2.4 t
B = 1,700 mm

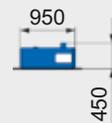


G = 4.8 t
B = 1,650 mm



Counterweight

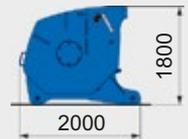
G = 3 * x 4.9 t
+ 2 * x 2.5 t
B = 3,000 mm



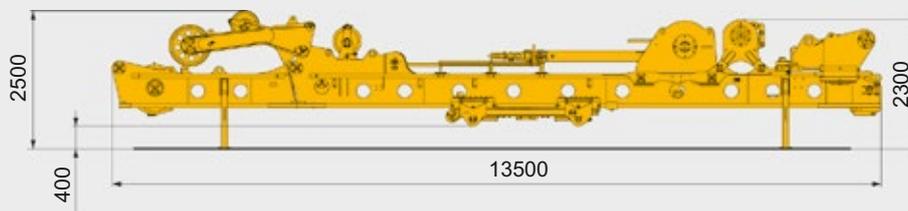
* depending on application

Main winch 380 kN

G = 7.8 t
(with 140 m rope)
B = 2,500 mm



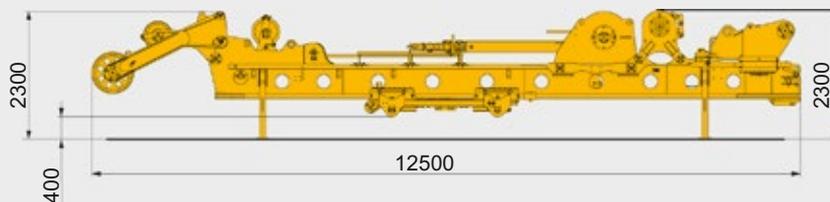
Lower mast section with Vario-mast system



G = 22.6 t **B = 2,480 mm**



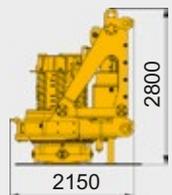
G = 2.6 t
B = 1,100 mm



G = 20.0 t
B = 2,480 mm

Rotary drive

KDK 460 S:
G = 9.5 t



Mast extension 3 m

G = 1.9 t
B = 1,150 mm



Mast extension 5 m

G = 2.6 t
B = 1,150 mm



Backstay cylinders

G = 2 x 2.0 t
B = 400 mm





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