BAUER BG 45

Rotary Drilling Rig

Base Carrier BS 95

BAUER

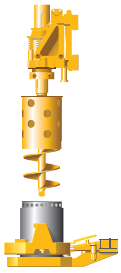
The BAUER drilling rigs

The Bauer drilling rig stand 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 drilling rigs 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

Kelly drilling

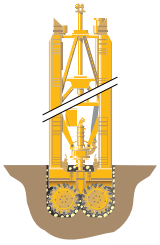
Cased Kelly drilling
Casing Installation with BTM



Cased Kelly Drilling
Installation with Oscilator

FDP
Full Displacement Piling (Standard or Lost Bit)

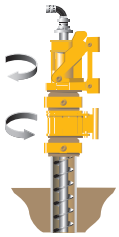
CFA
Continuous Flight Auger Drilling



BC
Trench Cutter

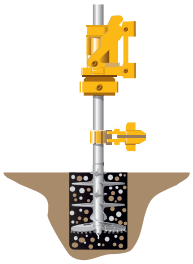
The Rotary Drilling Rig BG 45 (BS 95)

Max. drilling diameter:	**3,700 mm**
Max. drilling depth:	**100.0 m**
Torque (nominal):	**461 kNm**
Max. height:	**42.0 m**
Engine:	**CAT C 15/433 kW**

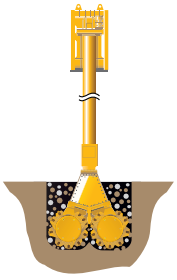


CCFA
Cased CFA system with KDK+ BTM / Double Rotary System

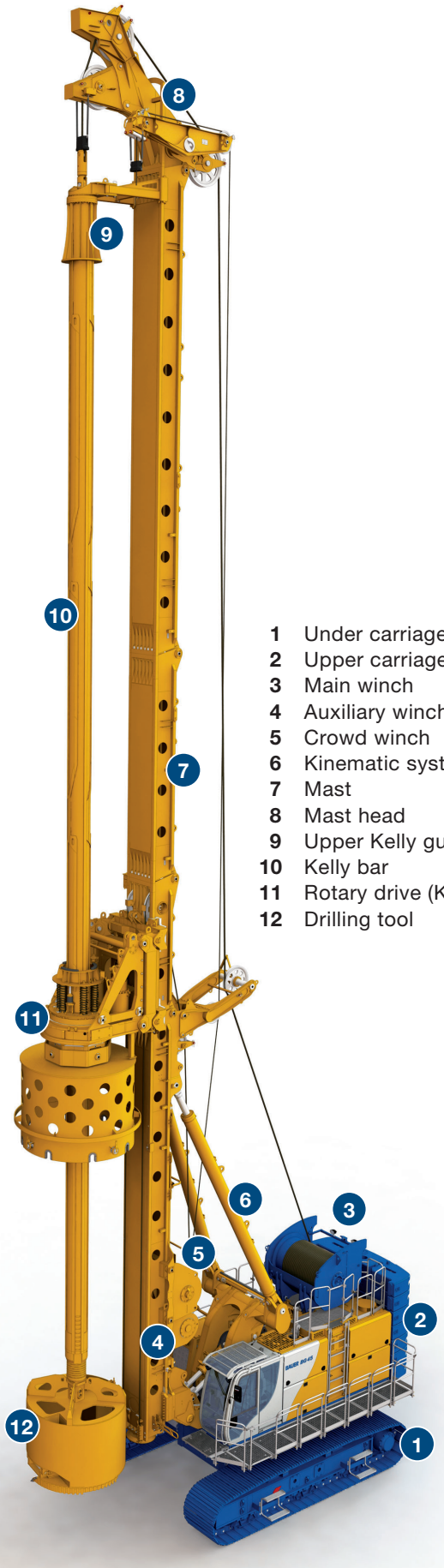
TR
Vibrator



SCM
Single Column Mixing



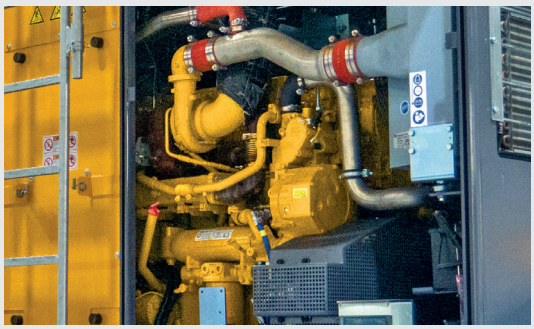
CSM
Cutter Soil Mixing



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

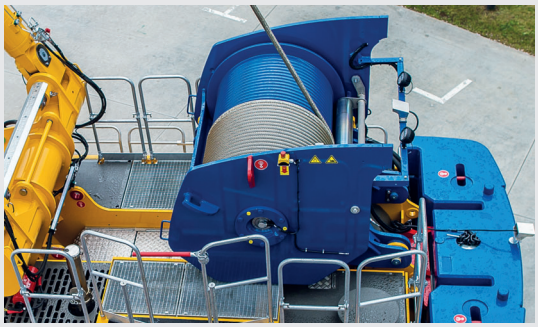
Spotlights

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



Powerful engine CAT C 15
- CAT C 15 (ORA*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

Main winch (on upper carriage)
- Single layer winch for minimized rope wear
- Constant line pull
- Service-friendly winch position
- Swing down mechanism for transport

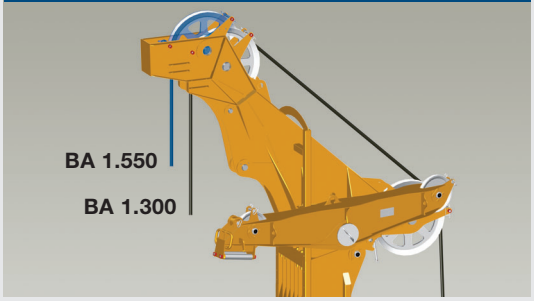


Safety equipment
- Guardrails on upper level (foldable for transport)
- Walking platform with handrail (foldable for transport)
- Upward folding service doors
- Closed circuit cameras for rear area and main winch surveillance with display on integrated screen in operator's cab

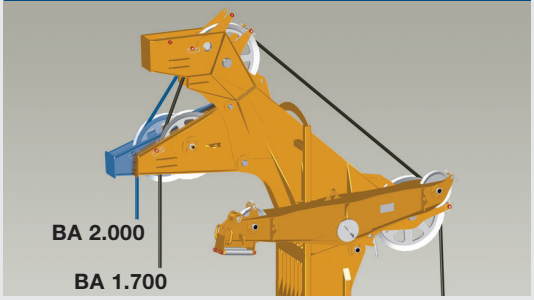
Energy-Efficient PowerEEP
- **Reduction of fuel consumption by up to 30%**
- **Increased productivity through improved efficiency**
- **Significantly reduced noise levels**
- **Tried and proven suitability for practical application**
- **Optimized parallel operation of main and auxiliary consumers**

*Emission standard equivalent to Tier 3 / Stage III

Vario-Mast head



Drill axis extension



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 16.6 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

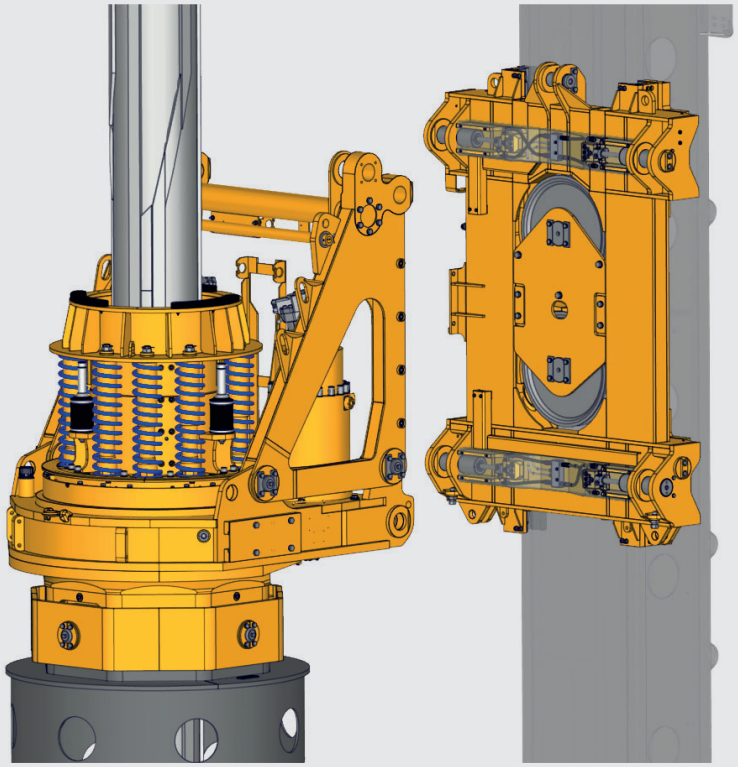
Safe and easy transport

- Mobilization kit with hydrailically operated pin connection for fast and save demounting of lower mast selection
- Hydraulic looking of support trestle
- Activated by remote control multi

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

Rotary Drive

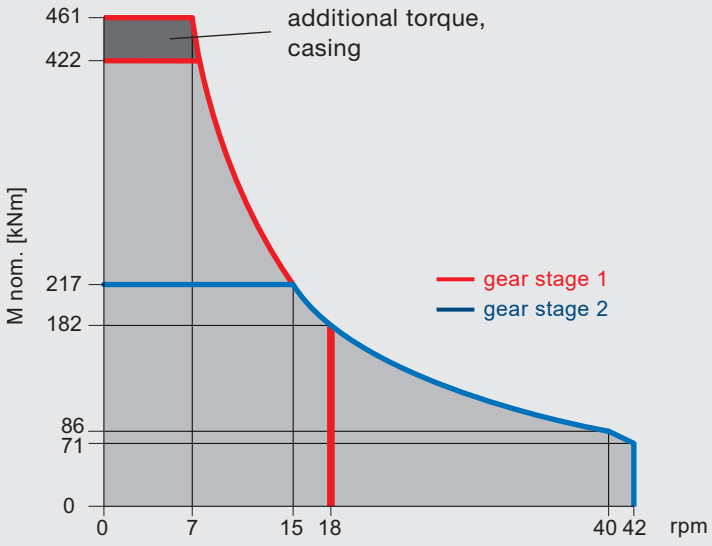


Kelly set-up
- Long Kelly guide
- Integrated shock absorbing spring system
- Enhanced drilling performance
- High operation comfort
- Reduction of wear on Kelly bars and drive keys

Rotary Drive
- Optional single-gear or multi-gear drive
- Max. torque 461 kNm
- Max. speed 42 rpm
- Various modes of operation, partially selectable speed and torque

Hydraulically operated pin connection on crowd sledge
- Pin connection controlled via remote control
- Simple and secure attachment of the rotary drive, no unsecured working at heights

KDK 460 S



*Not to scale

Technical Equipment (selection)

Base carrier BS 95

Standard
- Removable counterweight elements
- Removable crawler side frames
- Platforms with handrail (on both sides and at the cabin)
- Guardrails upper level (foldable for transport)
- Cameras for rear area and main winch surveillance
- 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
- Compressor 1,000 l/min
- Electric generator 13 kVA
- Bio-degradable hydraulic oil
- Arctic kit / Arctic kit plus
- Hydraulic system with quick-release hydraulic couplers (under carriage)
- Remote control basic / multi
- Premium operator seat “climate”

Drilling rig attachment

Standard
- Main winch with hydraulically operated freewheeling
- Swivel for main rope
- Pivoted anchor points for main and auxiliary rope
- Hydraulic locking for support trestle
- Flexible mast concept (Vario-mast, Vario-mast head)
- Reduced headroom version possible by means of Vario-mast section

Optional
- 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)
- Attachment of casing oscillator (up to BV 2000)
- Attachment of casing oscillator possible up to 2,500 mm drilling diameter
- Mobilization kit
- Hydraulically operated pin connection on the crowd sledge

Rotary drive

Standard
- Rotary drive KDK 460 S (multi-gear)
- Kelly equipment for outer Kelly tube 470 mm
- Integrated Kelly damping system
- Quick-release hydraulic couplers

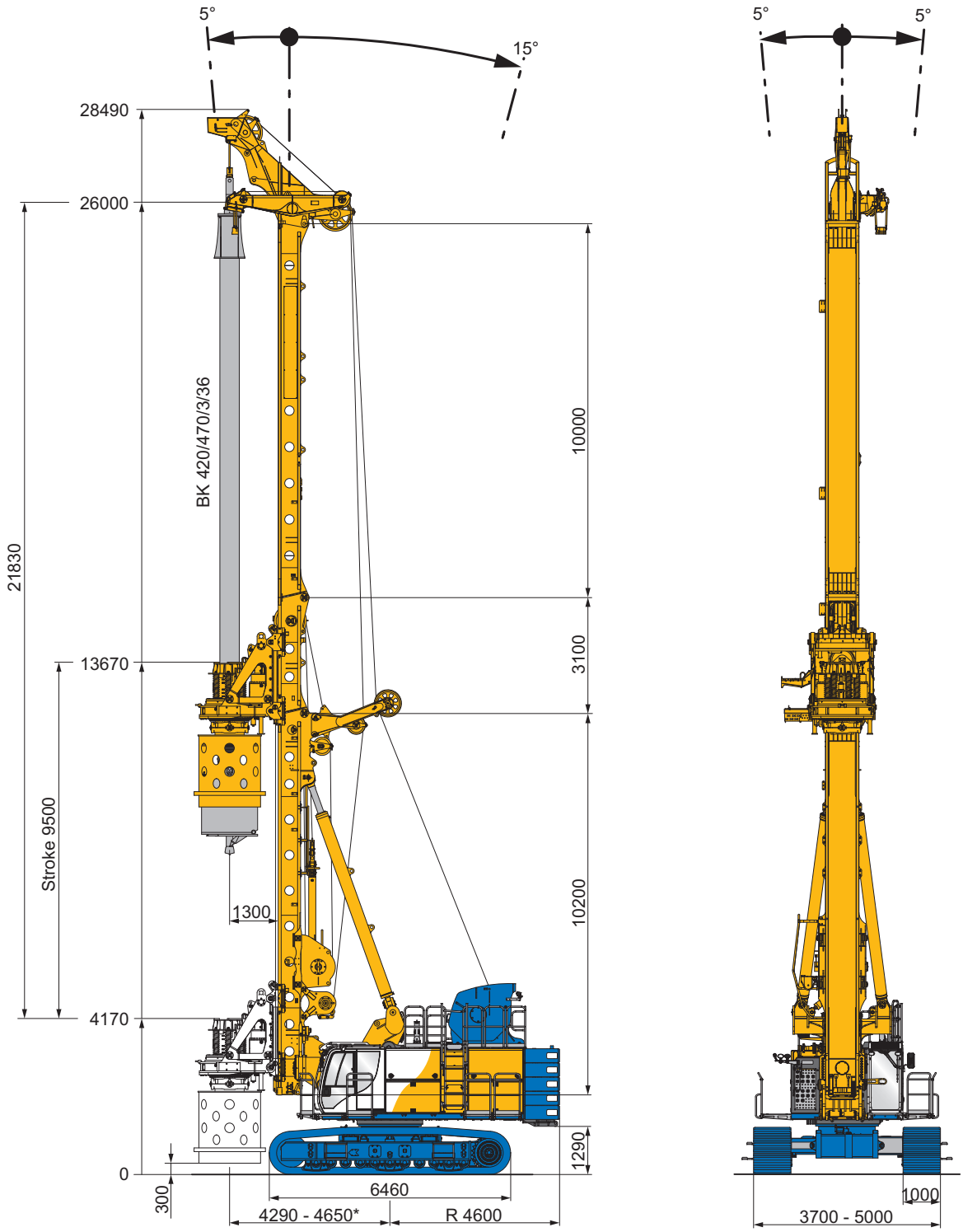
Optional
- Kelly equipment for outer Kelly tube 559 mm
- Torque multiplier BTM 720 K
  - Torque 600 kNm

Measuring and control system

Standard
- Automatic mast alignment with memory recall
- Crowd stroke 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
- Automatic drilling and extraction
- BAUER Enhanced CAN Interface (BECI)
- Crowd Plus

Dimensions – Basic Version



Operating weight 150 t
(as shown)

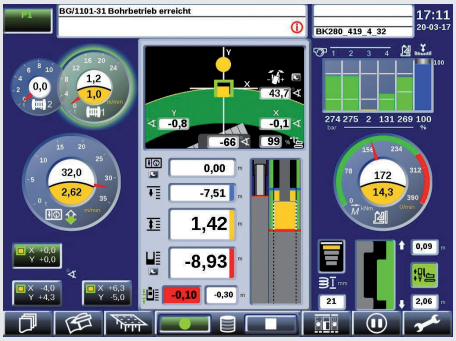
*depending on equipment

Technical Specifications

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)	12.0 m/min	
Fast speed (down/up)	35.0 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 EU 2016/1628 EPA/CARB GB20891-2014	ORA* ORA* China Stage III	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} 110 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	

B-Tronic System

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

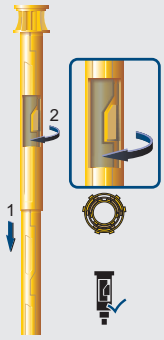
Device networking
DTR module
- The DTR module allows equipment and production data to be made available to a wide variety of users

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

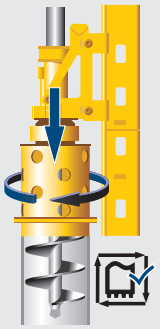
B-Report
- Standardized reports for the documentation of drilling progress and verification of performance and quality

Assistance Systems (selection)

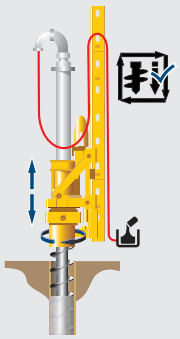
Adaptive Kelly speed assistant
The assistant raises and lowers the Kelly bar safely and quickly and allows an easy operation.
The automatic control of the speed of the main winch reduces the speed at the transition points of the Kelly sections.
This provides maximum safety with minimum wear. The permanent monitoring of the parameters prevents a locked Kelly bar from being raised or lowered accidentally and thus causing damage.



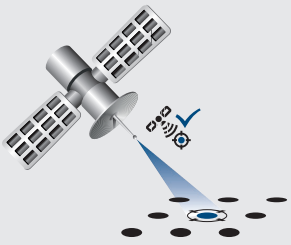
Kelly visualization
Display of the locking recesses, as well as representation of the controlled extension and retraction of the Kelly bar on the B-Tronic system. The rapid approach of the locking position results in a considerably enhanced drilling performance. In addition, the level of wear that the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



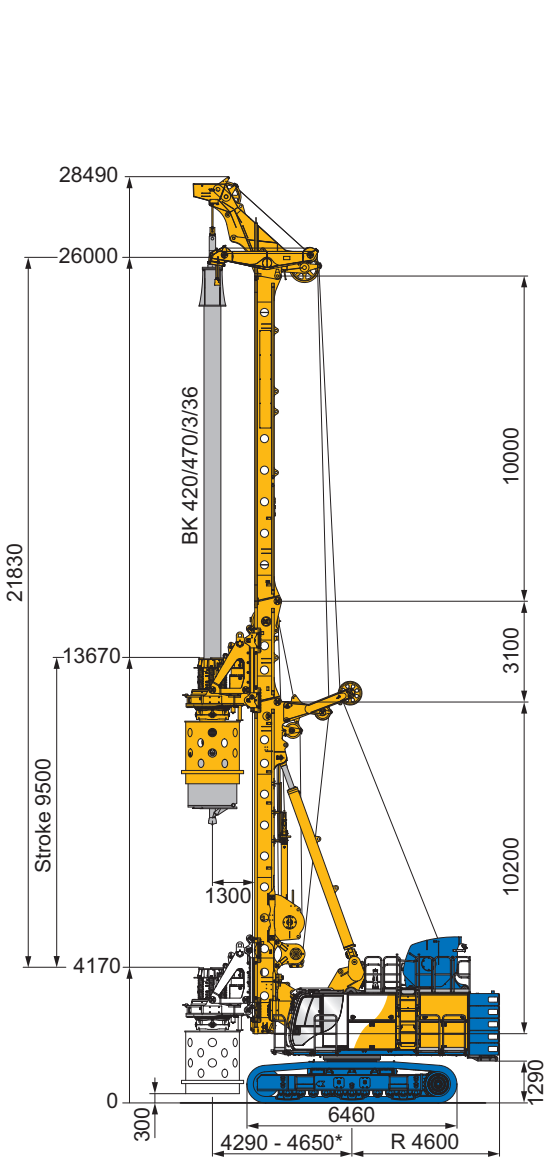
Automatic drilling and extraction control for Single-Pass processes
The system controls the drilling and/or extraction speed of the crowd system and enables hands-free operation. This ensures the production of a high-quality pile while simultaneously minimizing the amount of concrete.

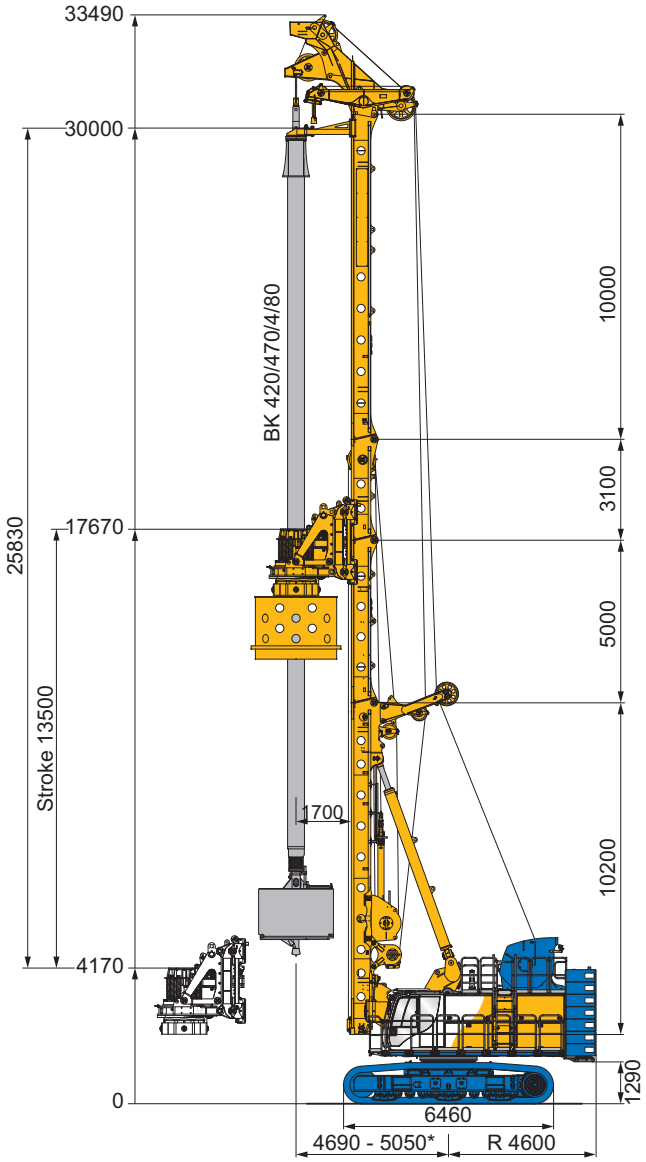


Satellite-based positioning
The BAUER Assistant Positioning System (B-APS) allows the position of a bored pile to be located extremely accurately. Documentation is provided for the nominal and actual coordinates, as well as the corresponding accuracy of each bored pile. Manual marking of the piles is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

Numerous other assistance systems are available in our portfolio.

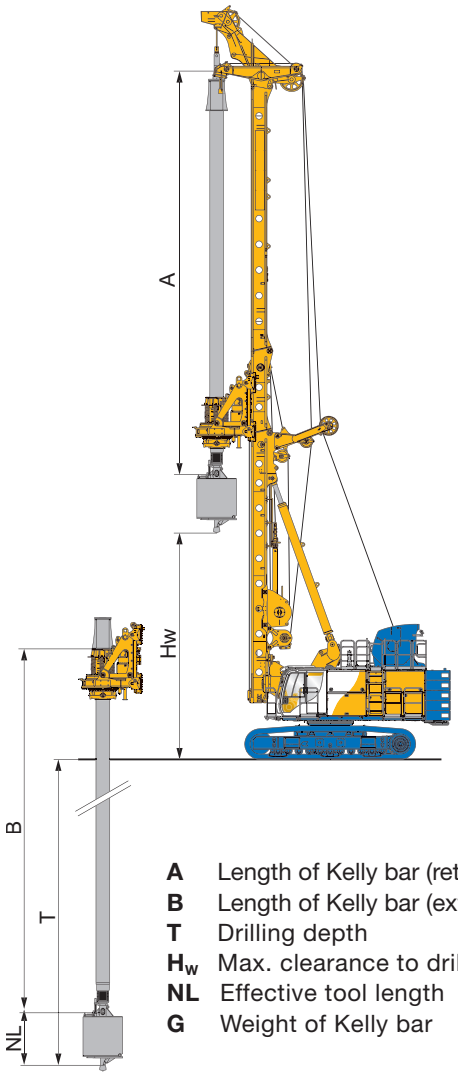
Application – Kelly Drilling





	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
cased	2,000 mm	2,500 mm	2,800 mm	3,400 mm
Operating weight approx.	150 t	180 t	180 t	190 t
with Kelly BK 420/470/...	...3/36	...4/94	...4/80	...4/80
Casing drive adapter	Ø 1,650 mm	Ø 2,000 mm	Ø 2,500 mm	Ø 3,500 mm
with bucket	Ø 1,500 mm	Ø 1,850 mm	Ø 2,320 mm	Ø 3,500 mm
with counterweight*	19.7 t	29.4 t	29.4 t	34.3 t

*depending on equipment



Drilling depth – uncased Kelly drilling

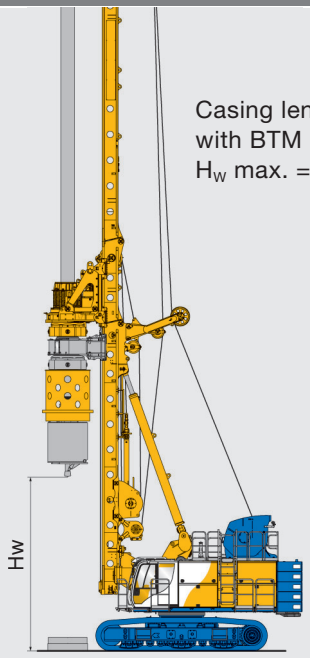
				DA 1,300 mm		DA 1,550 mm	
3-part Kelly bar	A (m)	B (m)	G (kg)	H_W (m)	T (m)	H_W (m)	T (m)
BK420/470/3/36	15.2	38.2	9,400	8.5	35.9	12.7	35.9
BK420/470/3/42	17.2	44.2	10,500	6.5	41.9	11.5	41.9
BK420/470/3/48	19.2	50.2	11,600	4.5	47.9	9.5	47.9
BK420/470/3/52	20.6	54.2	12,300	3.1	51.9	8.2	51.9
4-part Kelly 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

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 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.

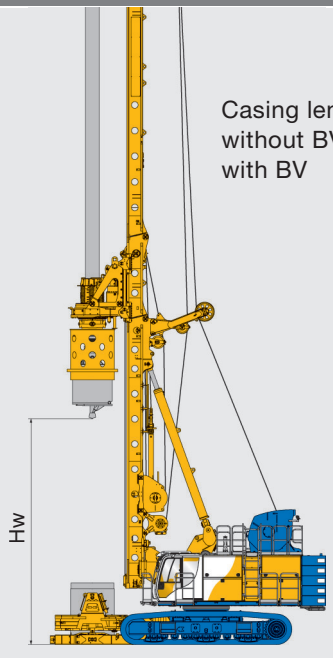
Further drilling depths, diameters and other Kelly types on request.

Torque multiplier BTM 720 K



Casing lengths
with BTM = H_W - 0.5 m
H_W max. = 11.0 m

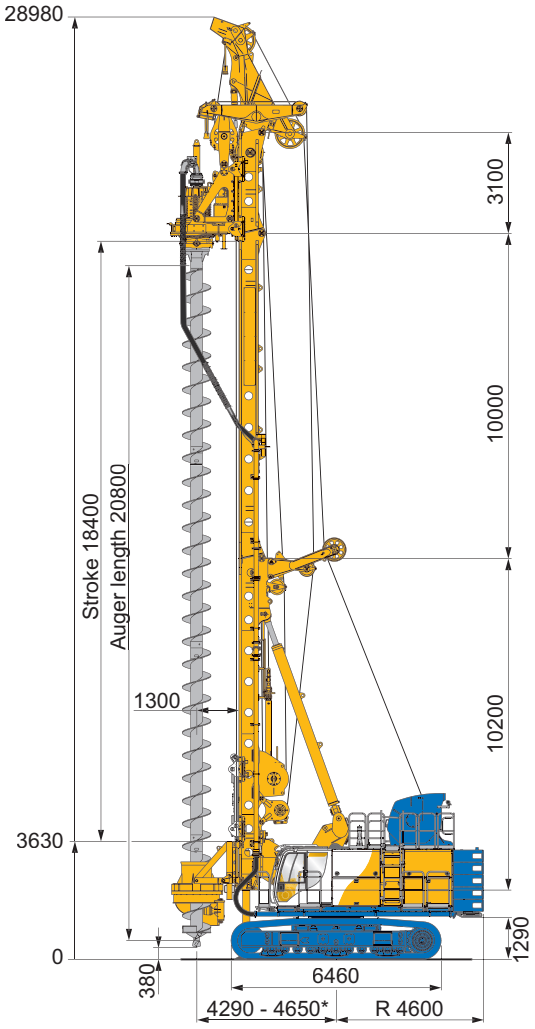
Kelly drilling with casing oscillator BV 2000

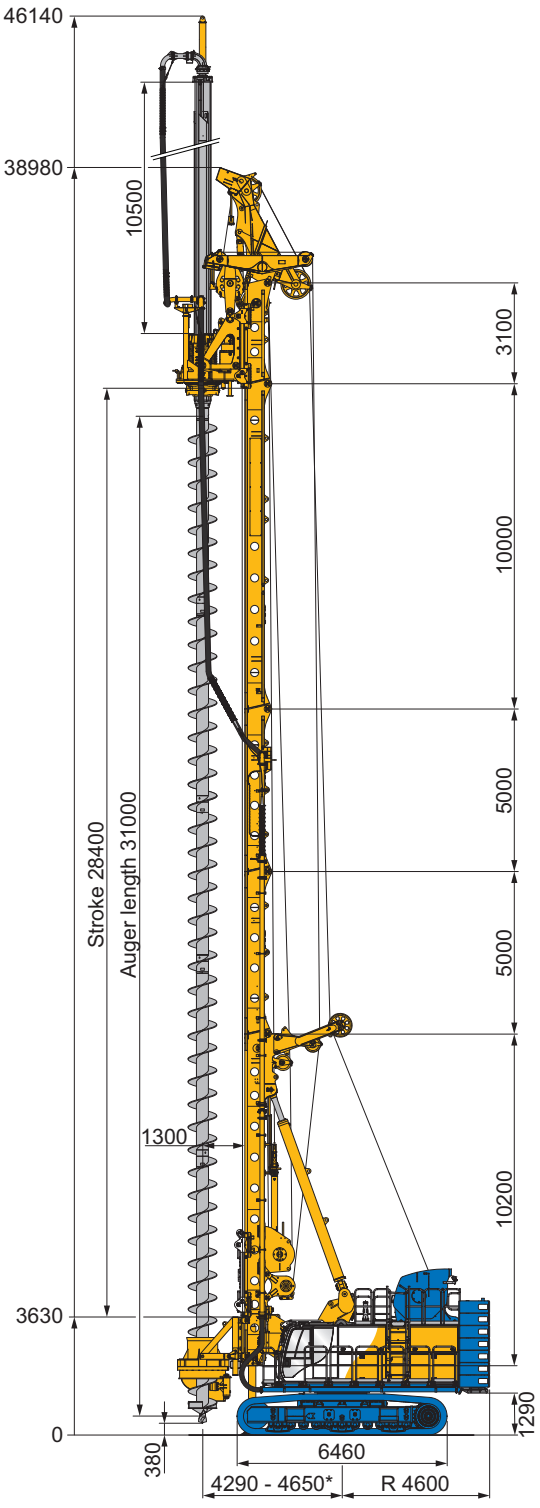


Casing lengths
without BV = H_W - 0.5 m
with BV = H_W - 2.4 m

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

Application – CFA-Drilling

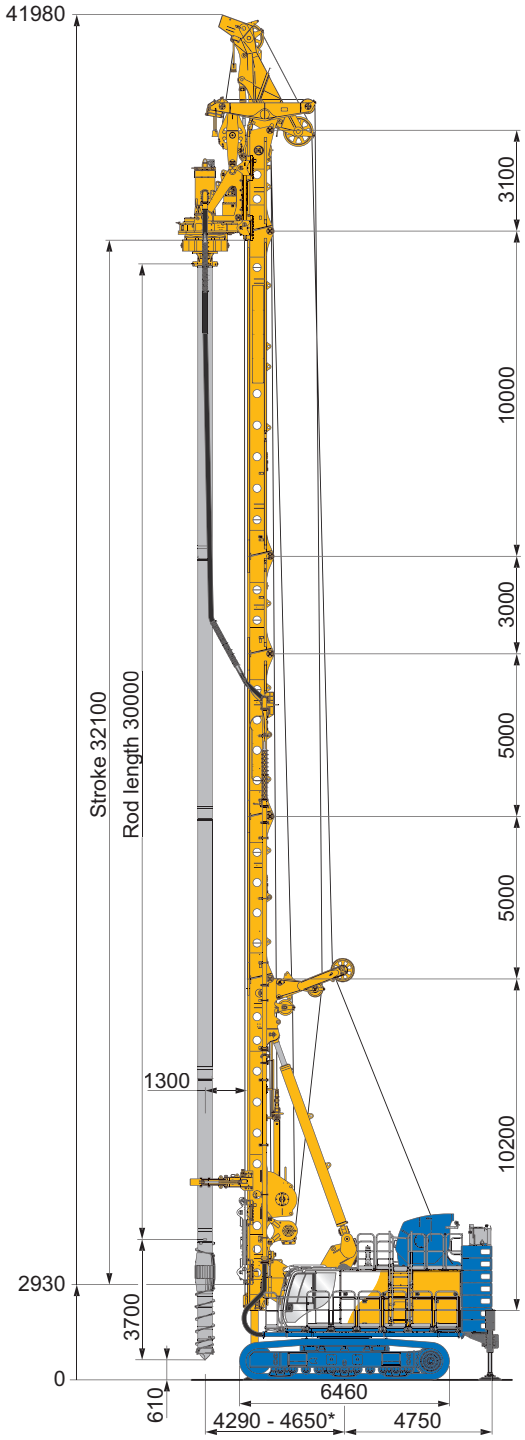


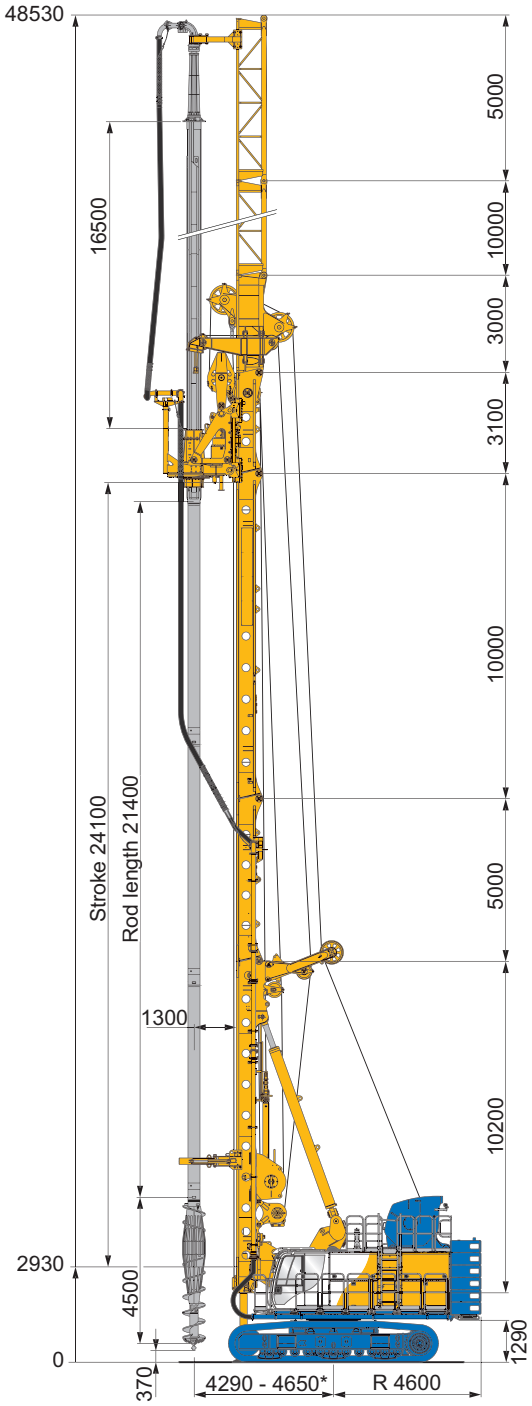


	Basic version	Upgraded version
Mast extension	without	5 + 5 m
Kelly extension	without	10.5 m
Max. drilling diameter	1,200 mm	1,200 mm
Max. drilling depth (with auger cleaner)	18.0 m	38.5 m
Max. extraction force with main and crowd winch (effective)	1,160 kN	1,160 kN
with counterweight*	19.7 t	34.3 t

*depending on equipment

Application – FDP-Drilling

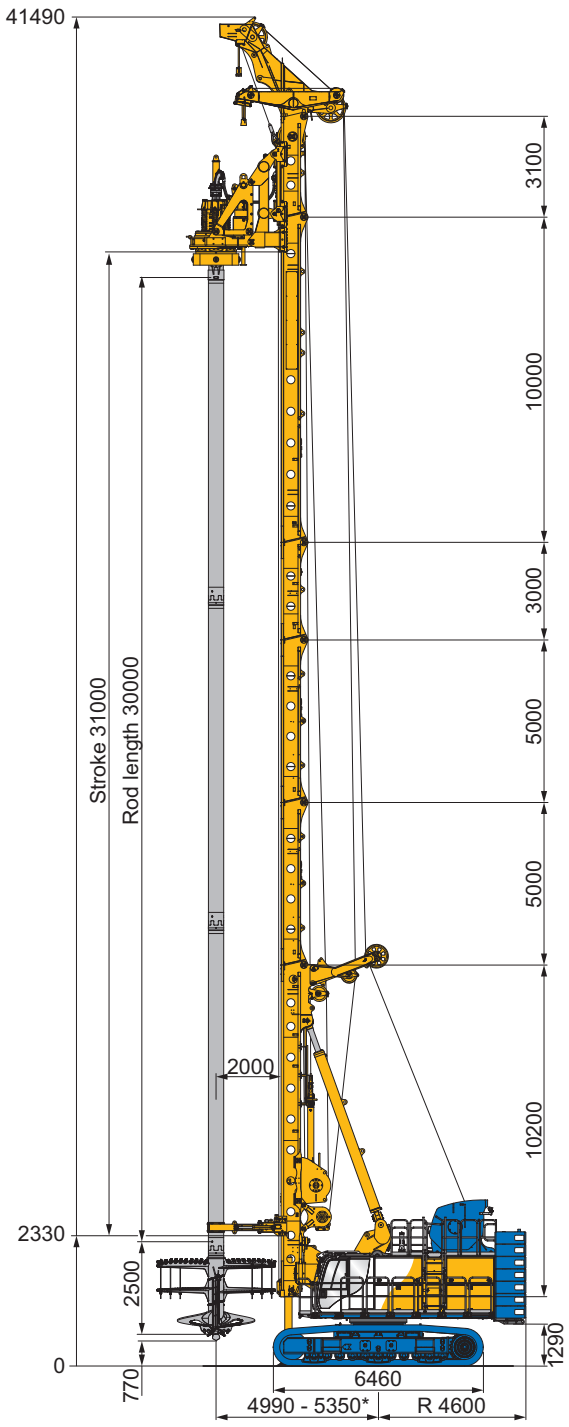


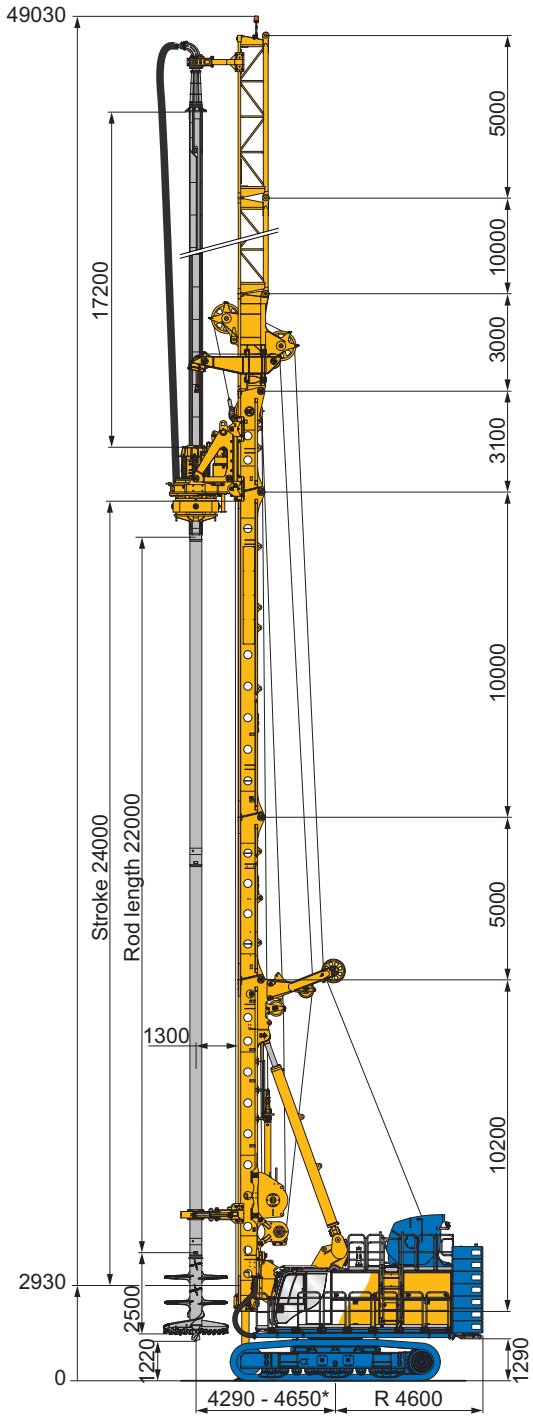


	FDP Lost-Bit**	FDP with lattice mast extension
Mast extension	5 + 5 + 3 m	5 m
Kelly extension	not applicable	16.5 m
Max. drilling diameter	710 mm	710 mm
Max. drilling depth	31.0 m	40.0 m
Max. extraction force with main and crowd winch (effective)	1,160 kN	1,160 kN
with counterweight*	34.3 t	34.3 t

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

Application – SCM-Mixing

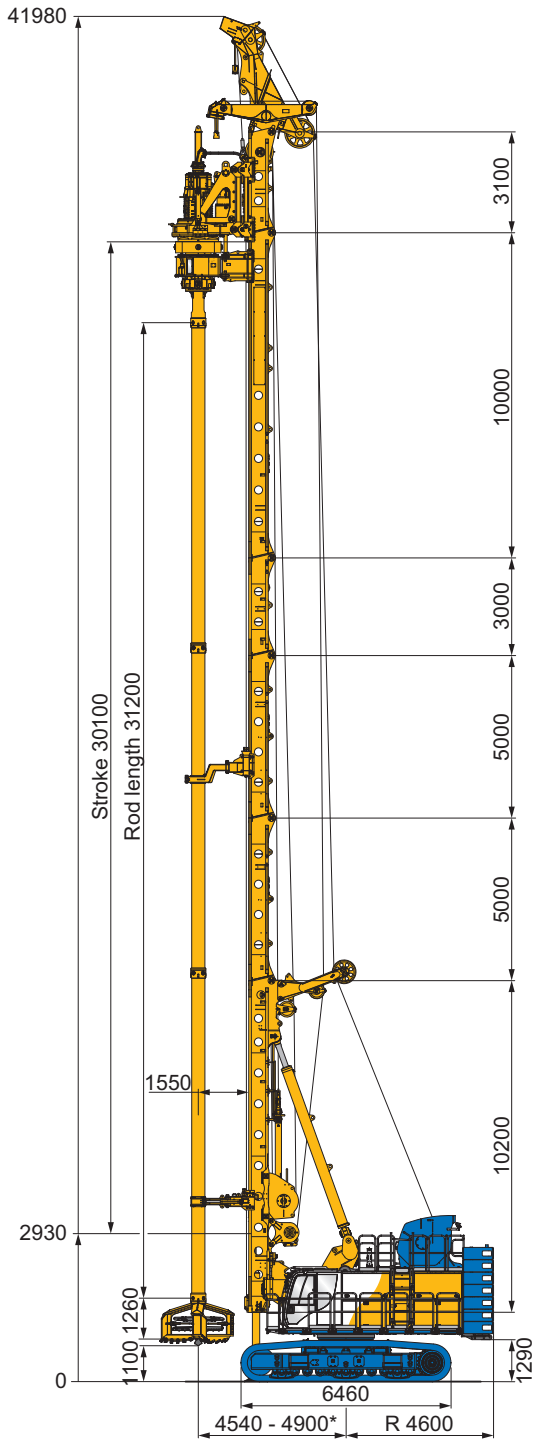




	Basic version	Upgraded version
Mast extension	5 + 5 + 3 m	5 m
Kelly extension	without	17.2 m
Drill axis	2,000 mm	1,300 mm
Max. mixing diameter	3,650 mm	2,000 mm
Max. mixing depth with pipe guidance	30.0 m	39.5 m
Max. extraction force with main and crowd winch (effective)	844 kN	844 kN
with counterweight*	34.3 t	34.3 t

*depending on equipment

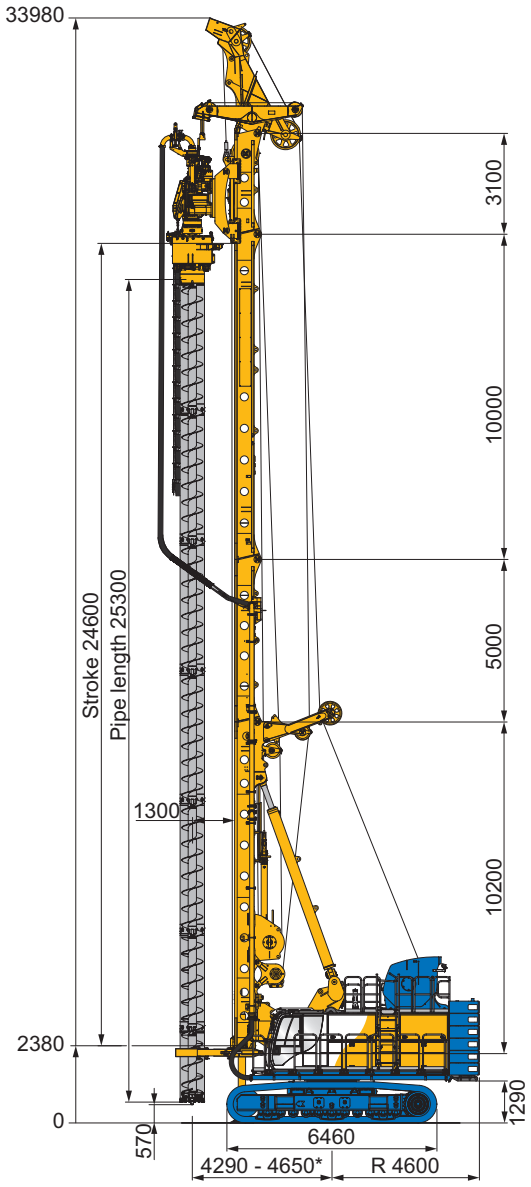
Application – SCM-DH-Mixing

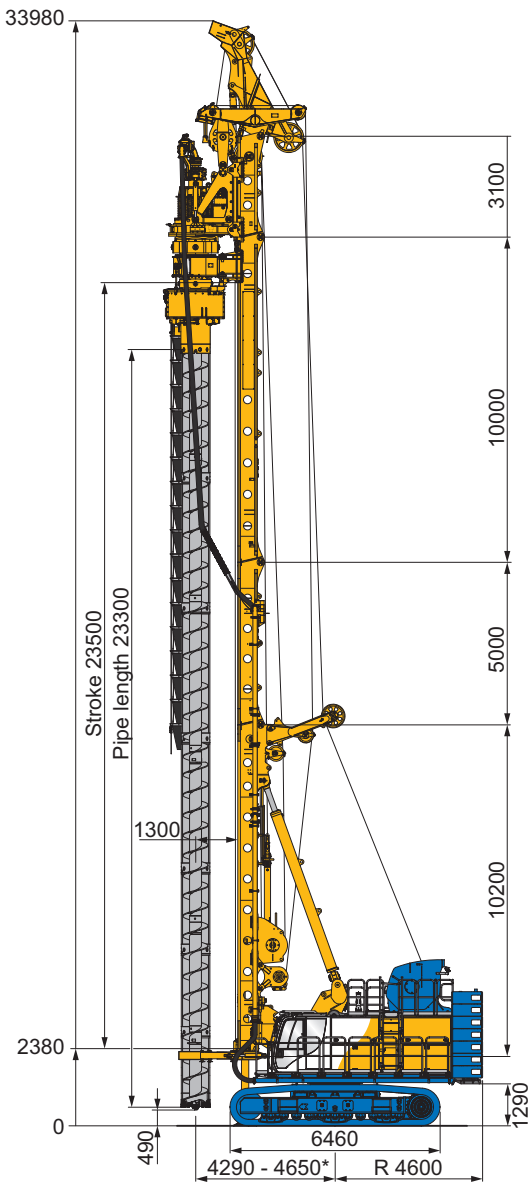


	Upgraded version
Mast extension	5 + 5 + 3 m
Kelly extension	without
Drill axis	1,550 mm
Max. mixing diameter	2,400 mm
Max. mixing depth with casing guidance	28.8 m
Max. pulling force with crowd winch and main winch (effective)	530 kN
with counterweight*	34.3 t

*depending on equipment

Drilling method – CCFA-Drilling

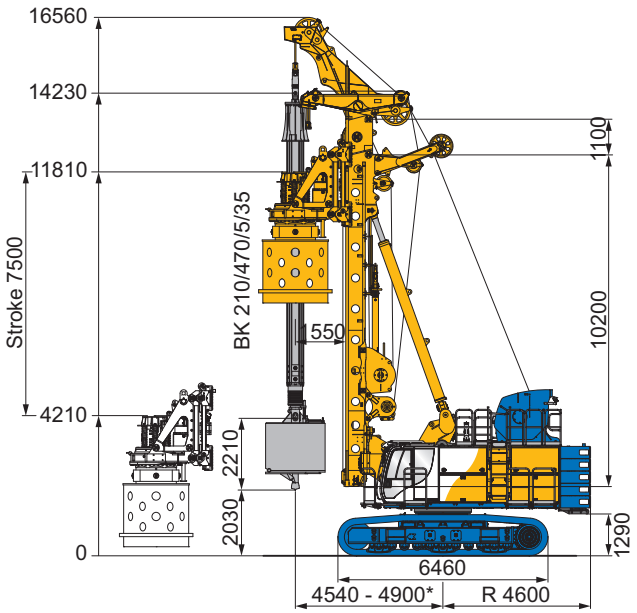


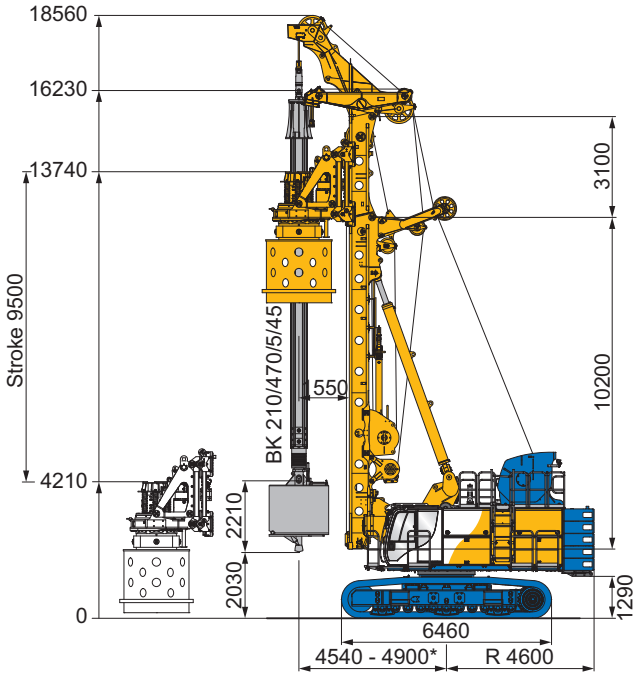


	Upgraded version with DKS 100 / 200	Upgraded versionwith KDK / BTM 400		
Mast extension	5 m	5 + 5 m	5 + 3 m	5 m
Max. mixing diameter	750 mm	750 mm	880 mm	1,000 mm
Max. drilling depth	23.6 m	28.0 m	25.0 m	23.0 m
Max. extraction force with main and crowd winch (effective)	530 kN		1,160 kN	
Spoil discharge system	Optional		Standard	
Max. torque: Auger (right-hand rotation) Casing (left-hand rotation)	 100 kNm 200 kNm		 200 kNm 400 kNm	
with counterweight*	29.4 t	34.3 t	36.6 t	34.3 t

*depending on equipment

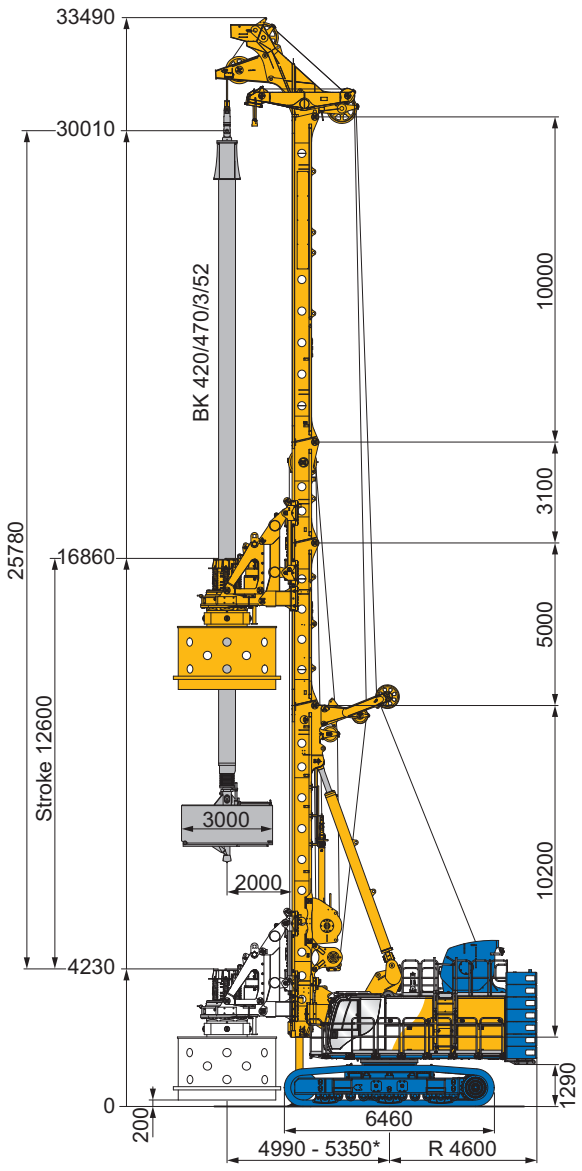
Special Applications – Kelly Drilling

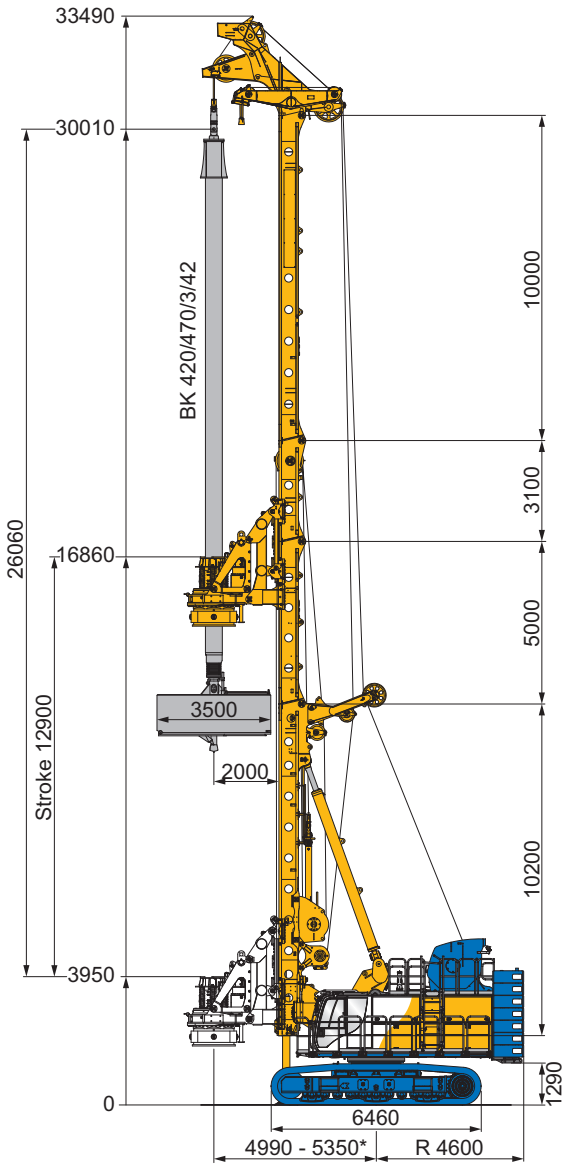




	Reduced Headroom System			
Vario mast segment	1,100 mm / 3,100 m			
Drill axis	1,300 mm	1,550 mm	1,700 mm	2,000 mm
Max. drilling diameter uncased cased	 2,300 mm 2,000 mm	 2,800 mm 2,500 mm	 3,200 mm 2,800 mm	 3,700 mm 3,400 mm
Max. drilling depth	35.0 m / 45.0 m	35.0 m / 45.0 m	30.0 m / 40.0 m	30.0 m / 40.0 m

Special Applications – Kelly Drilling

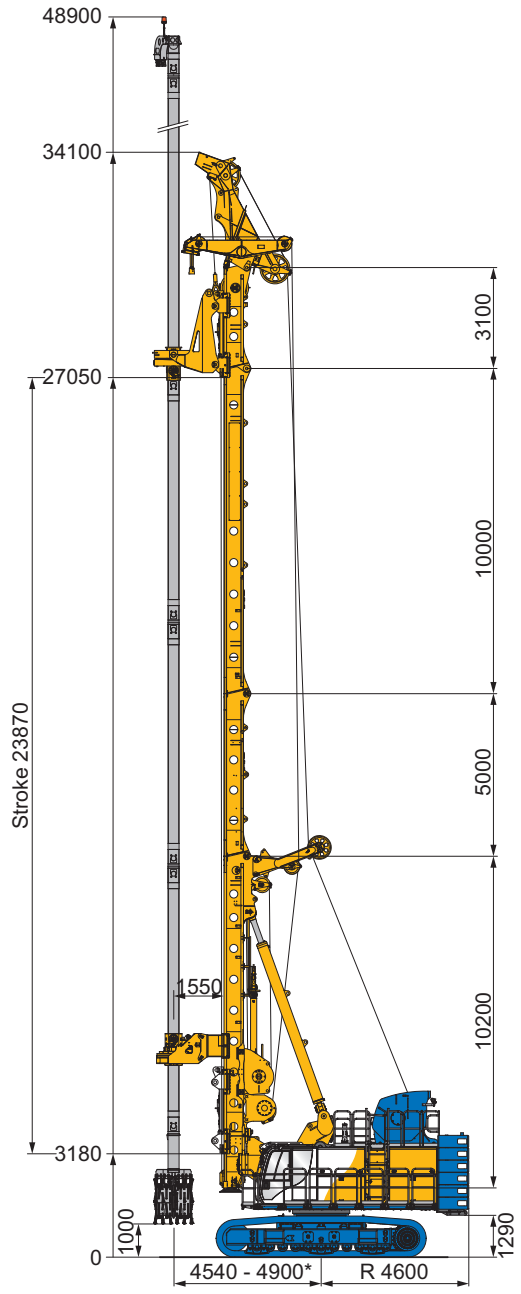


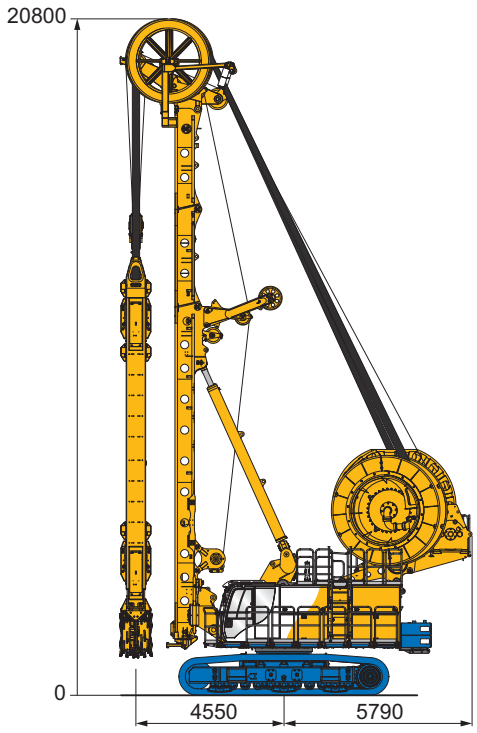


	Uncased	Slurry-supported
Mast extension	5 m	5 m
Upper Kelly guide	without	without
Drill axis	2,000 mm	2,000 mm
Max. drilling diameter uncased cased	 - 3,000 mm	 3,500 mm -
Operating weight approx. with Kelly with casing drive adapter with bucket with Counterweight*	181 t ...3/36 Ø 3,000 mm Ø 2,750 mm 34.4 t	183 t .../3/42 - Ø 3,500 mm 34.3 t

*depending on equipment

Further Applications





	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	
with 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

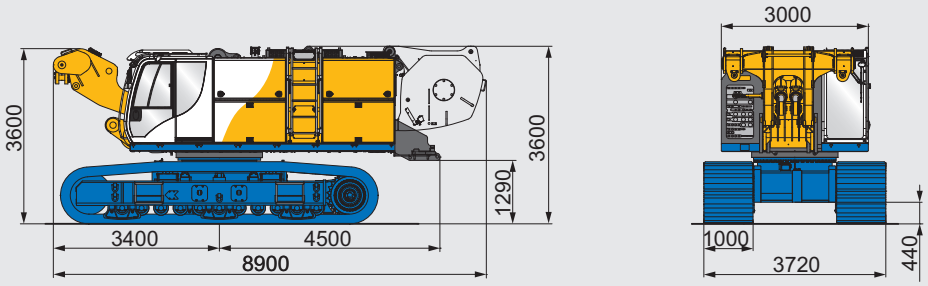
Transport – Dimensions and Weights

G = Weight
B = Width, overall

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

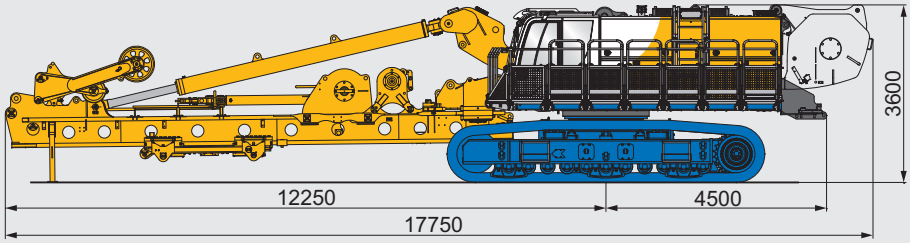
Base carrier

G = 67.0 t (without main winch)
B = 3,720 mm



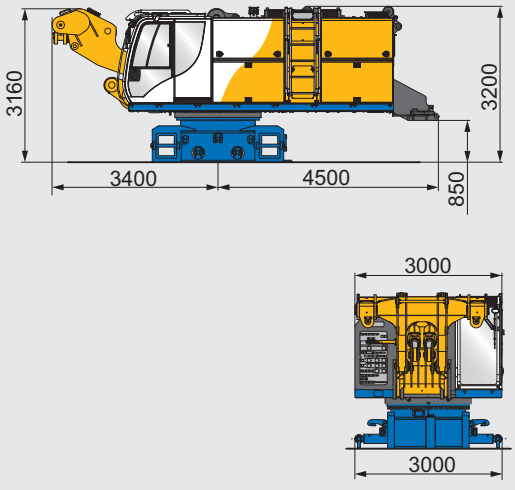
Base carrier with lower mast section

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

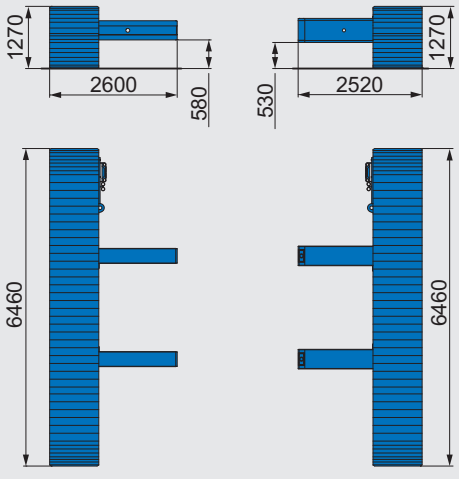


Base carrier without crawlers

G = 36.0 t
B = 3,000 mm

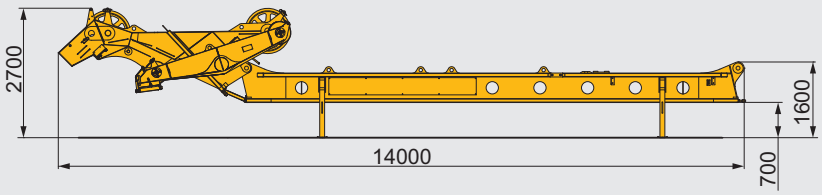


G = 2 x 15.5 t

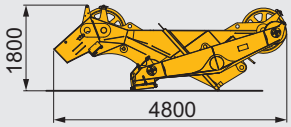


Upper mast section with mast head

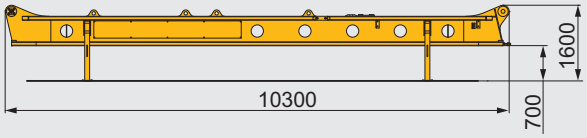
G = 7.2 t
B = 2,100 mm



G = 2.4 t
B = 1,700 mm

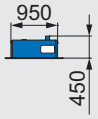


G = 4.8 t
B = 1,650 mm



Counterweight

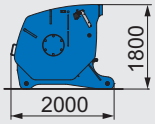
G = 3*x 4.9 t
+ 2*x 2.5 t
B = 3,000 mm



*depending on application

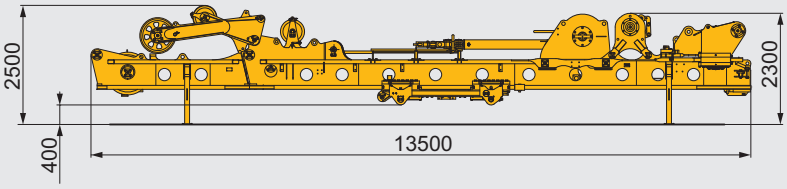
Main winch 380 kN

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

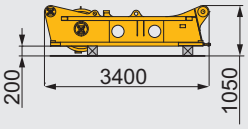


Lower mast section with Vario-mast system

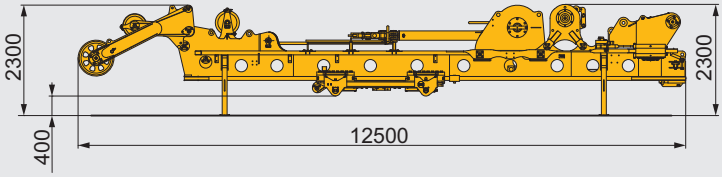
G = 22.6 t **B = 2,480 mm**



G = 2.6 t **B = 1,100 mm**

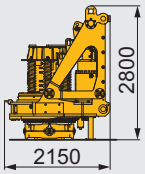


G = 20.0 t **B = 2,480 mm**



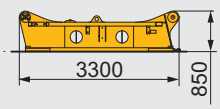
Rotary drive

KDK 460 S:
G = 9.5 t



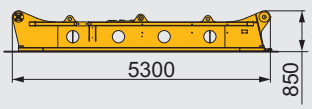
Mast extension 3 m

G = 1.9 t
B = 1,150 mm



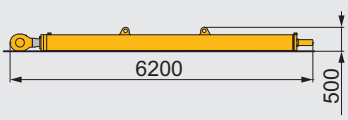
Mast extension 5 m

G = 2.6 t
B = 1,150 mm



Backstay cylinders

G = 2 x 2.0 t
B = 400 mm



BAUER Maschinen GmbH
BAUER-Strasse 1
86529 Schrobenhausen
Germany
Tel.: +49 8252 97-0
bma@bauer.de
www.bauer.de

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