BAUER BG 30 H

Drilling Rig

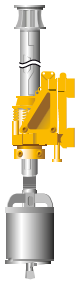
Base Carrier BT 75

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.

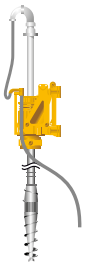
Specific highlights of the drilling rigs are:
- High safety standards
- Environmental sustainability, economic efficiency and performance
- Easy transport and short rigging time
- High quality standard
- Long lifetime and excellent resale value



Kelly drilling

Cased Kelly drilling
Casing Installation with BTM

CFA
Continuous Flight Auger Method



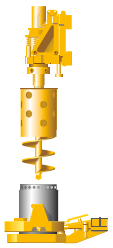
FDP
Full Displacement Piling (standard or lost bit)

FoW
Front-of-wall method

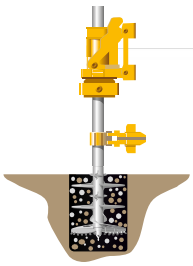
VD
Vibro Displacement

The Drilling Rig BG 30 H (BT 75)

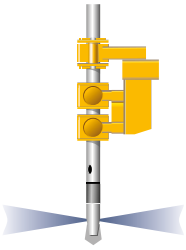
Max. drilling diameter:	**2,500 mm**
Max. drilling depth:	**64.7 m**
Max. torque:	**300 kNm**
Max. height:	**25.5 m**
Engine:	**CAT C 9.3 B 310 / 340 kW**



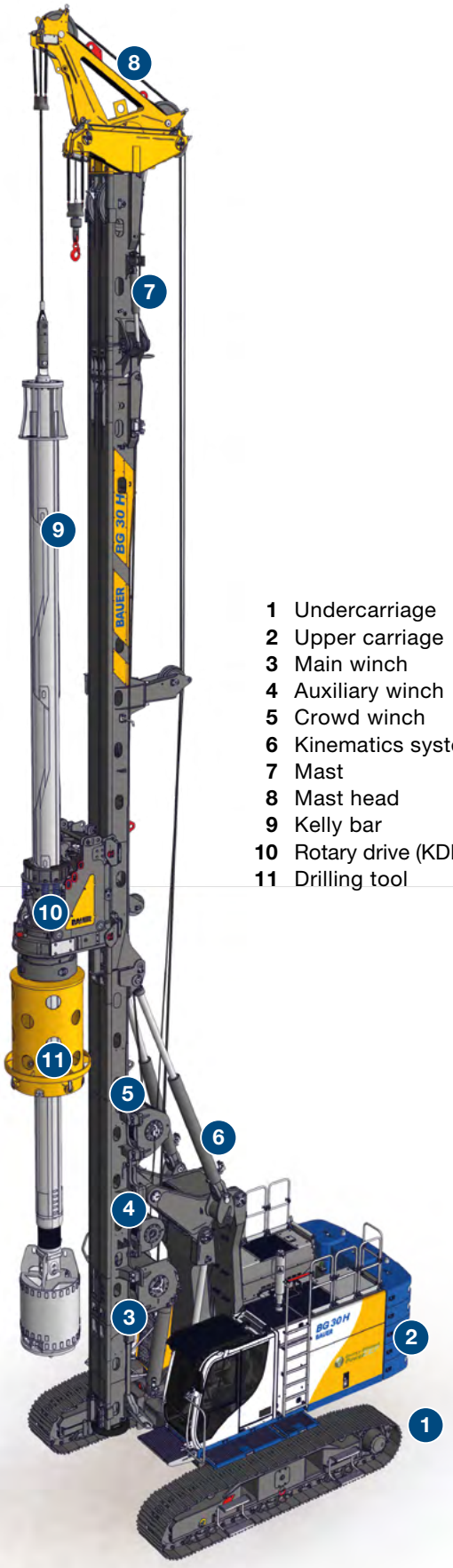
Cased Kelly drilling
Casing installation
with casing oscillator



SCM/SCM-DH
Single column mixing



HDI
Jet grouting



1 Undercarriage
2 Upper carriage
3 Main winch
4 Auxiliary winch
5 Crowd winch
6 Kinematics system
7 Mast
8 Mast head
9 Kelly bar
10 Rotary drive (KDK)
11 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 for multi-functional potentiometer input

Powerful CAT engines
- C 9.3 B 310 kW (UN/ECE R96*) or C 9.3 B 340 kW (EU Stage V, EPA/CARB Tier 4 final)
- Diesel particulate filter in exhaust emission EU Stage V, EPA/CARB Tier 4 final
- Low noise emission
- Worldwide CAT service partners

Safety equipment
- Integrated service platforms in the upper carriage for easy and safe maintenance work
- Retractable grating on side of cab
- Guardrails on the upper level (foldable for transport)
- Rear view cameras

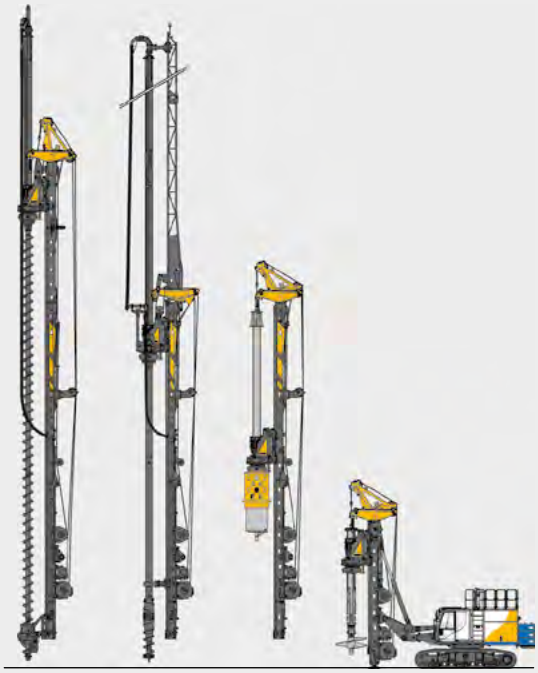
Energy-Efficient PowerEEP

- **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**

* Exhaust emission equivalent EPA Tier 3 and EU Stage III A

Variable stackable counterweight elements
- Constant tail radius (irrespective of number of counterweights)
- Low weight of individual elements (4.9 t or 2.5 t)
- Flexible arrangement for various applications
- Mounting and demounting possible with the drilling rig
- Transport of the machine possible without removing counterweights

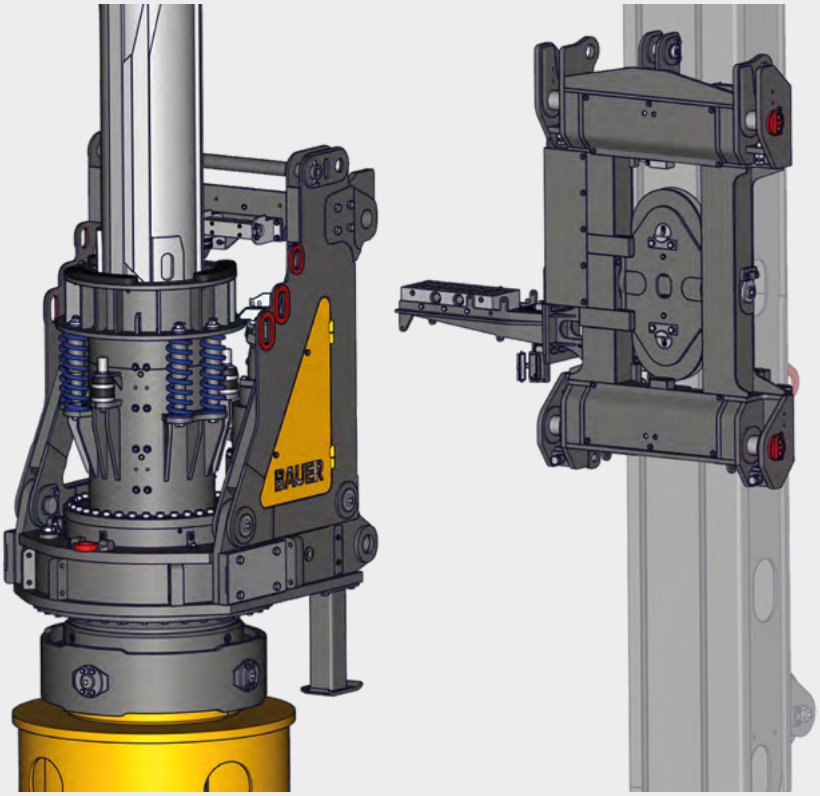
Single Pass SPEX Extreme



Flexible mast concept
- Extension package Single Pass Extreme (SPEX)
- Multi-sectional mast
  - Low-head version
  - Giant drill version
  - Optimized transport length
- Upper mast extension 3 m (hydraulic foldable and lockable)
  - Simple and secure attachment, no working at heights unsecured
  - Reduced transport length
- Lattice mast extension for 20.5 m follow-up stroke
- Vario-mast head
  - Mast head for drill axis 1,000 mm, expandable to 1,400 mm
  - Increased stroke for Kelly bars when using an upper Kelly guide
  - Tiltable main jib for single-pass processes and optimized transport

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

Drehgetriebe

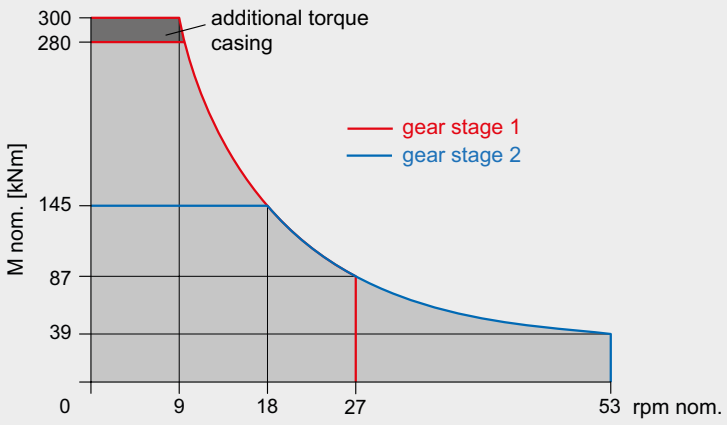


Kelly set-up
- Long Kelly guide
- Integrated shock absorbing spring system
- Kelly visualization (see page 11)
- Enhanced drilling performance
- High operation comfort
- Reduction of wear on Kelly bars and drive keys

Rotary drive KDK 300
- Optional single gear drive or multi gear drive
- Max. torque 300 kNm
- Max. speed 53 rpm
- Various modes of operation, partially selectable speed of rotation and torque

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

KDK 300 S



Technical equipment (selection)

Base carrier BT 75

Standard
- Removable counterweights
- Retractable grating steps next to the operator's cab
- Energy-efficient power (EEP)
- Premium operator’s seat
- Cameras for rear area monitoring
- Integrated service platform
- Remote control Basic

Optional
- Counterweight, variably adjustable
- Guardrails on the upper level (foldable for transport)
- High-pressure cleaner with water tank
- Rear support unit
- Compressor 1,000 l/min
- Generator
- Low-temperature package / Low-temperature package plus
- Cab space heater with automatic timer
- Remote control Multi
- Operator seat with air-condition
- Weather protection

Drilling rig attachments

Standard
- Main winch with hydraulic free-wheel control
- Swivel for main rope
- Masthead foldable for transport
- Pivoted anchor point for main and auxiliary rope

Optional
- Vario masthead
- Extension of drill axis to 1,400 mm
- Hydraulically operated pin connection on the crowd sledge for easy mounting and removal of the rotary drive
- Mast support
- Mast extension 3 m, hydraulically foldable and lockable
- Three-sectional mast for Low Head and Giant Drill applications
- Additional auxiliary winch 20 kN
- Attachment of casing oscillator up to BV 1500
- Auger cleaner attachment for Kelly system
- Passenger transportation system with car attachment

Rotary drive

Standard
- Rotary drive KDK 300 S (multi-gear drive)
- Kelly drive adapter for outer Kelly tube 419 mm
- Integrated Kelly shock absorbing system
- Cardan joint

Optional
- Torque converter BTM 720 K for Kelly drilling
  - Torque 400 kNm (nominal)

Measurement and control technology

Standard
- Automatic mast alignment with memory-recall
- Crowd stroke monitoring
- Crowd speed control
- Electronic mast reach limiter
- Slewing Angle Warner

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 control for Single-Pass processes
- BAUER Enhanced CAN Interface (BECI)
- Crowd Plus
- Stability Plus
- Slewing Angle Limiter

Stability Plus – just keep moving safely

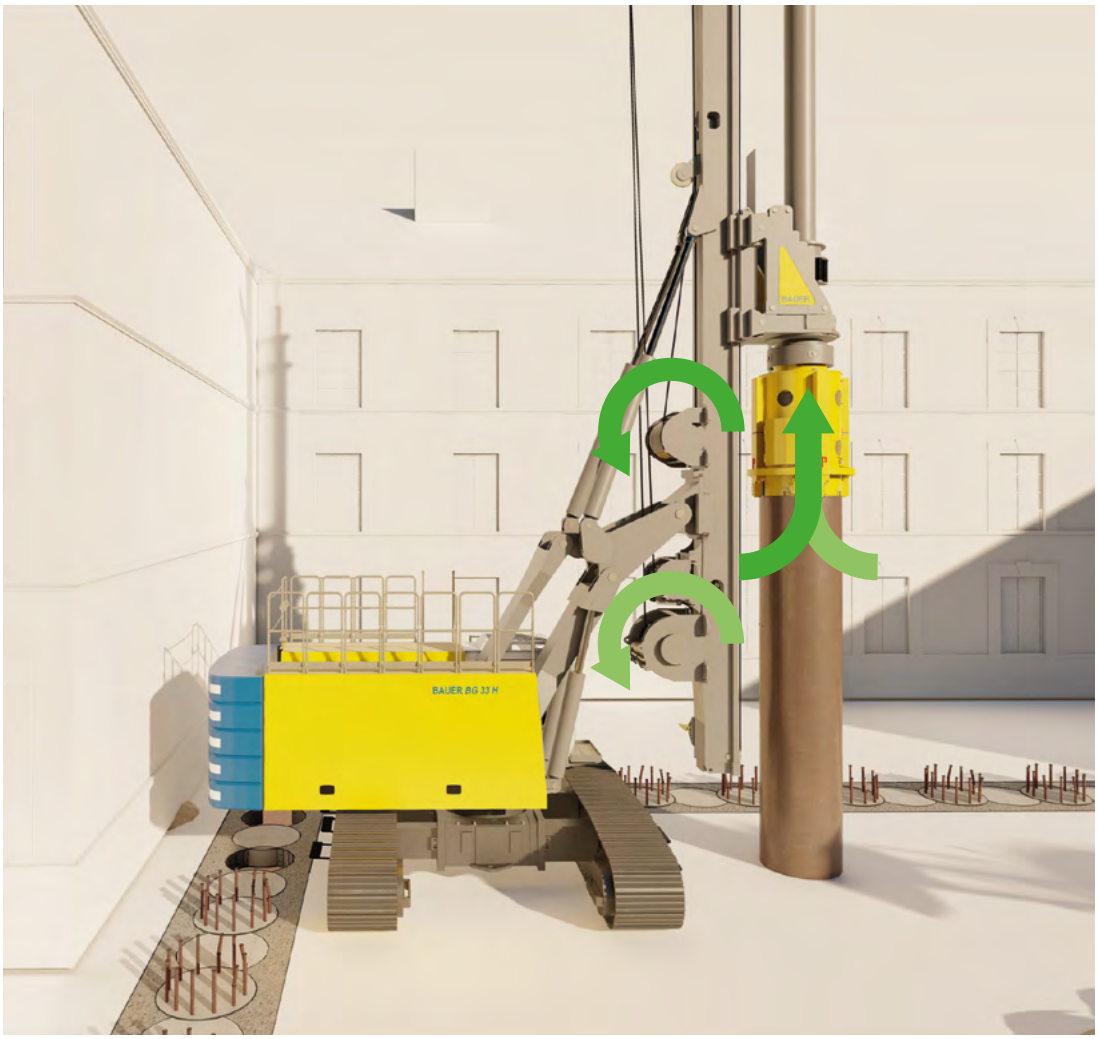
Stability Plus

- Safe work even in the extended range of outreach (safety sensors monitor swinging speed and rotary drive position)
- The usual agility of the drilling rig during Kelly drilling with up to 3 rpm is fully maintained
- Enhanced performance thanks to extended outreach during drilling (light green area)
- Laborious relocation to reach drilling locations, particularly in corners, is avoided. This enables simplified handling on tight sites
- The strain on the equipment operator is reduced
- Display of permitted equipment parameters on the B-Tronic in real time
- Easy data transfer of stability values to B-Tronic
- All stability values calculated for the equipment are saved in B-Tronic and can be selected and activated quickly and easily

Only for reference to show working principle

Crowd Plus – double performance, simple operation

Crowd Plus
- Increased retraction force for extracting casing pipes by coupling the main and crowd winch
- Control via a single joystick
- Single-line pulling with the main winch possible
- Function only permitted when using a suitable pulling plate (pulling plate not included)
- Full single-line main winch pulling force can only be activated when using the mast support (reduced pulling force without mast support)
- Effective extension for cased kelly drilling



Only for reference to show working principle

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

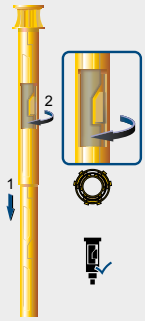
Device networking
DTR module
- The DTR module allows equipment and production data to be made available to a wide variety of users

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

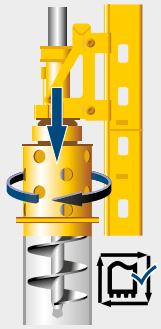
Report of production data
- Standardized reports for the documentation of drilling progress and verification of performance and quality

Assistance Systems (selection)

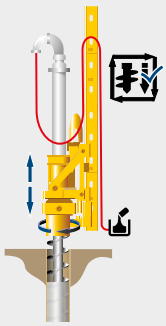
Adaptive Kelly speed assistant
The assistant raises and lowers the Kelly bar safely and quickly and allows an easy operation. The automatic control of the main winch reduces the speed at the transition points of the Kelly sections.
This provides maximum safety with minimum wear. The permanent monitoring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



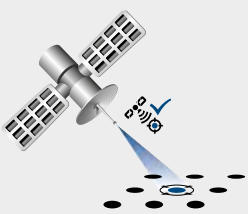
Kelly visualization
Display of the locking recesses, as well as representation of the controlled extension and retraction of the Kelly bar on the B-Tronic system. The rapid approach of the locking position results in a considerably enhanced drilling performance. In addition, the level of wear that the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



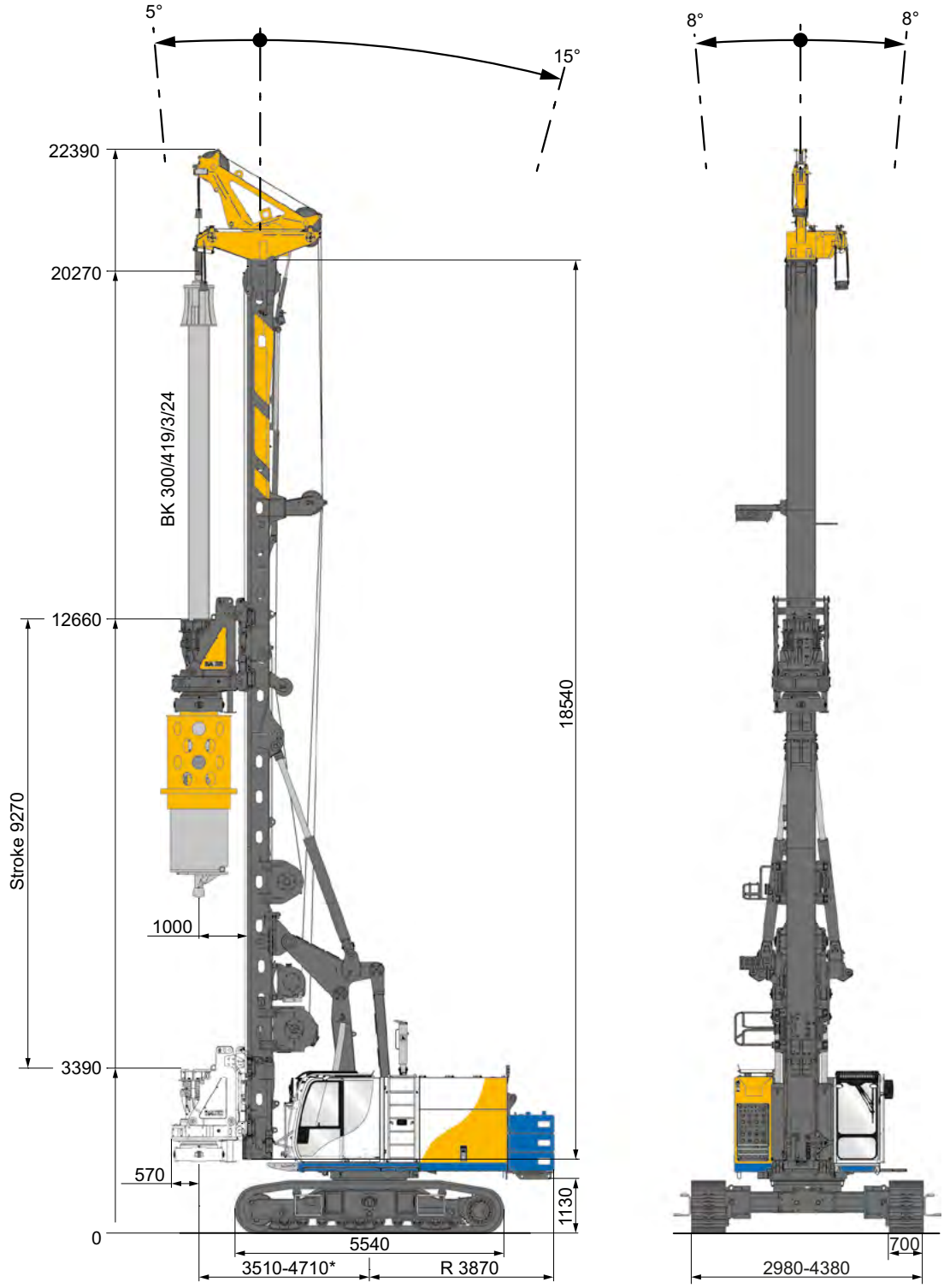
Automatic drilling and extraction control for Single-Pass processes
The system controls the drilling and / or extraction speed of the crowd system and enables hands-free operation. This ensures the production of a high-quality pile while simultaneously minimizing the amount of concrete.



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.

Dimensions - Basis Version



Operating weight 83,8 t
(as shown)

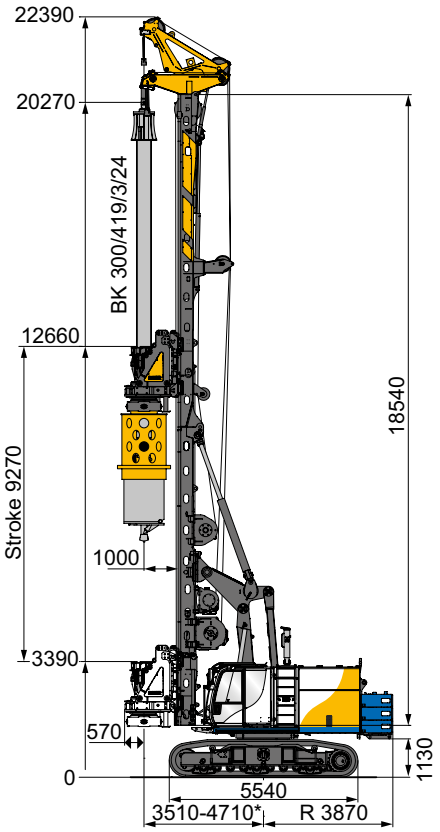
* depending on equipment

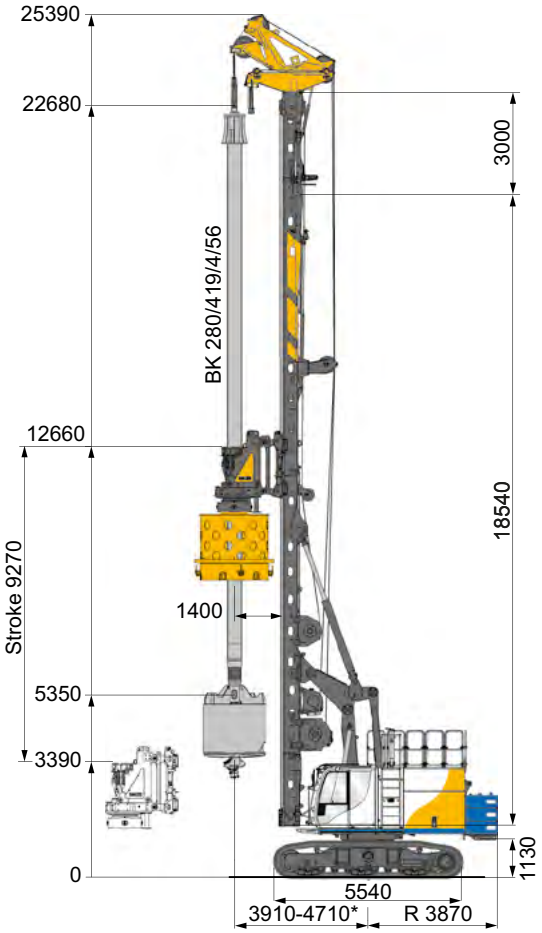
Technical Specifications

Rotary drive (selectable)	KDK 300 S	
Torque (nominal) for casing operation at 350 bar	300kNm	
Torque (nominal) for drilling at 350 bar	280 kNm	
Max. speed of rotation	53 rpm	
Crowd winch		
Max. sledge stroke with 3 m mast extension	18,700 mm	
Crowed force push effective / nominal	330 / 423 kN	
Crowed force pull effective / nominal	330 / 423 kN	
Extraction force Crowd Plus effective / nominal with Mast support unit without Mast support unit	 545 / 638 kN 460 / 540 kN	
Rope diameter	24 mm	
Speed (down / up)	9.9 m/min	
Fast speed (down / up)	32 m/min	
Main winch	M6 / L3 / T5	
Line pull (1st layer) effective / nominal	215 / 270 kN	
Rope diameter	28 mm	
Line speed (max.)	85 m/min	
Auxiliary winch (selectable)		
Line pull (1st layer) effective / nominal	80 / 100 kN	100 / 125 kN
Rope diameter	20 mm	
Line speed (max.)	55 m/min	
Base carrier (EEP)	BT 75	
Engine	CAT C 9.3 B	
Rated output ISO 3046-1	310 kW @ 1,850 rpm	340 kW @ 1,850 rpm
Exhaust emission	UN/ECE R96* -	EU Stage V EPA/CARB Tier 4 final
Diesel tank capacity / AdBlue Tank	730 / – l	730 / 34,5 l
Sound pressure level in the cabin (EN 16228, Annex B)	LP_A 80 dB (A)	
Sound power level (2000/14/EC u. EN 16228, Annex B)	LW_A 109 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	
Under carriage	UW 85	
Crawler type	B 7	
Traction force effective / nominal	546 / 643 kN	

* Exhaust emission equivalent EPA Tier 3 und EU Stage III A

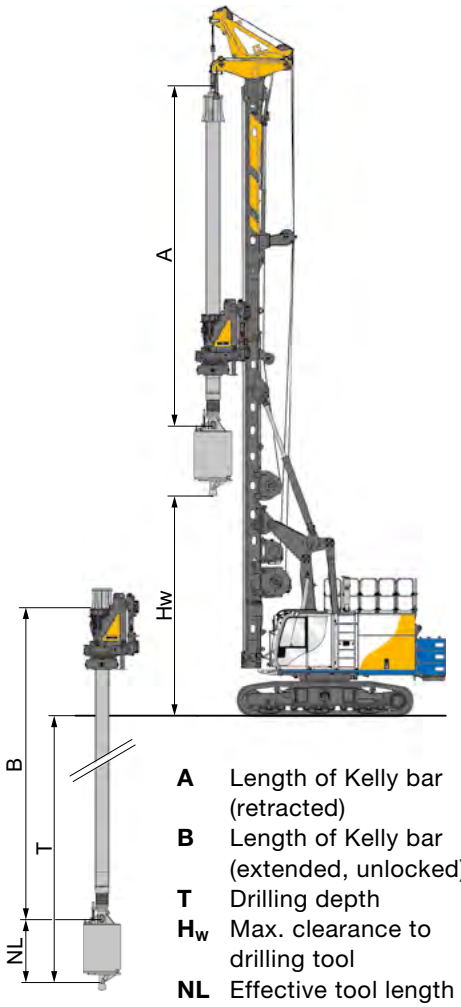
Application – Kelly Drilling





	Basic version	Upgraded version
Mast extension	without	3 m
Drill axis	1,000 mm	1,400 mm
Max. drilling diameter		
uncased	1,700 mm	2,500 mm
cased	1,400 mm	2,200 mm
Operating weight, approx.	83.8 t	101.7 t
with Kelly	3/24	4/56
with casing drive adapter	1,300 mm	2,000 mm
with bucket	1,180 mm	1,830 mm
with counterweight*	9.9 t	14.7 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

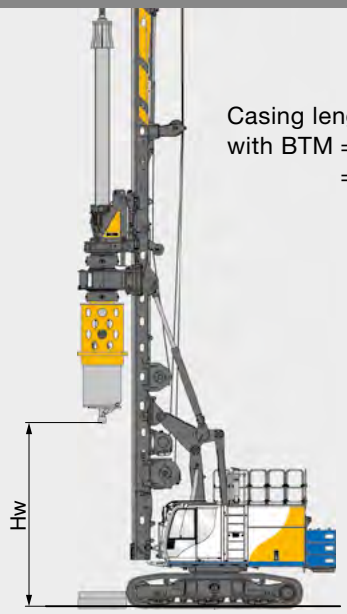
Drilling depth – uncased Kelly drilling, drill axis 1,000 mm

				without mast extension		3.0 m mast extension	
3-part Kelly	A (m)	B (m)	G (kg)	H_w (m)	T (m)	H_w (m)	T (m)
BK/300/419/3/24	10.7	26.4	5,500	7.4	24.9	7.9	24.9
BK/300/419/3/27	11.7	29.4	5,900	6.4	27.9	7.9	27.9
BK/300/419/3/30	12.7	32.4	6,350	5.4	30.9	7.9	30.9
BK/300/419/3/33	13.7	35.4	6,800	4.4	33.9	7.4	33.9
BK/300/419/3/36	14.7	38.4	7,200	3.4	36.9	6.4	36.9
BK/300/419/3/39	15.7	41.4	7,700	2.4	39.9	5.4	39.9
4-part Kelly							
BK/280/419/4/36	12.3	38.2	8,350	5.7	36.7	7.9	36.7
BK/280/419/4/40	13.3	42.2	8,950	4.7	40.7	7.7	40.7
BK/280/419/4/44	14.3	46.2	9,600	3.7	44.7	6.7	44.7
BK/280/419/4/48	15.3	50.2	10,300	2.7	48.7	5.7	48.7
BK/280/419/4/56	17.3	58.2	11,550	0.7	56.7	3.7	56.7
BK/280/419/4/64	19.3	66.2	12,800	-	64.7	1.7	64.7

Drilling data have been determined with an effective tool length of NL = 1.9 m and with the mast at a minimum opera- ting radius. These data only apply for the use of Bauer tools.

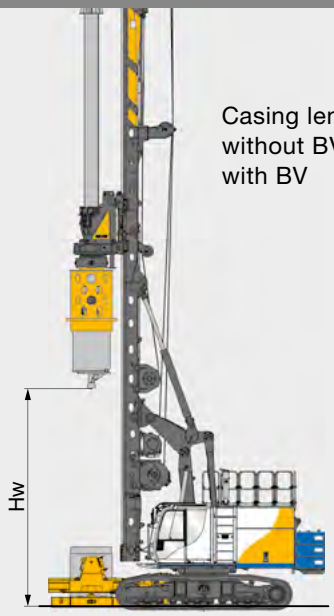
Other drilling depths, drilling diameters and Kelly versions are available on request.

Torque multiplier BTM 720 for a torque of 400 kNm for casing



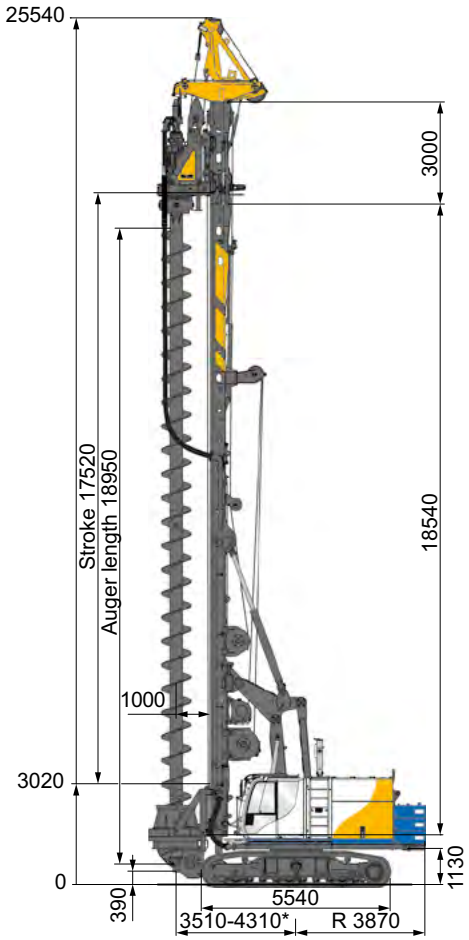
Casing length
with BTM = H_w - 0.5 m
= H_w max. 7.4 m

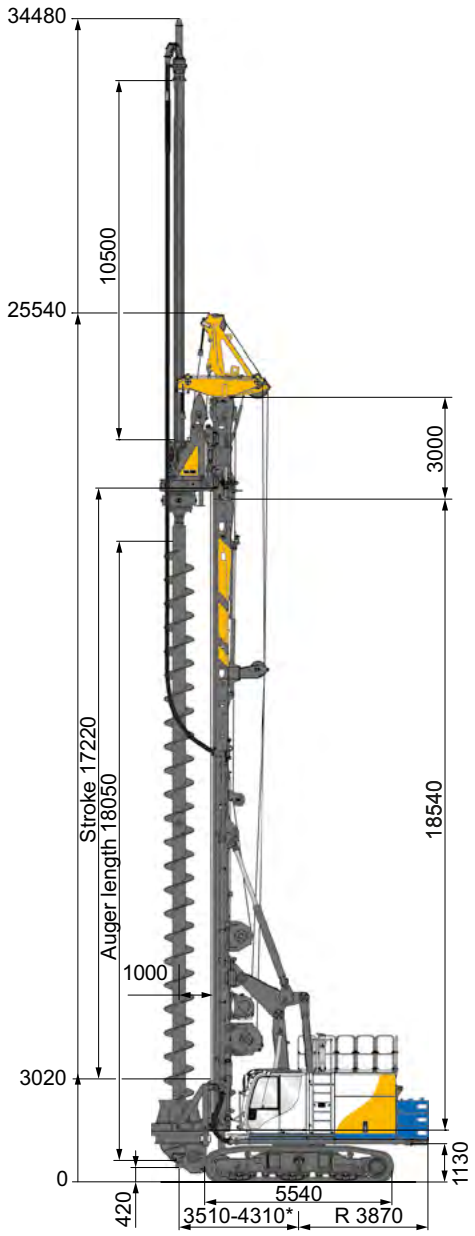
Kelly drilling with casing oscillator up to BV 1500



Casing length
without BV = H_w - 0.5 m
with BV = H_w - 1.6 m

Application – CFA Drilling

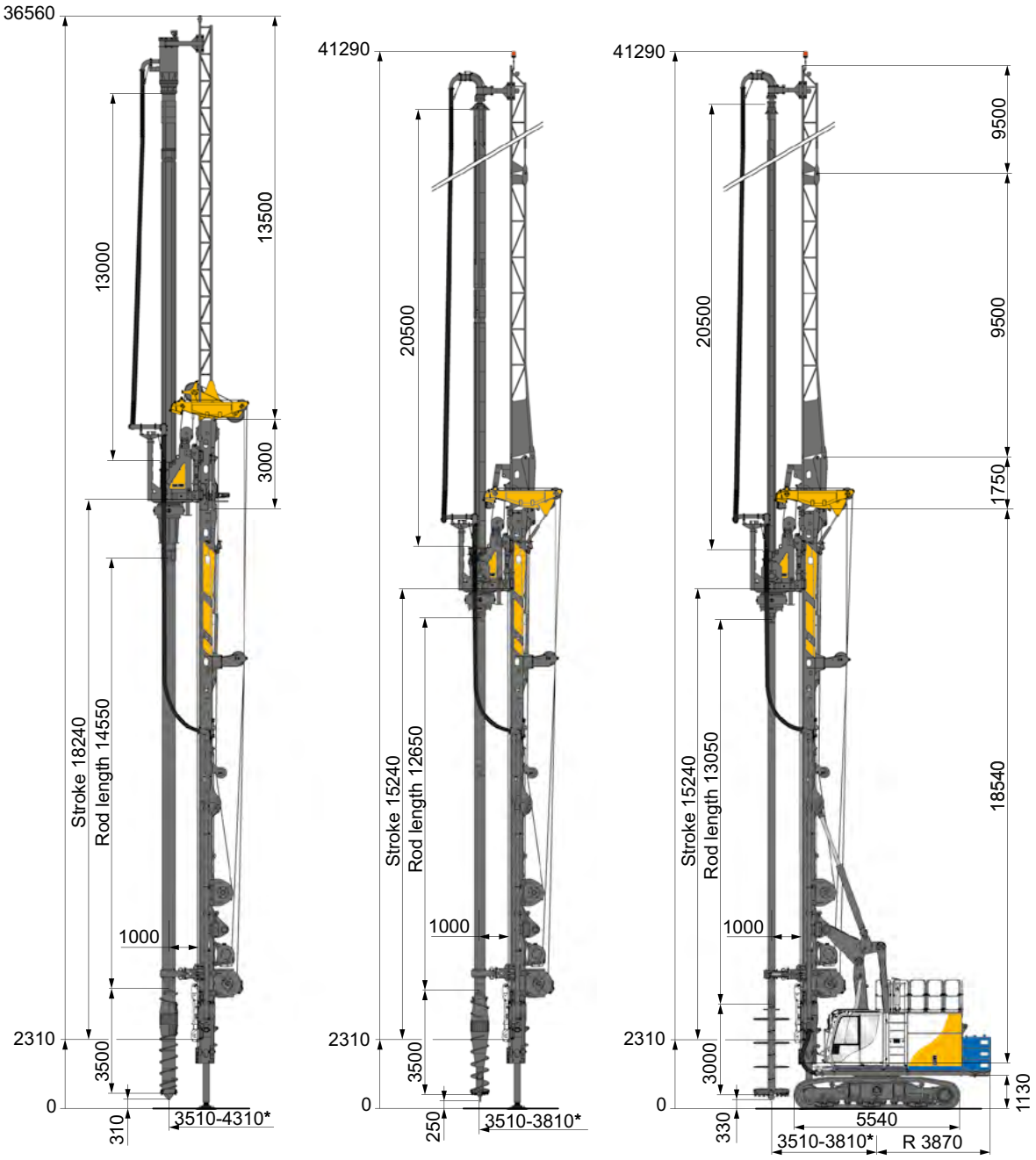




	Without mast extension	With mast extension
Mast extension	3 m	3 m
Kelly extension	without	10.5 m
Max. drilling diameter	1,200 mm	1,200 mm
Drilling depth with Bauer rotary auger cleaner	16.9 m	27.4 m
Drilling depth with Bauer brush auger cleaner	17.9 m	28.4 m
Max. extraction force with main and crowd winch (effective)	730 kN	730 kN
with counterweight*	12.3 t	12.3 t

* depending on equipment

Application – with Lattice mast extension



	FDP Lost-bit drilling	FDP drilling	SCM mixing
Mast extension	3 m	-	-
Kelly extension	13.0 m	20.5 m	20.5 m
Max. drilling diameter FDP	620 mm	620 mm	-
Max. mixing diameter SCM	-	-	2,500 mm**
Max. drilling depth FDP	30.7 m	34.8 m	-
Max. mixing depth SCM	-	-	34.8 m
Max. extraction force with main and crowd winch (effective)	730 kN	730 kN	730 kN
with counterweight*	14.7 t	12.3 t	12.3 t

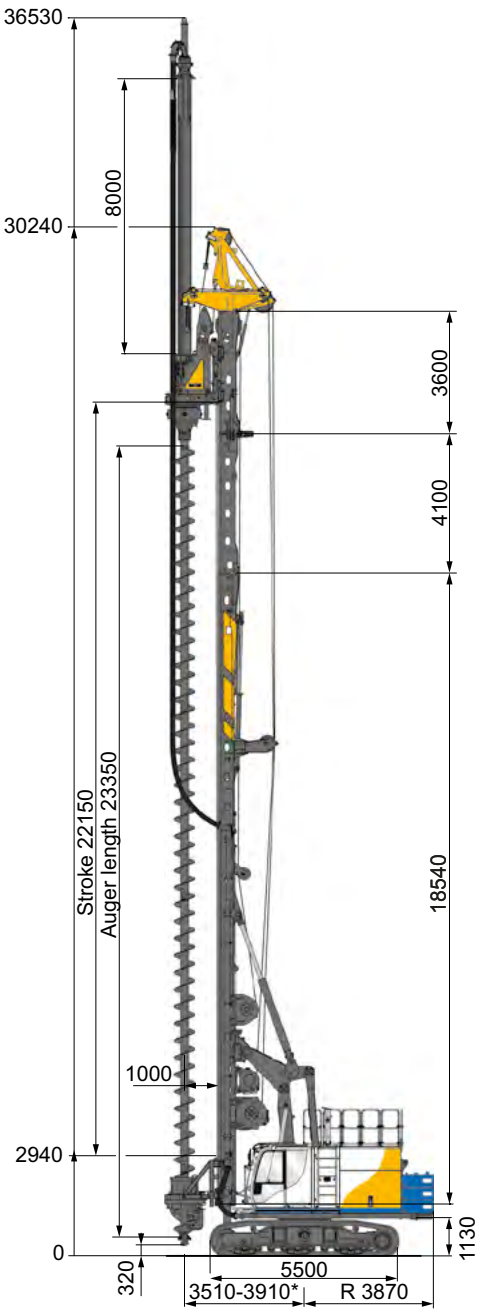
* depending on equipment
** operation only possible with restrictions

Extension package Single Pass Extreme (SPEX)

Single Pass SPEX Extreme

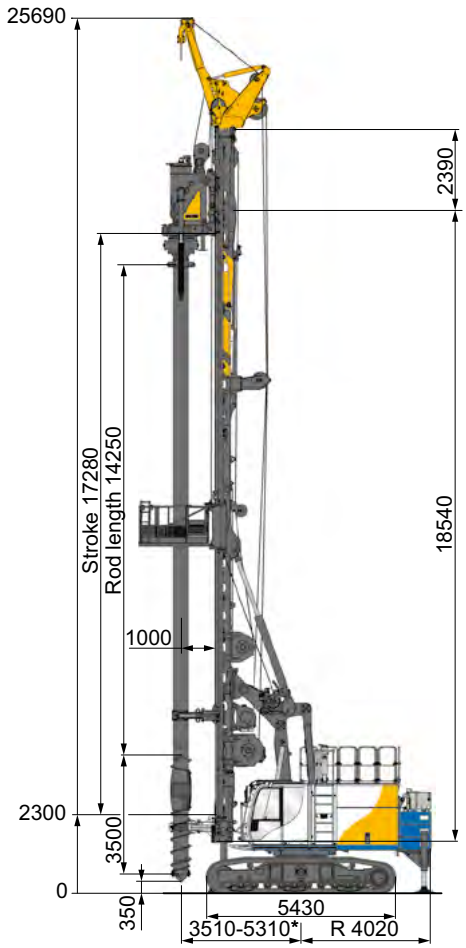
Highlights Extension Package Single Pass Extreme (SPEX)

- Expansion of the active feed by 7.7 m due to installation of an upper mast extension
- Further 8 m drilling depth, achievable due to following up with the Kelly extension
- Low investment costs due to the expansion of the standard equipment
- Compact transport dimensions due to the hydraulically foldable and lockable mast extension
- Optionally, the Remote Control Multi can be used to fold the mast extension
- Can be used in CFA, FDP and SCM mode



	CFA drilling		FDP drilling	SCM mixing
Kelly extension	without	8.0 m	8.0 m	8.0 m**
Max. drilling / mixing diameter	1,200 mm	880 mm	620 mm	1,700 mm
Max. drilling depth with Bauer rotary auger cleaner and Kelly extension	29.8 m		-	-
Max. drilling depth with Bauer brush auger cleaner and Kelly extension	31.0 m		-	-
Max. drilling / mixing diameter with casing guidance and Kelly extension	-		30.1 m	30.1 m
Max. extraction force with main and crowd winch (effective)*	565 kN		565 kN	565 kN
with counterweight*	14.7 t		14.7 t	14.7 t

* depending on equipment
** not recommended



Highlights of Handling Package for FDP Lost-Bit:

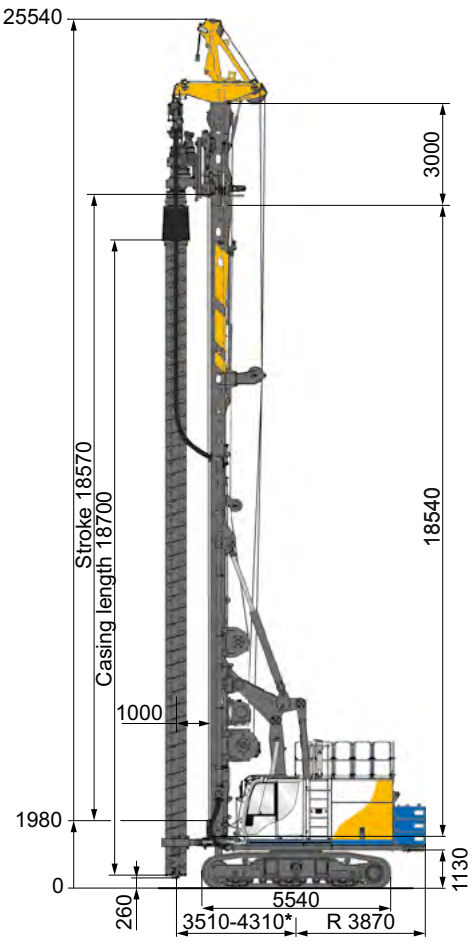
- Special mast head with auxiliary rope boom, which can be swivelled hydraulically in the drill axis
- Mast-guided personnal hoist system with swivelling transport platform
- Concrete funnel with camera system and cleaning system on the rotary drive for de-pressurized concreting in FDP mode
- High-pressure cleaner with water tank integrated in the base carrier
- Hydraulic upper carriage support for stabilizing and lifting the machine
- Extra wide flat track shoes on the under carriage
- Advanced EEP hydraulic system for full parallel operation of drilling and auxiliary functions
- Large horizontal movement enables a smooth and trouble-free swivel motion

Operating weight 93.1 t
(as shown)

	FDP Lost-Bit drilling Handling Package
Max. drilling diameter	620 mm
Max. drilling depth	16.8 m
Max. extraction force with main and crowd winch (effective)	730 kN
with counterweight*	12.3 t

* depending on equipment

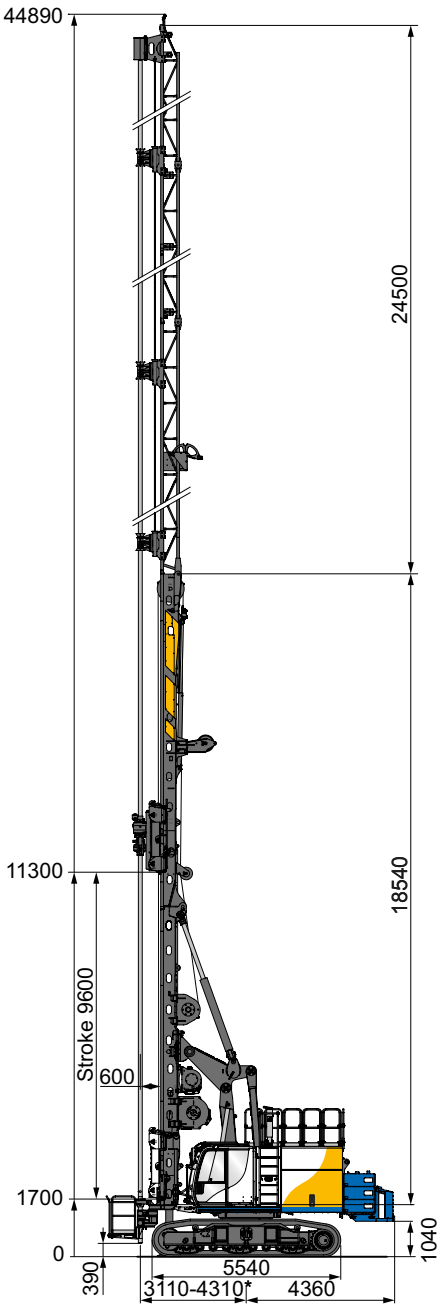
Further Applications

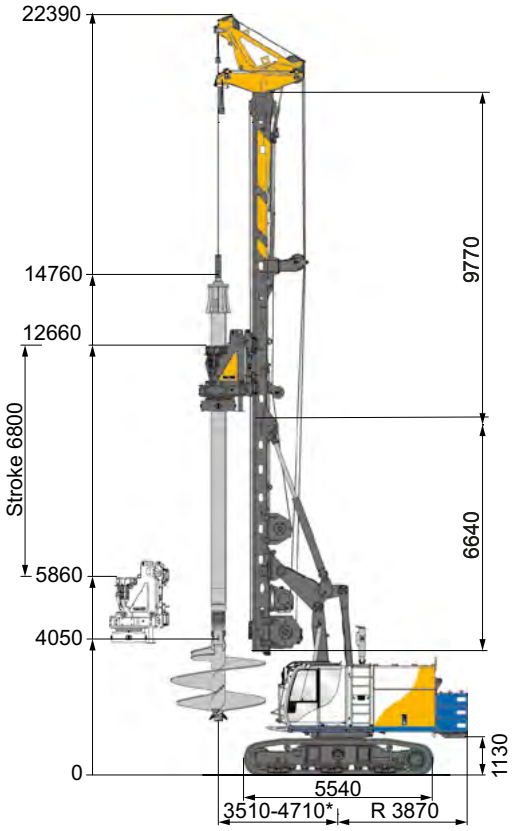


CCFA with FoW application	
Torque auger/casing	50/140 kNm
Mast extension	3 m
Max. drilling diameter	610 mm
Max. drilling depth	18.1 m
Max. extraction force with main and crowd winch (effective)	530 kN
Ejection system	without
with counterweight*	12.3 t

Vibro Displacement (VD) Vibrator TR 17	
Max. penetration depth	16.1 m
Pressure with crowd winch (effective)	110 kN
Max. extraction force with crowd winch (effective)	330 kN
with counterweight*	14.9 t

* depending on equipment

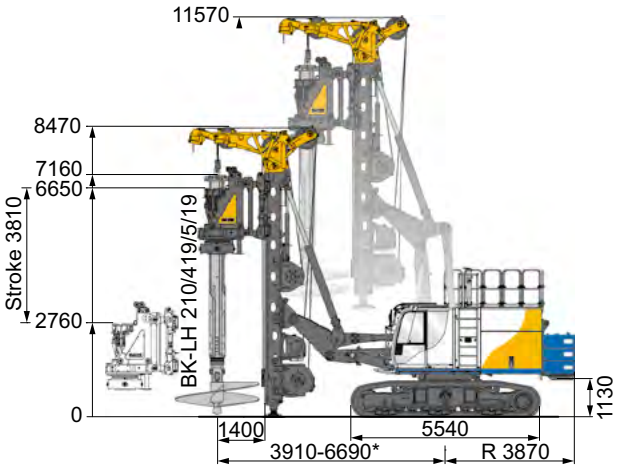




Jet Grouting	
Length of lattice mast	24.5 m
Max. rod diameter	89 - 133 mm
Max. jetting depth	35.3 m
Rotary drive	KDK 10/14 S
Max. extraction force with crowd winch (effective)	330 kN
with counterweight*	12.3 t

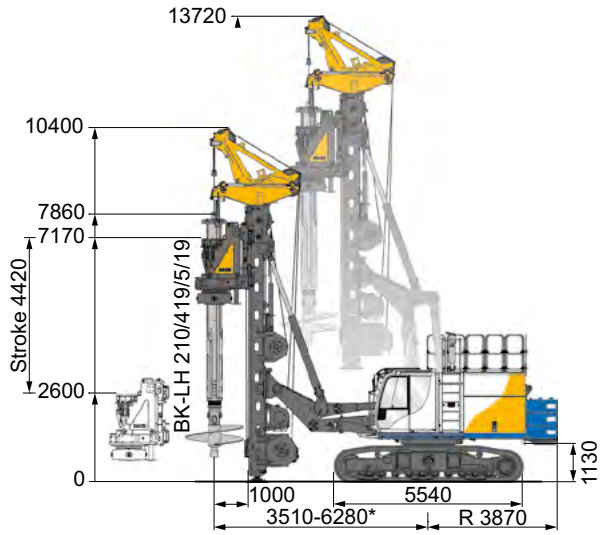
Giant Drill	
Lower mast extension	without
Drill axis	1,400 mm
Max. drilling diameter	3,800 mm
Max. drilling depth	-

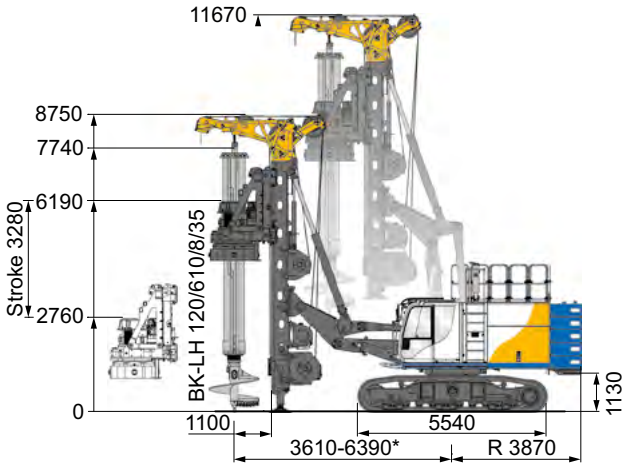
* depending on equipment



Low Headroom System for large drilling depths:

- The BG 30 H low headroom drilling rig can also be configured for large drilling depths in limited headroom conditions.
- With the special Kelly bar BK-LH 120/610/8/35 drilling depths of up to 35.3 m can be achieved with a maximum drilling diameter of 2,500 mm.
- Equipped with the low headroom masthead, the rig has a minimum height of just 8.8 m. Alternatively, the height of the rig with the Kelly masthead is 10.8 m.
- The KDK 300 WP (max. 280 kNm for drilling) automatically reduces the torque to 120 kNm when the special Kelly bar BK-LH 120/610/8/35 is used. The full torque of 300 kNm is provided for cased drilling.





	Low Headroom System
Lower mast extension	-
Drill axis	1,000 / 1,400 mm
Max. drilling diameter	1,700 / 2,500 mm
Max. drilling depth	19.5 m

	Low Headroom System for large drilling depth	
Rotary drive	KDK 300 WP	
Drill axis	1,100 mm	1,400 mm
Max. drilling diameter	1,900 mm	2,500 mm
Max. drilling depth (BK-LH 120/610/8/35)	35.3 m	

* depending on equipment

Transport Data - Dimensions and Weights

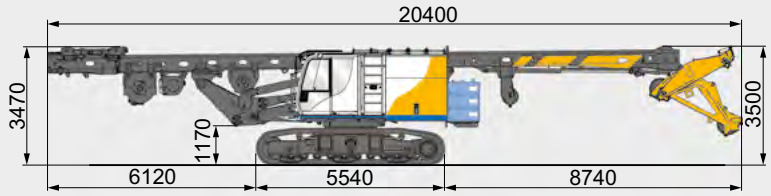
G = Weight
B = Width, overall

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

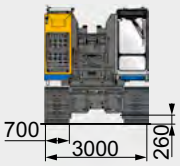
Transport with under carriage

Without mast extension*

G = 60.3 t

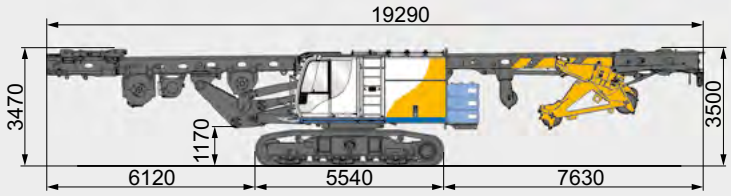


G = 72.6 t with 12.3 t counterweight

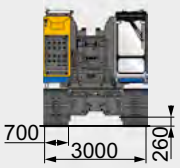


With mast extension*

G = 63.3 t

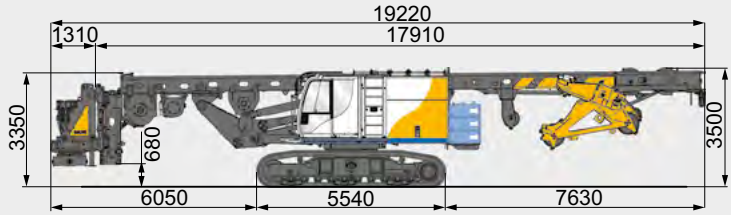


G = 75.6 t with 12.3 t counterweight

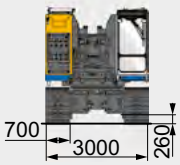


Lower mast section with rotary drive and folded mast extension

G = 68.8 t with rotary drive

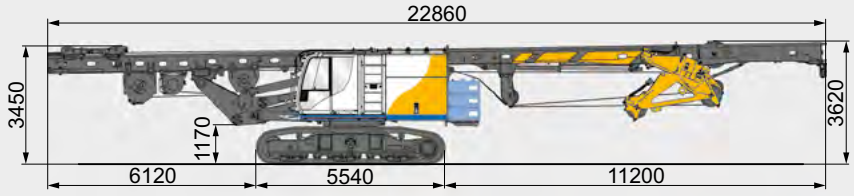


G = 81.1 t incl. rotary drive with 12.3 t counterweight

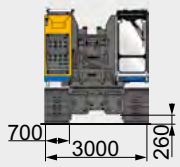


Extension Package Single Pass Extreme (SPEX)

G = 64.3 t



G = 79.0 t with 14.7 t counterweight

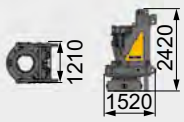


Counterweight**

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

Rotary drive

G = 5.5 t (KDK 300 S)



Track shoes	Overall width of crawlers retracted / extended
700 mm	3,000 - 4,400 mm
800 mm	3,300 - 4,500 mm
900 mm	3,400 - 4,600 mm

* more weight with three-sectional mast approx. 500 kg

International Service Hotline
+800 1000 1200*

+49 8252 97-2888
BMA-Service@bauer.de
*toll-free number, where available

24/7

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

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