BAUER BG 28 H

Drilling Rig

Base Carrier BT 85

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 Bauer 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

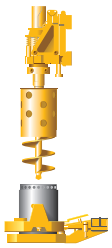
FDP
Full Displacement Piling (standard or lost bit)

FoW
Front-of-wall method

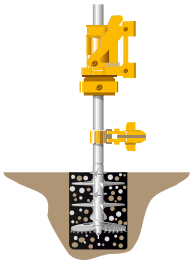
VD
Vibro Displacement

The Drilling Rig BG 28 H (BT 85)

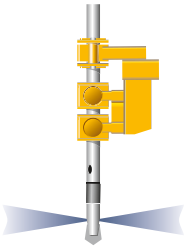
Max. drilling diameter:	**2,500 mm**
Max. drilling depth:	**65.7 m**
Max. torque:	**282 kNm**
Max. height:	**24.9 m**
Engine:	**Volvo TAD 13 345/405 kW**



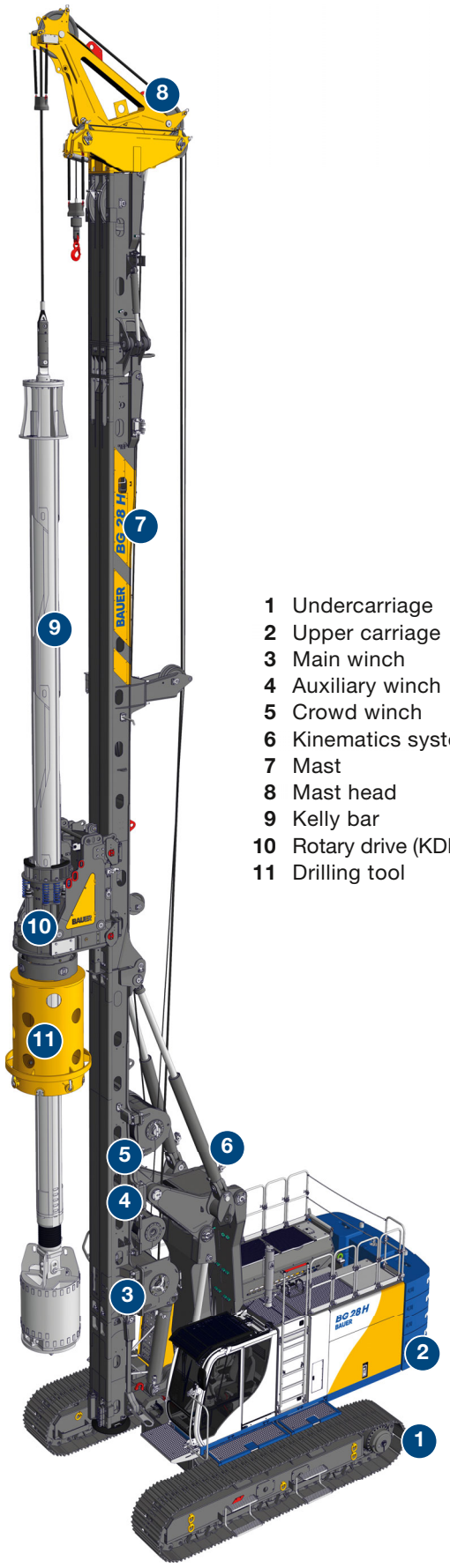
Cased Kelly drilling
Casing installation
with casing oscillator



SCM/SCM-DH
Single column mixing



HDI
Jet grouting

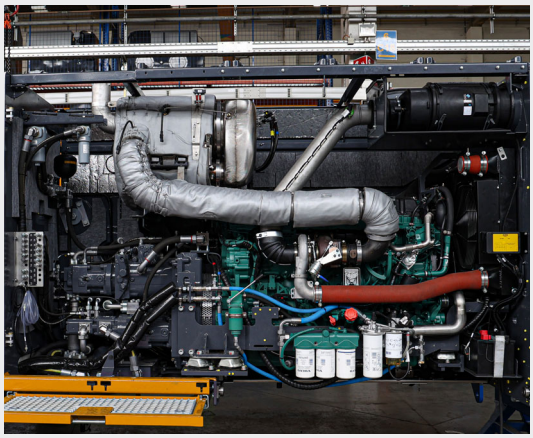


1 Undercarriage
2 Upper carriage
3 Main winch
4 Auxiliary winch
5 Crowd winch
6 Kinematics system
7 Mast
8 Mast head
9 Kelly bar
10 Rotary drive (KDK)
11 Drilling tool

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

High-performance Volvo engines
- TAD 13 (345 kW UN/ECE R96* or 405 kW EU Stage V, EPA/CARB Tier 4 final)
- Diesel particle filter in exhaust class EU Stage V, EPA/CARB Tier 4 final
- Low noise emission
- Globally available Volvo service partner network



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)
- Cameras for rear area monitoring

Energy-Efficient PowerEEP

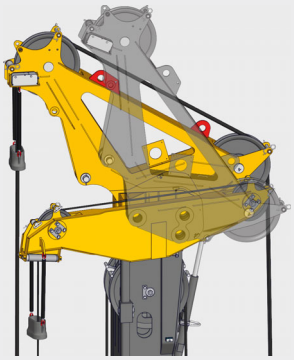
- **Reduction of fuel consumption by up to 30%**
- **Increased productivity thanks to improved efficiency**
- **Significantly reduced noise levels**
- **Tried and proven suitability for practical application**
- **Optimized parallel operation of main and auxiliary consumers**

*Emission standard equivalent EPA Tier 3 and EU Stage III A

Variably stackable counterweights
- 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

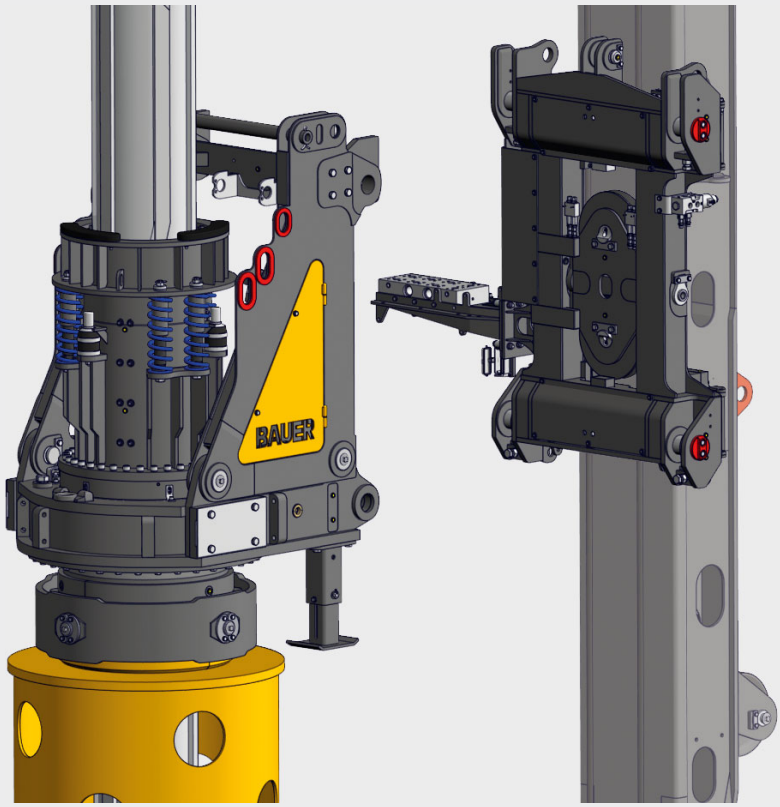
Single Pass SPEX Extreme

Flexible mast concept
- Expansion package Single Pass Extreme (SPEX)
- Three-sectional mast
  - Low-head version
  - Giant drill version
  - Optimized transport length
- Upper mast extension 2 m or 3 m (hydraulically foldable and lockable)
  - Simple and secure attachment, no working at heights unsecured
  - Reduced transport length
- Lattice mast extension for max. 20.5 m follow-up length
- 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
  - Foldaway main winch boom for single-pass method and optimized transport length



Remote control for equipment setup
- Remote control can be used to activate many setup functions, such as moving the drilling rig, telescoping the undercarriage etc., outside the danger zone
  - Operation within sight of the triggered setup functions
  - Rugged and compact wireless remote control, remote control Multi with LCD screen
  - Lockable storage box for remote control can be accessed from the ground

Rotary drive

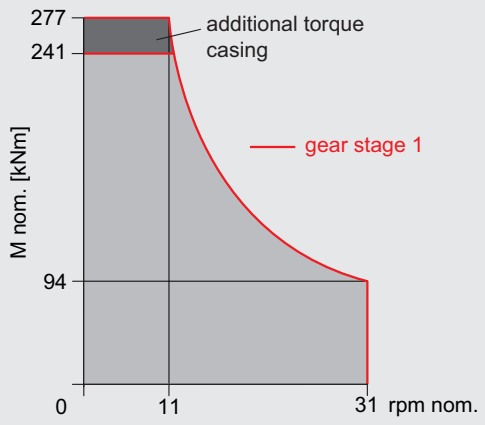


Kelly set-up
- Long Kelly guide
- Integrated shock absorbing spring system
- Kelly visualization (see page 15)
- Improvement of drilling performance
- Very easy to use
- Reduction of wear on Kelly bar and adapter bars

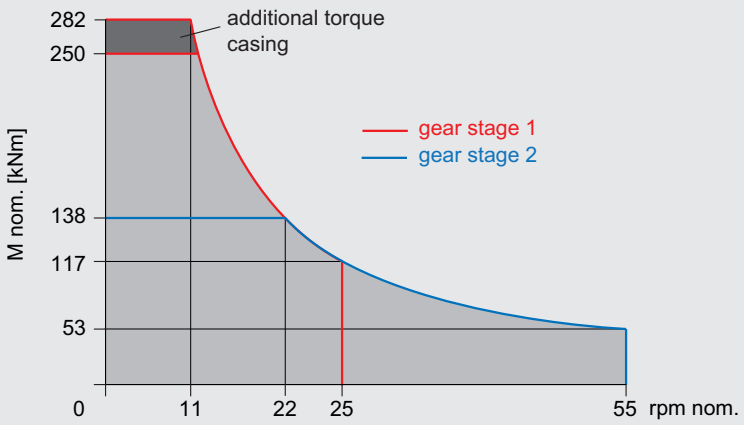
Rotary drive
- Optional single gear drive or multi gear drive
- Max. torque 282 kNm
- Max. speed 55 rpm
- Different operating modes, speed and torque can be freely configured in some areas

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

KDK 280 K



KDK 280 S



Technical equipment (selection)

Base carrier BT 85

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

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 13 kVA
- Low-temperature package / Low-temperature package plus
- Cab space heater with automatic timer
- Remote control Basic / Multi
- Operator seat with air-condition
- Weather protection

Drilling rig attachments

Standard
- Main winch with hydraulic free-wheel control
- Swivel for main rope
- Masthead foldaway 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 2 m or 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
  - Drilling rig weight can be activated by mechanical coupling (UW 80)
- Auger cleaner attachment for Kelly system
- Passenger transportation system with car attachment

Rotary drive

Standard
- Rotary drive KDK 280 K (constant drive)
- Kelly equipment for external Kelly casing 394 mm
- Integrated Kelly shock absorbing system
- Cardan joint

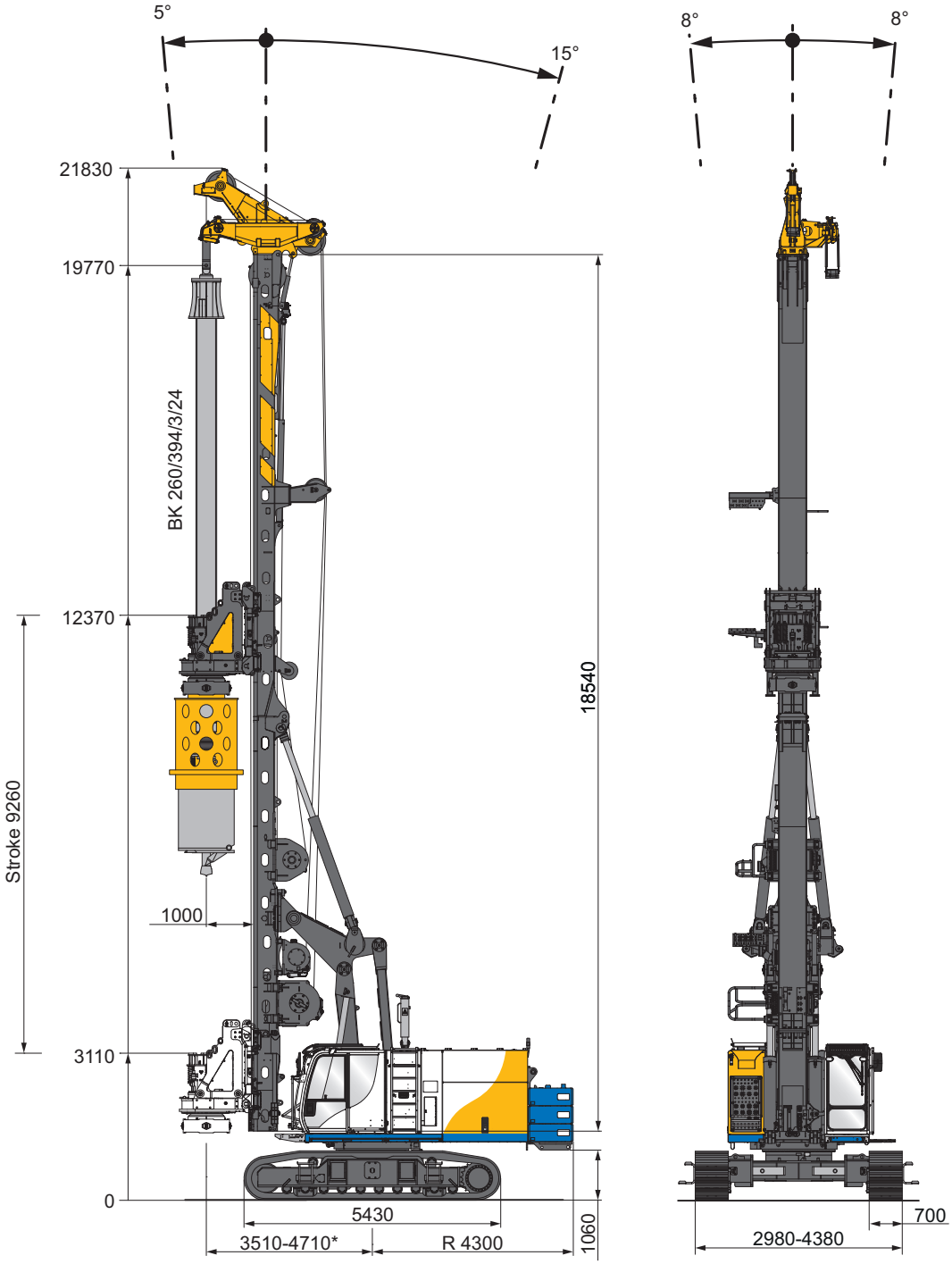
Optional
- Rotary drive KDK 280 S (switch drive)
- Kelly equipment for external Kelly casing 419 mm
- Torque converter BTM 720 K for Kelly drilling
  - Torque 400 kNm (nominal)

Measurement and control technology

Standard
- Automatic mast alignment with memory-recall
- Crowd stroke monitoring
- Feed rate control
- Electronic mast reach limiter

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

Dimensions - Basic version



Operating weight **83.7 t**
(as shown)

*depending on equipment

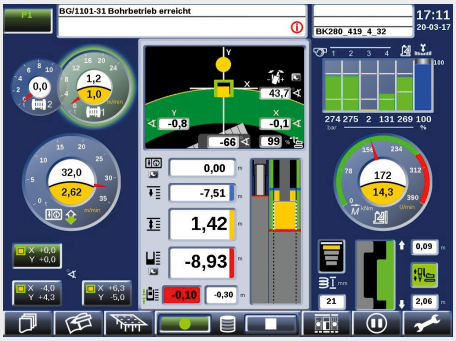
Technical specifications

Rotary drive	KDK 280 K	KDK 280 S
Torque (nominal) for casing operation at 350 bar	277 kNm	282 kNm
Torque (nominal) for drilling at 350 bar	241 kNm	250 kNm
Max. speed of rotation	31 rpm	55 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	530 / 620 kN with Mast support unit 460 / 540 kN without Mast support unit	
Rope diameter	24 mm	
Speed (down/up)	11.0 m/min	
Fast speed (down/up)	35 m/min	
Main winch	M6 / L3 / T5	
Line pull (1st layer) effective/nominal	200 / 250 kN	
Rope diameter	28 mm	
Line speed (max.)	85 m/min	
Auxiliary winch	M6 / L3 / T5	
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 85	
Engine	Volvo TAD 13	
Rated output ISO 3046-1	345 kW @ 1,850 U/min	405 kW @ 1,850 U/min
Exhaust standards according to EU 2016/1628	UN/ECE R96*	EU Stage V EPA/CARB Tier 4 final
Diesel tank capacity / AdBlue tank	730 / – l	730 / 70 l
Sound pressure level in the cabin (EN 16228, Annex B)	LP_A 80 dB (A)	
Sound power level (2000/14/EG and EN 16228, Annex B)	LW_A 109 dB (A)	
Hydraulic pressure	350 bar	
Hydraulic oil tank capacity	650 l	
Flow rates	2 x 320 + 1 x 565 + 1 x 215 l/min	
Undercarriage	UW 65	UW 80
Crawler type	B 6	B 7
Traction force effective/nominal	450 / 530 kN	520 / 610 kN

*Emission standard equivalent to EPA Tier 3 and EU Stage III A

B-Tronic system

B-Tronic
With the BAUER B-Tronic system, you can reliably and precisely accomplish your tasks on the construction site, even under extreme application conditions.
- The high-resolution touchscreen display makes operation extremely user-friendly
- By changing the brightness, color scheme and day/night mode, the display of the operating situation and light exposure can be optimally adjusted
- The main parameters, such as pump pressures, torque and drilling depths are visible at a glance



B-Drive
The B-Drive is a central operating and visualization system
- B-Drive combines configurable potentiometer values in one display
- Ergonomic placement of the display on the right column of the operator's cab

Tablet
The tablet is the multifunctional tool for your Bauer machine
- You have online access to the customer portal, manuals, equipment management and lots more
- Default internet connection via the DTR module located in the machine
- The operator screen can be mirrored live onto the tablet in order to follow the ongoing work process

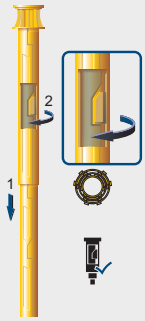
Equipment networking
DTR module
- With the DTR module, equipment and product data can be provided to a range of users

WEB-BGM
- WEB-BGM is a software for accessing equipment data and locations of the equipment fleet even when you are not on site

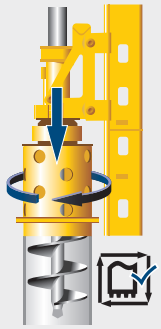
Report for production data
- Standardized reports to document drilling progress and as proof of performance and quality

Assistance systems (selection)

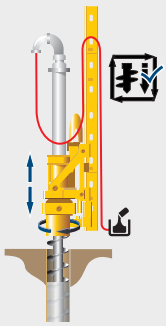
Adaptive Kelly speed assistant
The assistant raises and lowers the Kelly bar safely and quickly and allows an easy operation. The automatic control of the main winch reduces the speed at the transition points of the Kelly sections. This provides maximum safety with minimum wear. The permanent monitoring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



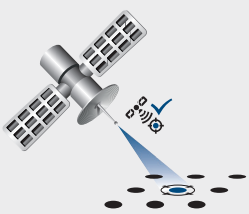
Kelly visualization
Display of the locking recesses, as well as representation of the controlled extension and retraction of the Kelly bar on the B-Tronic system. The rapid approach of the locking position results in a considerably enhanced drilling performance. In addition, the level of wear that the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



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.



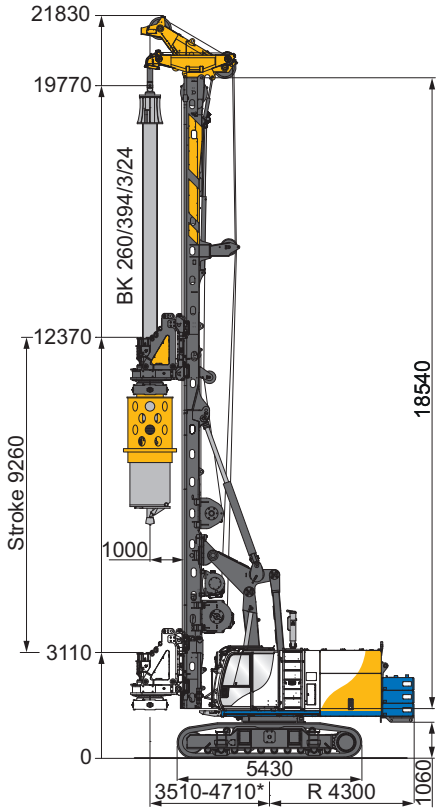
Automatic drilling and extraction control for Single-Pass processes
The system controls the drilling and/or extraction speed of the crowd system and enables hands-free operation. This ensures the production of a high-quality pile while simultaneously minimizing the amount of concrete.

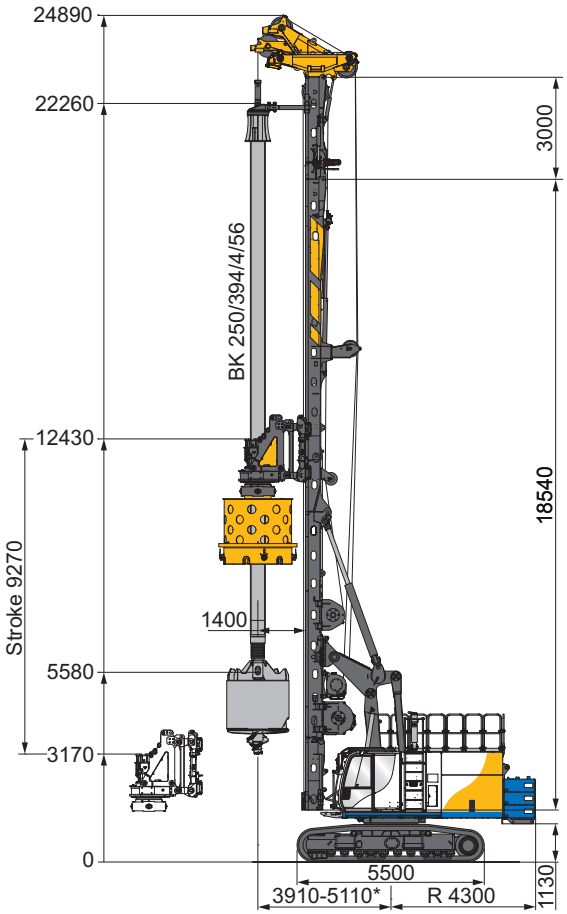


Satellite-based positioning
The BAUER Assistant Positioning System (B-APS) allows the position of a bored pile to be located extremely accurately. Documentation is provided for the nominal and actual coordinates, as well as the corresponding accuracy of each bored pile. Manual marking of the piles is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

Many other assistance systems are available in our portfolio.

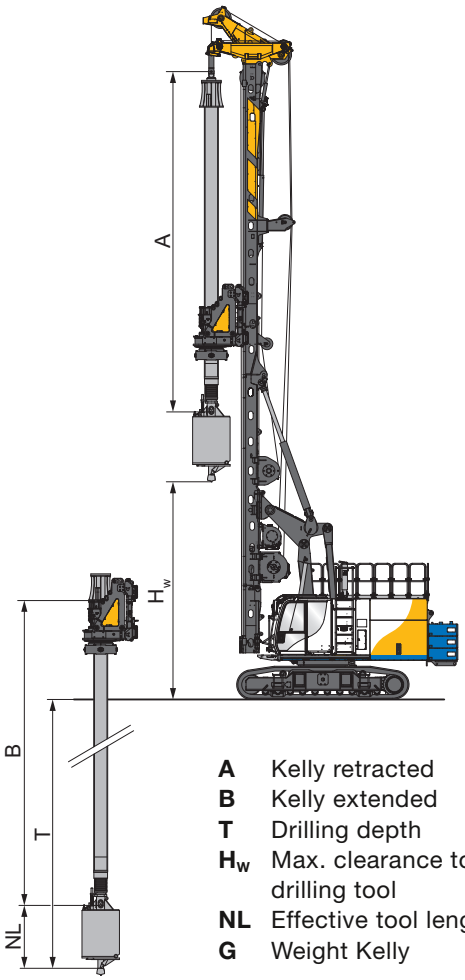
Drilling method – Kelly drilling





	Basic version	Expansion stage
Undercarriage	UW 65	UW 80
Mast extension	without	3 m
Upper Kelly guide	without	with
Drilling 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.	83.7 t	103.0 t
with Kelly	BK 260/394/3/24	BK 250/394/4/56
with casing drive adapter	1,300 mm	2,000 mm
with bucket	1,180 mm	1,830 mm
with counterweight	9.9 t	12.3 t

*depending on equipment



A Kelly retracted
B Kelly extended
T Drilling depth
H_w Max. clearance to drilling tool
NL Effective tool length
G Weight Kelly

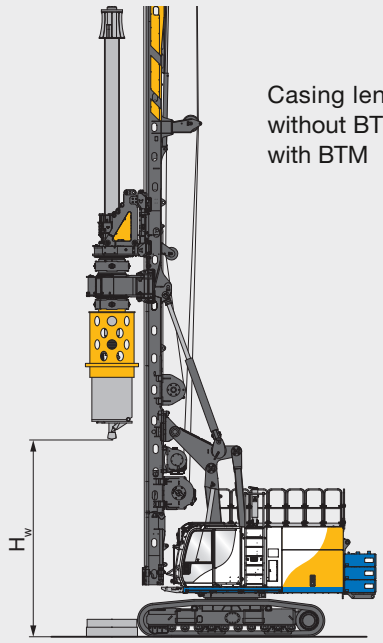
Drilling depths – uncased Kelly drilling, drilling axis 1,000 mm

				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/260/394/3/24	10.7	26.6	4,800	6.9	25.4	7.9	25.4
BK/260/394/3/30	12.7	32.6	5,550	4.9	31.4	7.9	31.4
BK/260/394/3/33	13.7	35.6	5,920	3.9	34.4	6.9	34.4
BK/260/394/3/36	14.7	38.6	6,300	2.9	37.4	5.9	37.4
BK/260/394/3/42	16.7	44.6	7,100	0.9	43.4	3.9	43.4
BK/260/394/3/48	18.7	50.6	7,900	-	-	1.9	49.4
4-part Kelly							
BK/250/394/4/32	10.7	34.9	6,600	6.9	33.7	7.9	33.7
BK/250/394/4/40	12.7	42.9	7,750	4.9	41.7	7.9	41.7
BK/250/394/4/44	13.7	46.9	8,350	3.9	45.7	6.9	45.7
BK/250/394/4/48	14.7	50.9	8,900	2.9	49.7	5.9	49.7
BK/250/394/4/56	16.7	58.9	10,050	-	-	3.9	57.7
BK/250/394/4/64	18.7	66.9	11,200	-	-	1.9	65.7

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

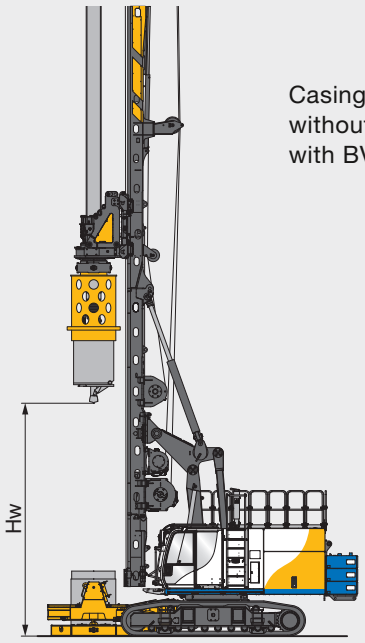
Other drilling depths, drilling diameters and Kelly versions are available on request.

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



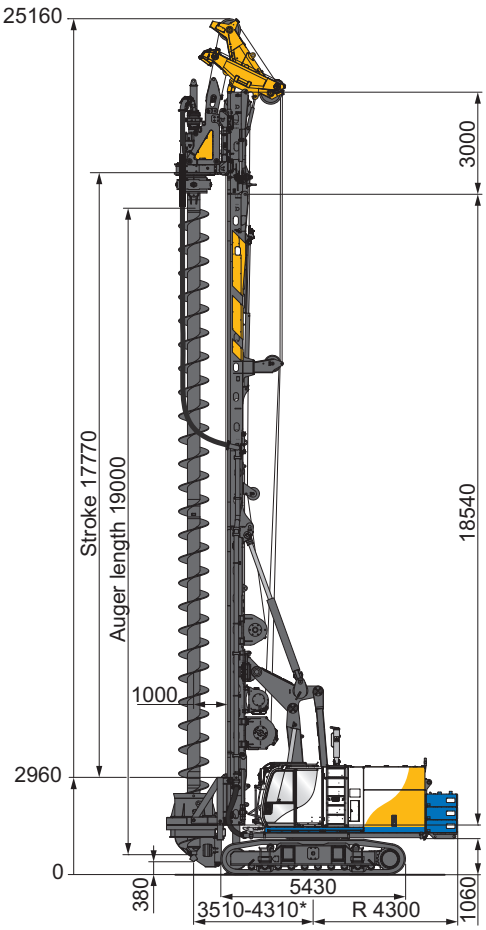
Casing lengths
without BTM = H_w - 0.5 m
with BTM = H_w max. 7.4 m

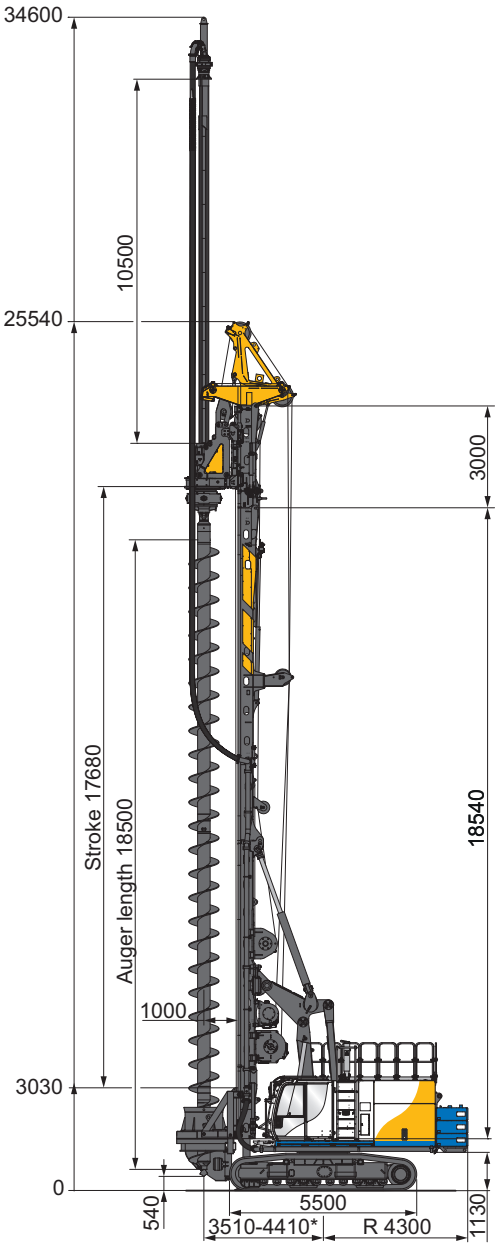
Kelly drilling with casing oscillator up to BV 1500



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

Drilling method – CFA drilling

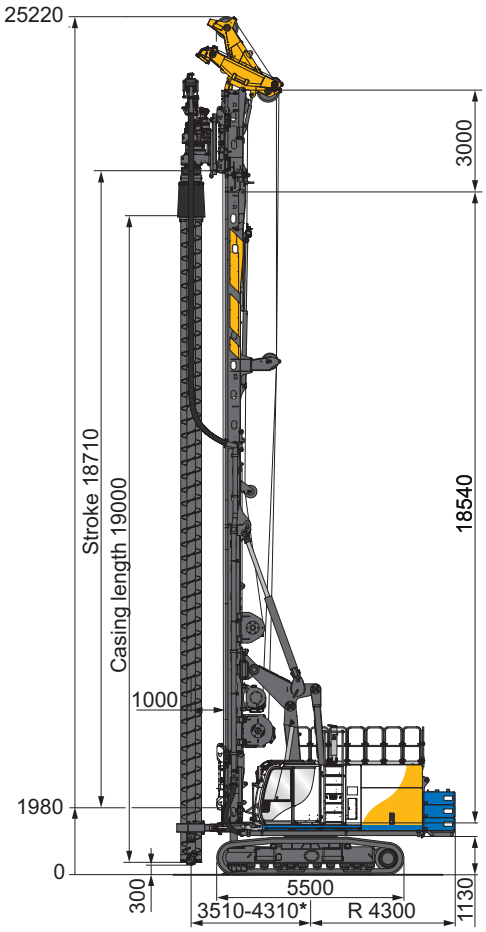


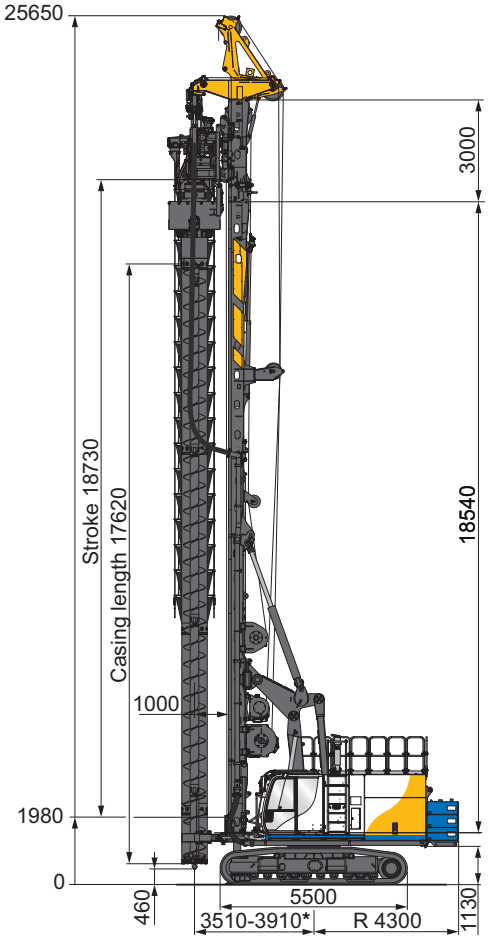


	Basic version	Expansion stage
Undercarriage	UW 65	UW 80
Mast extension	3 m	3 m
Kelly extension	without	10.5 m
Max. drilling diameter	1.200 mm	1,200 mm
Drilling depth with auger cleaner	17.3 m	27.6 m
Max. extraction forth with main- and crowd winch (effective)	730 kN	730 kN
with counterweight *	9.9 t	12.3 t

*depending on equipment

Further Applications

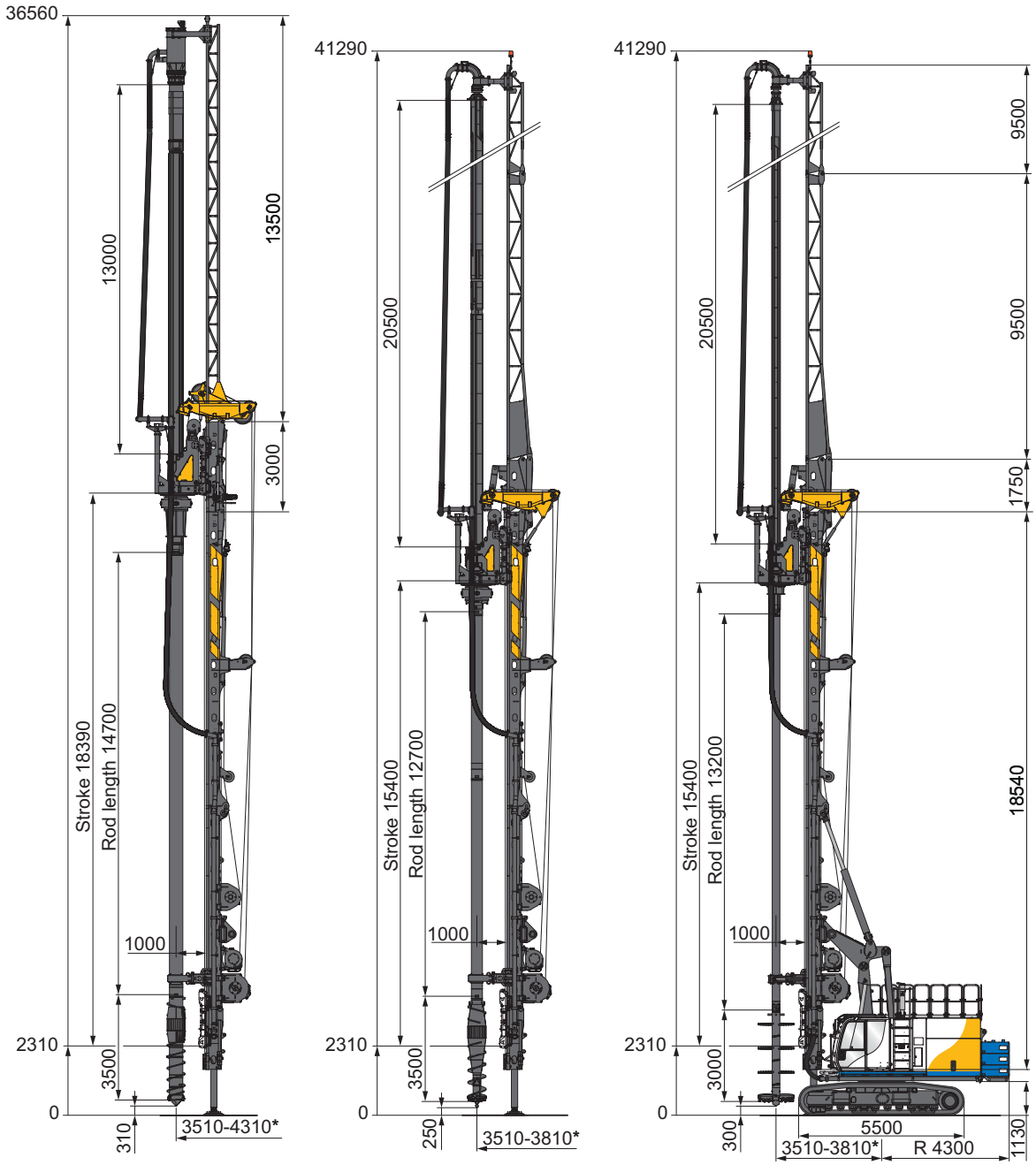




	CCFA with FoW application DKS 50 / 140	**Cased CFA drilling** with DKS 100 / 200
Torque auger / casing	50/140 kNm	100/200 kNm
Mast extension	3 m	3 m
Max. drilling diameter	610 mm	750 mm
Max. drilling depth	18.3 m	17.3 m
Max. extraction force with main- and crowd winch (effective)	500 kN	730 kN
with counterweight *	12.3 t	12.3 t
Ejection system	without	Optional

*depending on equipment

Further Applications



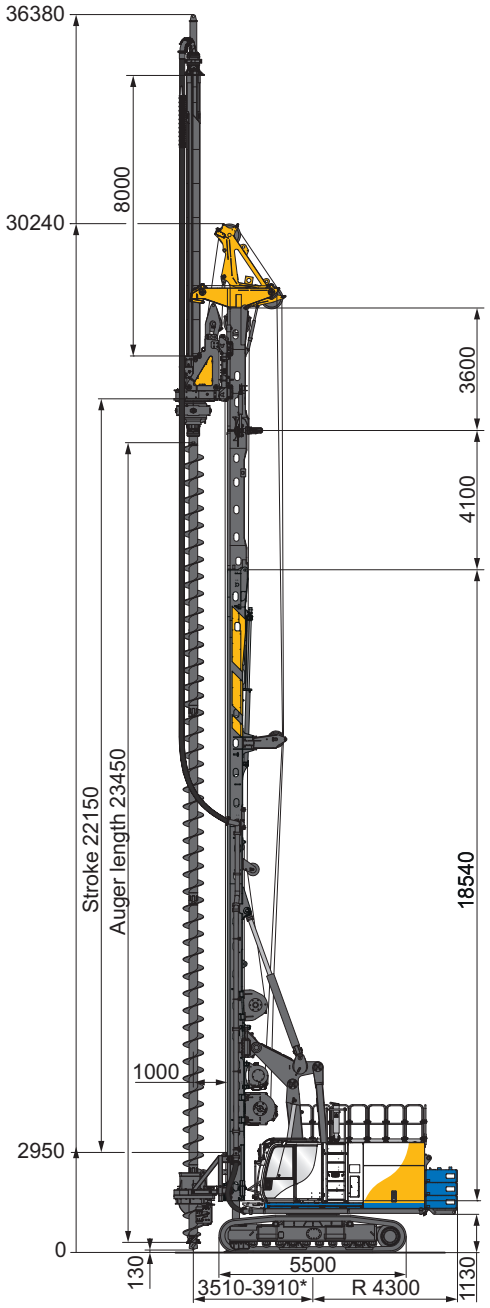
	FDP lost bit drilling Expansion stage	FDP drilling Expansion stage	SCM mixing Expansion stage
Undercarriage	UW 80	UW 80	UW 80
Mast extension	3 m	-	-
Kelly extension	13.0 m	20.5 m	20.5 m
Max. drilling diameter FDP	620 mm	620 mm	-
Max. mixing diameter SCM	-	-	2,500 mm**
Max. drilling depth FDP	30.9 m	35.0 m	-
Max. mixing depth SCM	-	-	35.0 m
Max. extraction force with main- and crowd winch (effective)	730 kN	730 kN	730 kN
with counterweight *	12.3 t	12.3 t	12.3 t

* depending on equipment
** Work only possible with restrictions

Single Pass SPEX Extreme

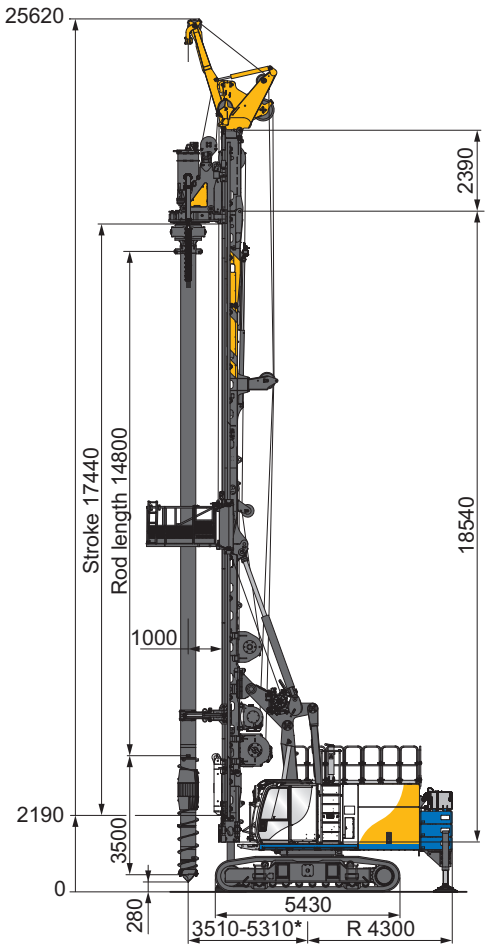
Highlights expansion package
Single Pass Extreme (SPEX)

- Expansion of the active feed path by 7.7 m by fitting a mast extension
- Additional 8 m of drilling depth can be achieved through follow up with Kelly extension
- Low investment cost through expansion of the standard equipment
- Compact transport dimensions through hydraulically foldable and lockable mast extension
- The folding process can optionally be done via remote control Multi
- Can be used for CFA, FDP, and SCM methods



	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
Drilling depth with auger cleaner / casing guidance without Kelly extension with Kelly extension	21.9 m 30.0 m		22.3 m 30.3 m	22.3 m 30.3 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



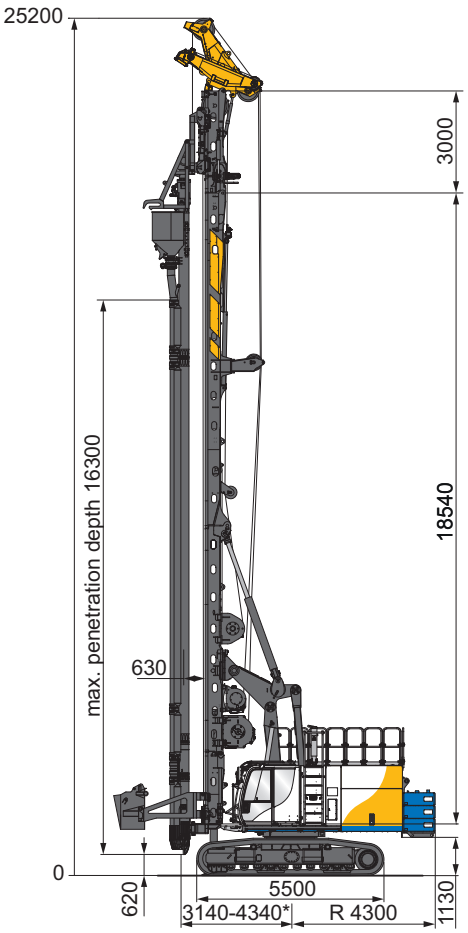
Highlights of the handling package for FDP lost bit:

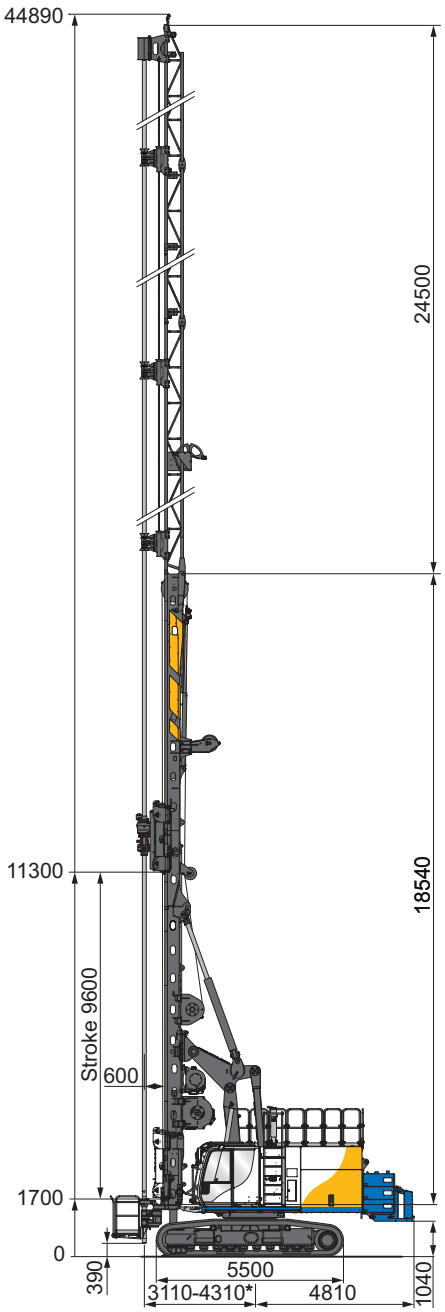
- Special mast head with hydraulic auxiliary winch boom that can be swiveled into the drilling axle
- Mast-guided passenger transportation system with swiveling car
- Attachment of concrete pouring hopper with camera system and cleaning system on rotary drive for pressure less concrete pouring in FDP mode
- High-pressure cleaner with water tank integrated on base carrier
- Hydraulic upper carriage support for stabilization and lifting of machine
- Extra-wide flat base plates on undercarriage
- Expanded EEP hydraulics system for full parallel operation of drilling and auxiliary functions
- Large horizontal displacement enables full rotation without any problems

Operating weight **92.9 t**
(as in diagram)

	FDP Lost-Bit drilling Handling package
Max. drilling diameter	620 mm
Max. drilling depth	17.0 m
Max. pulling force with crowd winch and main winch (effective)	730 kN
with counterweight *	12.3 t

*depending on equipment



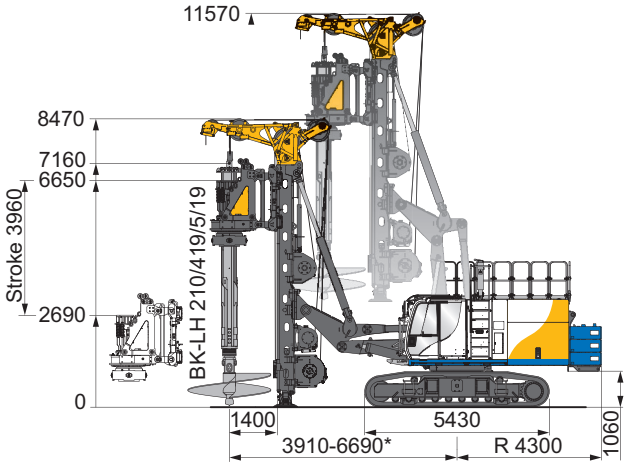


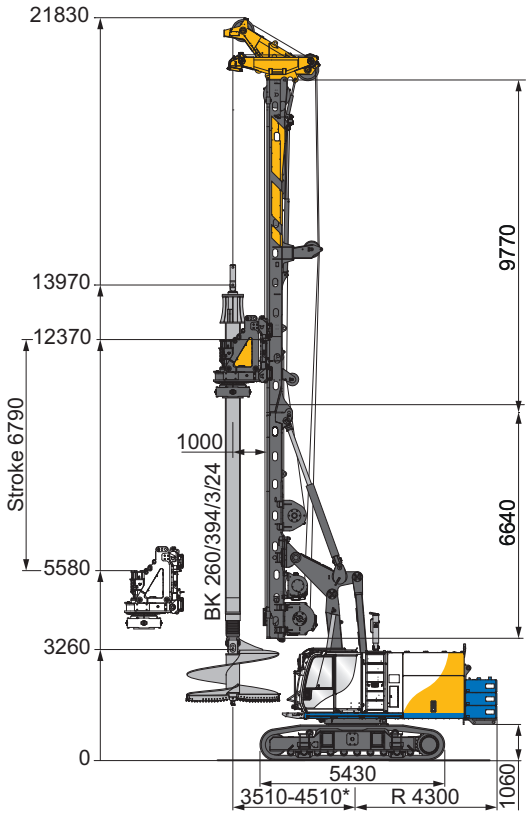
	Vibration displacement (VD) Depth vibrator TR 17
Max. penetration depth	16.3 m
Pressure with crowd (effective)	110 kN
Max. extraction force with crowd winch (effective)	330 kN
with counterweight *	9.9 t

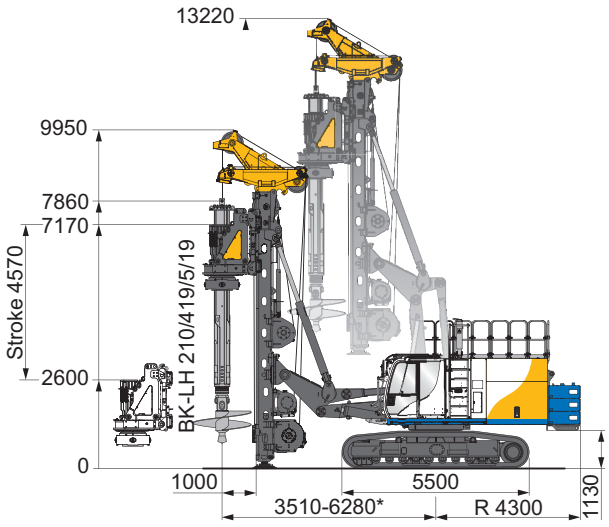
	Expansion stage JG drilling
Lattice mast length	24.5 m
Max. rod diameter	89 - 133 mm
Max. jet depth	35.3 m
Rotary drive	KDK 10 / 14 S
Max. extraction force with crowd winch (effective)	330 kN
with counterweight *	12.3 t

*depending on equipment

Special applications







	Giant drill - Basic version	Low Headroom system
Undercarriage	UW 65 / UW 80	UW 65 / UW 80
Lower mast extension	without	-
Drilling axis	1,000 mm	1,000 / 1,400 mm
Max. drilling diameter	3,000 mm	1,700 / 2,500 mm
Max. drilling depth	-	19.5 m

*depending on equipment

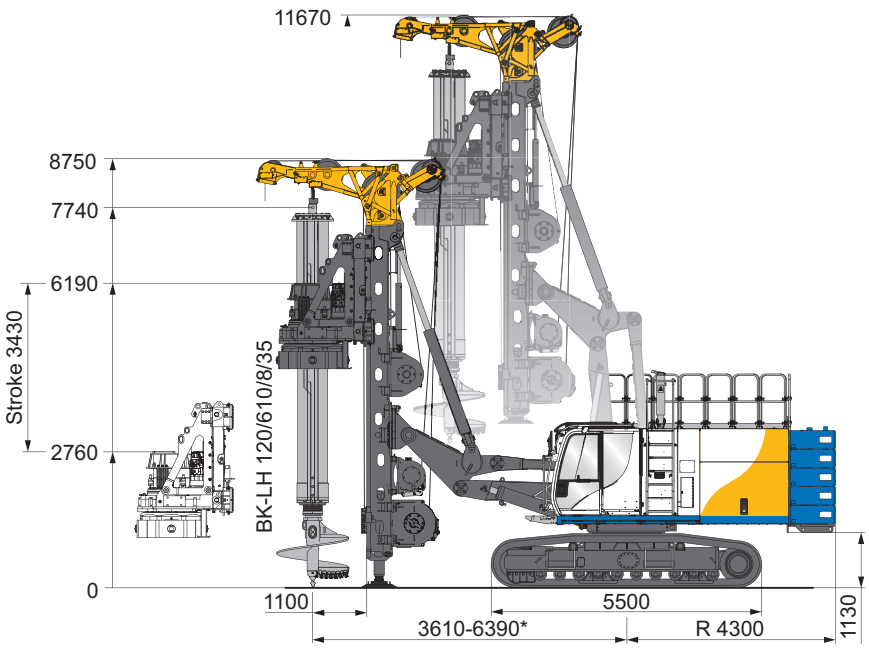
Low Headroom system for large drilling depths:

– The BG 28 H as a Low Headroom drilling rig can also be configured for large drilling depths with restricted working heights.

– With the special Kelly bar BK-LH 120/610/8/35 drilling depths can be achieved up to 35.3 with a maximum drilling diameter of 2,500 mm.

– With the Low Headroom mast, the drilling rig achieves a minimum equipment height of just 8.8 m. Alternative equipment with the Kelly mast head is 10.8 m.

– The KDK 280 WP (max. 250 kNm for drilling) reduces the torque automatically to 110 kNm when using the special Kelly bar BK-LH 120/610/8/35.
For casing, 280 kNm are provided.



	Low Headroom system for large drilling depths	
Undercarriage	UW 80	
Rotary drive	KDK 280 WP	
Drilling axis	1,100 mm	1,400 mm
Max. drilling diameter	1,900 mm	2,500 mm
Max. drilling depth (BK-F 140/610/8/35)	35.3 m	

*depending on equipment

Transport data – Dimensions and weights

G = Weight
B = Width

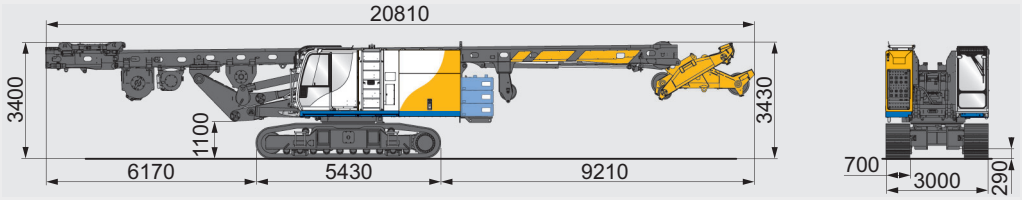
Weight data are approximate values, additional equipment (options) can modify the total weight and dimensions.

Transport with undercarriage UW 65

Without mast extension*

G = 59.8 t

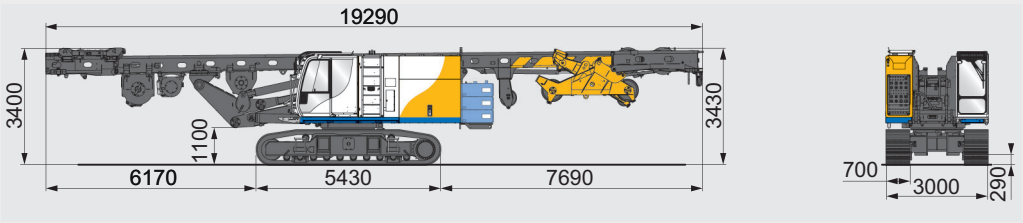
G = 69.7 t with 9.9 t counterweight



With mast extension*

G = 63.0 t

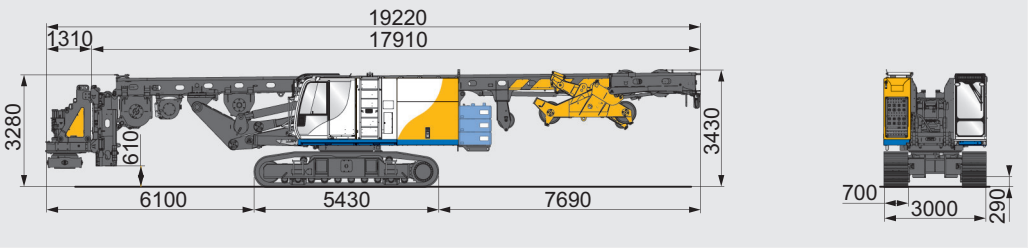
G = 72.9 t with 9.9 t counterweight



Lower mast segment incl. rotary drive and mast extension folded

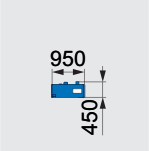
G = 68.4 t

G = 78.3 t with 9.9 t counterweight



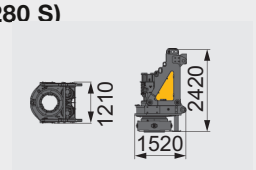
Counterweight**

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



Rotary drive

G = 5.2 t (KDK 280 K)
G = 5.5 t (KDK 280 S)

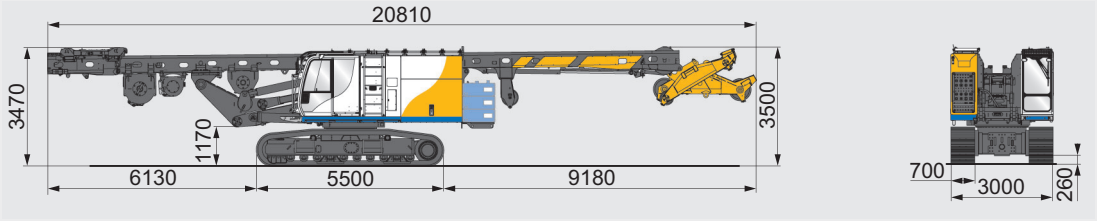


* Added weight multi-piece mast approx. 500 kg
** depending on the method

Transport with undercarriage UW 80

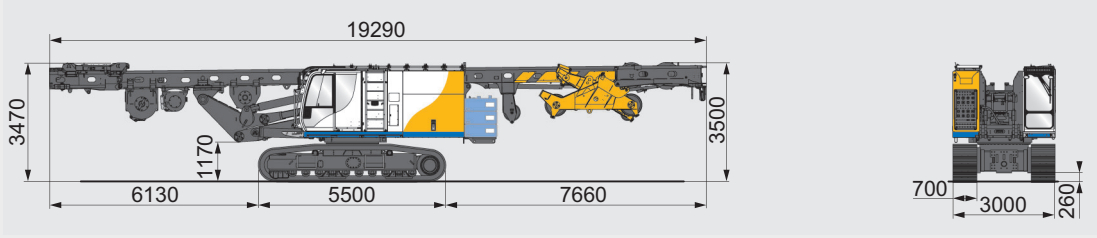
Without mast extension*

G = 64.1 t **G = 76.4 t with 12.3 t counterweight**



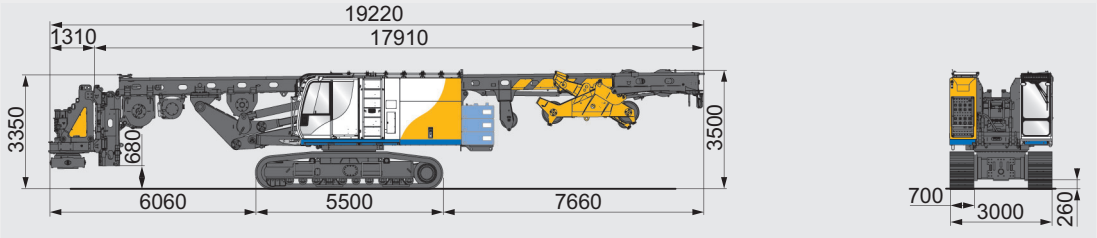
With mast extension*

G = 67.1 t **G = 79.4 t with 12.3 t counterweight**



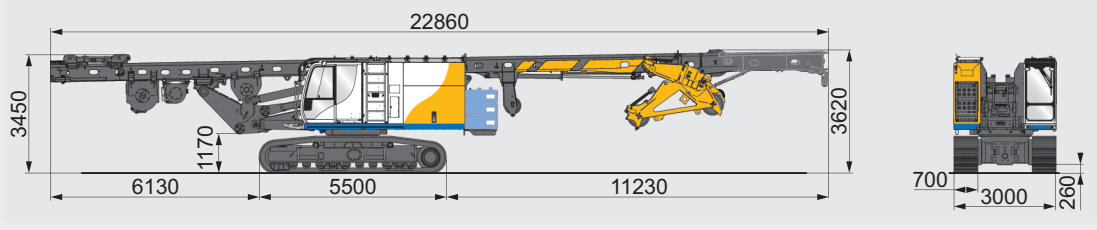
Lower mast segment incl. rotary drive and mast extension folded

G = 72.5 t **G = 84.4 t with 12.3 t counterweight**



Extension Package Single Pass Extreme (SPEX)

G = 68.2 t **G = 82.9 t with 14.7 t counterweight**



	UW 65	UW 80
Track shoes	**Overall width of crawlers retracted / extended**	
700 mm	3,000 - 4,400 mm	3,000 - 4,400 mm
800 mm	3,200 - 4,500 mm	3,300 - 4,500 mm
900 mm	3,400 - 4,600 mm	3,400 - 4,600 mm

*Added weight multi-piece mast approx. 500 kg

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