

# BAUER BG 33

## Rotary Drilling Rig

Base Carrier BT 85

 Energy-Efficient  
Power **EEP**



The Bauer drilling rigs are multi-function 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 to transport and short rigging time
- High quality standard
- Long lifetime and excellent resale value



**Kelly Drilling**



**Cased Kelly Drilling**  
Installation with BTM



**CFA**  
Continuous Flight  
Auger Drilling



**FDP**  
Full Displacement Piling  
(Standard or Lost Bit)



**FoW**  
Front of Wall



**HDI**  
Jet Grouting

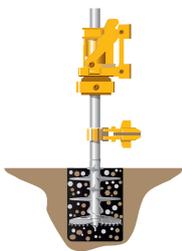


# The Rotary Drilling Rig BG 33 (BT 85)

Max. drilling diameter: 2,500 mm  
 Max. drilling depth: 72.4 m  
 Max. torque: 342 kNm  
 Max. height: 30.3 m  
 Engine: Volvo TAD 13 345 / 405 kW



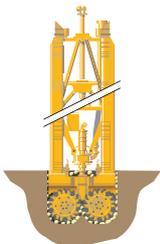
**Cased Kelly Drilling**  
Installation with Oscillator



**SCM / SCM-DH**  
Single Column Mixing



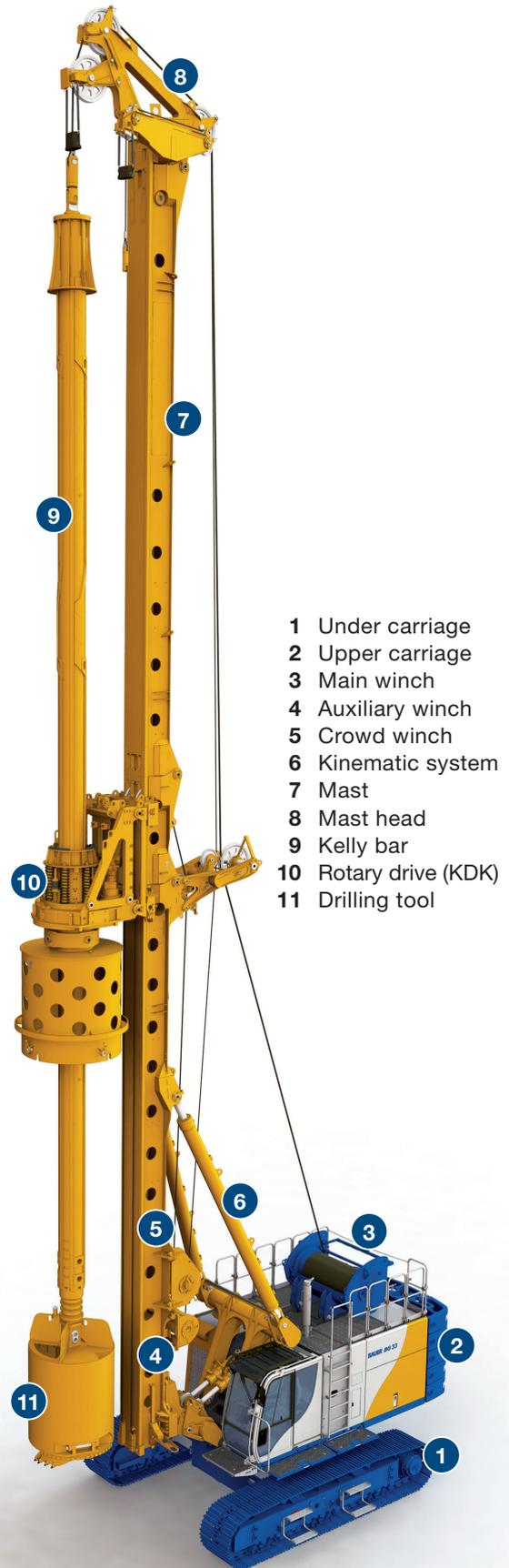
**CCFA**  
Cased CFA System  
with KDK + BTM / Double  
Rotary System



**BC**  
Trench Cutter



**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 Kelly bar
- 10 Rotary drive (KDK)
- 11 Drilling tool



**Modern, ergonomic operator's cab**

- FOPS compliant with additional protective roof guard
- Premium operator seat, air-sprung and heatable
- Joystick controls with high functionality
- B-Drive for multi-functional potentiometer input

**Powerful Volvo engine**

- Volvo TAD 13 (ORA\* or Stage V / Tier 4 final)
- Low noise emission
- Worldwide Volvo service partners



**Safety equipment**

- Walking platform with handrail (foldable for transport)
- Upward folding service doors
- Guardrails on upper level (foldable for transport)
- Rear view cameras
- Variable stackable counterweight elements with low weight of individual elements (4.9 t or 2.5 t)

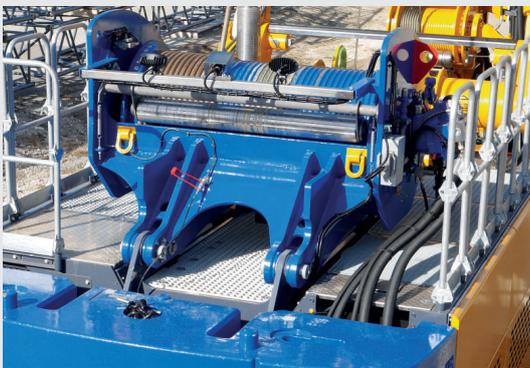


- Reduction of fuel consumption by up to 30%
- Increased productivity through improved efficiency
- Significantly reduced noise levels
- Tried and proven suitability for practical application
- Optimized parallel operation of main and auxiliary consumers

\* Exhaust emission equivalent Tier 3 / Stage III A

### Safe and easy transport

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



### Main winch on upper carriage

- Single layer winch for minimized rope wear
- Constant line pull
- Designed for heavy continuous operation (M6 / L3 / T5)
- Service-friendly winch position
- Swing down mechanism for transport

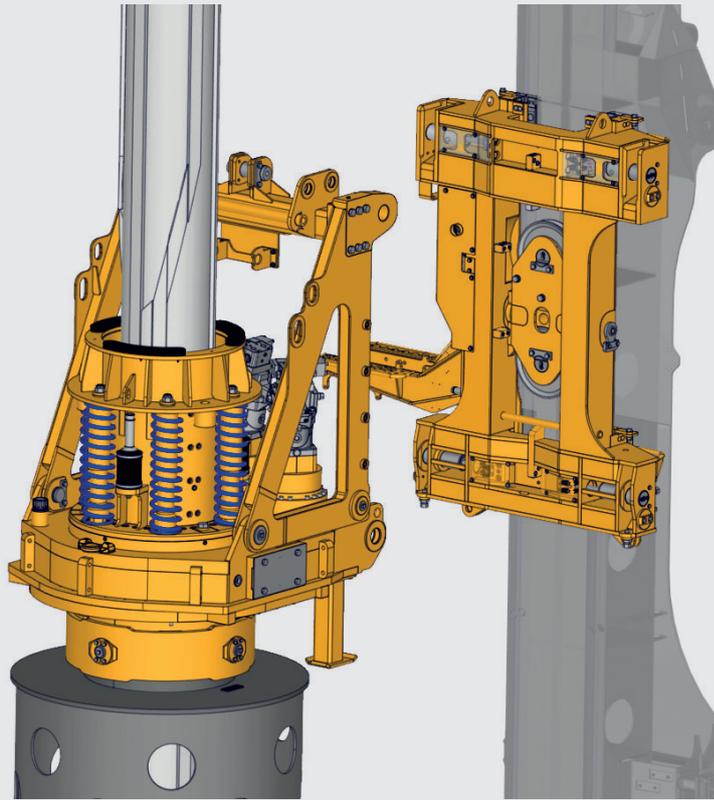
### Flexible mast concept

- Vario-masthead
  - Mast head for drill axis distance 1,100 expandable to 1,400 mm
  - Increased stroke for Kelly bars when using an upper Kelly guide
  - Tilttable main jib for single-pass processes and for optimized transport
- Vario-crowd system
  - Transport possible with built-in crowd ropes (Kelly drilling)
  - Reduced headroom version possible by means of integrated Vario-mast section
- Vario-mast section 2 m
- Vario-mast section 2 m + mast extension 2 m (only Single-Pass)



### 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 ground level



**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

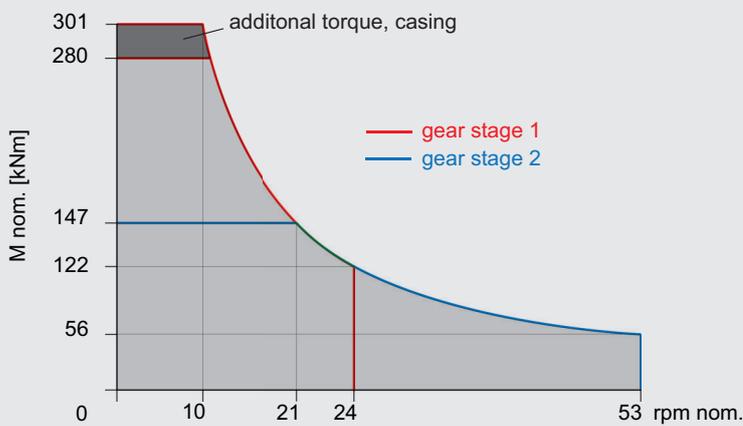
**Rotary drive**

- Optional single gear drive or multi gear drive
- Max. torque casing 342 kNm
- Max. speed of rotation 53 rpm
- Various modes of operation, partially selectable speed of rotation and torque

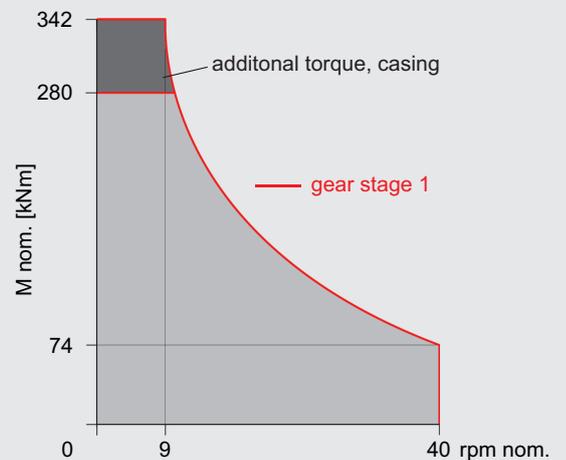
**Hydraulically operated pin connection on the crowd sledge**

- Pin connection controlled via remote control
- Simple and secure attachment of rotary drive, no working at heights unsecured

**KDK 300 S\***



**KDK 340 K\***



\* with 405 kW

## Base carrier BT 85

**Standard**

- Removable counterweight elements
- Retractable grating on side of cab
- Electric refueling pump
- Energy-Efficient Power (EEP)
- Premium operator seat
- Cameras for rear area and main winch surveillance
- Integrated service platforms
- Central lubrication system
- Guard rails on the upper level (foldable for transport)

**Optional**

- Counterweight, variably adjustable
- Rear support unit
- High-pressure cleaner with water tank
- Compressor 1,000 l/min
- Electric generator 13 kVA
- Arctic kit / Arctic kit plus
- Cab space heater incl. time switch
- Front screen guard
- Weather protection
- Premium operator seat with air-condition

## Drilling rig attachment

**Standard**

- Sturdy V-type mast kinematic system
- Main winch with hydraulic free-fall control
- Hydraulic locking for support trestle
- Swivel for main rope
- Vario-mast head
- Pivoted anchor point for auxiliary rope

**Optional**

- Extension of drill axis to 1,400 mm
- Mast support unit
- Vario-crowd system with Vario-mast section 2 m
  - Transport possible with built-in crowd ropes (Kelly operation)
  - Reduced headroom version, possible with integrated Vario-mast section 2 m
- Mast extension 2 m (only Single-Pass)
- Attachment of casing oscillator up to BV 1500 with UW 80 or up to BV 2000 with UW 100
- Concrete- / Air- / Suspension line attachment
- Mobilization kit

## Rotary drive

**Standard**

- Rotary drive KDK 300 K (single-gear drive)
- Kelly drive adapter for outer Kelly tube 419 mm
- Quick-release hydraulic couplers

**Optional**

- Rotary drive KDK 300 S (multi-gear drive)
- Rotary drive KDK 340 K (single-gear drive)
- Kelly drive adapter for outer Kelly tube 394 / 470 mm
- Torque multiplier BTM 720 K Kelly drilling
  - Torque 420 kNm (nominal)
- Torque multiplier BTM 400 for CCFA

## Measuring and control system

**Standard**

- PLC processor for all electrically actuated functions
- Automatic mast alignment with memory function
- Crowd stroke monitoring
- Electronic mast reach limiter
- Kelly visualization

**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
- Slewing Angle Limiter



Rotary drive	KDK 300 K	KDK 300 S	KDK 340 K
Torque casing (nominal) at 350 bar	294 kNm	301 kNm	342 kNm
Torque drilling (nominal) at 350 bar	281 kNm	280 kNm	280 kNm
Speed of rotation (max.)	30 rpm	53 rpm	40 rpm
Crowd winch system			
Max. sledge stroke with 2 m Vario + 2 m mast extension		23,000 mm	
Crowded force push and pull, effective / nominal		330 / 423 kN	
Rope diameter		24 mm	
Speed (down / up)		11.0 m/min	
Fast speed (down / up)		35.0 m/min	
Main winch (selectable)		single-layer	
Winch classification		M6 / L3 / T5	
Line pull (1st layer) effective / nominal		265 / 335 kN	
Rope diameter		32 mm	
Line speed (max.)		80 m/min	
Auxiliary winch (selectable)			
Winch classification		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 rpm		405 kW @ 1,850 rpm
Exhaust emission EU 2016/1628	ORA*		Stage V
EPA/CARB	ORA*		Tier 4 final
GB20891-2014	China Stage III		-
Diesel tank capacity / AdBlue Tank	730 / - l		730 / 70.0 l
Sound pressure level in the cabin (EN 16228, Annex B)		LP <sub>A</sub> 80 dB (A)	
Sound power level (2000/14/EC u. EN 16228, Annex B)		LW <sub>A</sub> 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	
Under carriage		UW 80	UW 100
Crawler type		B 7	
Traction force effective / nominal	520 / 630 kN		730 / 860 kN

\* exhaust emission equivalent Tier 3 / Stage III A emission standard

**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

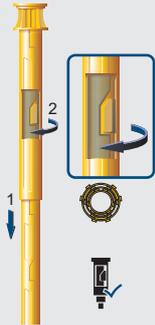


**Adaptive Kelly speed assistant**

The assistant raises and lowers the Kelly bar safely and quickly and allows an easy operation. The automatic control of the speed of the main winch reduces the speed at the transition points of the Kelly sections.

This provides maximum safety with minimum wear.

The permanent monitoring of the parameters prevents a locked Kelly bar from being raised or lowered accidentally and thus causing damage.



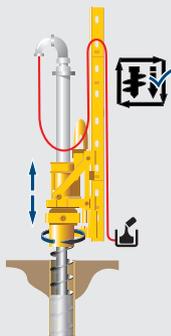
**Kelly visualization**

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



**Kelly drilling assistant**

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



**Automatic drilling and extraction control for Single-Pass processes**

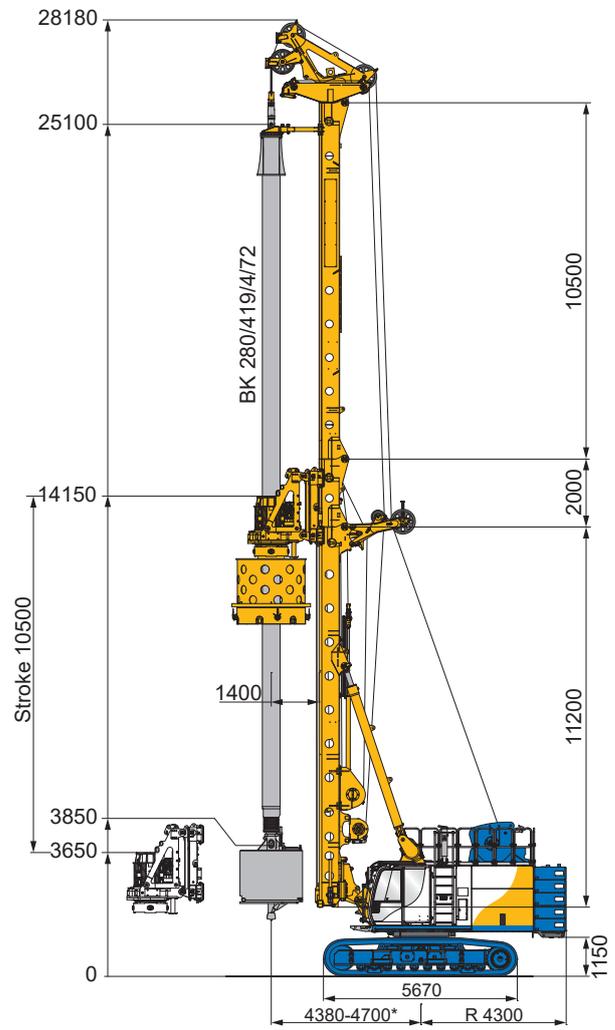
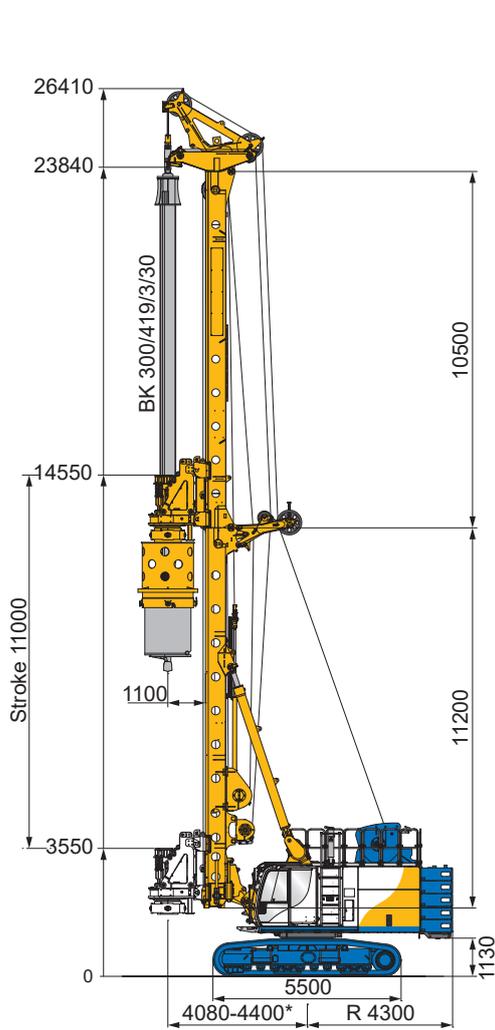
The system controls the drilling and/or extraction speed of the crowd system and enables hands-free operation. This ensures the production of a high-quality pile while simultaneously minimizing the amount of concrete.



**Satellite-based positioning**

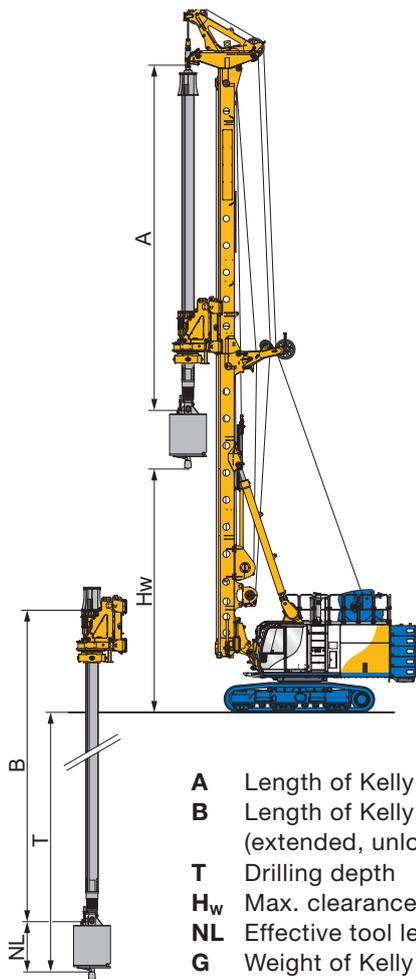
The BAUER Assistant Positioning System (B-APS) allows the position of a bored pile to be located extremely accurately. Documentation is provided for the nominal and actual coordinates, as well as the corresponding accuracy of each bored pile. Manual marking of the piles is no longer required.

Numerous other assistance systems are available in our portfolio.



	Basic version	Upgraded version
Under carriage	UW 80	UW 100
Rotary drive	KDK 300 K/S	KDK 340 K
Mast extension	without	2 m Vario
Upper Kelly guide	without	with
Drilling axis	1,100 mm	1,400 mm
Max. drilling diameter		
uncased	1,900 mm	2,500 mm
cased	1,600 mm	2,200 mm
Operating weight approx.	102 t	132 t
with Kelly	BK300/419/3/30	BK280/419/4/72
with casing drive adapter	1,500 mm	2,000 mm
with bucket	1,350 mm	1,830 mm
with counterweight *	14.9 t	29.4 t

\* depending on equipment



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

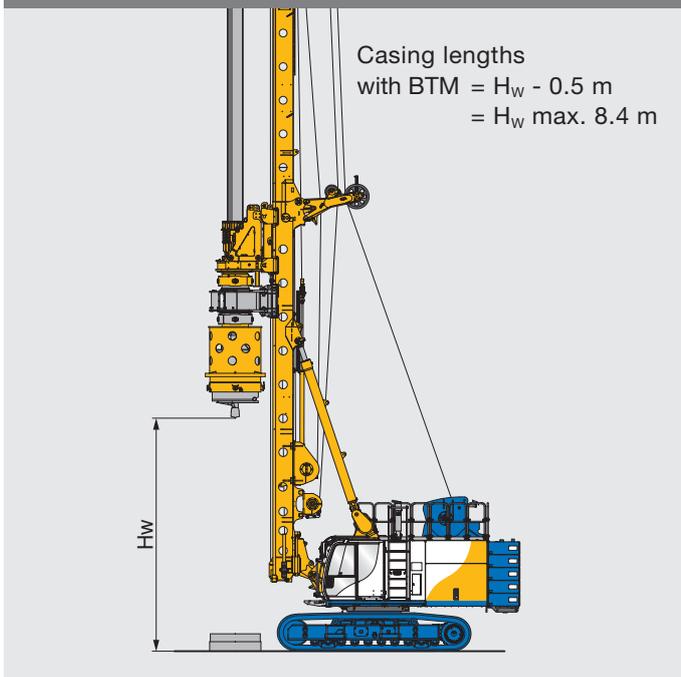
### Drilling depths – uncased Kelly drilling

3-part Kelly	A (m)	B (m)	G (kg)	Basic version		Upgraded version	
				H <sub>w</sub> (m)	T (m)	H <sub>w</sub> (m)	T (m)
BK300/419/3/27	11.7	29.4	5,850	9.6	27.5	9.6	27.6
BK300/419/3/30	12.7	32.4	6,300	9.0	30.5	9.6	30.6
BK300/419/3/33	13.7	35.4	6,700	8.0	33.5	9.3	33.6
BK300/419/3/36	14.7	38.4	7,100	7.0	36.5	8.3	36.6
BK300/419/3/39	15.7	41.4	7,550	6.0	39.5	7.3	39.6
BK300/419/3/42	16.7	44.4	8,150	5.0	42.5	6.3	42.6
4-part Kelly							
BK280/419/4/36	12.3	38.2	8,300	9.4	36.3	9.6	36.4
BK280/419/4/40	13.3	42.2	8,900	8.4	40.3	9.6	40.4
BK280/419/4/44	14.3	46.2	9,550	7.4	44.3	8.6	44.4
BK280/419/4/48	15.3	50.2	10,200	-	-	7.6	48.4
BK280/419/4/56	17.3	58.2	11,400	-	-	5.6	56.4
BK280/419/4/64	19.3	66.2	12,650	-	-	3.6	64.4
BK280/419/4/68	20.3	70.2	13,300	-	-	2.6	68.4
BK280/419/4/72	21.3	74.2	14,000	-	-	1.6	72.4

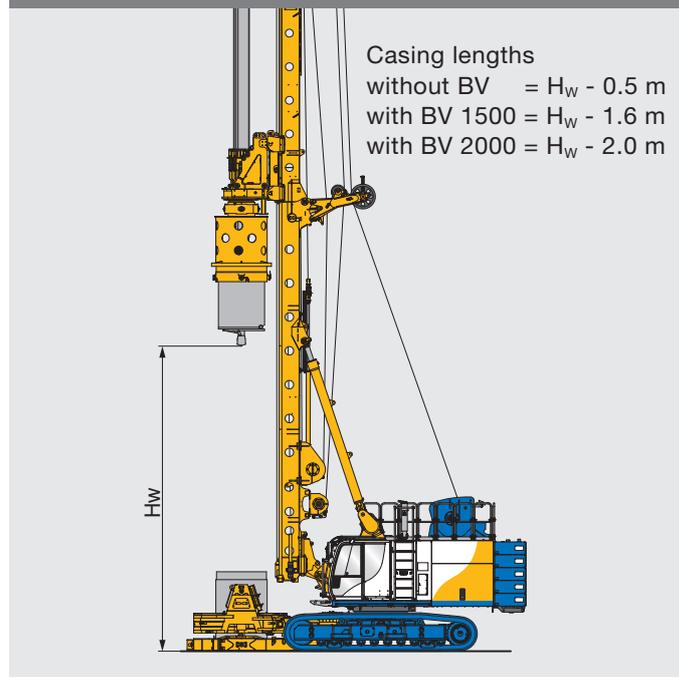
Drilling data as shown are based on tool length NL = 1.9 m, minimum horizontal mast reach and using Bauer attachment. Drilling depth is increased by 0.32 m when using maximum horizontal mast reach.

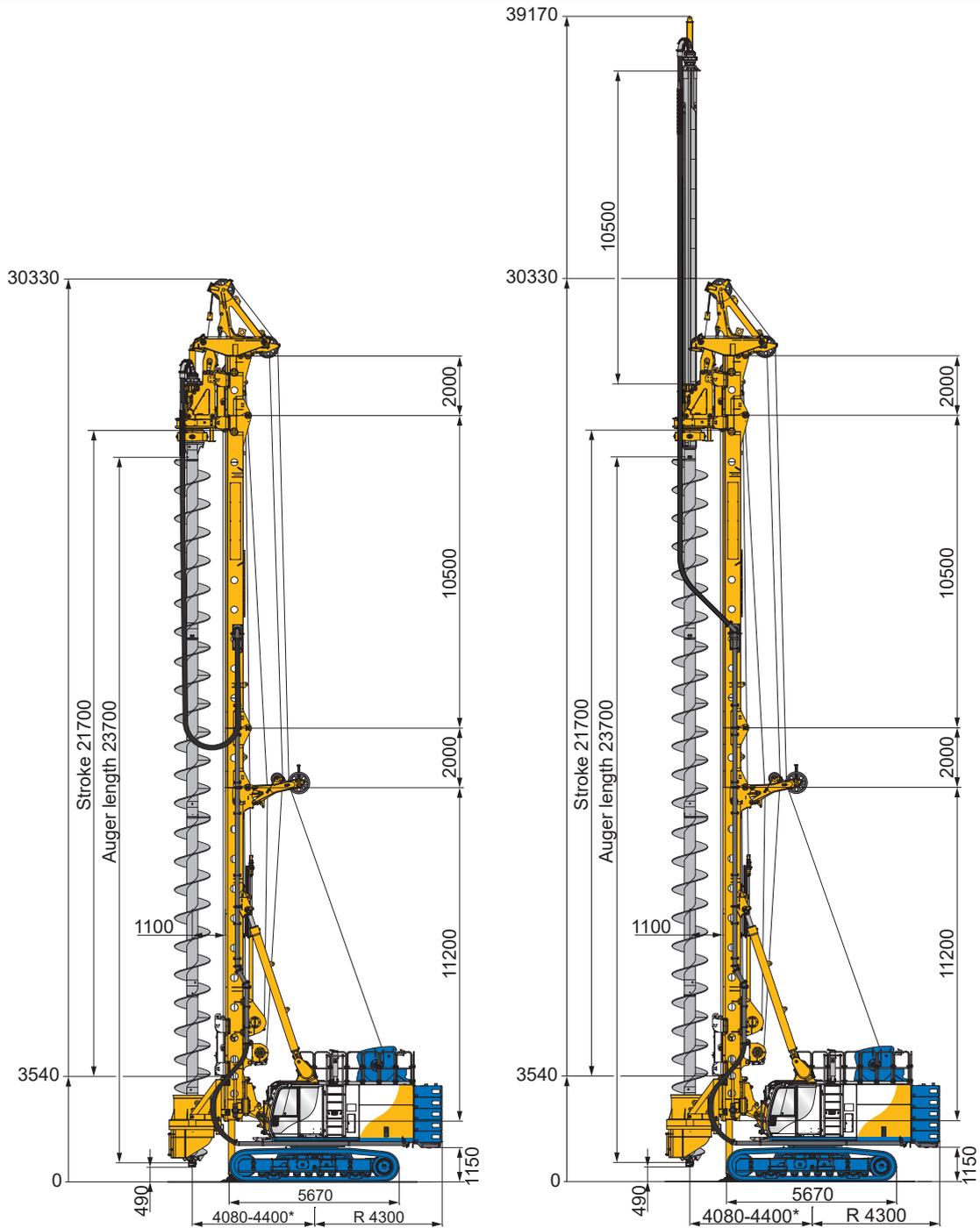
Further drilling depths, diameters and other Kelly types on request.

### Torque multiplier BTM 720 for a torque of 420 kNm for casing



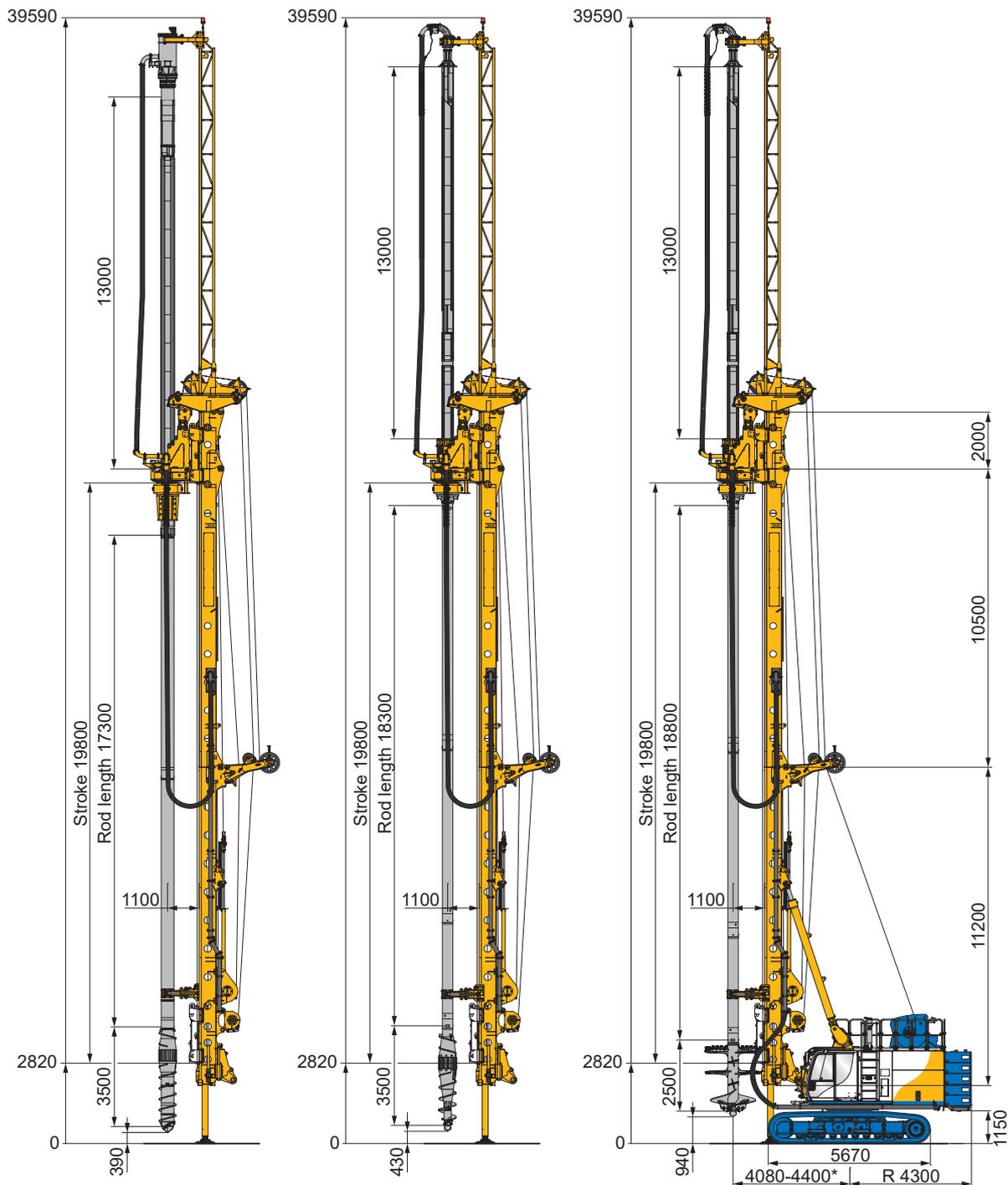
### Kelly drilling with casing oscillator up to BV 1500 (UW 80) or up to BV 2000 (UW 100)





	Basic version	Upgraded version
Under carriage	UW 100	UW 100
Mast extension	2 m + 2 m Vario	2 m + 2 m Vario
Kelly extension	without	10.5 m
Max. drilling diameter	1,180 mm	1,180 mm
Max. drilling depth (with auger cleaner)	21.3 m	31.8 m
Max. extraction force with main and crowd winch (effective)	830 kN	830 kN
with counterweight *	14.9 t	19.7 t

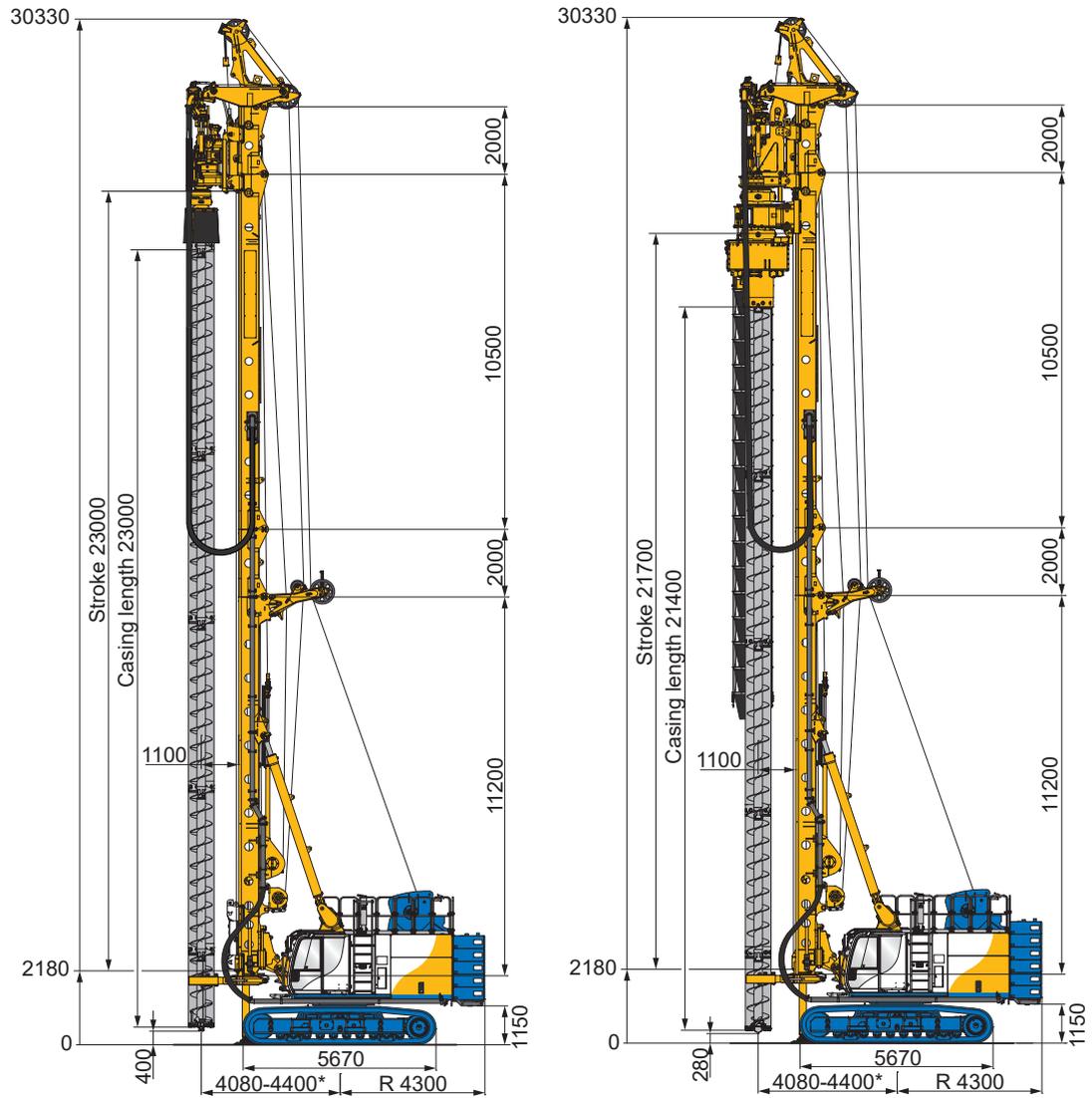
\* depending on equipment



	FDP Lost-Bit drilling	FDP drilling	SCM mixing
Under carriage	UW 100	UW 100	UW 100
Mast extension	2 m Vario	2 m Vario	2 m Vario
Kelly extension	13.0 m	13.0 m	13.0 m
Max. drilling and mixing diameter	620 mm	620 mm	1,900 mm (2,500 mm**)
Max. drilling and mixing depth	32.4 m	32.4 m	31.9 m
Max. extraction force with main and crowd winch (effective)	830 kN	830 kN	830 kN
with counterweight *	17.3 t	14.9 t	14.9 t

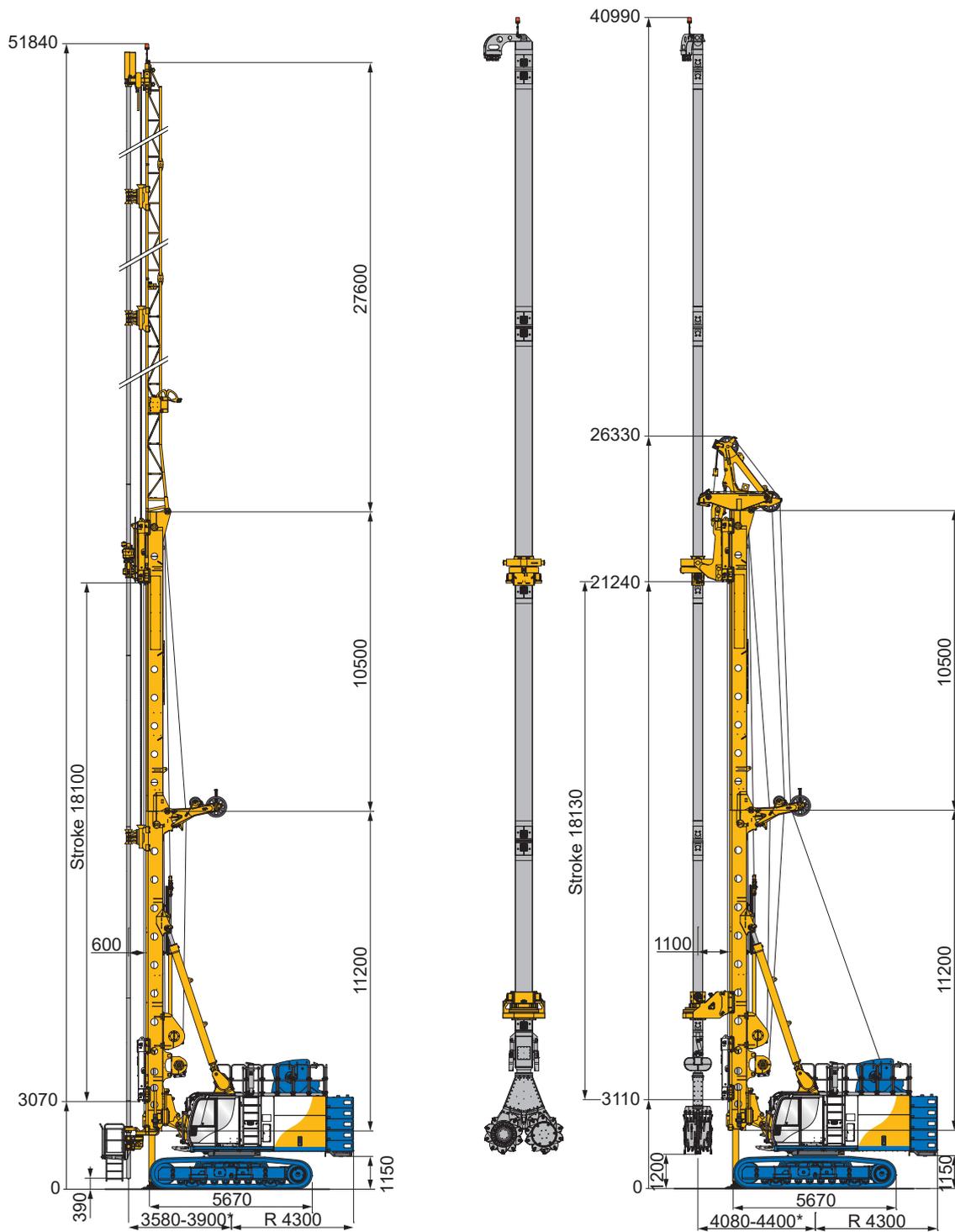
\* depending on equipment

\*\* operation only with special equipment



	FoW drilling		CCFA drilling	
	DKS 50 / 140	DKS 100 / 200	with BTM 400	
Mast extension	2 m + 2 m Vario	2 m + 2 m Vario	2 m + 2 m Vario	2 m Vario
Under carriage	UW 100	UW 100	UW 100	UW 100
Max. drilling diameter	610 mm	750 mm	750 mm	880 mm
Max. drilling depth	22.5 m	22.5 m	21.3 m	19.3 m
Max. extraction force with main and crowd winch (effective)	500 kN	530 kN	830 kN	830 kN
Max. torque:				
Auger (right-hand rotation)	50 kNm	100 kNm	200 kNm	200 kNm
Casing (left-hand rotation)	140 kNm	200 kNm	400 kNm	400 kNm
Ejection system	without	optional	Standard	Standard
with counterweight *	14.9 t	24.5 t	29.4 t	29.4 t

\* depending on equipment



	Jet Grouting	CSM mixing **	
Lattice mast	27.6 m	Cutter / mixing head	BCM 5      BCM 10
Rod diameter	89 - 133 mm	Panel width	1,000 mm      1,200 mm
Max. jetting depth	43.3 m	Panel length	2,400 mm      2,800 mm
Rotary drive	KDK 14 S	Max. mixing depth	34.7 m
Max. extraction force with crowd winch (effective)	330 kN		
with counterweight *	24.5 t		

\* depending on equipment

\*\* For detailed information see brochure "Cutter-Soil-Mixing - Process and Equipment" 905.656.2

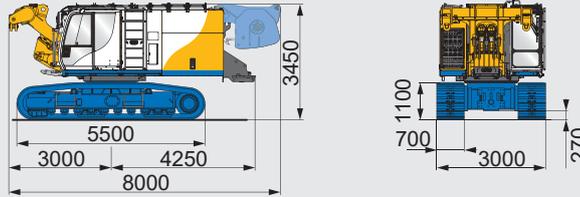
**G** = Weight  
**B** = Width

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

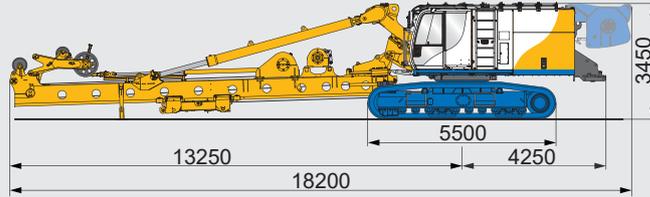
**Transport with UW 80**

**Base carrier**

**G = 45.5 t**  
**G = 49.7 t (with main winch 265 kN)**



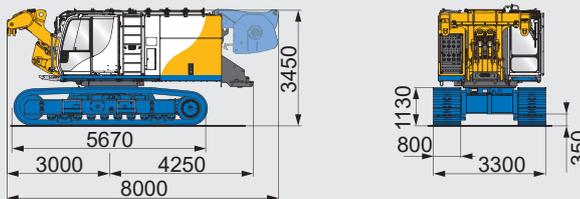
**G = 61.4 t**  
**G = 65.6 t (with main winch 265 kN)**



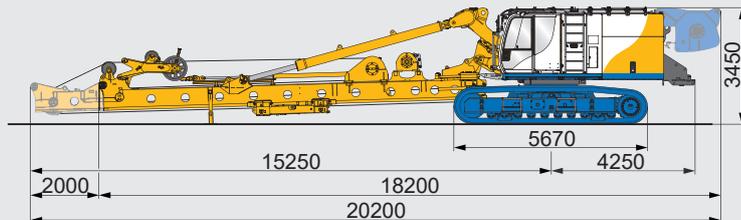
**Transport with UW 100**

**Base carrier**

**G = 46.4 t**  
**G = 50.8 t (with main winch 265 kN)**

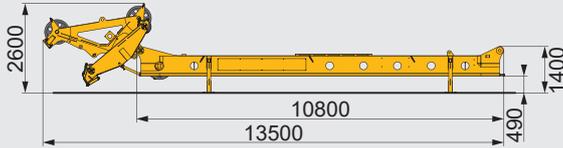


**G = 62.3 t**  
**G = 66.5 t (with main winch 265 kN)**  
**G = 67.8 t (with main winch 265 kN and Vario-mast section 2 m)**



### Upper mast section with mast head

**G = 4.8 t**  
**B = 1,700 mm**



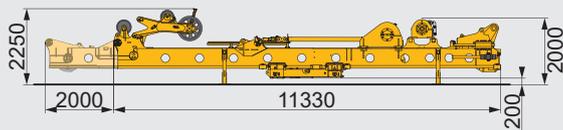
### Rotary drive

**G = 5.2 t (KDK 300 K)**  
**G = 5.5 t (KDK 300 S)**  
**G = 6.7 t (KDK 340 K)\*\***



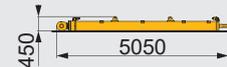
### Lower mast section

**G = 13.5 t**  
**G = 14.8 t (mit Vario Mastsegment 2 m)**  
**B = 2,100 mm**



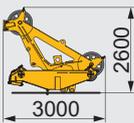
### Backstay cylinder

**G = 2 x 1.1 t**  
**B = 300 mm**



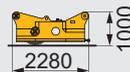
### Mast head

**G = 1.4 t**  
**B = 1,300 mm**



### Vario-mast section 2 m

**G = 1.3 t**  
**B = 900 mm**



### Mast extension 2 m

**G = 1.0 t**  
**B = 900 mm**



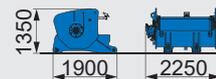
### Counterweight \*

**G = 4 x 2,5 + 1 x 4.9 t**  
**B = 3,000 mm**



### Main winch 265 kN

**G = 4.2 t (mit 100 m Seil)**



### Width of crawlers retracted / extended

**UW 80**

**UW 100**

Track shoes 700 mm	3,000 - 4,400 mm	-
Track shoes 800 mm	3,300 - 4,500 mm	3,300 - 4,500 mm
Track shoes 900 mm	3,400 - 4,600 mm	3,400 - 4,600 mm

\* depending on application

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Materials and specifications are subject to change without notice. Illustrations may include optional equipment and not show all possible configurations. These and the technical data are provided as indicative information only, with any errors and misprints reserved.