BAUER BG 50

Drilling Rig

Base Carrier BT 145

BAUER

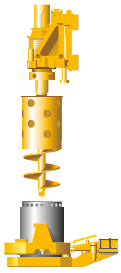
The Bauer Drilling Rigs

The Bauer drilling rigs 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.

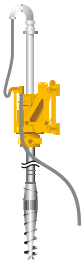
Specific highlights of the drilling rigs are:
- High safety standards
- Environmental sustainability, economic efficiency and performance
- Easy to transport and short rigging time
- High quality standard
- Long lifetime and excellent resale value

Kelly drilling

Cased Kelly drilling
Casing Installation with BTM

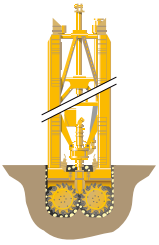


Cased Kelly Drilling
Installation with Oscilator

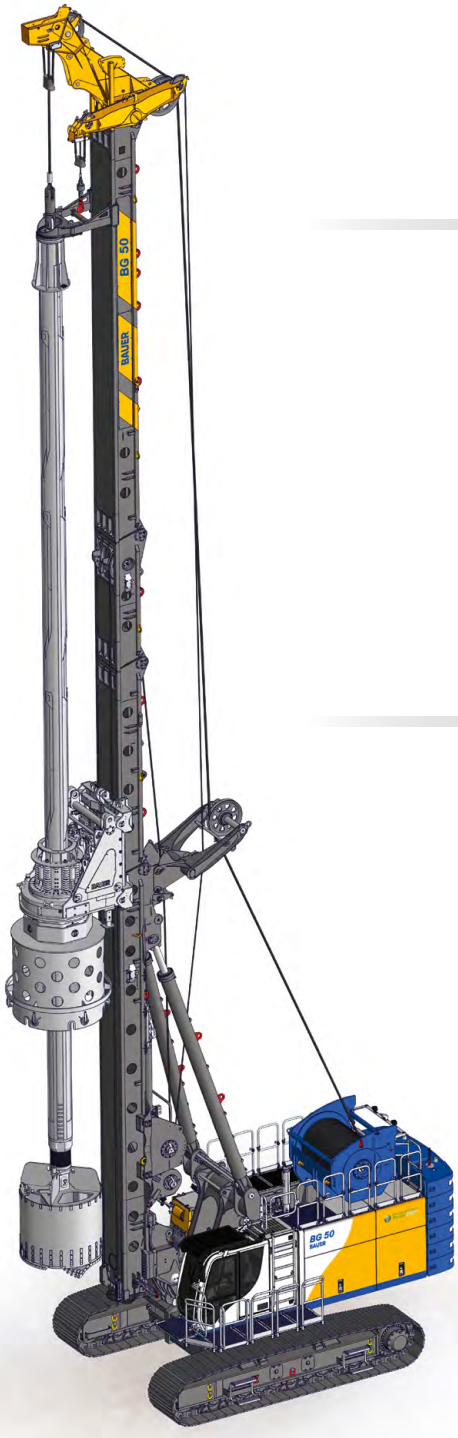


FDP
Full Displacement Piling (Standard or Lost Bit)

CFA
Continuous Flight Auger Drilling

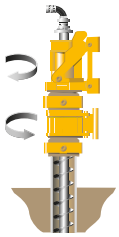


BC
Trench Cutter

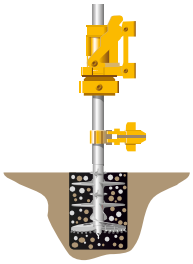


The Drilling Rig BG 50 (BT 145)

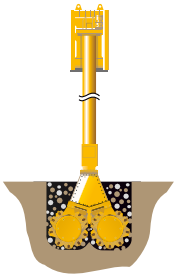
Max. drilling diameter:	**3,700 mm**
Max. drilling depth:	**121.0 m**
Torque (nominal):	**500 kNm**
Max. height:	**42.2 m**
Engine:	**CAT C18 470 kW**



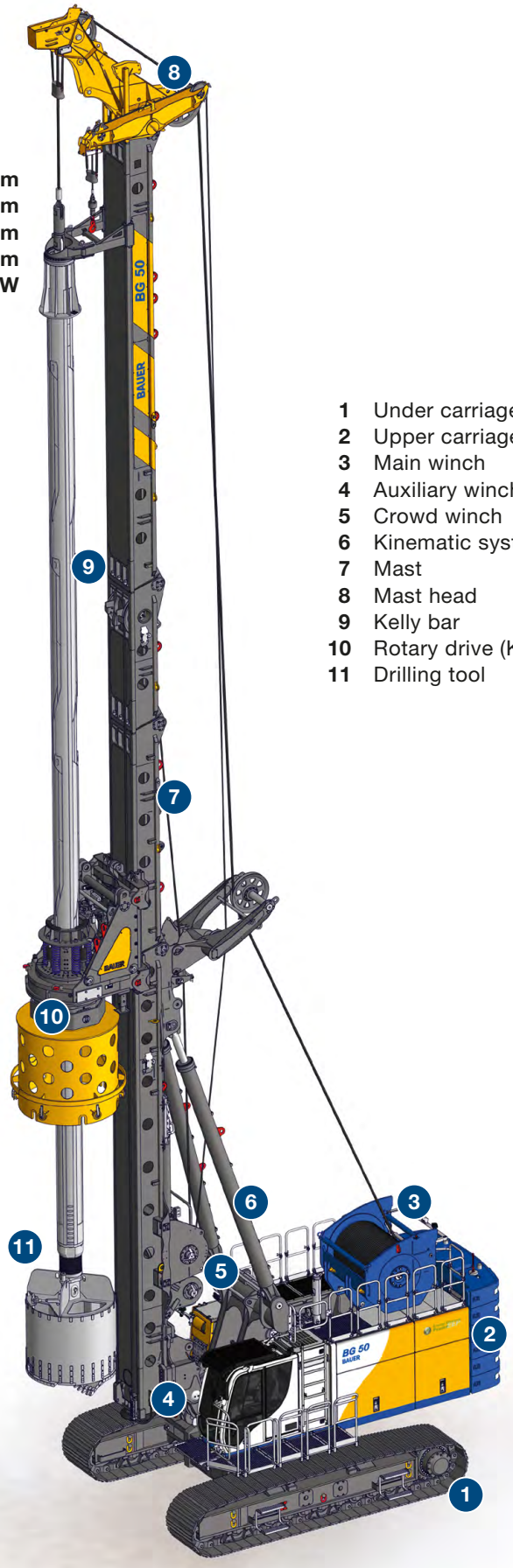
CCFA
Cased CFA system
with KDK+ BTM / Double
Rotary System



SCM
Single Column Mixing

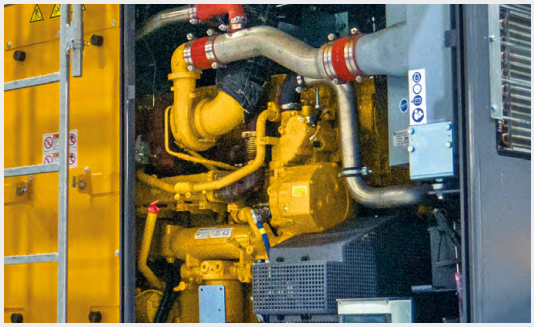


CSM
Cutter Soil Mixing



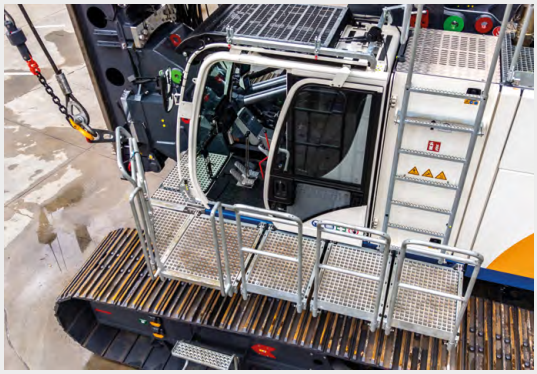
1 Under carriage
2 Upper carriage
3 Main winch
4 Auxiliary winch
5 Crowd winch
6 Kinematic system
7 Mast
8 Mast head
9 Kelly bar
10 Rotary drive (KDK)
11 Drilling tool

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



Powerful CAT engine
- CAT C 18 470 kW (UN ECE R96* or EU Stage V / EPA/CARB 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
- Integrated service platforms in the upper carriage for easy and safe maintenance work
- Platforms with foldable handrail beside the operator's cab
- Guardrails on top of the upper carriage (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**

* Equivalent to Tier 3 / EU-Stage III A

Vario-mast head

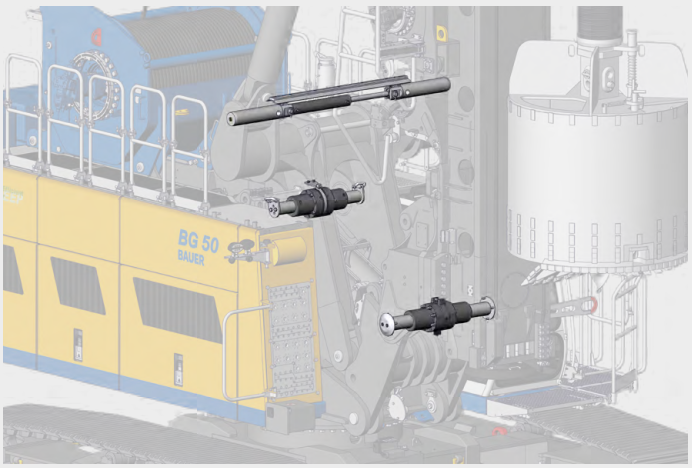
Drill axis extension

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 16.8 m possible by means of integrated Vario-mast section
- Mast extension 5 m or 5 + 5 m
- Mast erection without auxiliary crane
  - Mast extensions can be combined with all drill axes
- Mast extension 5 + 8 m for CFA, FDP drilling as wall as SCM mixing

Safe and easy transport

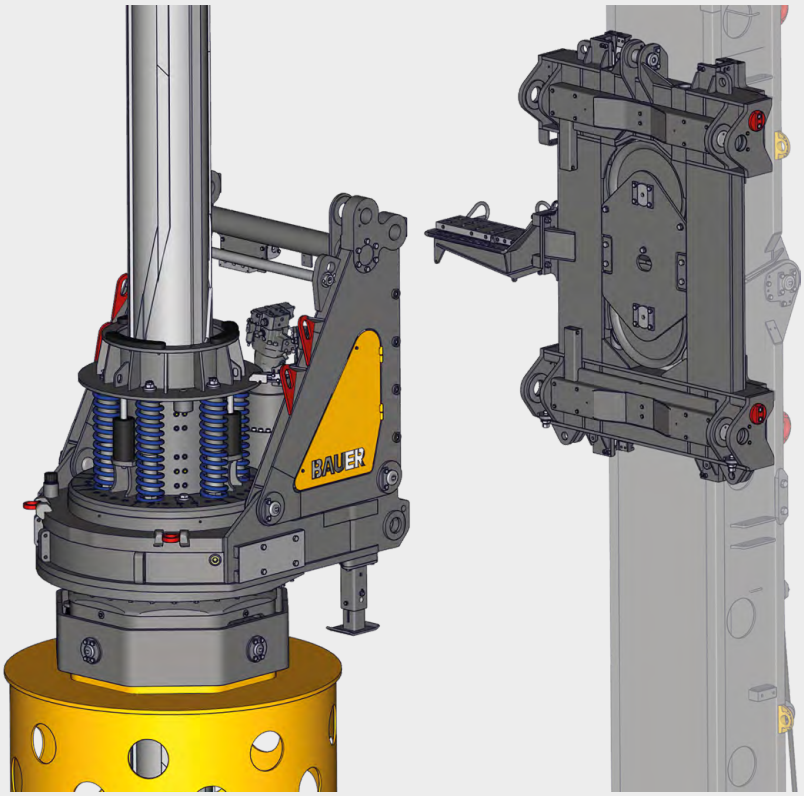
- Mobilization kit with hydraulically operated pin connection for fast and save demounting of lower mast section
- Hydraulic looking of support trestle
- Activated by remote control multi
- Quick-release hose package on mast
- Pre centering on the mast and attachments with easier access to the mast bolts



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

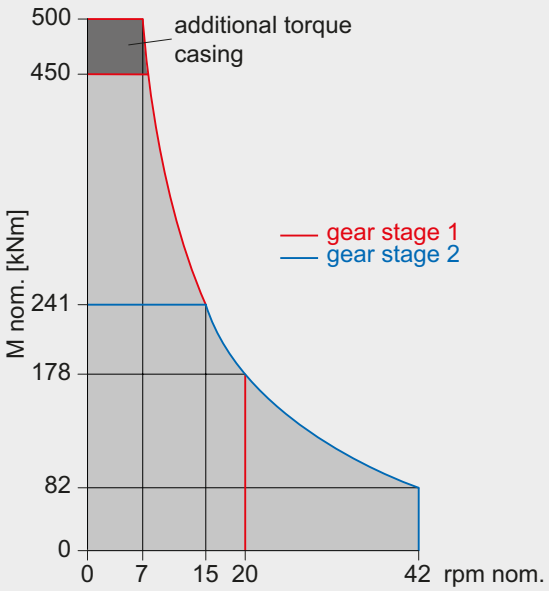


Kelly set-up
- Long Kelly guide
- Integrated shock absorbing spring system
- Kelly visualization (see page 11)
- Enhanced drilling performance
- High operation comfort
- Reduction of wear on Kelly bars and drive keys

Rotary Drive
- Optional single-gear or multi-gear drive
- Max. torque 500 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 500 S



* not to scale

Technical Equipment (selection)

Base carrier BT 145

Standard
- Removable counterweight elements
- Removable crawler side frames with quick-release hydraulic couplers
- Platforms with handrail foldable beside the cab
- Guardrails upper level (foldable for transport)
- Cameras for rear area and main winch surveillance
- Hydraulic system with quick-release hydraulic couplers (socket bank)
- Energy-Efficient Power (EEP)
- Premium operator seat
- Integrated service plattform
- Remote control multi

Optional
- Counterweight variably adjustable
- Compressor 1,000 l/min
- Electric generator 12.1 kVA
- Arctic kit / Arctic kit plus

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
- Quick-release hose package on mast

Optional
- Extension of drill axis to 1,550 / 1,700 / 2,000 mm
- Mast support unit
- Mast extension 5 m / 5 + 5 m (Kelly method)
- Mast extension 5 + 8 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 500 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 650 kNm (nom.)

Measuring and control system

Standard
- Automatic mast alignment with memory recall
- Crowd stroke monitoring
- 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
- Bauer Enhanced CAN Interface (BECI)
- Crowd Plus

B-TRONIC 5

Designed for you and ready for action.

Dynamic

- Information that adapts to the respective process step
- Dynamic, situation adjusted screen layout
- Visualized position changes of drilling equipment for a clear process understanding

Intuitive

- Intuitive menu navigation
- Help options on every page
- Focus on process-related information

Click now and learn **more about the powerful B-Tronic 5.**

Personalized

- User-specific login available
- Use of existing set values
- Personalization of widgets

Connected

- Interface to data recording
- Interface for service

Assistance Systems (selection)

Adaptive Kelly Speed Assistant

The Adaptive Kelly speed assistant takes over the extension and retraction of the Kelly bar almost automatically. It independently reduces the speed at the segment transitions, protects the equipment from damage, minimizes wear, and lowers noise emissions.

Crowd Plus

Crowd Plus supports the pulling and lifting of casings. Using the pulling plate between the drilling tool and the Kelly bar, the pulling force of the main winch is transferred to the crowd system. Through monitored and safely synchronized operation of the main winch and the crowd winch, even large diameters and heavy drilling equipment can be moved reliably.

Automatic Drilling and Extraction Control for Single Pass Processes

The automatic system controls the drilling and extraction speed of the crowd system and enables hands-free operations. This ensures the installation of a high-quality pile while simultaneously keeping the concrete consumption at an optimum. Both automatic functions provide a stable, precise, and consistently uniform single-pass working process.

Further Assistance Systems

Kelly Visualization

Kelly visualization makes working with the Kelly bar intuitive and transparent. It displays the locking recesses, the Kelly sections, the distance to the next section, and the spring travel – all in real time. The rapid approach of the locking position results in a significantly enhanced drilling performance. In addition, the wear on the Kelly bar and the drive keys is considerably reduced.

Fill Level Assistant and Threshold Assistant

The fill level assistant monitors the fill level of the drilling tool and prevents over-drilling or overfilling. Color-coded indicators show the status; once the target value is reached, crowd and rotary drive stop automatically. The lead assistant monitors the lead between tool and casing and prevents advance drilling. When the threshold is reached, both drives stop. Both assistants can be combined.

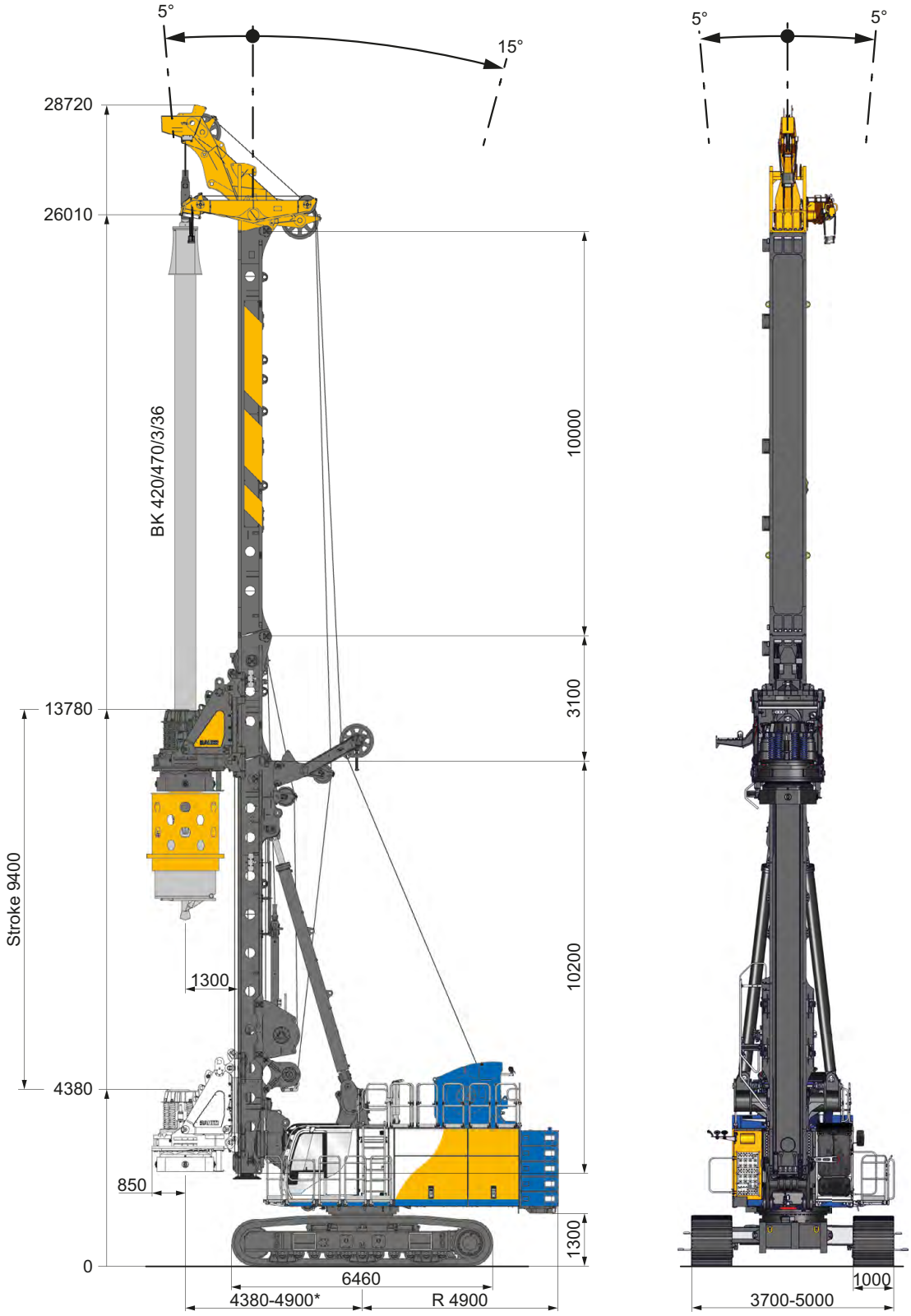
Automatic Torque Setting

The automatic torque setting limits the maximum torque to prevent excessive loading and any resulting damage to the drilling equipment. The operating limits of the installed tooling are taken over via the machine menu, and the system ensures that operation is carried out strictly within these limits.

- Stability Plus
- Kelly Drilling Assistant
- One-directional Spoil Discharge Assistant
- Bi-directional Spoil Discharge Assistant
- Slewing Angle Warner and Limiter
- Casing Assistant
- Auto Mast Alignment with Memory Function
- Slack Rope with Automatic Swivel Alignment
- etc.

Discover more innovative assistance systems – click now!

Dimensions – Basic Version



Operating weight 157 t
(as shown)

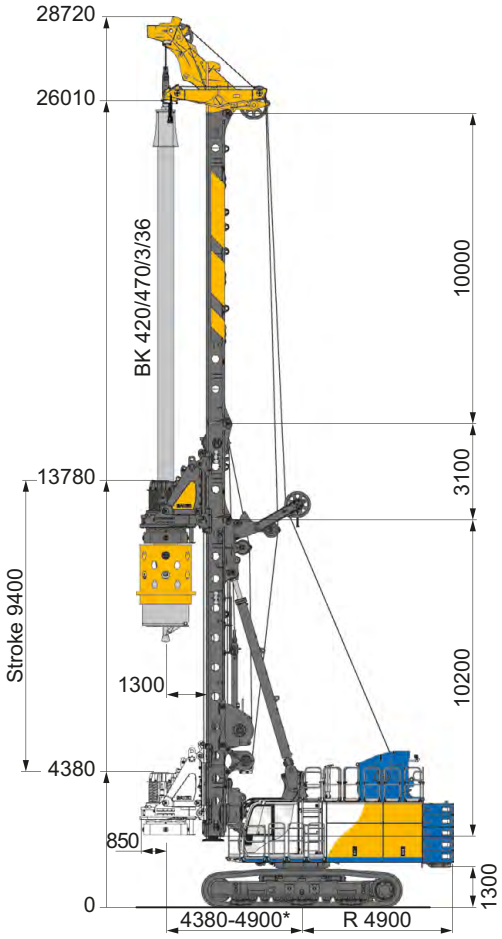
* depending on equipment

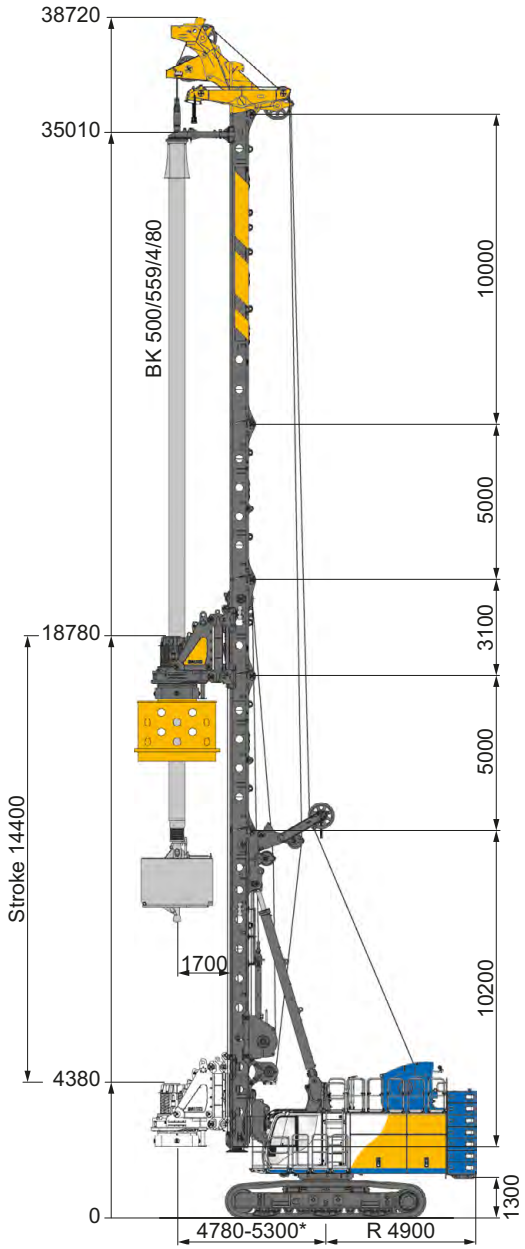
Technical Specifications

Rotary drive	KDK 500 S	
Torque casing (nominal) at 350 bar	500 kNm	
Torque drilling (nominal) at 350 bar	450 kNm	
Speed of rotation (max.)	42 rpm	
Crowd winch system		
Max. stroke of sledge	32,400 mm	
Max. stroke of Kelly	19,400 mm	
Crowed force push effective / nominal	464 / 595 kN	
Crowed force pull effective / nominal	464 / 595 kN	
Extraction force Crowd Plus effective / nominal with Mast support unit without Mast support unit	 884 / 1,131 kN 800 / 983 kN	
Rope diameter	28 mm	
Speed (down/up)	12.8 m/min	
Fast speed (down/up)	35 m/min	
Main winch	single-layer	
Winch classification	M6 / L3 / T5	
Line pull (1st layer) effective / nominal	420 / 525 kN	
Rope diameter	40 mm	
Line speed (max.)	69 m/min	
Auxiliary winch (selectable)		
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)	BT 145	
Engine	CAT C 18	
Rated output ISO 3046-1	470 kW @ 1.850 rpm	
Exhaust Emission Standard acc. to	UN ECE R96*	EU Stage V EPA/CARB Tier 4 final
Diesel tank capacity / AdBlue tank	800 / – l	800 / 66.5 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	1,300 l	
Flow rates	2 x 430 + 1 x 650 + 1 x 320 l/min	
Under carriage	UW 130	
Crawler type	B8B	
Traction force effective / nominal	880 / 1,030 kN	

* Equivalent to Tier 3 / Stage III A emission standard

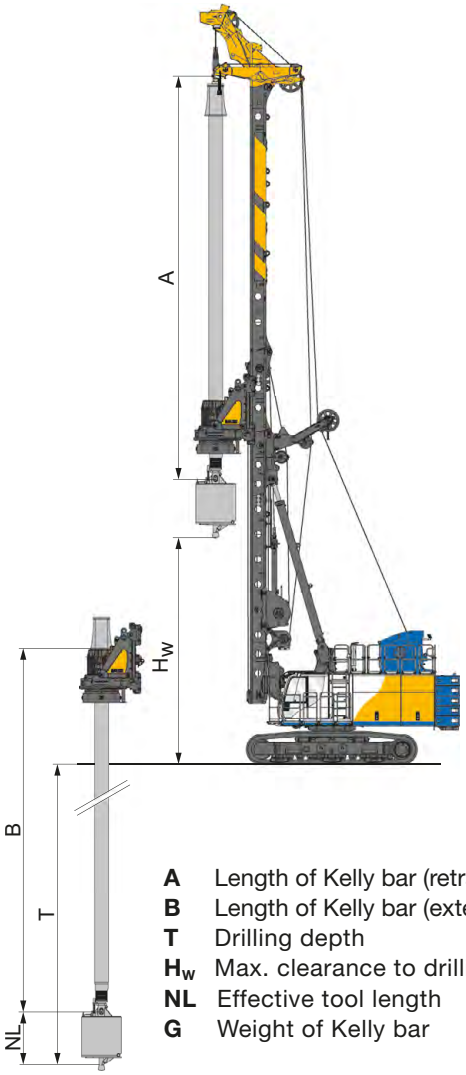
Application – Kelly Drilling





	Basic version	Upgraded version		
Mast extension	without		5 + 5 m	
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.	157 t	187 t	187 t	192 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*	24.5 t	34.3 t	34.3 t	34.3 t

* depending on equipment



Drilling depth – uncased Kelly drilling, Basic version

				BA 1,300 mm		BA 1,550 mm	
3-part Kelly**	A (m)	B (m)	G (kg)	H_W (m)	T (m)	H_W (m)	T (m)
BK420/470/3/36	15.3	38.0	9,400	8.5	35.7	8.9	35.7
BK420/470/3/52	20.6	54.1	12,300	3.2	51.7	3.6	51.7
4-part Kelly**							
BK420/470/4/48	15.3	49.5	12,600	8.5	47.3	8.9	47.3
BK420/470/4/72	21.3	73.5	17,600	2.5	71.3	2.9	71.3

Drilling depth – uncased Kelly drilling, Upgraded version

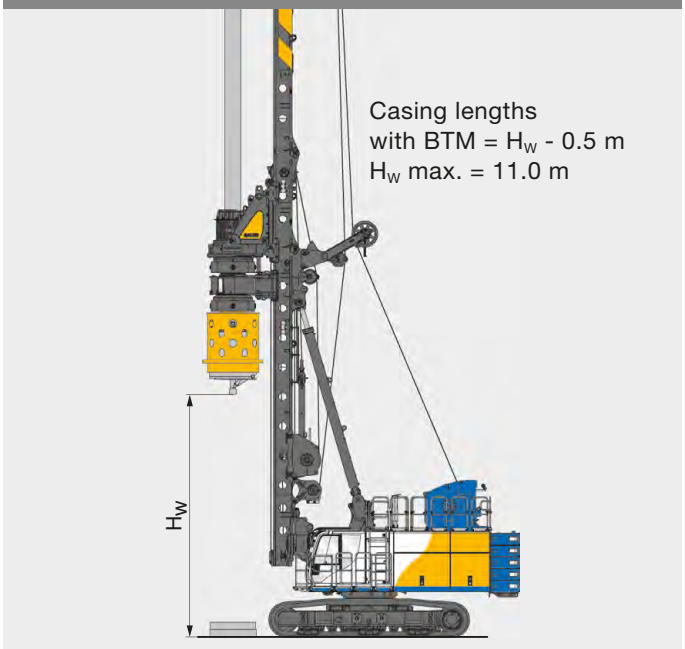
				BA 1,550 mm		BA 2,000 mm	
4-part Kelly	A (m)	B (m)	G (kg)	H_W (m)	T (m)	H_W (m)	T (m)
BK500/559/4/48	15.9	51.9	16,900	13.5	49.4	13.0	49.7
BK500/559/4/72	21.9	75.9	23,000	12.0	73.4	10.9	73.7
BK500/559/4/80	23.9	83.9	25,100	10.0	81.4	8.9	81.7
BK500/559/4/105*	27.9	108.9	31,563	3.7	106.4	2.7	106.7
5-part Kelly**							
BK420/559/5/105*	24.8	108.6	26,700	9.1	106.4	7.9	106.7
BK420/559/5/110*	25.8	113.6	27,700	8.1	111.4	6.9	111.7
BK420/559/5/120*	27.8	123.6	29,800	6.1	121.4	4.9	121.7

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

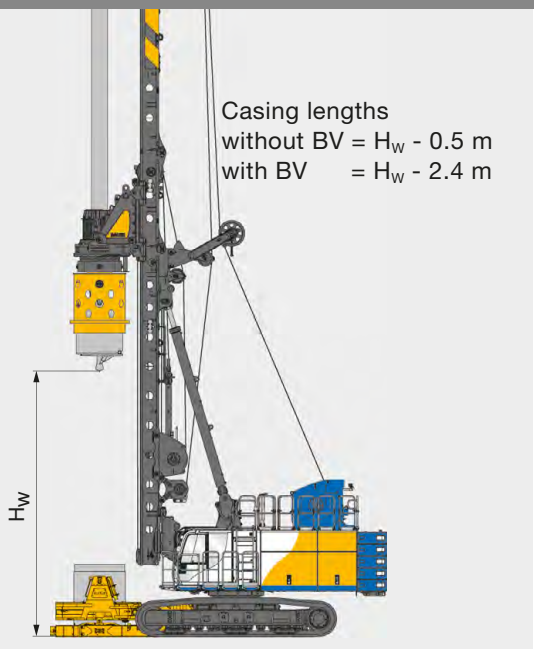
Drilling data as shown are based on tool length NL = 1.9 m, minimum horizontal mast reach and using Bauer attachment. Drilling depth is increased by 0.57 m when using maximum horizontal mast reach.

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

Torque multiplier BTM 720 K

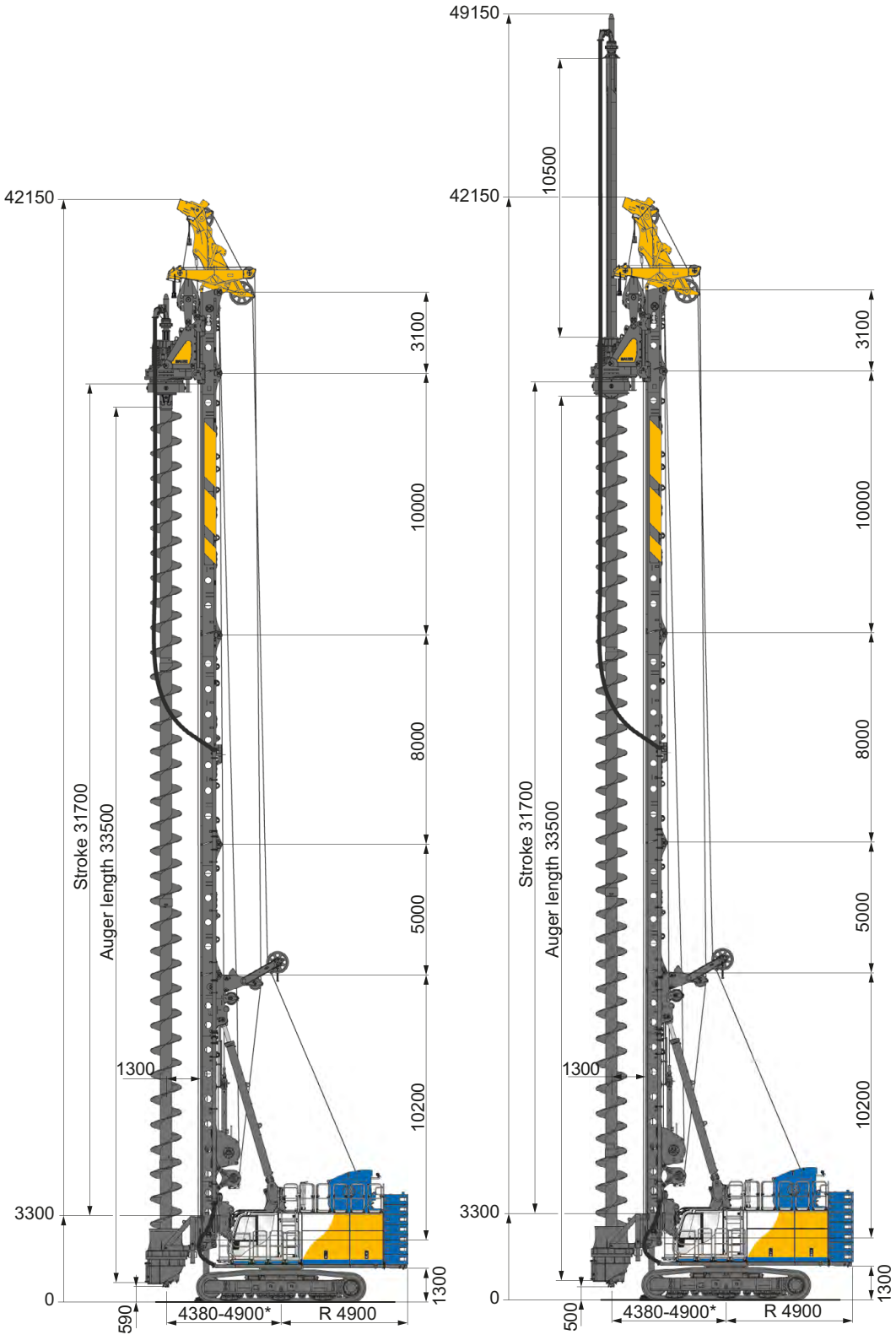


Kelly drilling with casing oscillator BV 2000



* Main winch in second layer with reduced pulling force: 39.5 t / 395 kN
** Reduction of torque to 420 kNm for Kelly type BK 420

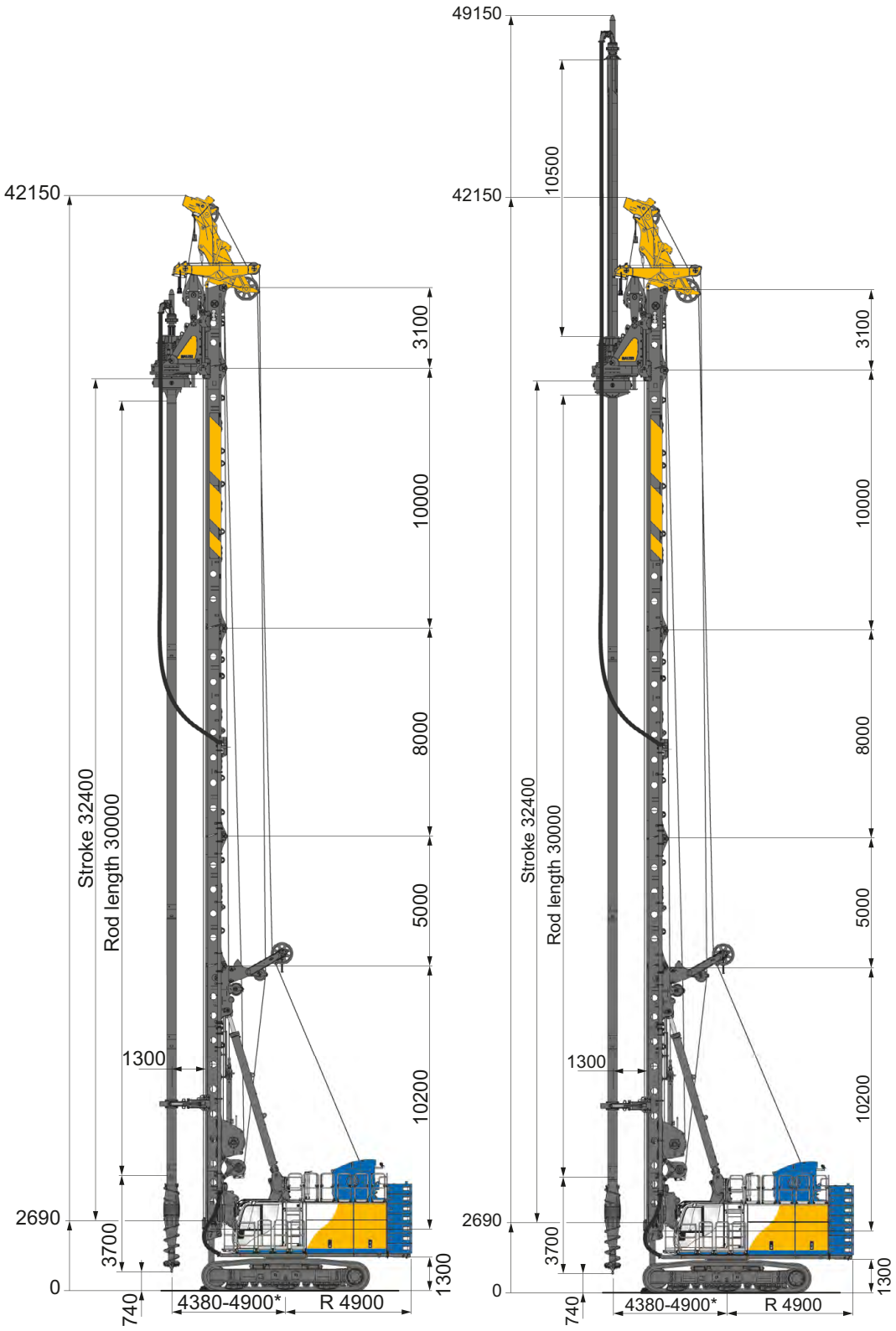
Application – CFA Drilling



	without Kelly extension	with Kelly extension
Mast extension	5 + 8 m	5 + 8 m
Kelly extension	without	10.5 m
Max. drilling diameter	1,200 mm	1,200 mm
Max. drilling depth (with auger cleaner)	31.0 m	41.5 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

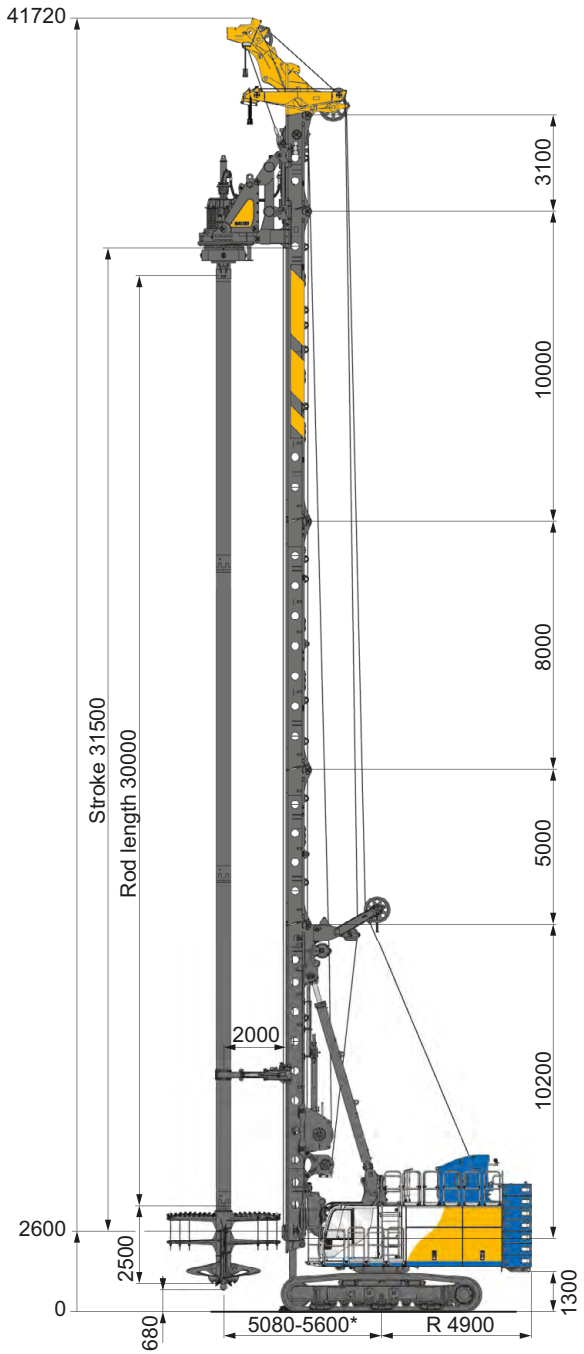
Application – FDP Drilling



	without Kelly extension	with Kelly extension
Mast extension	5 + 8 m	5 + 8 m
Kelly extension	without	10.5 m
Max. drilling diameter	710 mm	710 mm
Max. drilling depth (with auger cleaner)	31.0 m	41.5 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

Application – SCM Mixing

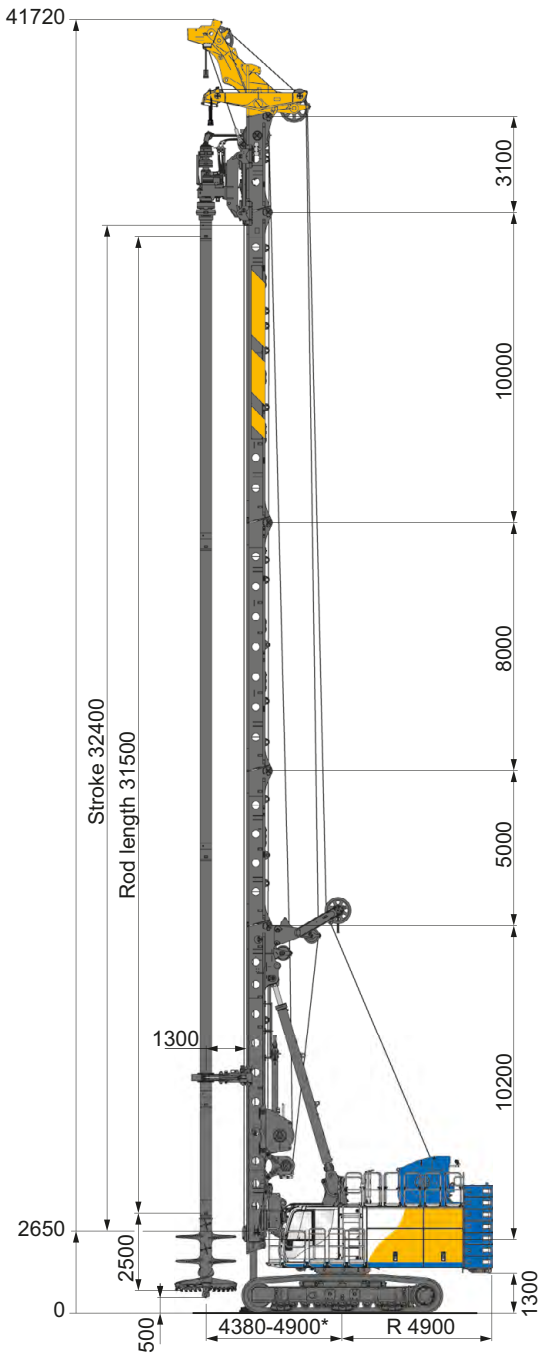


	SCM Mixing with KDK
Mast extension	5 + 8 m
Kelly extension	without
Drill axis	2,000 mm
Max. mixing diameter	3,650 mm
Max. mixing depth with pipe guidance	30.0 m
Max. extraction force with main and crowd winch (effective)	814 kN
with counterweight*	34.3 t

* depending on equipment

SCM Mixing – Advantages of the MB 185:

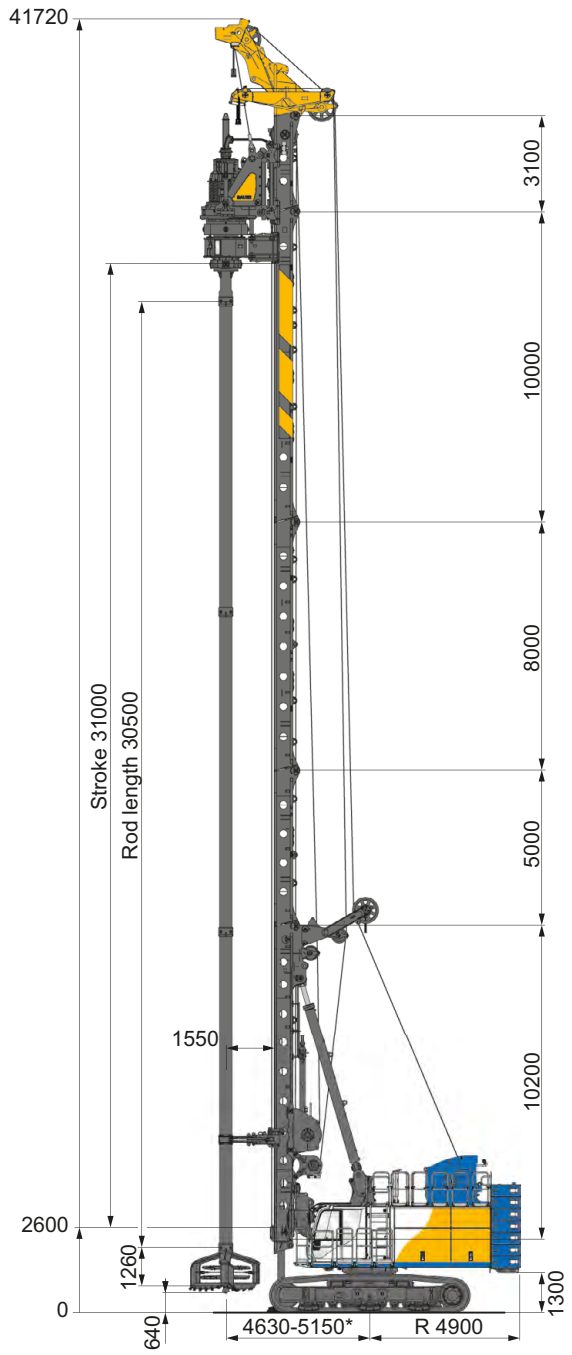
- **High rotational speed (up to 110 rpm)**
  Ensures intensive and uniform mixing, even with large mixing tools
- **Consistent mixing quality**
  Smooth and continuous operation provides uniform column homogeneity
- **Reduced mixing cycle times**
  Leads to higher daily output and improved operational efficiency
- **Optimized for SCM processes**
  Where rotational speed and shear forces are critical – not maximum torque



	SCM Mixing with MB
Mast extension	5 + 8 m
Kelly extension	without
Drill axis	1,300 mm
Max. mixing diameter	2,000 mm
Max. mixing depth with pipe guidance	31.5 m
Max. extraction force with main and crowd winch (effective)	600 kN
with counterweight*	34.3 t

* depending on equipment

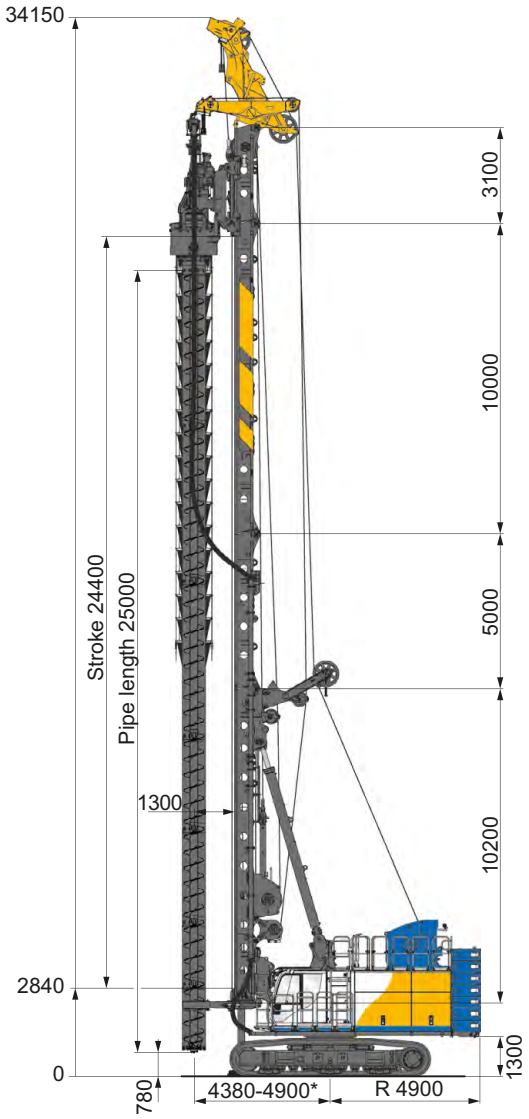
Application – SCM-DH Mixing



	SCM mixing with KDK and BTM
Mast extension	5 + 8 m
Kelly extension	without
Drill axis	1,550 mm
Max. mixing diameter	2,400 mm
Max. mixing depth with casing guidance	30.0 m
Max. extraction force with main and crowd winch (effective)	814 kN
with counterweight*	34.3 t

* depending on equipment

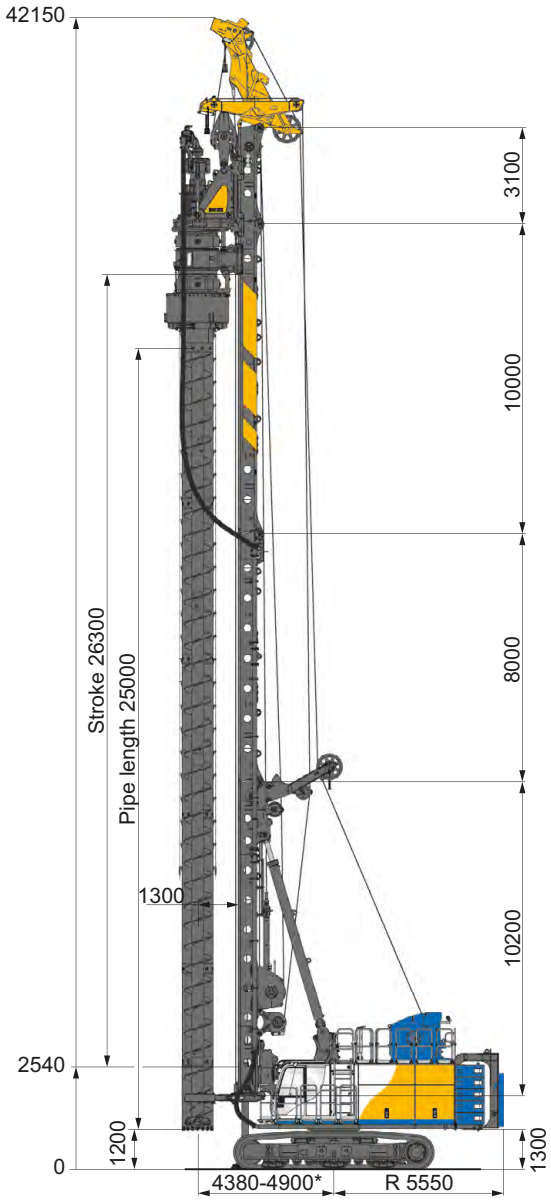
Drilling method – CCFA Drilling



	with DKS 110 / 240	
Mast extension	5 m	5 + 5 m
Max. drilling diameter	750 mm	620 mm
Max. drilling depth	23.0 m	28.0 m
Max. extraction force with main and crowd winch (effective)	600 kN	
Spoil discharge system	Optional	
Max. torque: Auger (right-hand rotation) Casing (left-hand rotation)	 110 kNm 240 kNm	
with counterweight*	34.3 t	

* depending on equipment

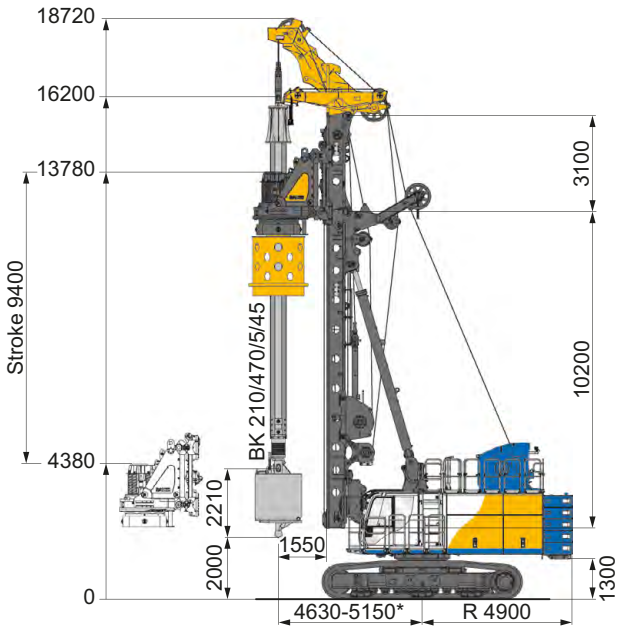
Drilling method – CCFA Drilling

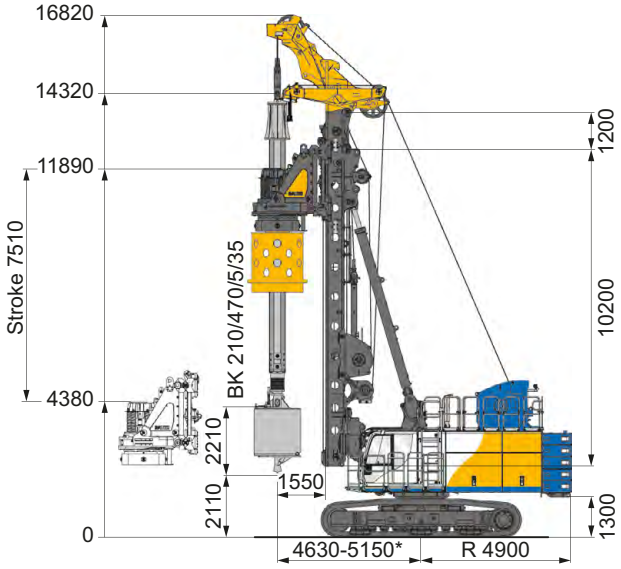


		with KDK / BTM 600		
Mast extension	5 + 5 m	8 m	5 m	-
Max. drilling diameter	750 mm	880 mm	1,000 mm	1,180 mm
Max. drilling depth	27.5 m	24.5 m	23.0 m	17.0 m
Max. extraction force with main and crowd winch (effective)		1,160 kN		
Spoil discharge system		Standard		
Max. torque: Auger (right-hand rotation) Casing (left-hand rotation)		 240 kNm 600 kNm		
with counterweight*		36.6 t		

* depending on equipment

Special Applications – Kelly Drilling

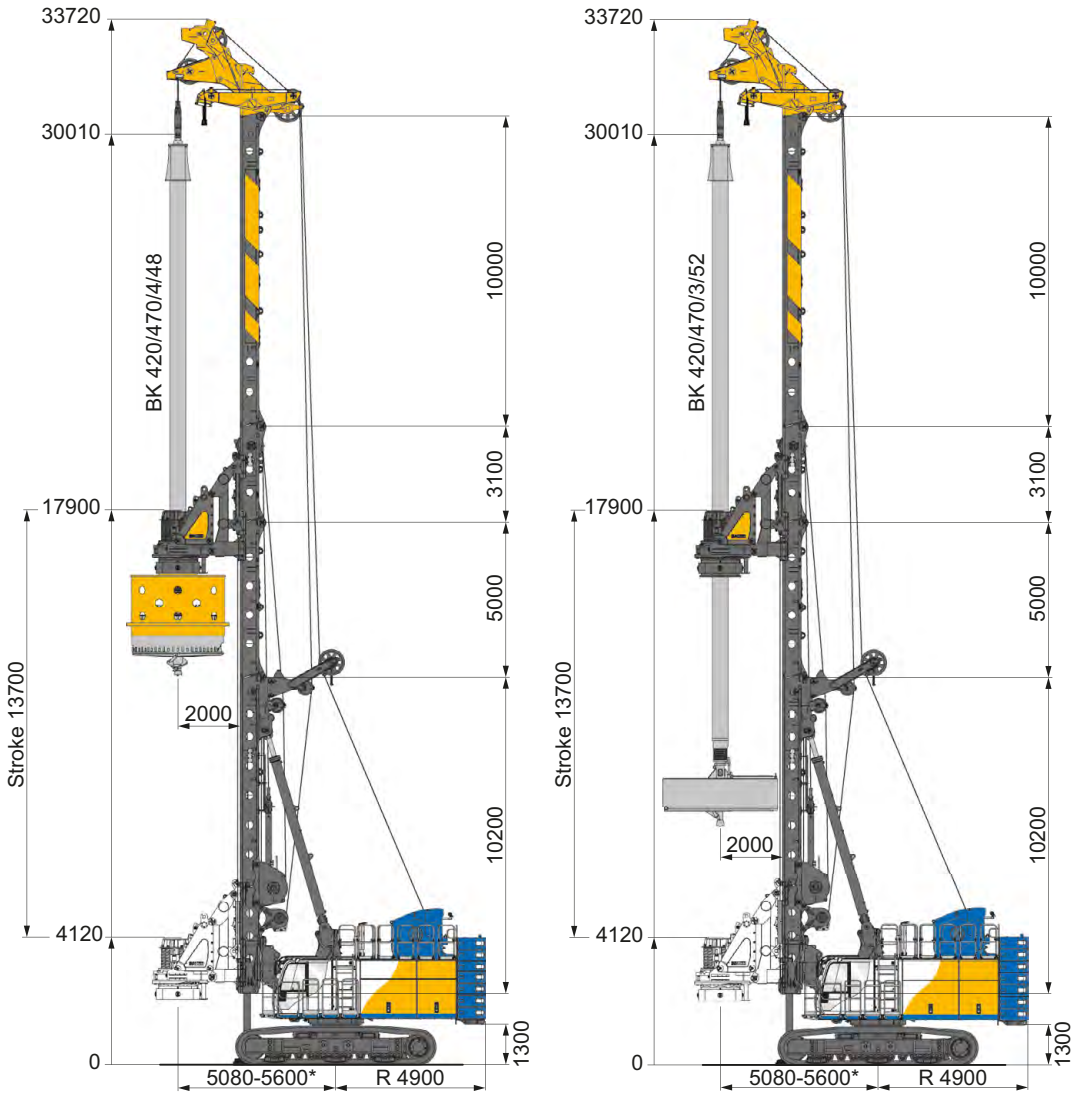




	Reduced Headroom System			
Vario-mast segment	1,200 mm / 3,100 m			
Drill axis	1,300 mm	1,550 mm	1,700 mm	2,000 mm
Max. drilling diameter				
uncased	2,300 mm	2,800 mm	3,200 mm	3,700 mm
cased	2,000 mm	2,500 mm	2,800 mm	3,400 mm
Max. drilling depth	35.0 m / 45.0 m	35.0 m / 45.0 m	30.0 m / 40.0 m	30.0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

* depending on equipment

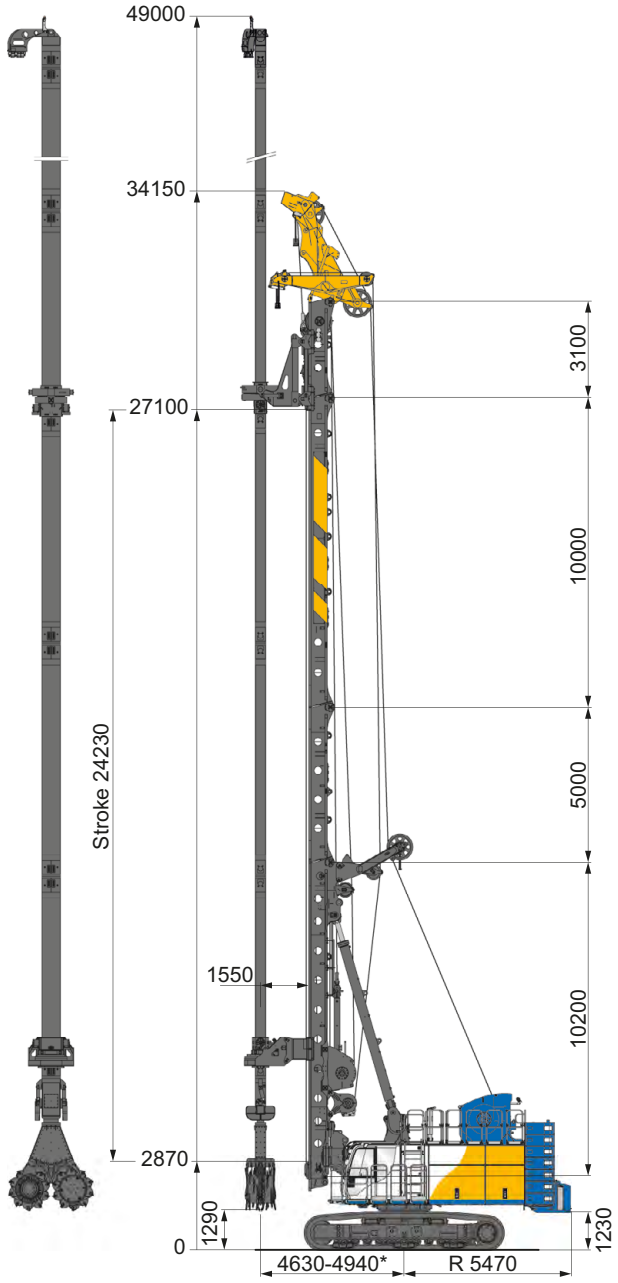
Special Applications – Kelly Drilling



	cased	slurry-supported
Mast extension	5 m	5 m
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*	185 t ...4/48 Ø 3,000 mm Ø 2,800 mm 34.3 t	187 t .../3/52 - Ø 3,500 mm 34.3 t

* depending on equipment

Further Applications



	CSM – Cutter Soil Mixing		
Cutting/Mixing head	BCM 5S	BCM 5L	BCM 10
Panel width	1,000 mm	1,000 mm	1,000 mm
Panel length	2,400 mm	2,800 mm	2,800 mm
Max. panel depth**	43.0 m	43.0 m	43.0 m
with counterweight		34.3 t	

* depending on equipment
** with lower mast extension

Transport – Dimensions and Weights

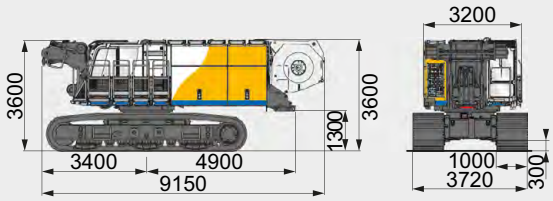
G = Weight
B = Width, overall

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

Transport

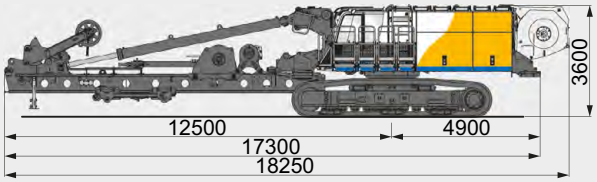
Base carrier

G = 67.5 t (without main winch)
B = 3,720 mm



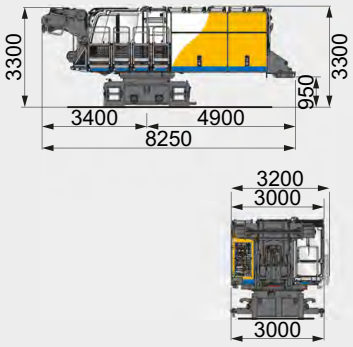
Base carrier with lower mast section

G = 92.5 t (without main winch)
B = 3,720 mm

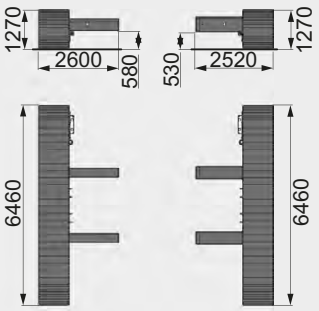


Base carrier without crawlers

G = 37.5 t
B = 3,000 mm

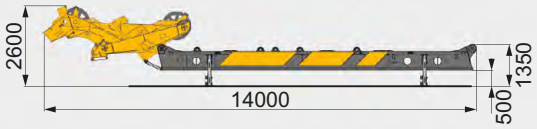


G = 2 x 15.5 t



Upper mast section with mast head

G = 7.4 t
B = 2,100 mm

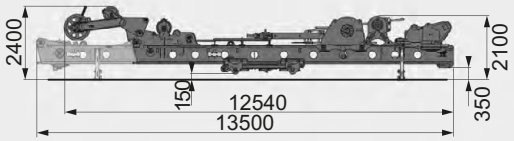


G = 2.5 t
B = 1,700 mm

G = 4.9 t
B = 1,650 mm

Lower mast section with Vario-mast system

G = 23,5 t with Vario segment B = 2,250 mm



Vario segment
G = 2.5 t B = 1,100 mm

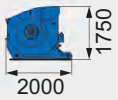
Counterweight

G = 4.9 t* or 2.5 t*
B = 3,000 mm

*depending on application

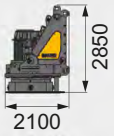
Main winch 380 kN

G = 7.6 t
(with 140 m rope)
B = 2,400 mm



Rotary drive

KDK 500 S
G = 10.6 t



Mast extension 5 m

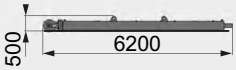
G = 2.7 t
B = 1,200 mm

Mast extension 8 m

G = 3.9 t
B = 1,200 mm

Backstay cylinders

G = 2 x 2.0 t
B = 400 mm



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