BAUER BG 23 H

Rotary Drilling Rig

Base Carrier BT 75

PremiumLine

BAUER

Experience for you!

“100 years of drilling,
4 decades of building machines,
and still down to the earth” Prof. Thomas Bauer

We could start by telling you about Sebastian Bauer, who founded a copper forge in the German town of Schrobenhausen some 200 years ago. We could then move on to how his workshop prospered and developed to a leading construction company for specialist foundation engineering. The story would continue to the mid 20th century, when innovation and the drive for perfection prompted Bauer to develop and build their own high-quality and high-performance machinery.

And it still wouldn´t end in the 21st century, Bauer now family-run in the seventh generation and meanwhile a globally operating group with more than 100 branches and subsidiaries operating in the fields of special foundation engineering (Bauer Spezialtiefbau), in manufacturing of foundation equipment (Bauer Maschinen) and focusing on products and services in the fields of water, energy, mineral resources and environmental technology (Bauer Resources).

But we think what really matters about us and to our customers is this:
We are a strong partner with face and values, we are down to earth, and we are dedicated to perfection in everything we touch.

1790
Foundation as a copper forge in Schrobenhausen, Germany

1928
Well drilling in Bavaria, Germany

1958
Invention of the ground anchor by Dr.-Ing. K.H. Bauer

1976
First hydraulic rotary drill rig BAUER BG 7

1984
First diaphragm wall trench cutter BC 30

More than machines: Competent consulting

Quality is not an act,
it is a habit.

Of the thousands of machines Bauer Maschinen has built since production started in the 1970´s with the first rotary drill rig BG 7, many of them are still in operation all over the world – in Siberia as well as in the desert. State of the art technology developed end-to-end by our inhouse engineers and full machine tests prior to delivery are one side of the coin. Bauer Maschinen can serve any customer need with the most comprehensive product portfolio.

The other side is project-specific consulting by highly trained experts, with a focus on your special requirements.

- **Quality and experience in specialist foundation engineering**
- **Global operation – local contacts in over 70 countries**
- **Reliability in technology, service**
- **Customized solutions**
- **On-site support over entire machine service life**

1980´s
Start of international equipment sales

2001
Bauer Maschinen established as independent company within the Bauer Group

2006
Stock market launch of BAUER AG, directed by Prof. Thomas Bauer

2011
Introduction of BG ValueLine and BG PremiumLine

2014
With EEP Bauer sets new standards for efficiency

The BAUER BG PremiumLine

The BG Premium Line stands 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 BG PremiumLine are:
- High safety standards
- Environmental sustainability, economic effi ciency and performance
- Easy to transport and short rigging time
- High quality standard
- Long lifetime and excellent resale value

The H-model line

Special features
of the H-model line are:
- Fast loading onto transport vehicles
- Easy rigging on-site due to compact design
- Rapid shifting to new working positions at construction sites with underpasses or below low bridges

BG 15 H
BT 40

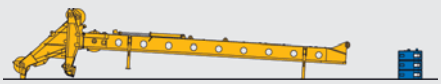
BG 18 H
BT 50

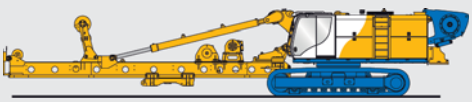
BG 20 H
BT 60

BG 23 H
BT 75

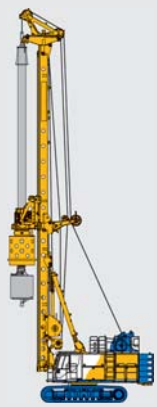
The V-model line

Special features
of the V-model line are:
- Big borehole diameters
- Large drilling depths
- Extended service intervals and power transmission with low vibrations due to the robust design of the kinematic system

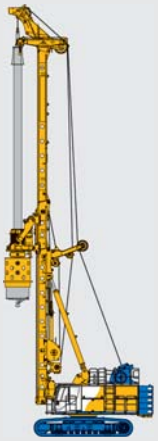




BG 28
BS 80



BG 36
BS 95

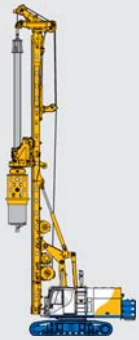


BG 45
BS 95

The Rotary Drilling Rig
BG 23 H PremiumLine (BT 75)

Max. drilling diameter:	**1,500 mm**
Max. drilling depth:	**53.2 m**
Max. torque:	**235 kNm**
Max. height:	**22.5 m**
Engine:	**CAT C 9 Stage III A/Tier 3**
	280 kW @ 1,850 rpm
	CAT C 9.3 Stage IV/Tier 4 final
	298 kW @ 1,850 rpm

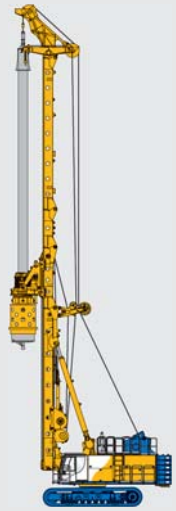
BG 28 H
BT 75



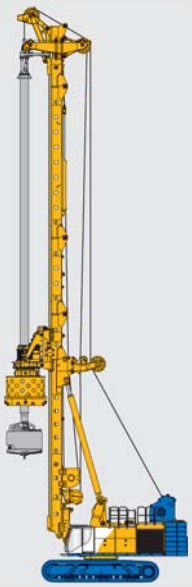
BG 28 H
BT 85

BG 33 H
BT 85

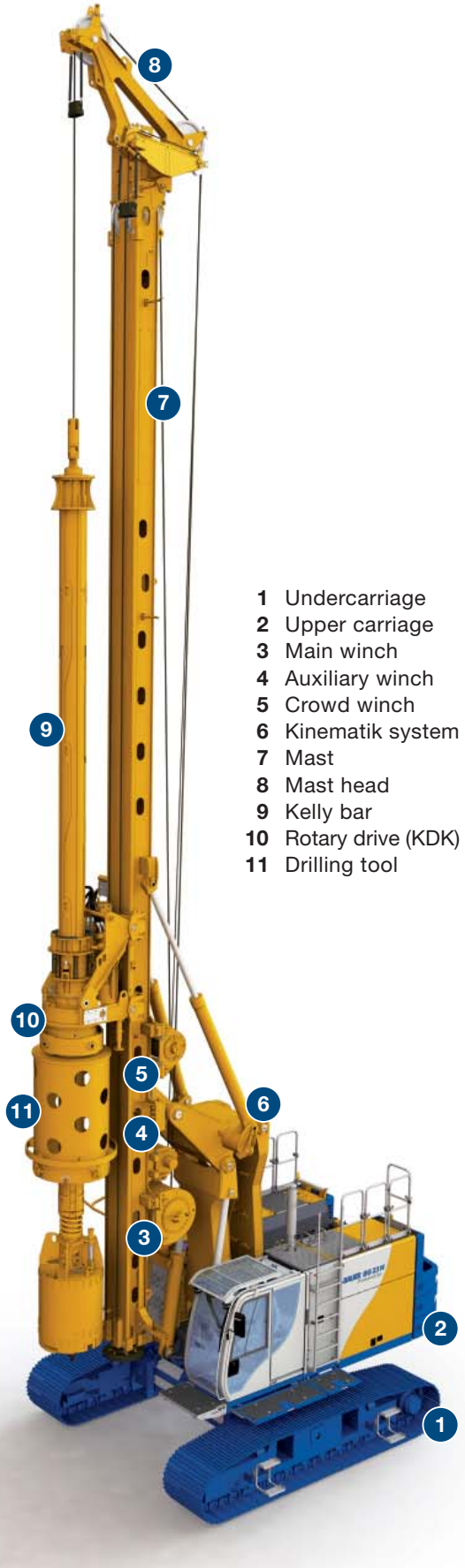
BG 36 H
BS 95



BG 55
BS 115



BG 72
BT 180



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

Spotlights

Modern, ergonomic operator 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 CAT engines
- C 9 (280 kW, Tier 3) or C 9.3 (298 kW, Tier 4 final)
- Diesel particulate filter in exhaust emission standard Tier 4 final
- Automatic idling mode
- Modern engine diagnostic system
- Low noise emission
- Low fuel consumption due to individual consumer control
- Worldwide CAT-service partners

Vario-masthead position Kelly drilling

Vario-masthead position Single-Pass drilling

Flexible mast concept
- Multi-sectional mast
  - Low-Head version
  - Giant drill version
  - Optimized transport length
- Lattice mast extension
- Vario-masthead
  - Masthead for drill axis 900 mm
  - Increased stroke for Kelly bars when using an upper kelly guide
  - Tiltable main jib for single-pass processes and for optimized transport

Energy-Efficient PowerEEP

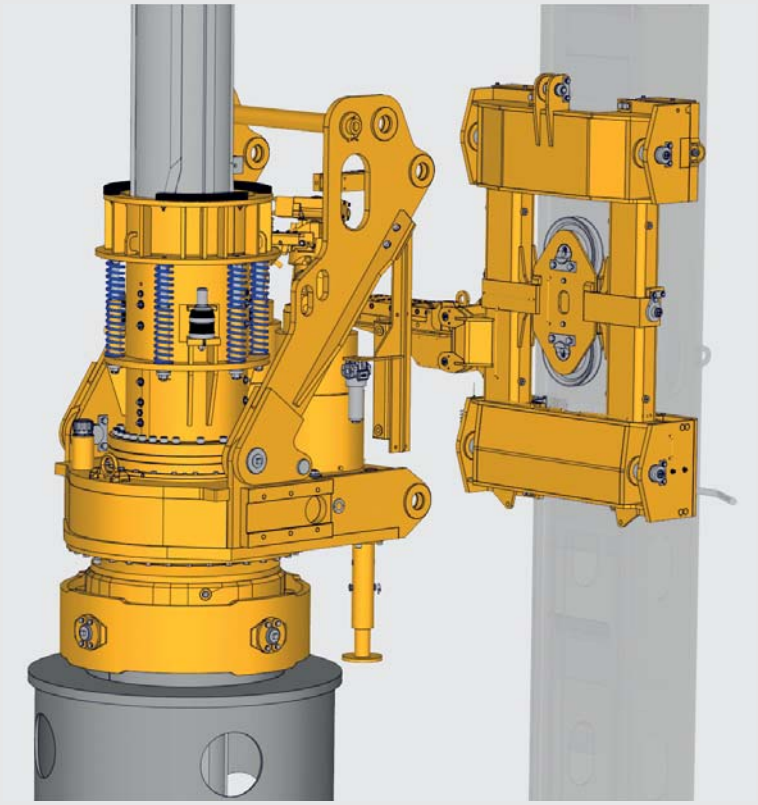
- **Reduction of fuel consumption by up to 30%**
- **Increased productivity through improved efficiency**
- **Significantly reduced noise levels**
- **Tried and proven suitability for practical application**
- **Optimized parallel operation of main and auxiliary consumers**

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

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)
- 2 rear view cameras

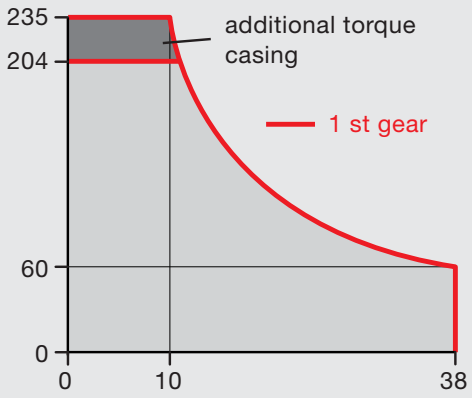
Remote control for rigging the machine
- The remote control can be used to perform numerous rigging functions outside the danger zone, such as moving the drilling rig, telescoping the undercarriage, etc.
  - Operation within sight of the controlled rigging functions
  - Rugged and compact wireless remote control multi with LCD screen
  - Lockable storage box for the remote control can be accessed from the ground

Rotary Drive

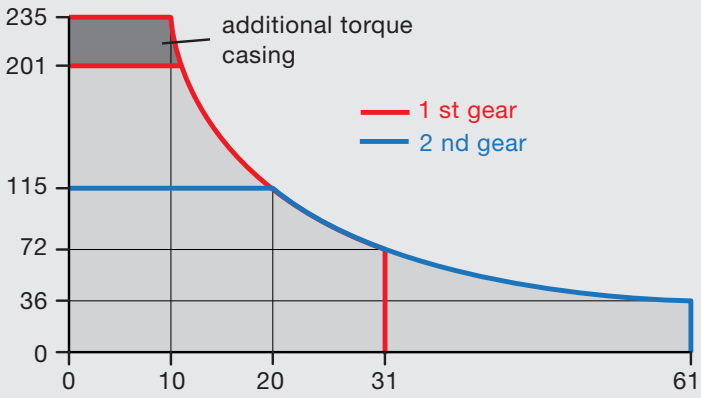


Rotary drive KDK 235
- Optional single gear drive KDK 235 K or multi gear drive KDK 235 S
- Max. torque 235 kNm
- Max. speed 61 rpm

KDK 235 K

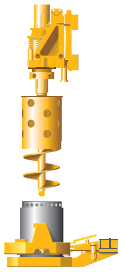


KDK 235 S



Multi-functional Equipment

Kelly Drilling



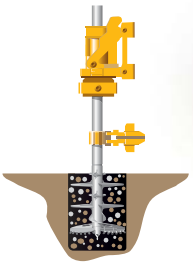
Cased Kelly Drilling
Casing Installation with Oscillator

CFA
Continuous Flight
Auger Method

FDP
Full Displacement Piling
(Standard or Lost Bit)

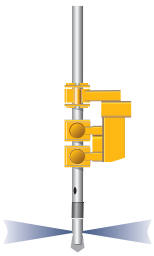
FoW

Pile Driving
with Hydraulic Hammer or
Pileco Diesel Hammer



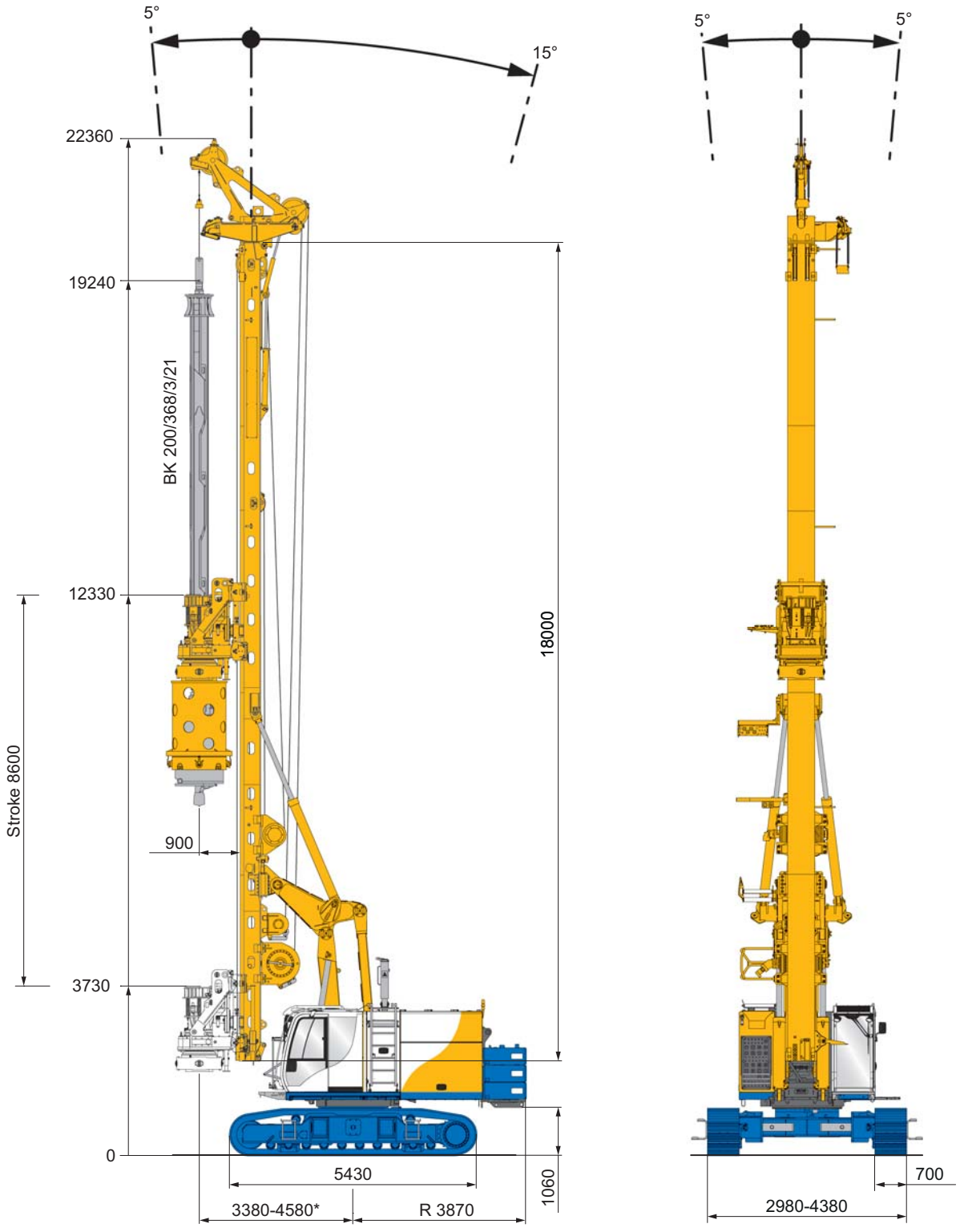
SCM
Single Column Mixing

TR
Deep Vibrator



HDI
Jet Grouting

Dimensions – Basic Version



Operating weight 75.2 t
(as shown)

* depending on equipment

Technical Specifications

Rotary drive	**KDK 235 K**	**KDK 235 S**
Torque (nominal) for casing operation at 350 bar	235 kNm	235 kNm
Torque (nominal) for drilling at 350 bar	204 kNm	201 kNm
Max. speed of rotation	38 rpm	61 rpm
Crowd winch		
Max. sledge stroke	15,580 mm	
Crowd force push and pull, effective/nominal	260 / 333 kN	
Rope diameter	22 mm	
Speed (down/up)	10.5 m/min	
Fast speed (down/up)	30.5 m/min	
Main winch	M6 / L3 / T5	
Line pull (1st layer) effective/nominal	170 / 210 kN	
Rope diameter	26 mm	
Line speed (max.)	80 m/min	
Auxiliary winch (selectable)	M6 / L3 / T5	
Line pull (1st layer) effective/nominal	55 / 70 kN	65 / 80 kN
Rope diameter	15 mm	
Line speed (max.)	58 m/min	
Base carrier (EEP)	BT 75	
Engine	CAT C 9	CAT C 9.3
Rated output ISO 3046-1	280 kW @ 1,850 rpm	298 kW @ 1,850 rpm
Exhaust emission EEC 97/68 EC EPA/CARB	Stage III A Tier 3	Stage IV 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/EG u. EN 16228, Annex B)	LW_A 112 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	
Undercarriage	UW 65	
Crawler type	B 6	
Traction force effective/nominal	450 / 530 kN	

Technical Equipment

Base carrier BT 75

Standard
- Removable counterweights
- Protective roof guard
- Radio with MP3, USB and Bluetooth hands-free kit
- Grating in front of cab
- Retractable grating on side of cab
- Electric refuelling pump
- Energy-Efficient Power (EEP)
- Premium operator seat
- 2 rear view cameras
- Integrated service platform
- Central lubrication system
- LED spotlights
- Climatronic

Optional
- Counterweight, variably adjustable
- Guardrails on the upper level (foldable for transport)
- Integrated service platform (electrically retractable / extendable)
- High-pressure cleaner with water tank
- Rear support unit, **Fig. A**
- Compressor 1,000 l/min
- Electric generator 13 kVA
- Bio-degradable hydraulic oil
- Arctic kit
- Cab space heater with automatic timer
- Additional camera (at customer specific location)
- Front screen guard
- Sun blind small or large
- Remote control Basic, **Fig. B**
- Remote control Multi
- Tool holders in front of the operator´s cabin, **Fig. C**

Drilling rig attachment

Standard
- Main winch with hydraulic free-fall control
- Swivel for main rope
- Masthead (foldable for transport)
- Pivoted anchor point for main and auxiliary rope
- Vario-masthead

Optional
- Upper Kelly guide
- Mast support unit
- Multi-sectional mast for Low Head and Giant Drill applications
- Lattice mast extension
- Swivel for auxiliary rope
- Additional auxiliary winch 20 kN
- Attachment of casing oscillator up to BV 1300
  - Powered by on-board hydraulics of the base carrier
  - Controlled from operator‘s cab
  - Possible up to 1,500 mm drilling diameter on request
- Attachment of automatic casing drive adapter, **Fig. D**
- Sling for counterweight handling

A

B

Rotary drive

Standard
- Rotary drive KDK 235 K (single-gear drive)
- Selectable modes of operation
- Kelly drive adapter for outer Kelly tube 368 mm
- Integrated Kelly damping system
- Exchangeable Kelly drive adapter
- Cardanic joint
- Quick-release hydraulic couplers
- Transport supports
- Lifting gear

Optional
- Rotary drive KDK 235 S (multi-gear)

Measuring and control system

Standard
- PLC processor for all electrically actuated functions
- Automatic mast alignment with memory-recall
- Depth measuring device on main winch
- Distance measuring device on crowd winch
- Main winch with electronic load sensing
- Slack rope prevention
- Automatic swivel alignment function
- Hoist limit switch for main and auxiliary winch
- Auxiliary winch with hydraulic load sensing
- Crowd stroke monitoring
- Crowd speed control
- Speed measuring control for rotary drive (KDK)
- Hold-Back control
- Electronic mast reach limiter
- Casing length monitoring

Optional
- Electronic load sensing for auxiliary winch
- Recording of concrete pressure and volume for Single-Pass processes
- Software modules for further applications
- Adaptive Kelly Speed assistant

C

D

B-Tronic System

B-Tronic
The BAUER B-Tronic system allows completition 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 cab

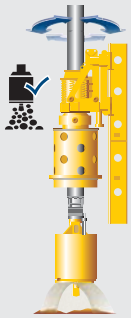
Tablet
The tablet is the multi-functional tool for the Bauer machine
- Online access to the customer portal, handbooks, equipment management systems and much more
- Standard internet connection via the DTR module, which is located in the machine
- The operator‘s screen can be mirrored live on the tablet to track the operating process

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

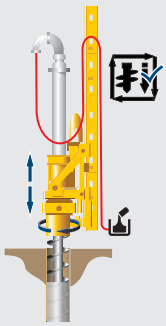
WEB-BGM
- WEB-BGM is a software used to retrieve equipment data and establish the locations of various machines, even if you are not on-site

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

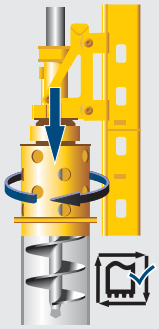
Assistance systems (selection)



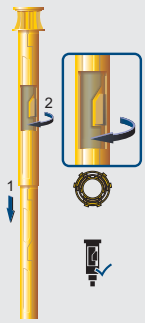
One-directional and bi-directional spoil discharge assistant
Automatic emptying of spoil via an alternating or shocking slewing rotation of the rotary drive. Infinitely variable adjustment of the shaking or shocking frequency via joystick.



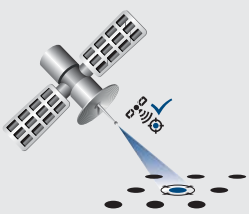
Automatic drilling and extraction control for Single-Pass processes
The system controls the drilling and / or extraction speed of the crowd system and enables hands-free operation. This ensures the production of a high-quality pile while simultaneously minimizing the amount of concrete.



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.



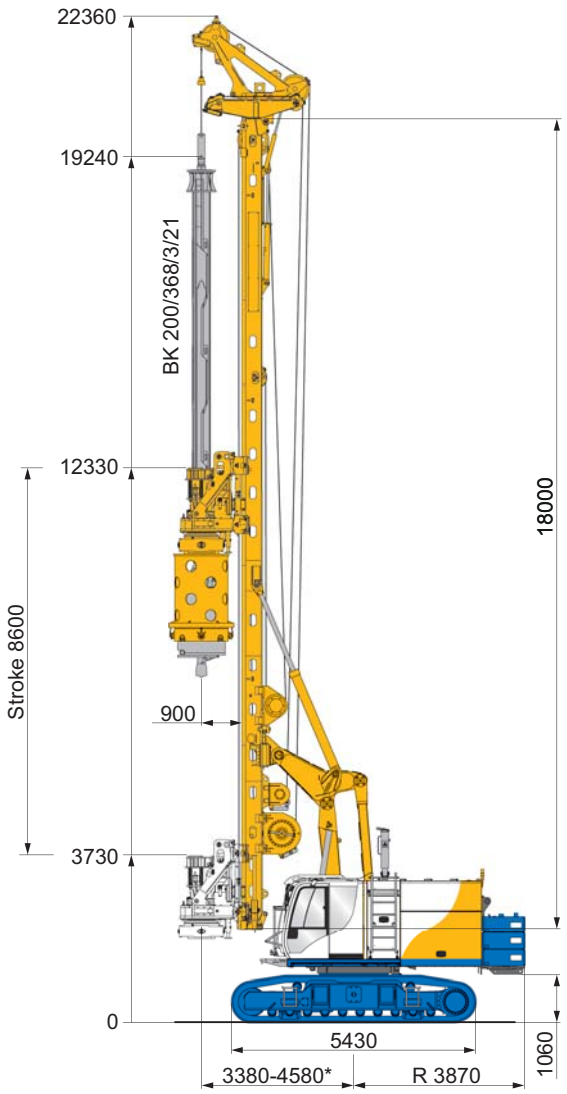
Kelly visualization
Display of the locking recesses, as well as representation of the controlled extension and retraction of the Kelly bar on the B-Tronic system. The rapid approach of the locking position results in a considerably enhanced drilling performance. In addition, the level of wear that the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

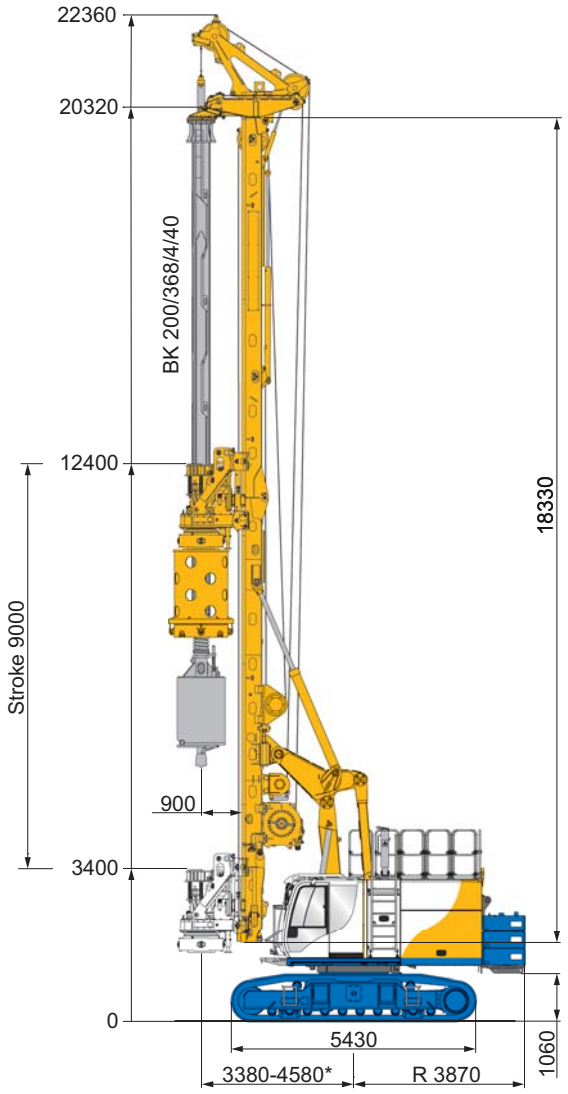


Satellite-based positioning
The BAUER-Assistant Positioning System (B-APS) allows the position of a bored pile to be located extremely accurately. Documentation is provided for the nominal and actual coordinates, as well as the corresponding accuracy of each bored pile. Manual marking of the piles is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

Numerous other assistance systems are available in our portfolio.

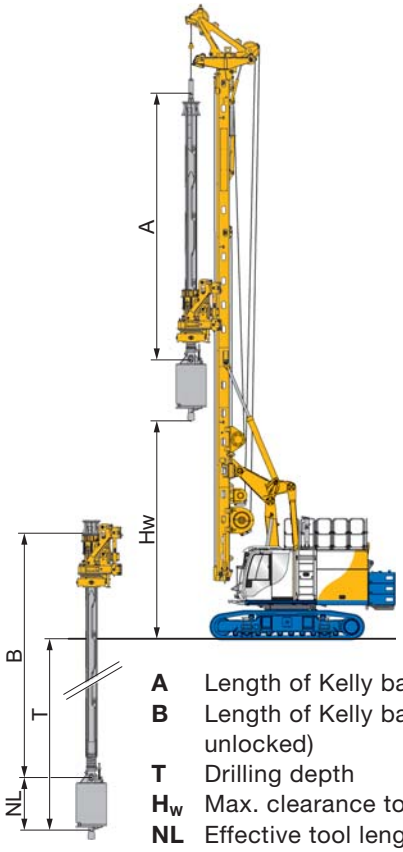
Application – Kelly Drilling





	Basic version	Upgraded version
Mast	Single section mast	Multi section mast
Upper Kelly guide	without	with
Max. drilling diameter		
uncased	1,500 mm	1,500 mm
cased	1,200 mm	1,200 mm
Operating weight, approx.	75.2 t	81.5 t
with Kelly	BK 200/368/3/21	BK 200/368/4/40
with casing drive adapter	1,180 mm	1,180 mm
with bucket	1,060 mm	1,060 mm
with counterweight *	7.5 t	12.3 t

* depending on equipment



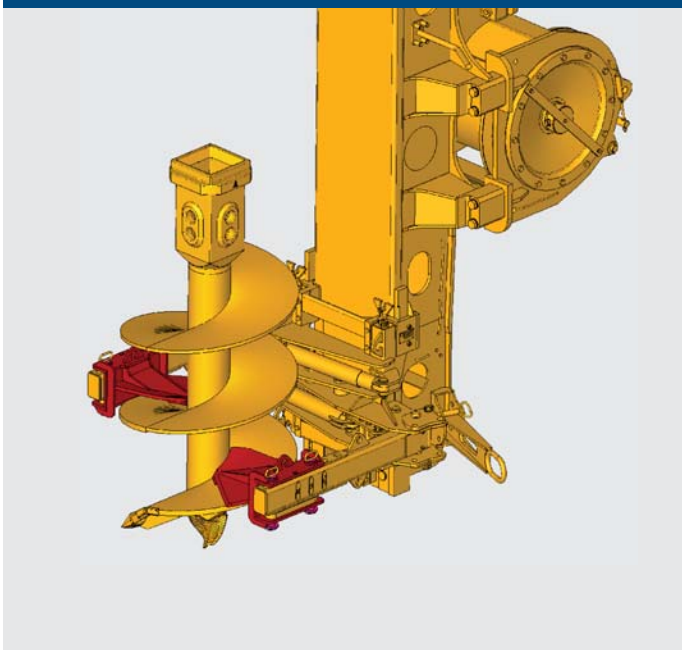
A Length of Kelly bar (retracted)
B Length of Kelly bar (extended, unlocked)
T Drilling depth
H_w Max. clearance to drilling tool
NL Effective tool length
G Weight of Kelly

Drilling depth – uncased Kelly drilling, drill axis 900 mm					
3-part Kelly	A (m)	B (m)	G (kg)	HW (m)	T (m)
BK200/368/3/18	8.4	20.4	3,300	7.67	18.5
BK200/368/3/21	9.4	23.4	3,600	7.67	21.5
BK200/368/3/24	10.4	26.4	3,900	7.67	24.5
BK200/368/3/27	11.4	29.4	4,200	6.76	27.5
BK200/368/3/30	12.4	32.4	4,500	5.76	30.5
BK200/368/3/33	13.4	35.4	4,800	4.76	33.5
4-part Kelly					
BK200/368/4/28	9.5	31.12	5,100	7.67	29.2
BK200/368/4/32	10.5	35.12	5,600	7.67	33.2
BK200/368/4/36	11.5	39.12	6,100	6.66	37.2
BK200/368/4/40	12.5	43.12	6,600	5.66	41.2
BK200/368/4/48	14.5	51.12	7,600	3.66	49.2
BK200/368/4/52	15.5	55.12	8,100	2.66	53.2

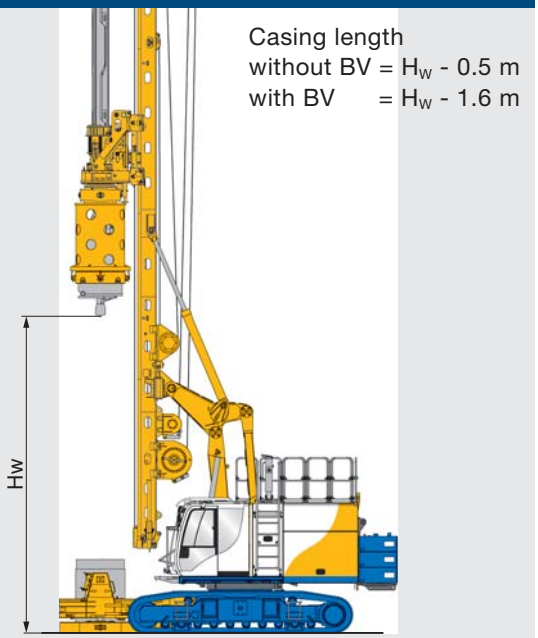
Drilling data have been determined with an effective tool length of NL = 1.9 m and with the mast at a minimum operating radius. These data only apply for the use of Bauer tools. Drilling depth is increased by 0.36 m when using maximum horizontal mast reach.

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

Auger cleaner for Kelly drilling application drilling diameter 520 to 1060 mm

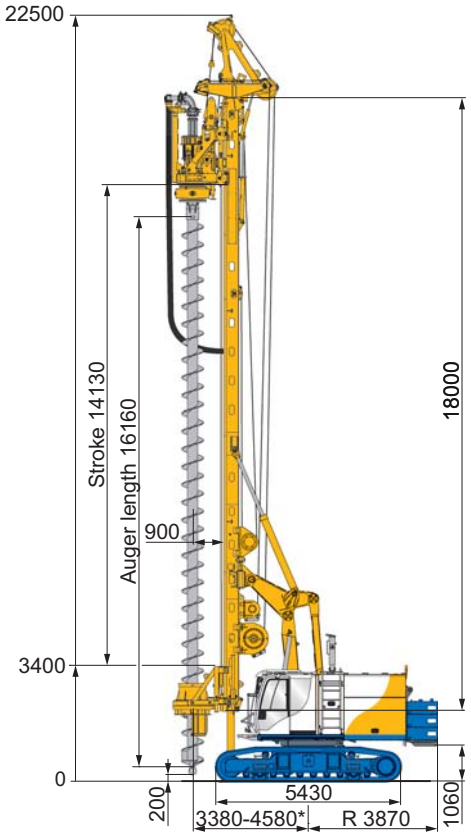


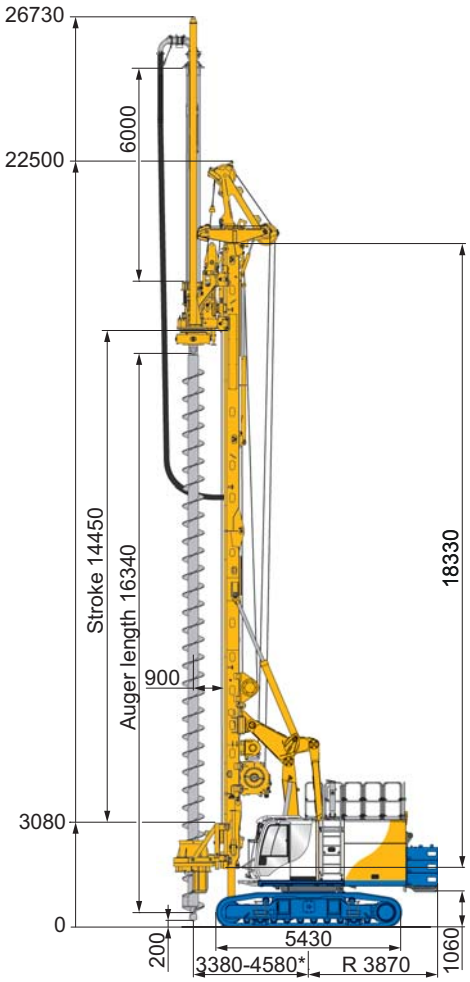
Kelly drilling with casing oscillator up to BV 1300



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

Application – CFA Drilling

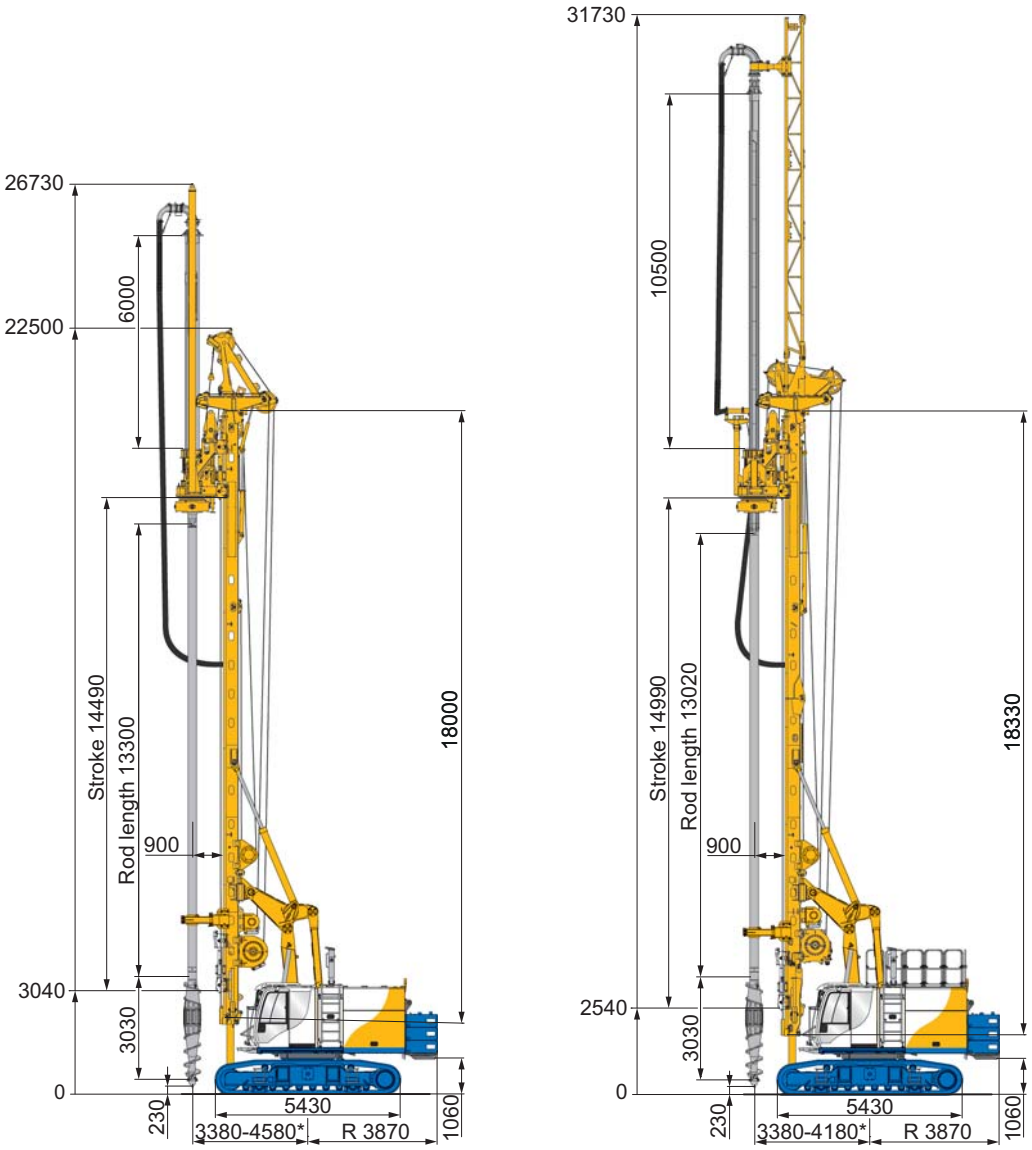




	Basic version	Upgraded version
Mast	Single section mast	Multi section mast
Kelly extension	without	6 m
Max. drilling depth	750 mm	750 mm
Drilling depth with auger cleaner	13.7 m	20 m
Max. extraction force with main and crowd winch (effective)	600 kN	600 kN
with counterweight *	7.5 t	9.9 t

* depending on equipment

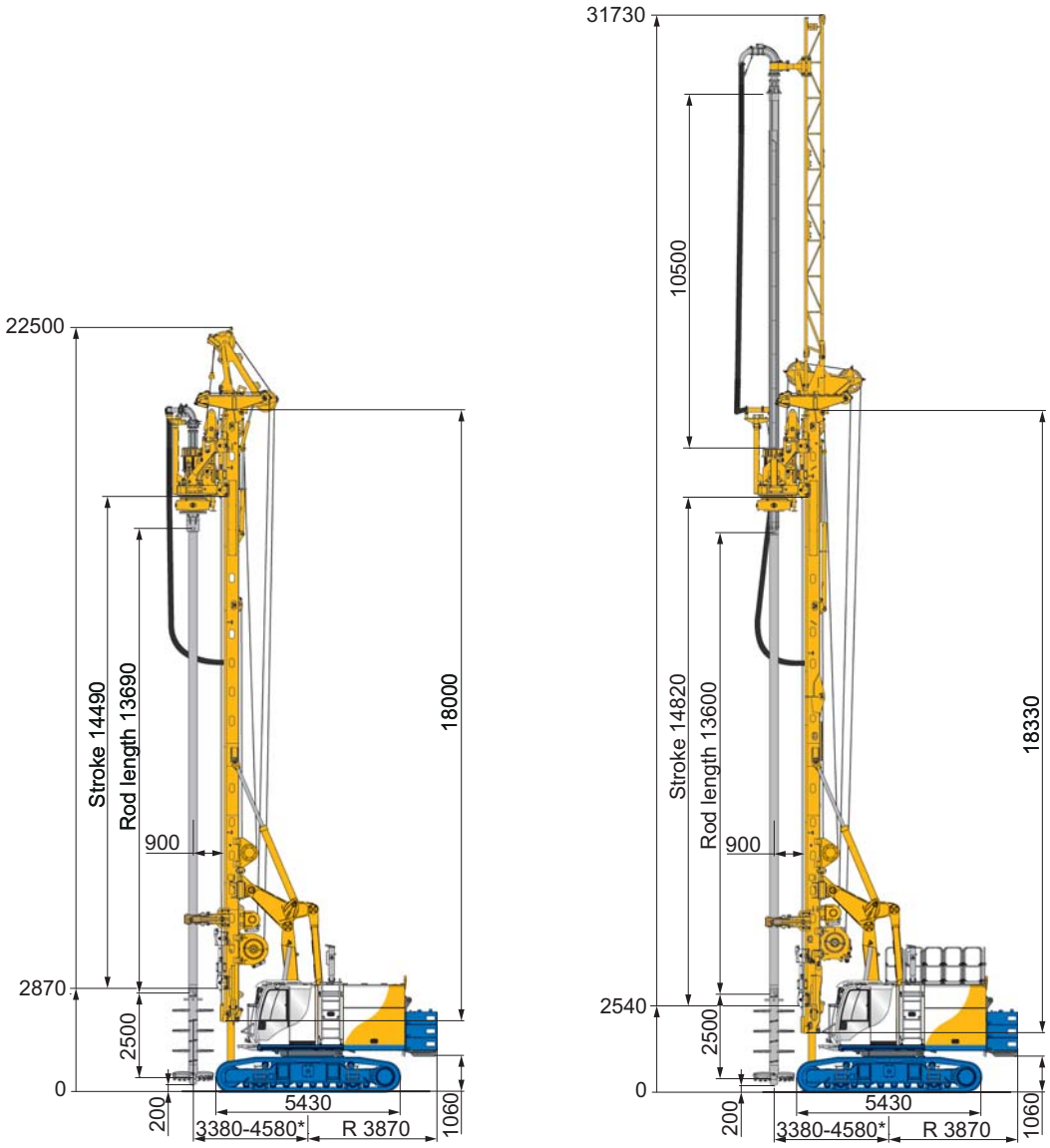
Further Applications



	FDP drilling Basic version	FDP drilling Upgraded version
Mast	Single section mast	Multi section mast
Kelly extension	6 m	10.5 m
Max. drilling diameter FDP	510 mm	510 mm
Max. drilling depth FDP	20 m	24.9 m
Max. extraction force with main- and crowd winch (effective)	600 kN	600 kN
with counterweight *	7.5 t	9.9 t

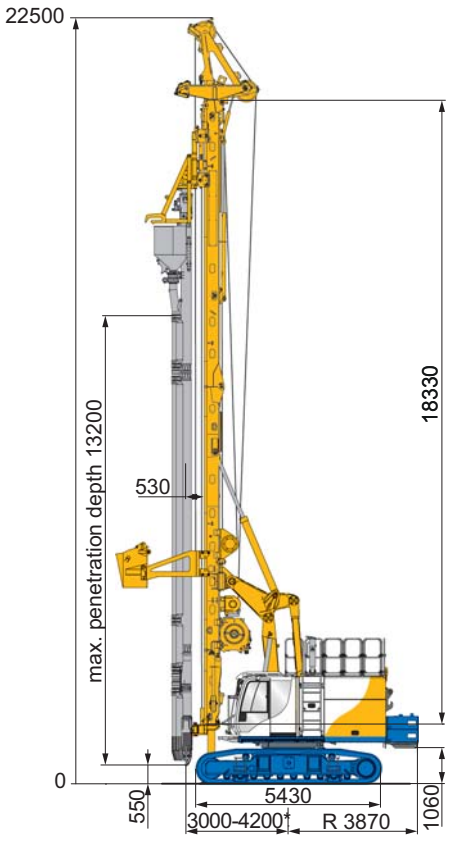
* depending on equipment

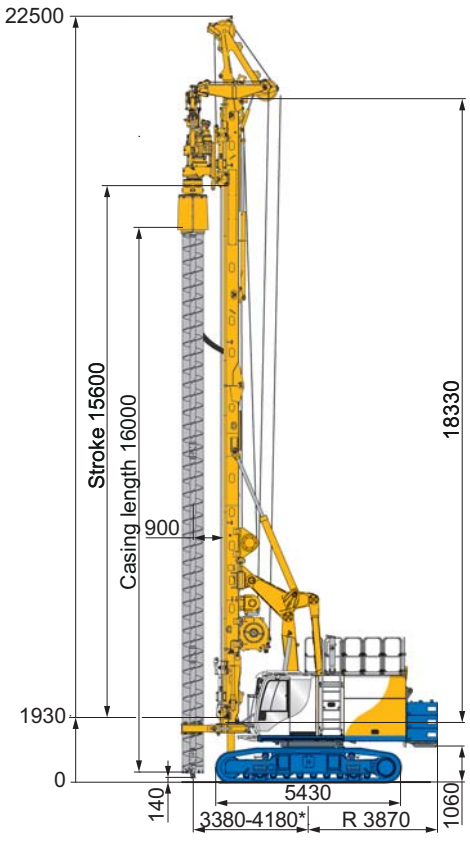
Further Applications



	SCM mixing Basic version	SCM mixing Upgraded version
Mast	Single section mast	Multi section mast
Kelly extension	without	10.5 m
Max. mixing diameter **	1,500 mm	1,500 mm
Max. mixing depth	14.4 m	24.9 m
Max. extraction force with main and crowd winch (effective)	600 kN	600 kN
with counterweight *	7.5 t	12.3 t

* depending on equipment
** operation only possible with restrictions



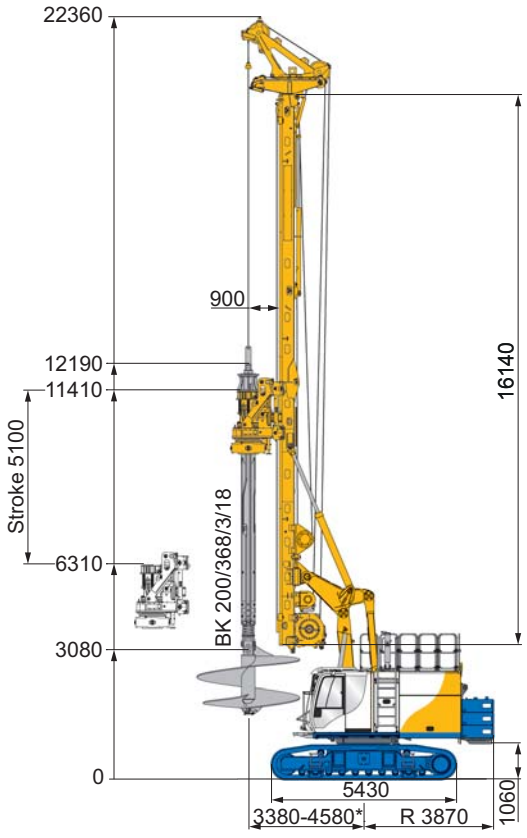


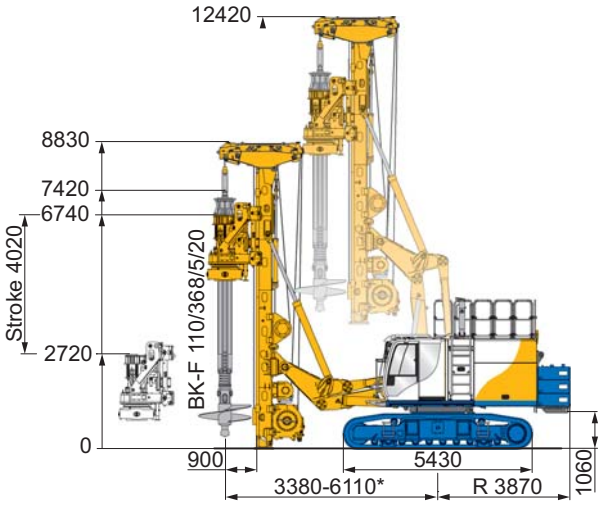
	Vibro Displacement (VD) Vibrator TR 17
Max. penetration depth	13.2 m
Pressure with crowd winch (effective)	110 kN
Extraction force with crowd winch (effective)	260 kN
with counterweight *	7.4 t

	FoW drilling DKS 50/140
Torque auger / casing	50/140 kNm
Max. drilling diameter	610 mm
Max. drilling depth	15.3 m
Max. extraction forth with main- and crowd winch (effective)	530 kN
with counterweight *	7.5 t

* depending on equipment

Special Applications





	Giant Drill Basic version
Lower mast extension	without
Max. drilling diameter	3,000 mm
Max. drilling depth	–

	Low Headroom System
Lower mast extension	without
Max. drilling diameter uncased cased	 1,500 mm 1,200 mm
Max. drilling depth Kelly BK-F 110/368/5/20	 19.6 m

* depending on application

Transport – Dimensions and weights

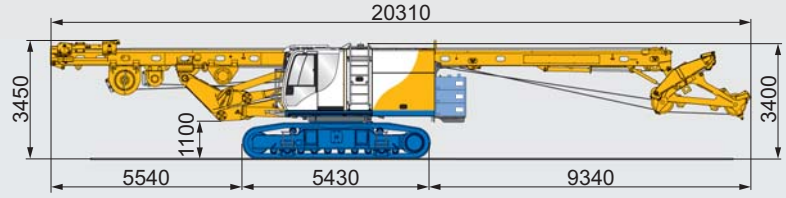
G = Weight
B = Width, overall

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

With single section mast

G = 56 t

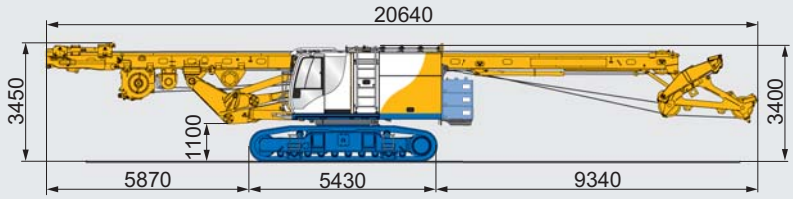
G = 63.5 t with 7.5 t counterweight



With multi section mast

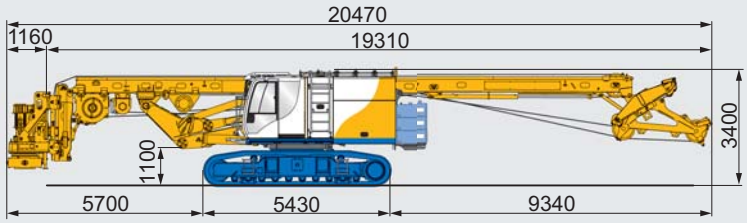
G = 56.9 t

G = 64.4 t with 7.5 t counterweight

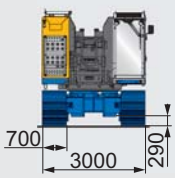


Lower mast section with rotary drive and folded mast extension

G = 69 t with 7.5 t counterweight



Base carrier

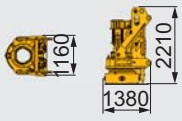


Counterweight *

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

Rotary drive

G = 4.3 t (KDK 235 K)
4.6 t (KDK 235 S)



* depending on application

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