BAUER BG 36 H

Rotary Drilling Rig

Base Carrier BS 95

PremiumLine

BAUER

Experience for you!

"Technology market leader and pioneer for innovations, at the same time down-to-earth with responsibility towards society and environment - that's our goal." Prof. Dr. Sebastian 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

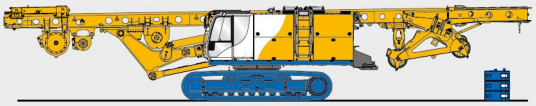
The BAUER BG PremiumLine

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.

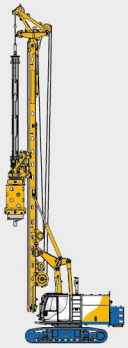
Specific highlights of the BG PremiumLine are:
- High safety standards
- Environmental sustainability, economic efficiency and performance
- Easy to transport and short rigging time
- High quality standard
- Long lifetime and excellent resale value

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 23 H
BT 65

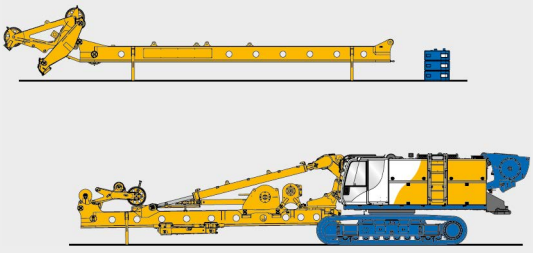


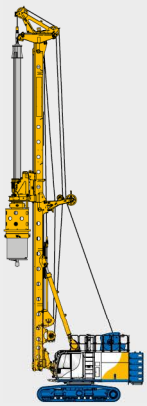
BG 23 H
BT 75

BG 28 H
BT 75

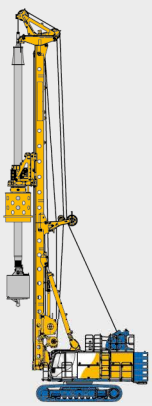
The V-Model Line

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

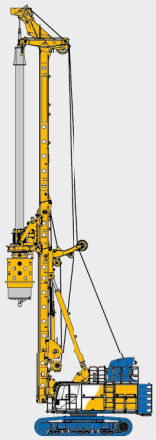




BG 33
BT 85



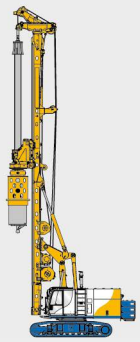
BG 36
BS 95



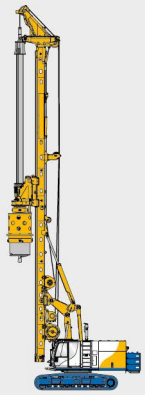
BG 45
BS 95

The Rotary drilling rig
BG 36 H PremiumLine (BS 95)

Max. drilling diameter:	**2,500 mm**
Max. drilling depth:	**68.0 m**
Max. torque (nominal):	**385 kNm**
Max. height:	**27.1 m**
Engine:	**CAT C 15 403-433 kW**

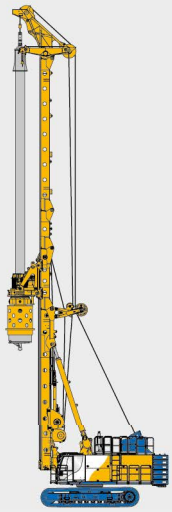


BG 28 H
BT 85

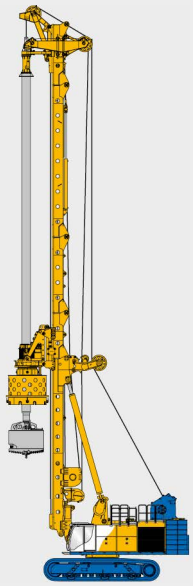


BG 33 H
BT 85

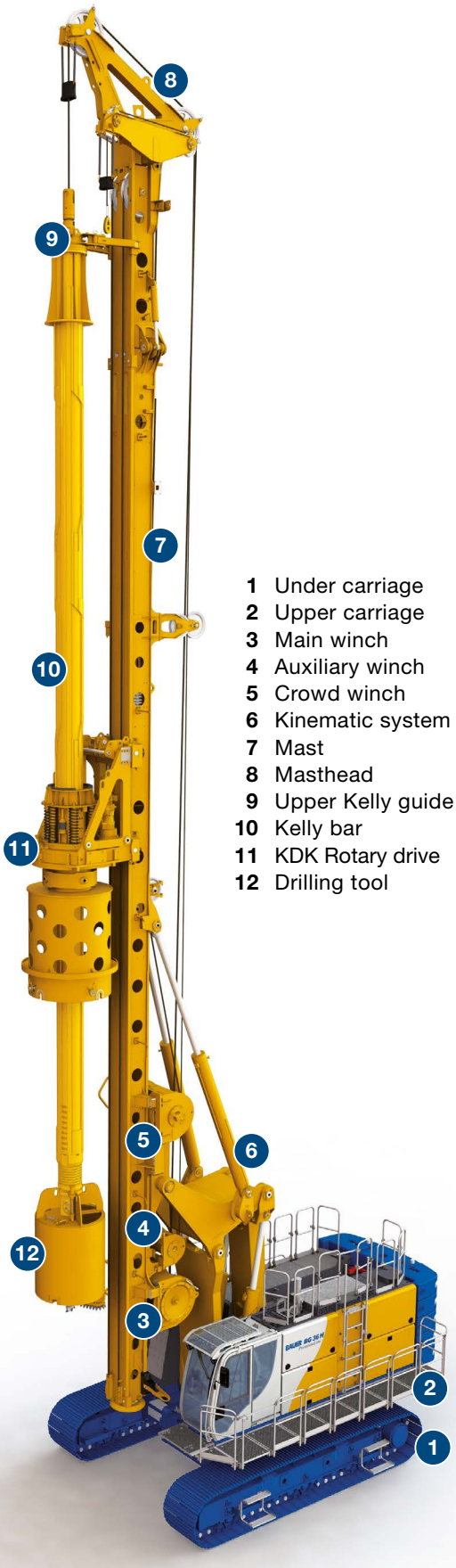
BG 36 H
BS 95



BG 55
BS 115

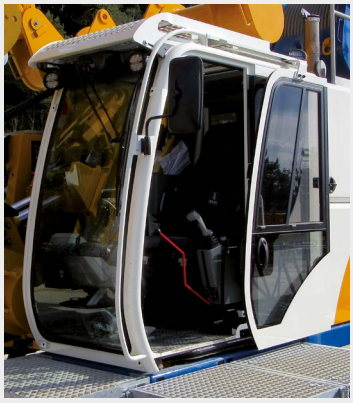


BG 72
BT 180



1 Under carriage
2 Upper carriage
3 Main winch
4 Auxiliary winch
5 Crowd winch
6 Kinematic system
7 Mast
8 Masthead
9 Upper Kelly guide
10 Kelly bar
11 KDK Rotary drive
12 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 adjustable potentiometer values on one display

Powerful CAT engines
- C 15 403-433 kW (Stage V / Tier 4 final or ORA*)
- Diesel particulate filter in exhaust emission standard Tier 4 final
- Low noise emission
- Worldwide CAT service partners

Safety equipment
- Guardrails upper level (foldable for transport)
- Upward folding service doors
- Walking platform with handrail (foldable for transport)
- Rear view cameras

Energy-Efficient PowerEEP

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

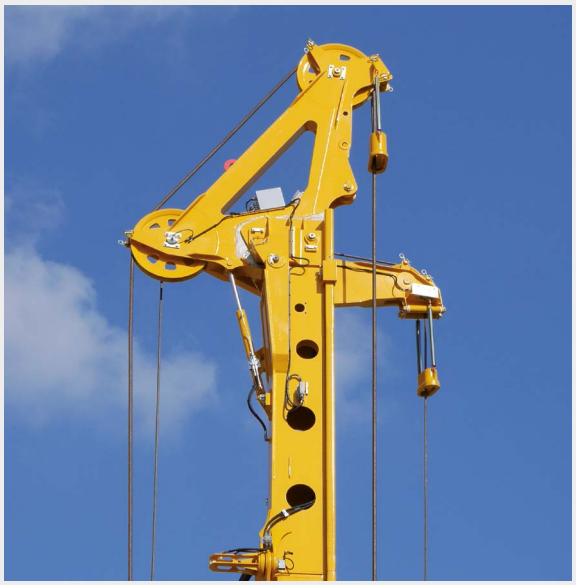
* Exhaust emission equivalent Tier 3 / Stage III A emission standard

Variably stackable counterweight elements

– Constant tail radius
– Low weight of individual elements (4.9 t or 2.5 t)
– Flexible arrangement for various applications
– Mounting and demounting with rig

Flexible mast concept

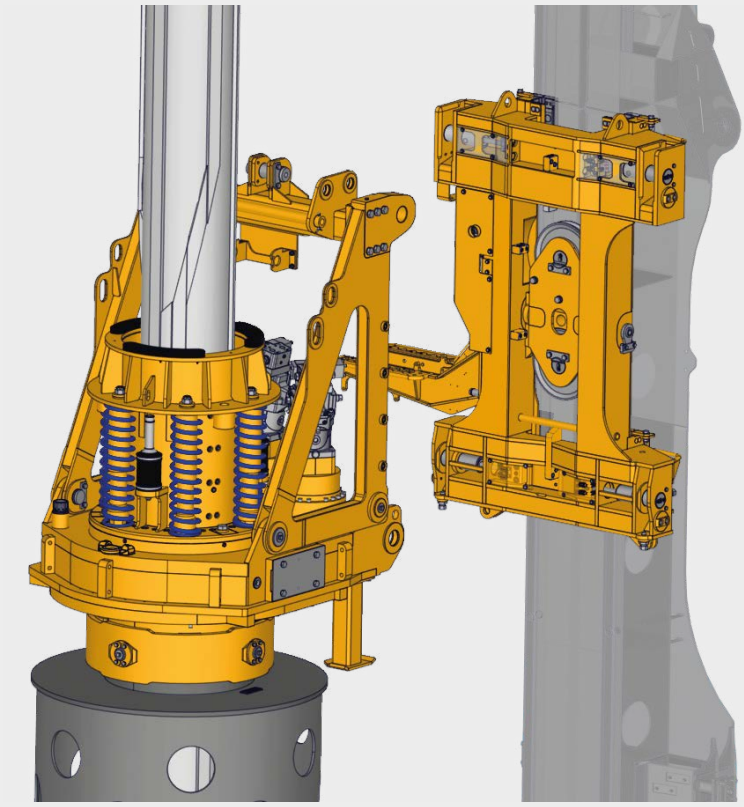
– Vario-masthead
  • Masthead for drill axis distance 1,100 and 1,400 mm
  • Increased stroke for Kelly bars when using an upper Kelly guide
  • Tiltable main jib for Kelly drilling, single-pass processes an optimized transport
  • Auxiliary winch is always fully usable
– Extended mast configuration
  • Mast extension 3 m, hydraulically foldable and lockable
  • Hydraulic locking, no working at height
  • Increased stroke for Single Pass Systems
  • Minimized transport length < 20 m



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

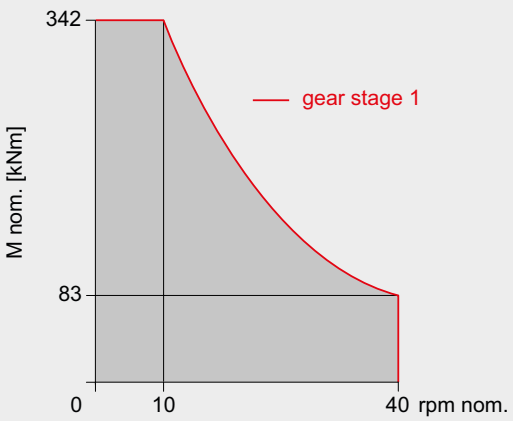


Kelly set-up
- Long Kelly guide
- Integrated shock absorbing spring system
- Kelly visualization (see page 15)
- Enhanced drilling performance
- High operation comfort
- Reduction of wear on Kelly bars and drive keys

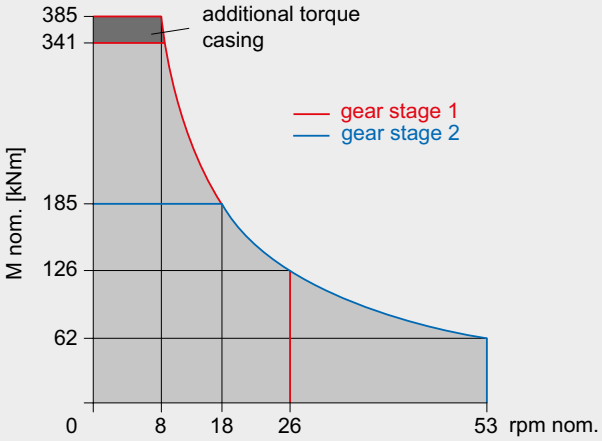
Rotary drive
- Optional single gear drive or multi gear drive
- Max. torque 385 kNm
- Max. speed 53 rpm
- Various modes of operation, partially selectable speed of rotation and torque

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

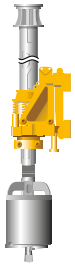
KDK 340 K



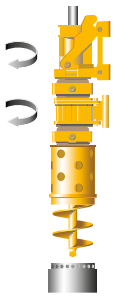
KDK 385 S



Multi-functional Equipment

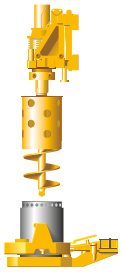


Kelly Drilling

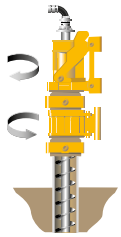


Cased Kelly Drilling
Installation with BTM

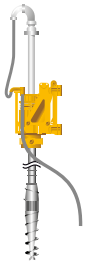
CFA
Continuous Flight
Auger Drilling



Cased Kelly Drilling
Installation with oscillator

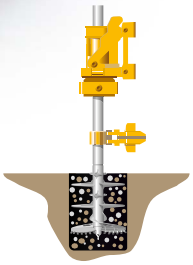


CCFA
Cased CFA System with
KDK + BTM / Double Rotary
System



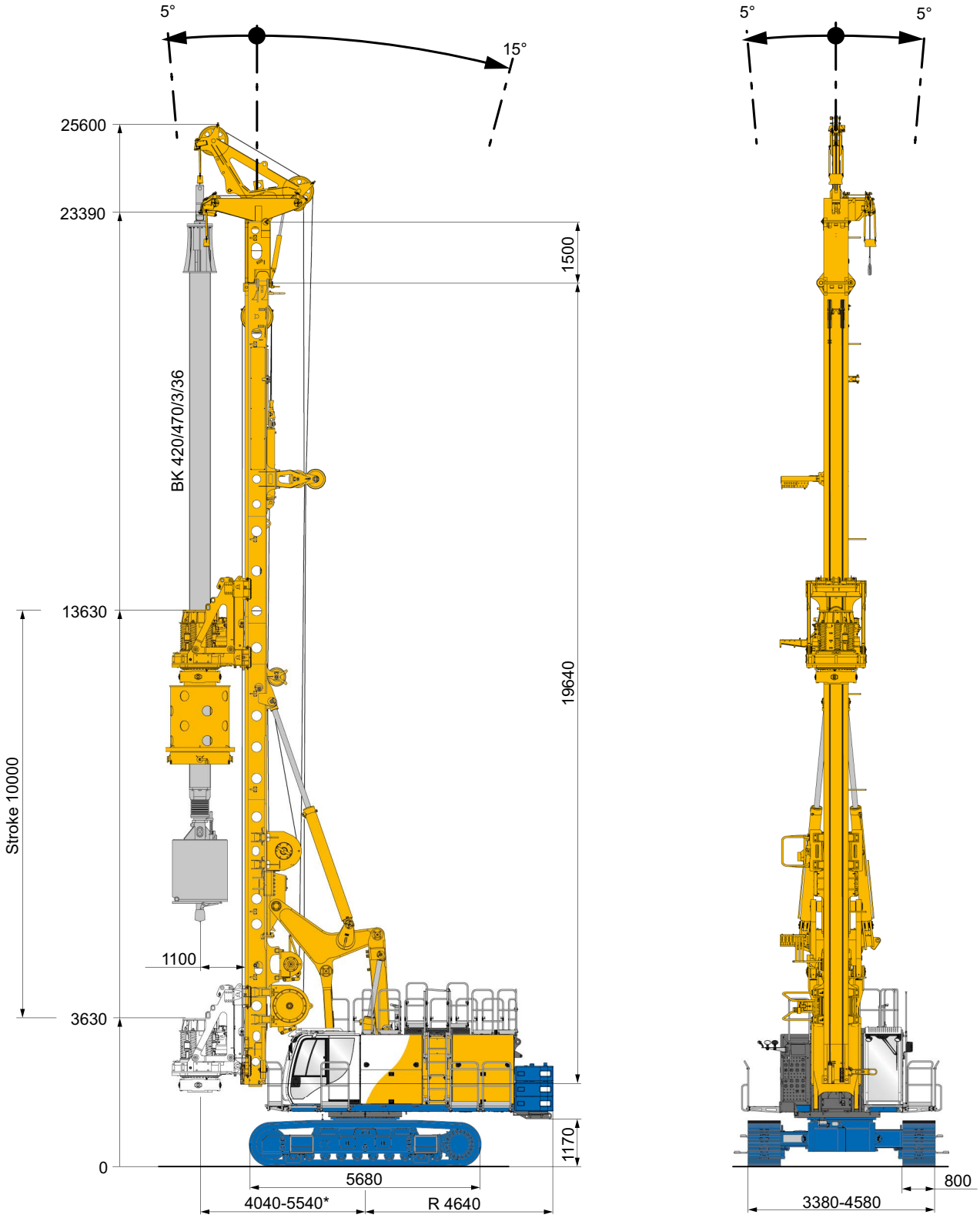
FDP
Full Displacement Piling
(Standard or Lost Bit)

FoW
Front of Wall



SCM / SCM-DH
Single Column Mixing

Dimensions – Basic Version



Operating weight 112 t
(as shown)

* depending on configuration

Technical Specifications

Rotary drive (selectable)	**KDK 340 K**	**KDK 385 S**
Torque (nominal) for casing operation at 350 bar	342 kNm	385 kNm
Torque (nominal) for drilling operation at 350 bar	342 kNm	341 kNm
Speed of rotation (max.)	40 rpm	53 rpm
Crowd winch system		
Max. sledge stroke with 3 m mast extension	20,090 mm	
Crowd force push and pull, effektive / nominal	400 / 513 kN	
Rope diameter	28 mm	
Speed	12.0 m/min	
Fast speed	30.0 m/min	
Main winch	M6 / L3 / T5	
Line pull (1st layer) effective / nominal	290 / 367 kN	
Rope diameter	32 mm	
Line speed (max.)	75 m/min	
Auxiliary winch (selectable)	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)	BS 95	
Engine	CAT C 15	
Rated output ISO 3046-1 (with/without power package)	403 / 433 kW 1,850 U/min	
Exhaust Emission Standard acc. to EU 2016/1628	ORA*	Stage V
EPA/CARB	ORA*	Tier 4 final
GB20891-2014	China Stage III	-
Diesel tank capacity / AdBlue tank	1,000 / – l	840 / 34,5 l
Sound pressure level in cabin (EN 16228, Annex B)	LP_A 80 dB (A)	
Sound power level (2000/14/EC and EN 16228, Annex B)	LW_A 110 dB (A)	
Hydraulic pressure	350 bar	
Hydraulic oil tank capacity	1,000 l	
Flow rates	2 x 440 + 1 x 565 + 1 x 215 l/min	

Under carriage (selectable)	UW 110 Standard	UW 110 Upgraded	UW 110 Transport optimized
Crawler type	B 7	B 7	B 7
Traction force effective / nominal	771 / 907 kN	771 / 907 kN	771 / 907 kN
Overall length of crawlers (Standard)	5,680 mm	6,090 mm	6,090 mm
Track shoes	800 / 900 mm	900 mm	900 mm

* Exhaust emission equivalent Tier 3 / Stage III A emission standard

Technical Equipment

Base carrier BS 95, Fig. A

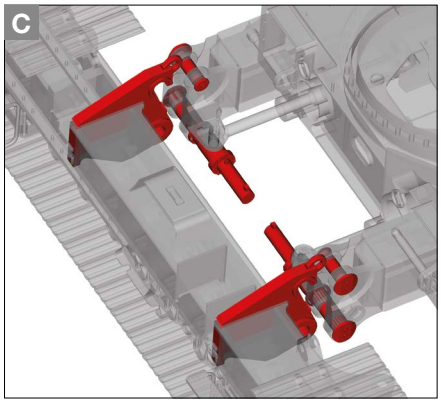
Standard
- Removable counterweight elements
- Removable crawler side frames
- Foldable guardrails upper level
- Platforms with handrail (on both sides and at the cabin)
- Energy-Efficiency Power (EEP)
- Air conditioning system
- Premium comfort seat
- LED spotlights
- Cameras for rear area surveillance
- Climatronic

Optional
- Counterweight variably adjustable
- Walking platform with handrail (continuous on both sides at cabin level, optional foldable for transport), **Fig. A**
- Compressor 1,000 l/min
- Electric generator 13 kVA
- Bio-degradable hydraulic oil
- Arctic kit
- Cab space heater
- Additional camera (at customer-specific location)
- Front screen guard
- Remote control basic, **Fig. B**
- Remote control multi
- UW 110 Transport optimized version, **Fig. C**
- Removeable crawlers
- Weather protection

Drilling rig attachment

Standard
- Sturdy H-type mast kinematic system
- Main winch with hydraulically operated freewheeling
- Swivel for main rope
- Mast extension 1.5 m (fixed)
- Masthead tiltable

Optional
- Upper Kelly guide
- Extension of drill axis to 1,400 mm
- Mast support unit
- Mast extension 3 m hydraulically foldable and lockable
- Swivel for auxiliary rope
- Attachment of automatic casing drive adapter
- Hydraulically operated pin connection on crowd sledge for easy mounting and demounting of rotary drive



Rotary drive

Standard
- Rotary drive KDK 340 K (single gear drive)
- Selectable modes of operation
- Kelly drive adapter for outer Kelly tube 470 mm
- Integrated Kelly damping system
- Exchangeable Kelly drive adapter
- Exchangeable Kelly drive keys
- Cardanic joint
- Quick-release hydraulic couplers
- Transport supports
- Lifting gear

Optional
- Rotary drive KDK 385 S (multi gear drive)
- Torque multiplier BTM 720 K for Kelly drilling
  - Torque 470 kNm (nominal)
  - Increasing of torque for casing installation
  - Easy attachment
  - Separate sledge
  - Connection to rotary drive with cardanic joint
- Torque multiplier BTM 400 for CCFA, **Fig. E**

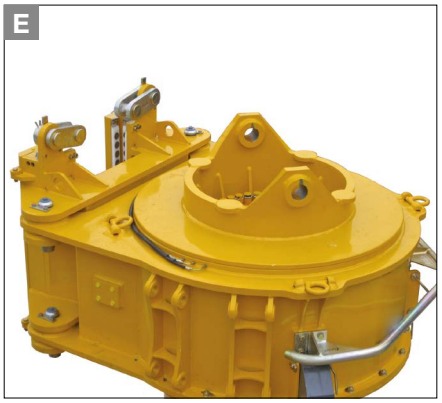
Measuring and control system

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
- Kelly visualization, **Fig. F**

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 CAT Interface (BECI)
- Crowd Plus

D

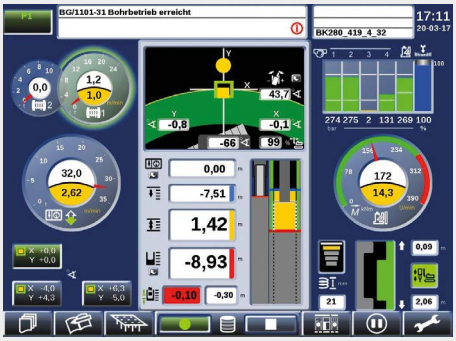
E



F

B-Tronic System

B-Tronic
The BAUER B-Tronic system allows completion of construction tasks in a reliable and accurate manner, even under extreme operating conditions.
- The high-resolution touchscreen display ensures excellent user-friendliness
- The display can be optimally adapted to the operating situation and the amount of light present by changing the brightness level, the color scheme and the day / night mode
- The main parameters such as pump pressure, torque and drilling depths can be viewed at a glance



B-Drive
The B-Drive is a central operating and visualization system
- B-Drive combines adjustable potentiometer values on one display
- Ergonomic positioning of the display on the right column of the operator´s cab

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

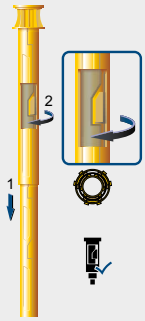
Device networking
DTR module
- The DTR module allows equipment and production data to be made available to a wide variety of users

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

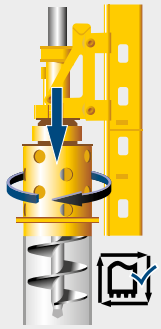
Report of production data
- Standardized reports for the documentation of drilling progress and verification of performance and quality

Assistance Systems (selection)

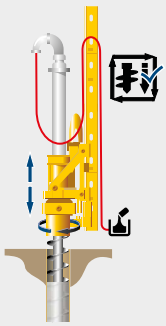
Adaptive Kelly speed assistant
The assistant raises and lowers the Kelly bar safely and quickly and allows an easy operation. The automatic control of the speed of the main winch reduces the speed at the transition points of the Kelly sections.
This provides maximum safety with minimum wear. The permanent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



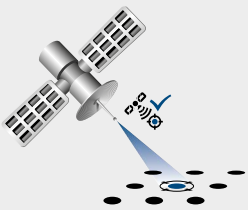
Kelly visualization
Display of the locking recesses, as well as representation of the controlled extension and retraction of the Kelly bar on the B-Tronic system. The rapid approach of the locking position results in a considerably enhanced drilling performance. In addition, the level of wear that the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



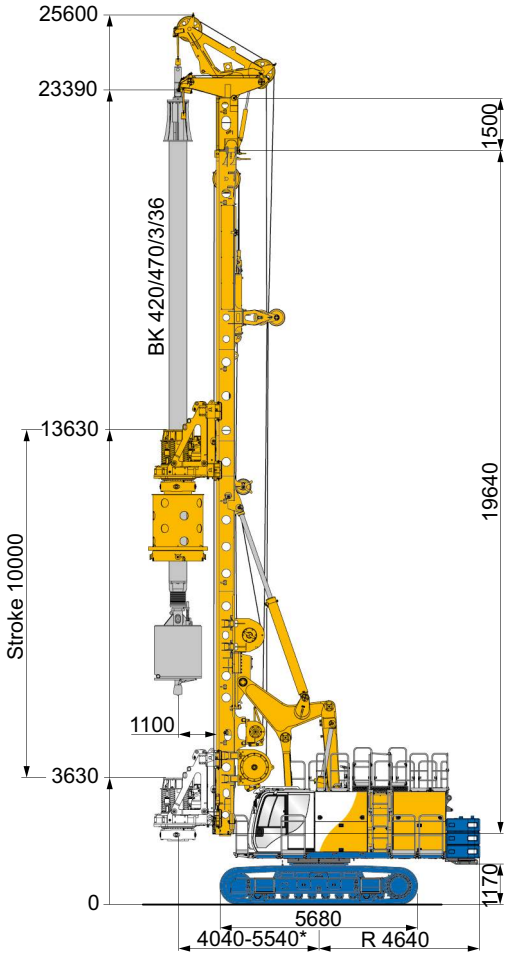
Automatic drilling and extraction control for Single-Pass processes
The system controls the drilling and / or extraction speed of the crowd system and enables hands-free operation. This ensures the production of a high-quality pile while simultaneously minimizing the amount of concrete.

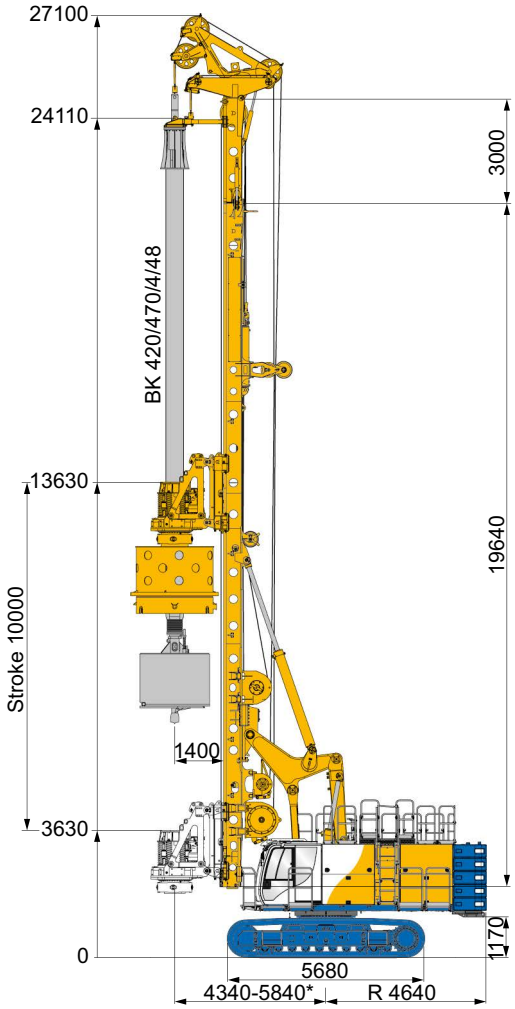


Satellite-based positioning
The BAUER Assistant Positioning System (B-APS) allows the position of a bored pile to be located extremely accurately. Documentation is provided for the nominal and actual coordinates, as well as the corresponding accuracy of each bored pile. Manual marking of the piles is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

Numerous other assistance systems are available in our portfolio.

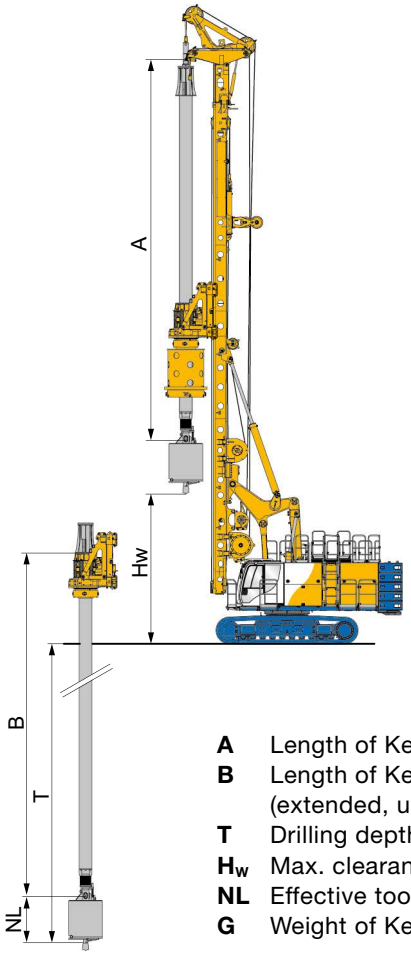
Application – Kelly Drilling





	Basic version	Upgraded version
Under carriage	UW 110 standard	UW 110 standard
Mast extension	1.5 m	3 m
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. with Kelly BK 300/419/... with bucket with counterweight	112 t ... 3/36 KB 1350 14.7 t	131 t ... 4/48 KB 2000 24.5 t

* depending on configuration



Drilling depth – uncased Kelly drilling

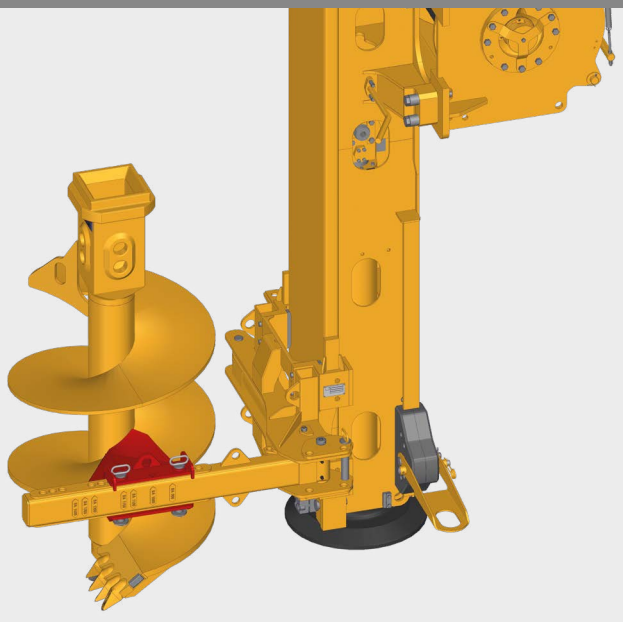
				1.5 m mast extension		3 m mast extension	
3-part Kelly bar	A (m)	B (m)	G (kg)	H_W (m)	T (m)	H_W (m)	T (m)
BK420/470/3/27	12.3	29.2	7,700	9.0	27.5	9.0	27.5
BK420/470/3/30	13.3	32.2	8,150	8.0	30.5	9.0	30.5
BK420/470/3/33	14.3	35.2	8,730	7.0	33.5	8.5	33.5
BK420/470/3/36	15.3	38.2	9,300	6.0	36.5	7.5	36.5
BK420/470/3/39	16.3	41.2	9,830	5.0	39.5	6.5	39.5
4-part Kelly bar							
BK420/470/4/36	12.3	37.8	10,250	9.0	36.0	9.0	36.0
BK420/470/4/40	13.3	41.8	11,000	8.0	40.0	9.0	40.0
BK420/470/4/44	14.3	45.8	11,800	7.0	44.0	8.5	44.0
BK420/470/4/48	15.3	49.8	12,600	6.0	48.0	7.5	48.0
BK420/470/4/52	16.3	53.8	13,500	5.0	52.0	6.5	52.0
BK420/470/4/64	19.3	65.8	15,700	2.0	64.0	3.5	64.0
BK420/470/4/68	20.3	69.8	16,480	–	–	2.5	68.0

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.

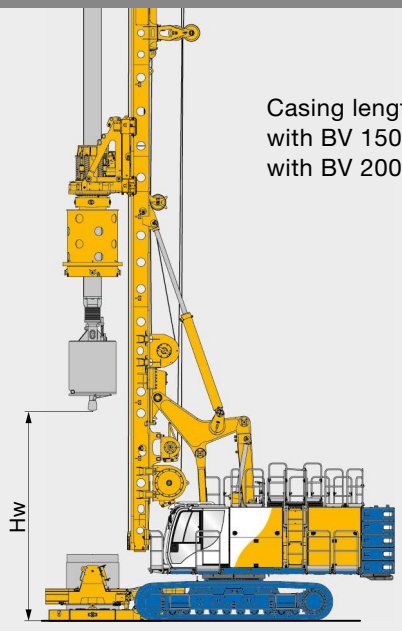
Further drilling depth, diameter and other Kelly types on request.

Auger cleaner for Kelly-drilling application Drilling diameter 520 to 1,060 mm



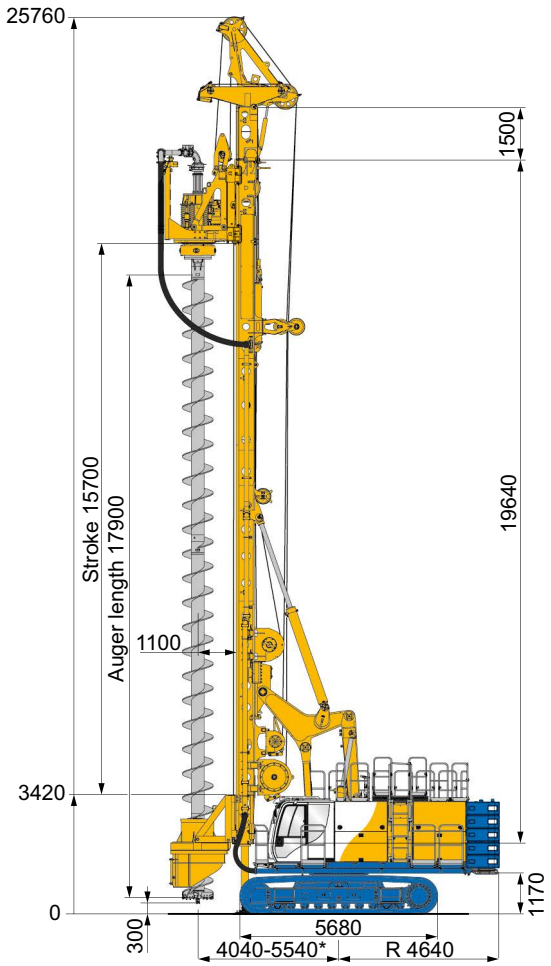
Further drilling diameters and drilling axes on request.

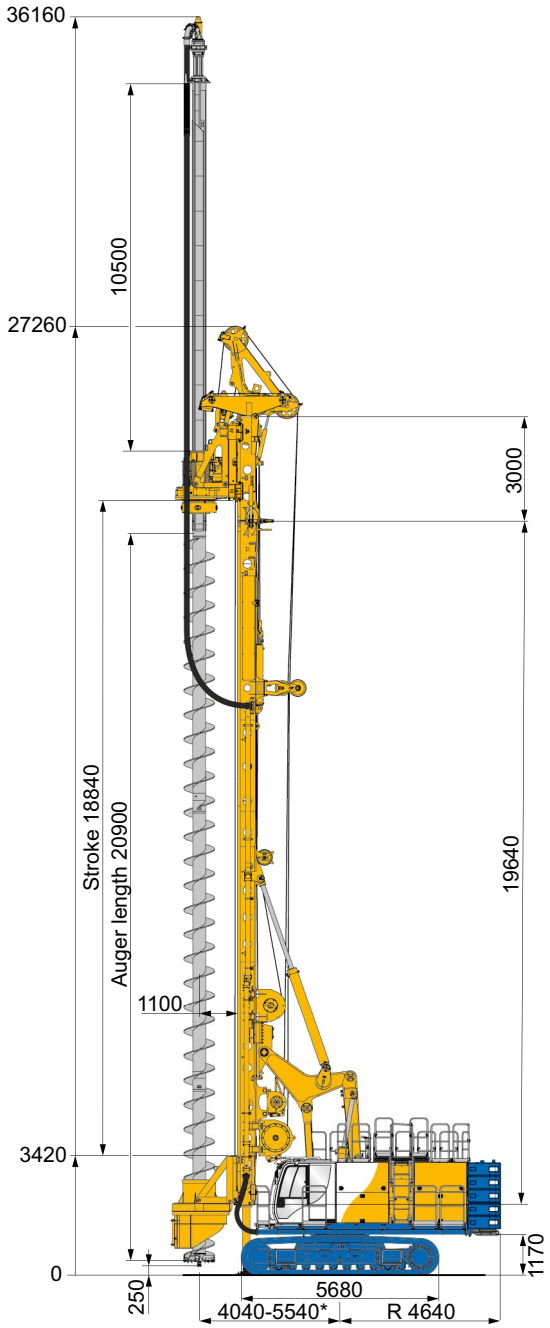
Cased Kelly drilling up to Casing oscillator BV 2000



Casing length
with BV 1500 = H_W -1.6 m
with BV 2000 = H_W -2.0 m

Application – CFA Drilling

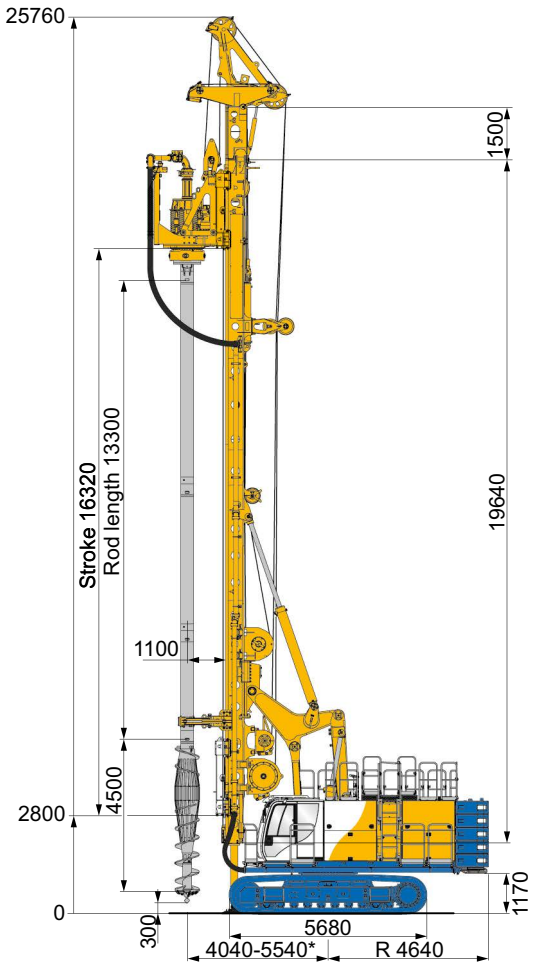


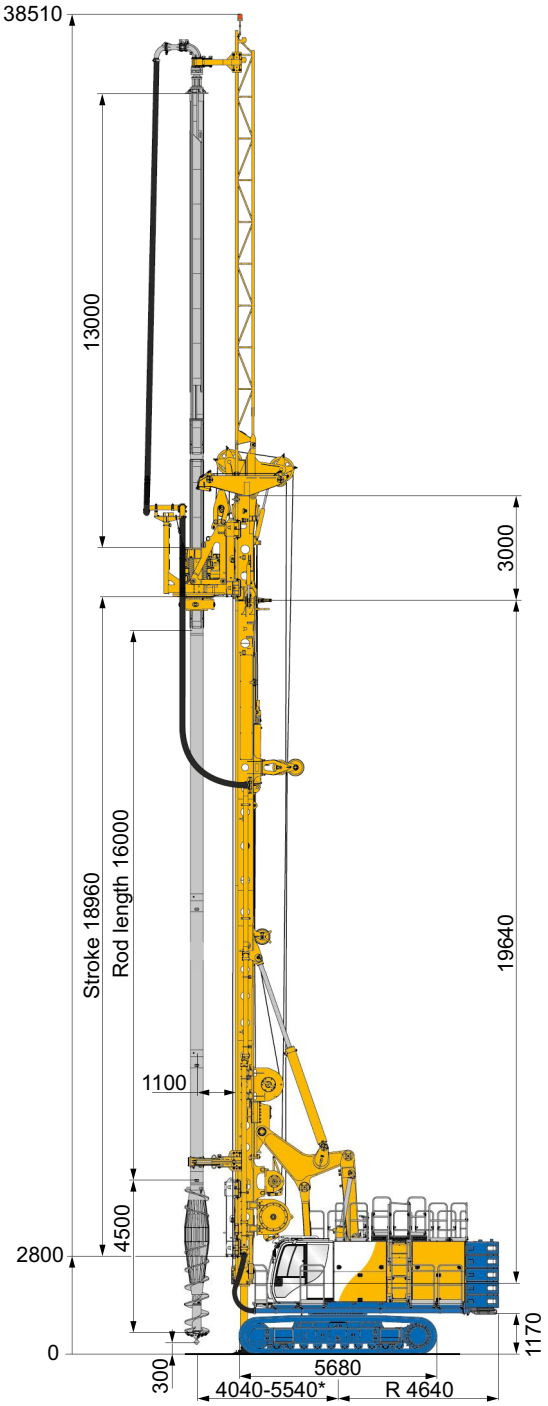


	Basic version	Upgraded version
Under carriage	UW 110 standard	UW 110 standard
Mast extension	1.5 m	3 m
Kelly extension	without	10.5 m
Max. drilling diameter	1,200 mm	1,200 mm
Max. drilling depth with auger cleaner	15.2 m	28.9 m
Max. extraction force with main- and crowd winch (effective)	950 kN	950 kN
with counterweight *	14.9 t	19.7 t

* depending on equipment

Application – FDP Drilling

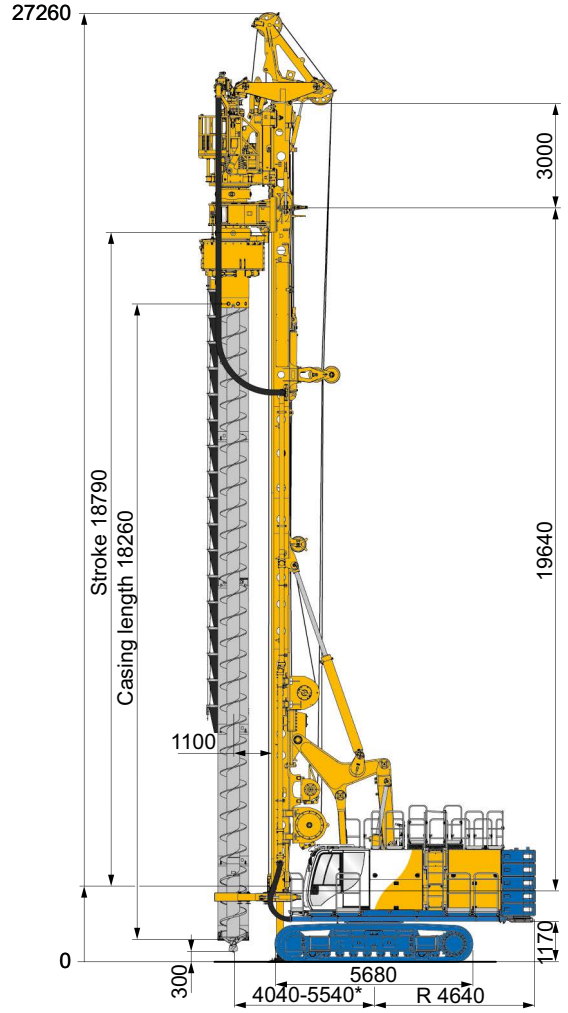




	Basic version	Upgraded version
Under carriage	UW 110 standard	UW 110 standard
Mast extension	1.5 m	3 m
Kelly extension	without	13.0 m
Max. drilling diameter	710 mm	710 mm
Max. drilling depth	15.8 m	31.6 m
Max. extraction force with main- and crowd winch (effective)	950 kN	950 kN
with counterweight*	14.9 t	24.5 t

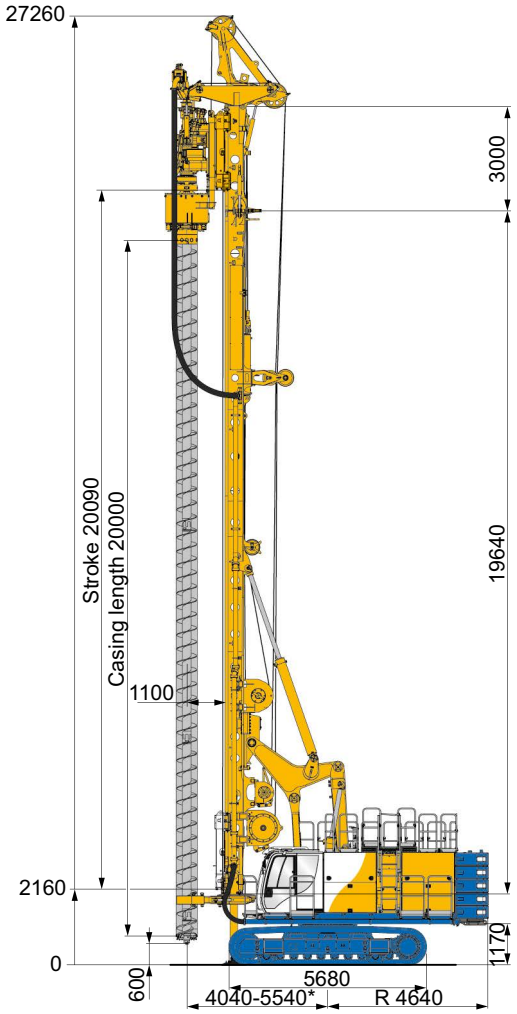
* depending on equipment

Application – CCFA Drilling



	CCFA drilling with KDK/BTM 400	
Under carriage	UW 110 standard	UW 110 standard
Mast extension	3 m	3 m
Max. drilling diameter	880 mm	1,000 mm
Max. drilling depth	18.5 m	17.0 m
Max. extraction force with main- and crowd winch (effective)	950 kN	950 kN
Max. torque: Auger (right-hand rotation) Casing (left-hand rotation)	 200 kNm 400 kNm	 200 kNm 400 kNm
Ejection system	standard	standard
With counterweight	29.4 t	29.4 t

Application – FoW Drilling



	FoW drilling with DKS 100/200
Mast extension	3 m
Max. drilling diameter	750 mm
Max. drilling depth	19.8 m
Max. extraction force with main- and crowd winch (effective)	530 kN
Max. torque: Auger (right-hand rotation) Casing (left-hand rotation)	 100 kNm 200 kNm
Ejection system	optional
with counterweight	24.5 t

Transport – Dimensions and Weights

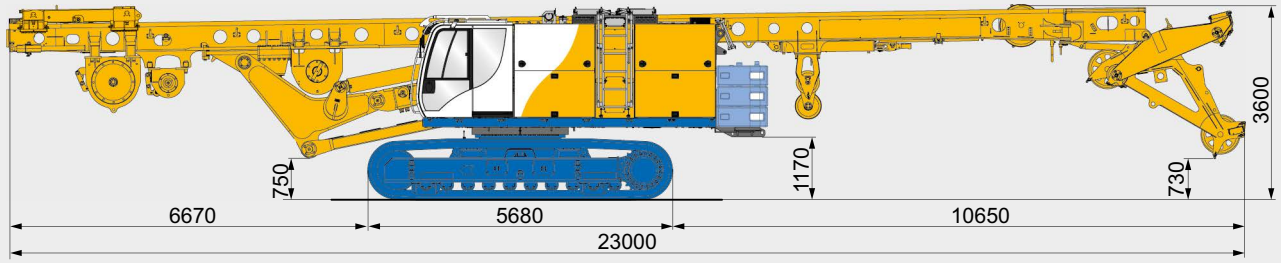
G = Weight
B = Width, overall

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

Transport with UW 110 Standard Version

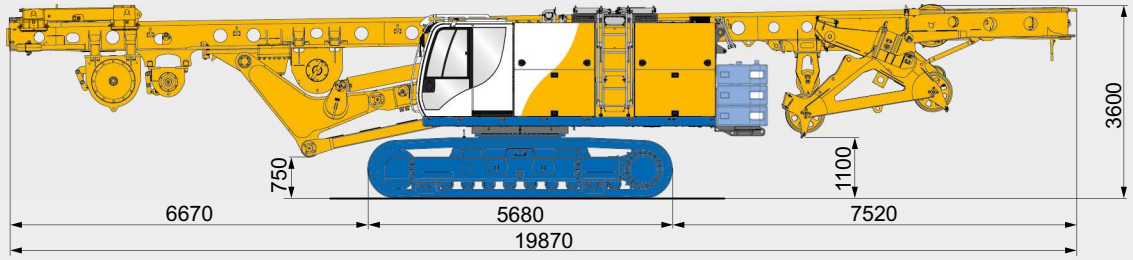
With 1.5 m fixed mast extension

G = 76.9 t*
B = 3,400 mm



With 3 m foldable mast extension

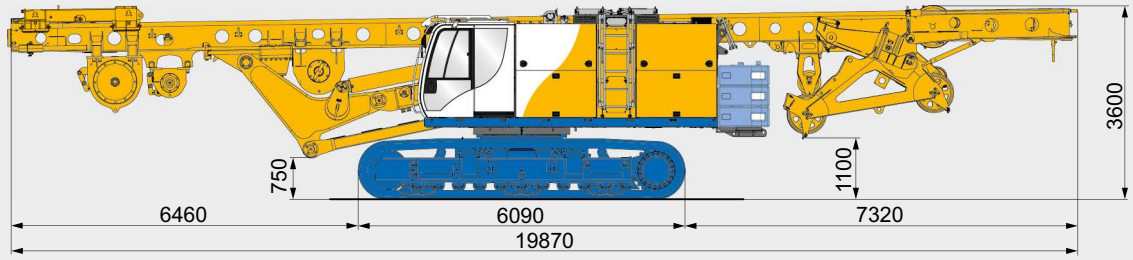
G = 77.5 t*
B = 3,400 mm



Transport with UW 110 Upgraded Version

With 3 m foldable mast extension

G = 80.8 t*
B = 3,500 mm

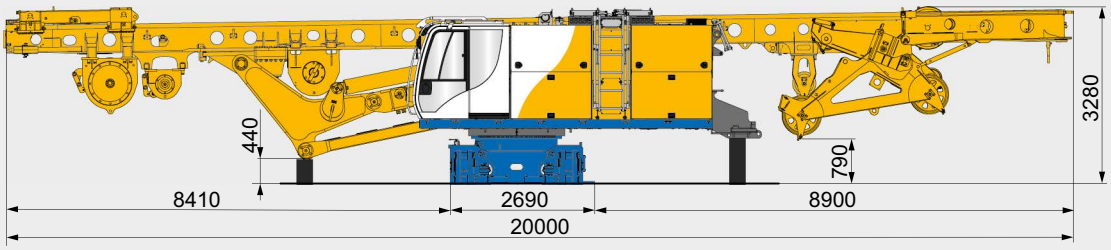


* Weigths w/o counter weigths

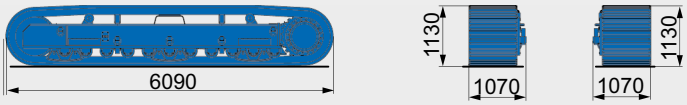
Transport with UW 110 Transport Optimized Version

With 3 m foldable mast extension

G = 63.9 t
B = 3,000 mm



G = 2 × 9.8 t

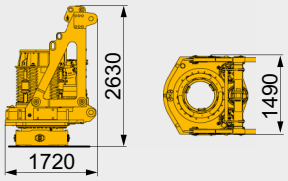


Counterweight*

G = 1 x 4.9 t + 4 x 2.5 t
B = 3,000 mm

Rotary drive

KDK 340 K: G = 6.7 t
KDK 385 S: G = 7.2 t

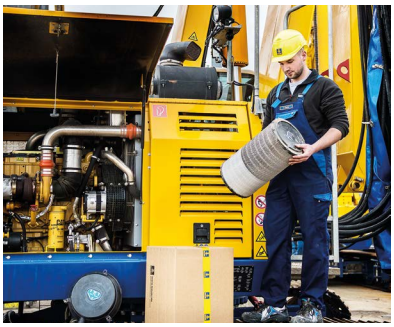


Width of crawlers retracted / extended	UW 110 Standard	UW 110 Upgraded version	UW 110 Transport optimized version
Track shoes 800 mm	3,400 – 4,600 mm	–	–
Track shoes 900 mm	3,500 – 4,700 mm	3,500 – 4,700 mm	4,000 – 4,800 mm

* depending on application

BAUER Service

Global Network



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