

# BAUER BG 24 H

## Rotary Drilling Rig

Base Carrier BT 75

PremiumLine



## 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 20<sup>th</sup> 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 21<sup>st</sup> 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



Regular showcasing  
of new developments  
on various exhibitions

# 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 15 H  
BT 40



BG 18 H  
BT 50

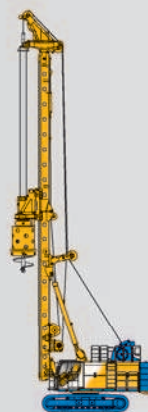


BG 20 H  
BT 60

## The V-model line

### Special features of the V-model line are:

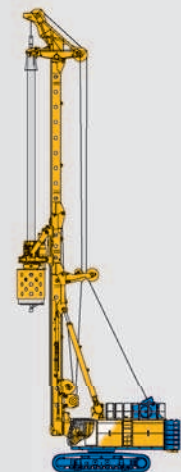
- Big borehole diameters
- Large drilling depths
- Extended service intervals and power transmission with low vibrations due to the robust design of the kinematic system



BG 30  
BS 95



BG 39  
BS 95



BG 42  
BS 115

## The Rotary drilling rig BG 24 H PremiumLine (BT 75)

Max. drilling diameter: 2,500 mm

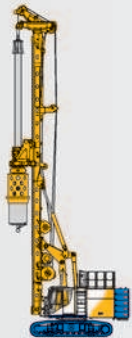
Max. drilling depth: 65.7 m

Max. torque: 277 kNm

Engine: CAT C 9 – Stage III A  
280 kW @ 1,850 rpm

CAT C 9.3 – Stage IV  
298 kW @ 1,850 rpm

Max. height: 23.9 m



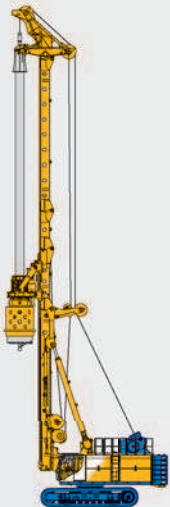
**BG 24 H**  
BT 75 / BT 85



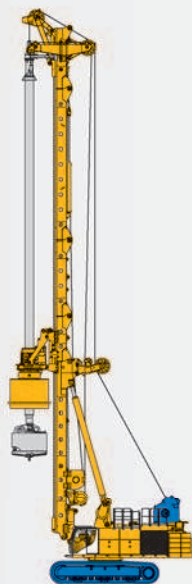
**BG 28 H**  
BT 85



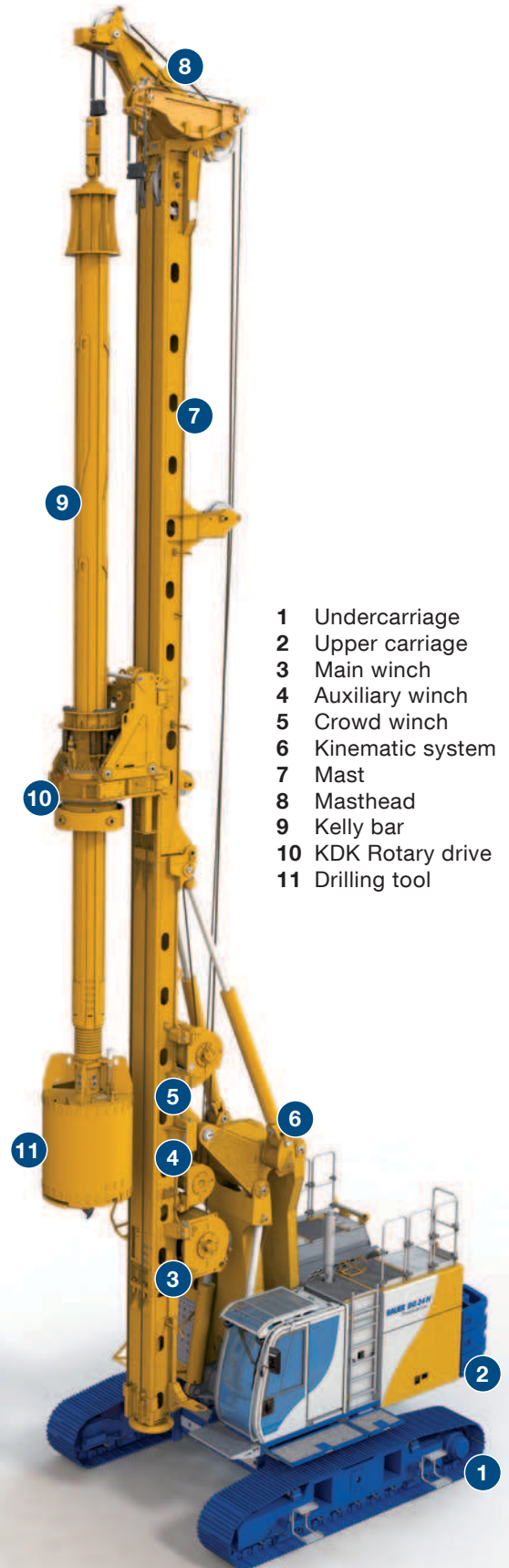
**BG 34 H**  
BS 95



**BG 46**  
BS 115



**BG 50**  
BT 180



- 1 Undercarriage
- 2 Upper carriage
- 3 Main winch
- 4 Auxiliary winch
- 5 Crowd winch
- 6 Kinematic system
- 7 Mast
- 8 Masthead
- 9 Kelly bar
- 10 KDK Rotary drive
- 11 Drilling tool



**Flexible mast concept**

- Sectional mast
  - Low Head version (min. rig height 8.5 m)
  - Lower mast extension demountable for drilling diameter up to 3 m (Giant Drill option)
  - Lower mast extension foldable for minimized transport length
- Upper mast extension 2 m (hydraulically foldable and lockable)
  - Easy and safe rigging, no working at height
  - Increased stroke for Single-Pass systems
  - Use of longer Kelly bars and casing tubes
  - Reduction of transport length
- Masthead for drill axis distance 1,000 and 1,400 mm
- Lattice mast extension (optional)



**Modern, ergonomic operator cab**

- FOPS compliant with additional protective roof guard
- Sliding door with sliding window
- Premium comfort seat, air-sprung and heatable
- High-precision electronic pre-control system
- Joystick controls with high functionality
- B-TRONIC 4.1 control module with color touch screen and a multitude of assistant and automatic systems
- The machine is linked via the Internet to site and service management systems through integrated DTR module and tablet



**Patented Kelly visualization with spring compression sensing**

- Display of lock recesses of the Kelly bar
- Increase in drilling performance
- Reduced wear on Kelly bar and Kelly drive keys
- Display and supervision of correct lowering and retracting of the Kelly bar

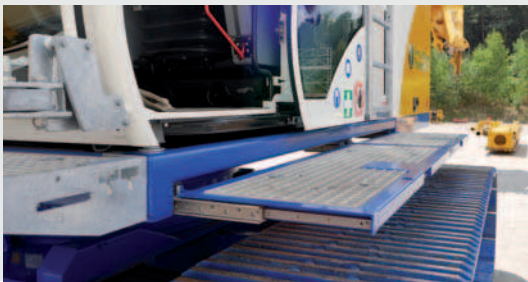


- Reduction of fuel consumption by up to 30%
- Increased productivity through improved efficiency
- Significantly reduced noise levels
- Tried and proven suitability for practical application
- Optimized parallel operation of main and auxiliary consumers



### Safety equipment

- Integrated service platforms in upper carriage for easy and safe maintenance work
- Retractable grating on side of cab
- Guardrails upper level (foldable for transport)
- 2 rear view cameras
- Flashing warning lights and audible reverse warning system
- Electronic mast reach limiter
- Slewing angle display for upper carriage



### Variably stackable counterweight elements

- Constant tail radius (irrespective of number of counterweights)
- Small weight of individual elements (4.9 t or 2.5 t)
- Flexible arrangement, adjustable to application
- Mounting and demounting with rig
- Transport of machine possible without removing counterweights



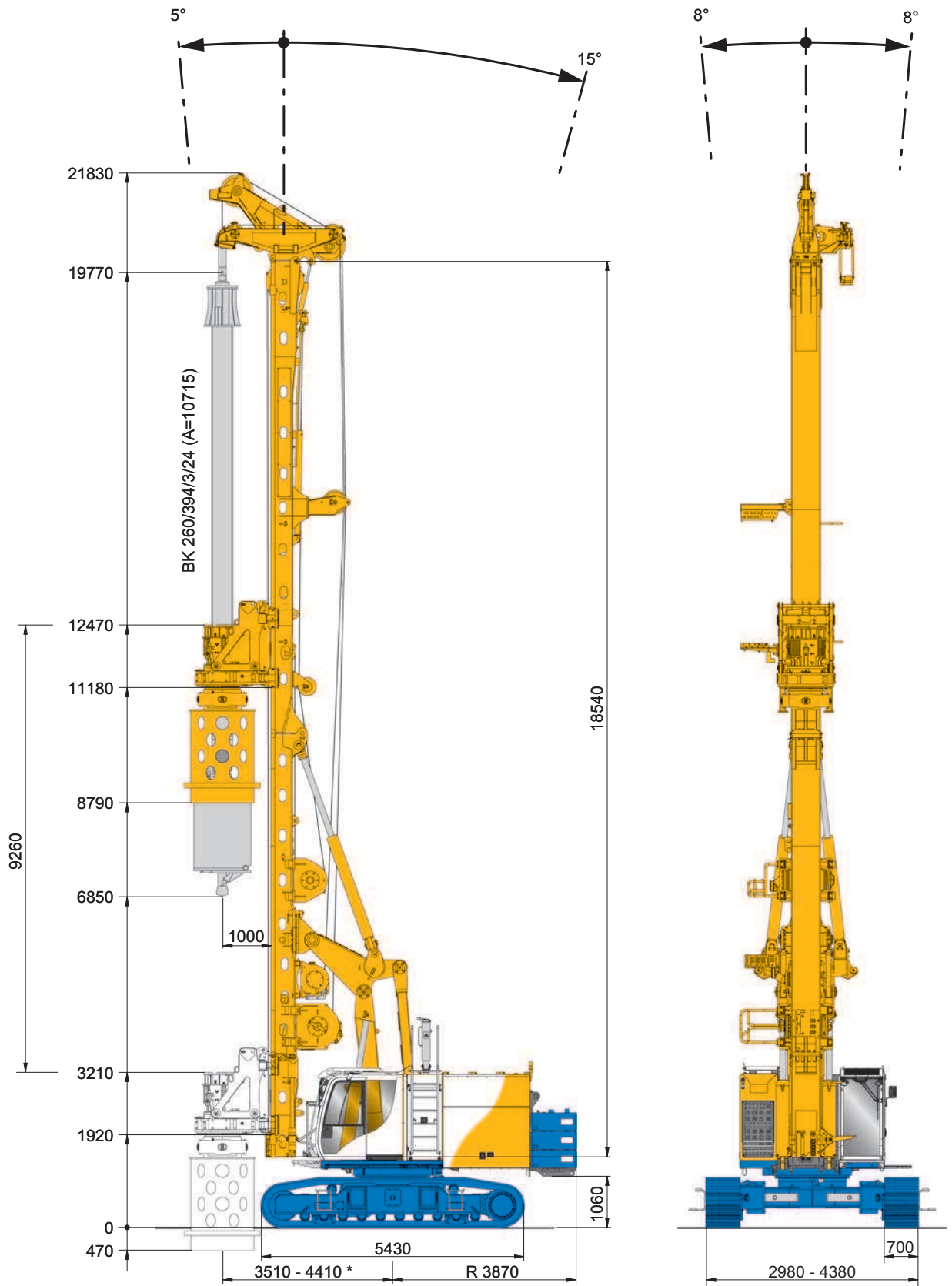
### Powerful CAT engines

- 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



### Rotary drive KDK 280

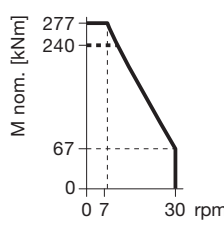
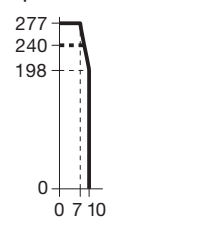
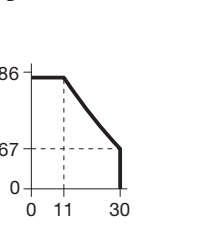
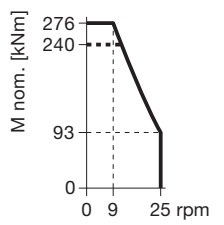
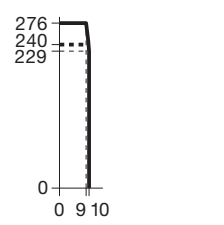
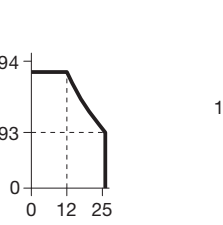
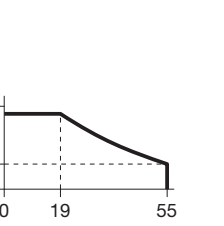
- Optional single-gear drive KDK 280 K or multi-gear drive KDK 280 S
- Max. torque on casing 277 kNm
- Max. rotation speed 54 rpm (with KDK 280 S)



**Operating weight** 82.2 t  
(as shown)

\* depending on configuration



<b>Rotary drive</b>	KDK 280 K	KDK 280 S		
Torque (nominal) for casing operation at 350 bar	277	276	kNm	
Torque (nominal) for drilling at 350 bar	240	240	kNm	
Speed of rotation (max.)	30	55	rpm	
<b>KDK 280 K</b>	Standard mode	rpm reduced	M <sub>D</sub> reduced	
M nom. [kNm]				
	0 7 30 rpm	0 7 10	0 11 30	
	Not to scale			
<b>KDK 280 S</b>	1 <sup>st</sup> gear Standard mode	1 <sup>st</sup> gear rpm reduced	1 <sup>st</sup> gear M <sub>D</sub> reduced	2 <sup>nd</sup> gear Standard mode
M nom. [kNm]				
	0 9 25 rpm	0 9 10	0 12 25	0 19 55
	Not to scale			
<b>Crowd winch</b>				
Crowd force push / pull, effective / nominal		330 / 423 kN		
Crowd force push / pull (measured at the casing drive adapter)		270 / 280 kN		
Speed (down / up)		7.5 / 7.5 m/min		
Fast speed (down / up)		29.5 / 29.5 m/min		
<b>Main winch</b>		M6 / L3 / T5		
Line pull (1 <sup>st</sup> layer) effective / nominal		200 / 250 kN		
Rope diameter		28 mm		
Line speed (max.)		85 m/min		
<b>Auxiliary winch</b>		M6 / L3 / T5		
Line pull (1 <sup>st</sup> layer) effective / nominal		80 / 100 kN		
Rope diameter		20 mm		
Line speed (max.)		55 m/min		
<b>Base carrier (EEP)</b>		BT 75		
Engine	CAT C 9	CAT C 9.3		
Rated output ISO 3046-1	280	298 kW		
	1,850	1,850 rpm		
Engine conforms to EEC 97/68 EC	Stage III A	Stage IV		
EPA/CARB	Tier 3	Tier 4 final		
Diesel tank capacity / AdBlue tank	600 / -	600 / 34.5 l		
Ambient air temperature (at full power) up to	45 °C			
Sound pressure level in cabin (EN 16228, Annex B)	L <sub>P,A</sub> 80 dB (A)			
Sound power level (2000/14/EG and EN 16228, Annex B)	L <sub>W,A</sub> 113 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			
<b>Undercarriage</b> (selectable)	UW 65	UW 80		
Crawler type	B 6	B 7		
Traction force effective / nominal	450 / 530	520 / 610 kN		

**Base carrier BT 75**

**Standard**

- Removable counterweight elements
- Protective roof guard
- Radio with CD, MP3, USB and Bluetooth c/w hands-free kit
- Grating in front of cab
- Retractable grating on side of cab
- Electric refueling pump
- Energy Efficiency Package (EEP)
- Air conditioning system
- Premium comfort seat
- 2 rear view cameras
- Integrated service platform
- Central lubrication system

**Optional**

- Counterweight variably adjustable to max. 12.3 t
- Guardrails upper level (foldable for transport)
- Integrated service platform (electrically retractable/extendable)
- High-pressure cleaner with water tank
- Compressor 1,000 l/min
- Electric generator 13 kVA
- Bio-degradable hydraulic oil
- Arctic kit / Arctic kit plus
- Cab space heater with automatic timer
- LED spotlights
- Additional camera (at customer-specific location)
- Rear support unit, **Fig. A**
- Front screen guard
- Sun blind small or big
- Climatronic



**BG attachment**

**Standard**

- Main winch with hydraulically operated freewheeling
- Swivel for main rope
- Masthead (tiltable for transport)
- Pivoted anchor point for main and auxiliary rope

**Optional**

- Upper Kelly guide
- Extension of drill axis to 1,400 mm
- Hydraulically operated pin connection on crowd sledge for easy mounting and demounting of rotary drive
- Mast support unit
- Mast extension 2 m hydraulically foldable and lockable
- Sectional mast for Low Head and Giant Drill applications
- Low Head extension kit
- Lattice mast extension
- Swivel for auxiliary rope
- Additional auxiliary winch 20 kN
- Attachment of casing oscillator up to BV 1300 L-03 with UW 65 or BV 1500 HD-07 with UW 80
  - Powered by on-board hydraulics of base machine
  - Controlled from operator's cab
  - Weight of drill rig can be activated through mechanical fixing (UW 80)
- Attachment of automatic casing drive adapter
- Sling for counterweight handling
- Auger cleaner attachment for Kelly system
- Personnel hoist system with lift cage, **Fig. B**



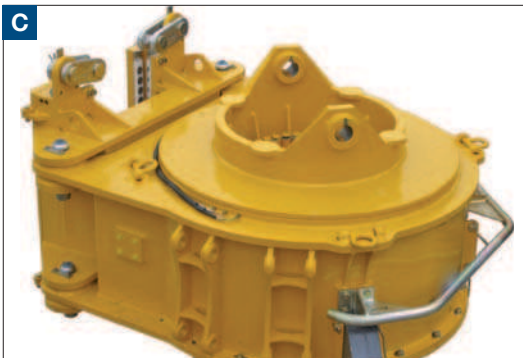
## Rotary drive KDK 280 K (single-gear drive)

### Standard

- Selectable modes of operation
- Kelly drive adapter for outer Kelly tube 394 mm
- Integrated Kelly damping system
- Exchangeable Kelly equipment KA 500/394
- Exchangeable Kelly drive keys
- Cardanic joint
- Quick-release hydraulic couplers
- Transport supports
- Lifting gear

### Optional

- Rotary drive KDK 280 S (multi-gear)
- Torque multiplier BTM 720 K for Kelly drilling
  - Torque 400 kNm (nominal)
  - Increasing of torque for casing installation
  - Easy attachment
  - Separate sledge
  - Connection to rotary drive with cardanic joint
- Torque multiplier BTM 200 for CCFA, Fig. C
- Additional oil cooler for rotary drive
- KDK 280 S
- Kelly equipment KA 500/419



## 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 on main and auxiliary winch
- Auxiliary winch with hydraulic load sensing
- Crowd stroke monitoring
- Crowd speed control
- Speed measuring control on rotary drive (KDK)
- Automatic torque setting (KDK)
- Hold-Back control
- Electronic mast reach limiter
- Bauer B-Tronic 4.1
- Tablet
- DTR module
- Assistants:
  - Kelly drilling assistant
  - Automatic crowd control
  - One-directional spoil discharge assistant
  - Bi-directional spoil discharge assistant
  - Casing extraction assistant

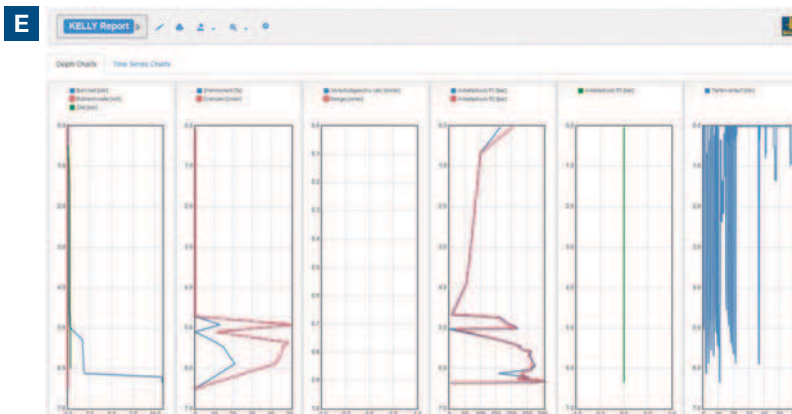
### Optional

- Electronic load-sensing for auxiliary winch
- Drilling and pulling assistant for Single-Pass processes
- Recording of concrete pressure and volume for Single-Pass processes
- Software modules for further applications
- B-APS Satellite-based positioning system

Operating, Evaluation and Transfer Systems

Standard

- Bauer B-TRONIC 4.1
  - High-resolution 10.4" touch screen for high operating comfort, Fig. D
  - High contrast display easy to read in daylight
  - Variable display of machine and process-specific production parameters in line with selected operating techniques
  - Main parameters, such as pump pressures, torque and drilling depth at a glance
  - Kelly visualization for displaying the actual position of lock recesses and drive keys
  - Recording of machine and process-specific production parameters (Fig. E) for documentation of the construction progress and external processing with the evaluation software B-Report
  - Data transfer to external data storage device (USB memory stick) or online access via WEB-BGM
  - Display of machine status and fault messages in plain text
  - Fault diagnosis
- Tablet
  - Fully-fledged tablet with numerous apps, (such as camera, processor, notebook etc.), Fig. F
  - Internet access via DTR module
  - Copy (mirroring) of operator screen
  - Offline availability of machine-specific documents, such as manuals and spare parts lists
  - Mobile tool for service engineers
- DTR module
  - Online Internet connection for the drilling rig via mobile communications network (GSM)
  - GPS receiver for positioning
  - WLAN connection for the tablet
  - Internet data transfer to BAUER webserver (WEB-BGM) for protected customer access to their own machine and production process data.





Kelly drilling



Cased Kelly drilling  
(installation with BTM)



Cased Kelly drilling  
(installation with oscillator)



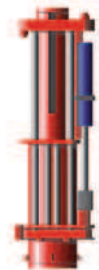
CFA



CCFA  
Cased CFA system  
with KDK + BTM



FDP  
Standard or Lost Bit



Pile driving  
with hydraulic hammer or  
Pileco Diesel hammer



VDW



TR  
Depth vibrator



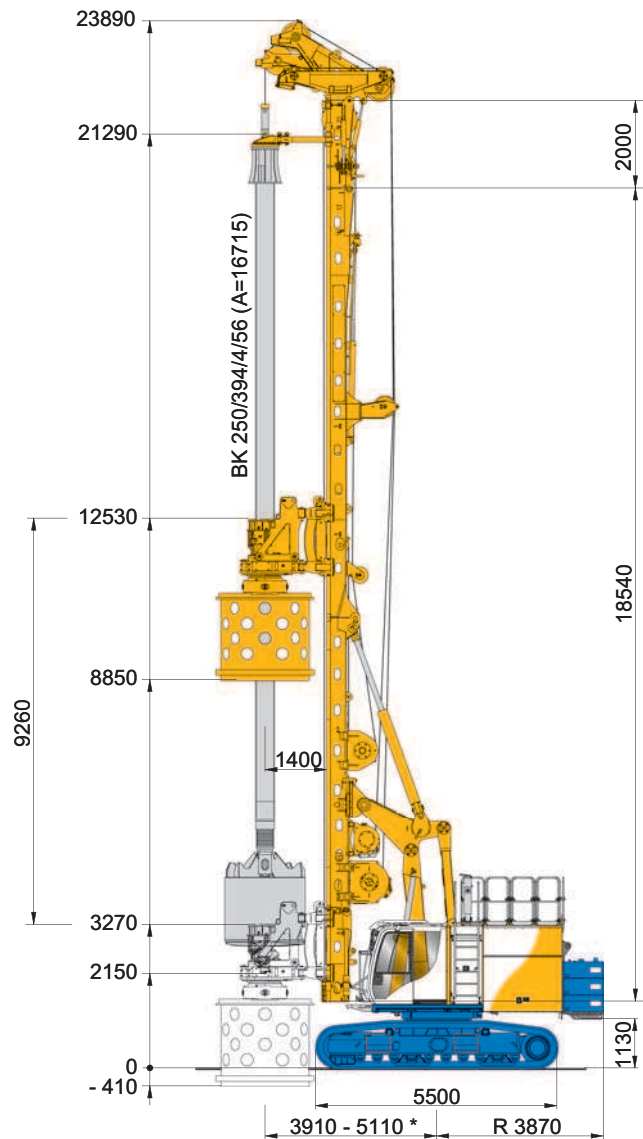
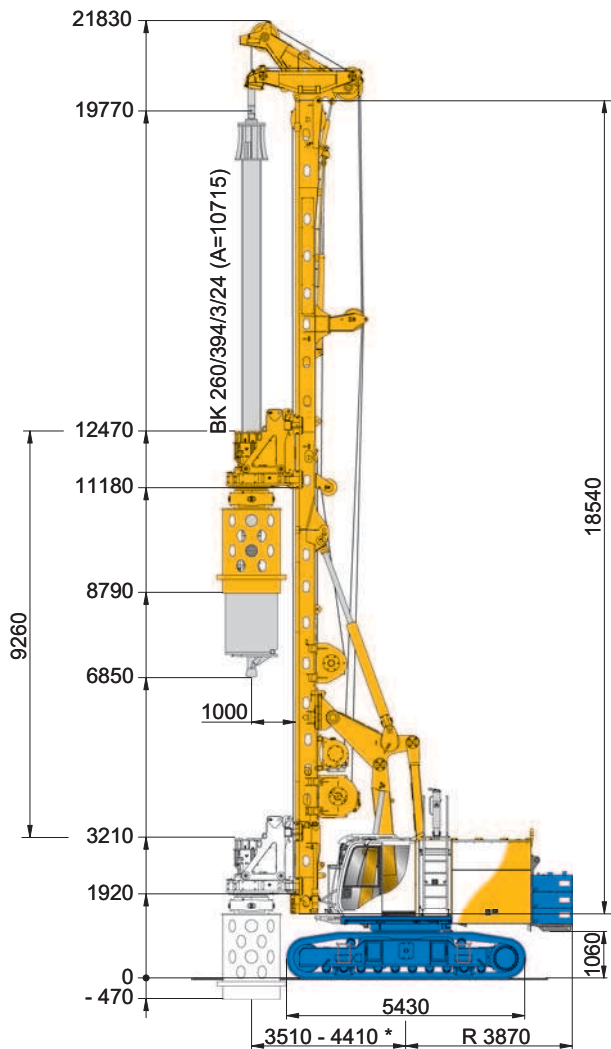
CSM  
Cutter Soil Mixing



SCM  
Single mixing paddle



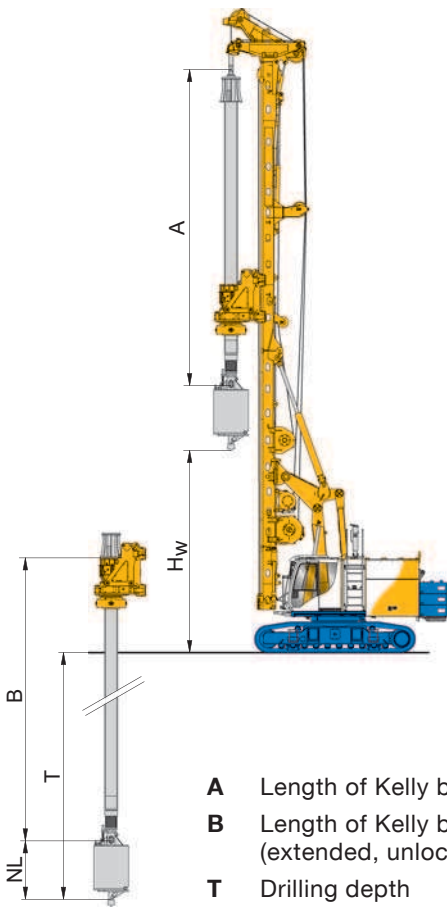
Jet Grouting



Basic version	
Undercarriage	UW 65 (B6)
Upper mast extension	without
Upper Kelly guide	without
Drilling axis	1,000 mm
Max. drilling diameter	
uncased	1,700 mm
cased	1,400 mm
Operating weight	82.2 t
with Kelly	3/24
with bucket	KB 1180
with counterweight	9.9 t

Upgraded version	
Undercarriage	UW 80 (B7)
Upper mast extension	2.0 m
Upper Kelly guide	with
Drilling axis	1,400 mm
Max. drilling diameter	
uncased	2,500 mm
cased	2,200 mm
Operating weight	100.2 t
with Kelly	4/56
with bucket	KB 1830
with counterweight	12.3 t

\* depending on configuration



- 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

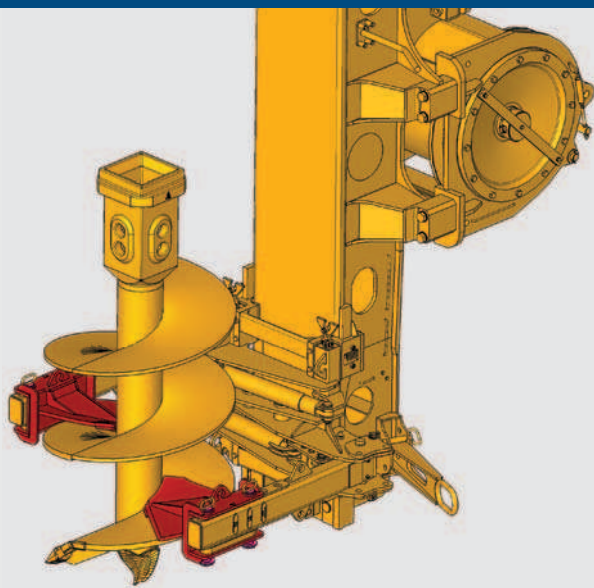
### Drilling depth – uncased Kelly drilling, drill axis 1.000 mm

				without mast extension		2.0 m mast extension	
3-part Kelly bar	A (m)	B (m)	G (kg)	H <sub>w</sub> (m)	T (m)	H <sub>w</sub> (m)	T (m)
BK260/394/3/24	10.72	26.61	4,800	6.9	<b>25.3</b>	8.0	<b>25.3</b>
BK260/394/3/30	12.72	32.61	5,550	4.9	<b>31.3</b>	6.9	<b>31.3</b>
BK260/394/3/33	13.72	35.61	5,920	3.9	<b>34.3</b>	5.9	<b>34.3</b>
BK260/394/3/36	14.72	38.61	6,300	2.9	<b>37.3</b>	4.9	<b>37.3</b>
BK260/394/3/42	16.72	44.61	7,100	0.9	<b>43.3</b>	2.9	<b>43.3</b>
BK260/394/3/48	18.72	50.61	7,900	–	–	0.9	<b>49.3</b>
4-part Kelly bar							
BK250/394/4/32	10.72	34.98	6,600	6.9	<b>33.7</b>	8.0	<b>33.7</b>
BK250/394/4/40	12.72	42.98	7,750	4.9	<b>41.7</b>	6.9	<b>41.7</b>
BK250/394/4/44	13.72	46.98	8,350	3.9	<b>45.7</b>	5.9	<b>45.7</b>
BK250/394/4/48	14.72	50.98	8,900	2.9	<b>49.7</b>	4.9	<b>49.7</b>
BK250/394/4/56	16.72	58.98	10,050	0.9	<b>57.7</b>	2.9	<b>57.7</b>
BK250/394/4/64	18.72	66.98	11,200	–	–	0.9	<b>65.7</b>

Drilling data as shown are based on tool length NL = 1.9 m, minimum horizontal mast reach and using Bauer attachment.

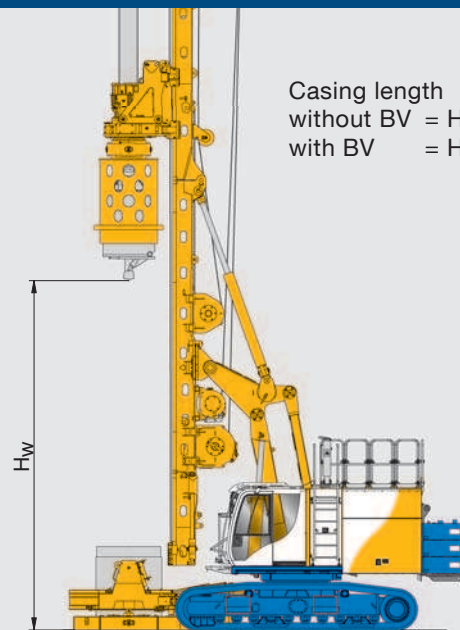
Further drilling depth, diameter and other Kelly types on request.

### Auger cleaner for Kelly-drilling application Drilling diameter 520 to 1060 mm

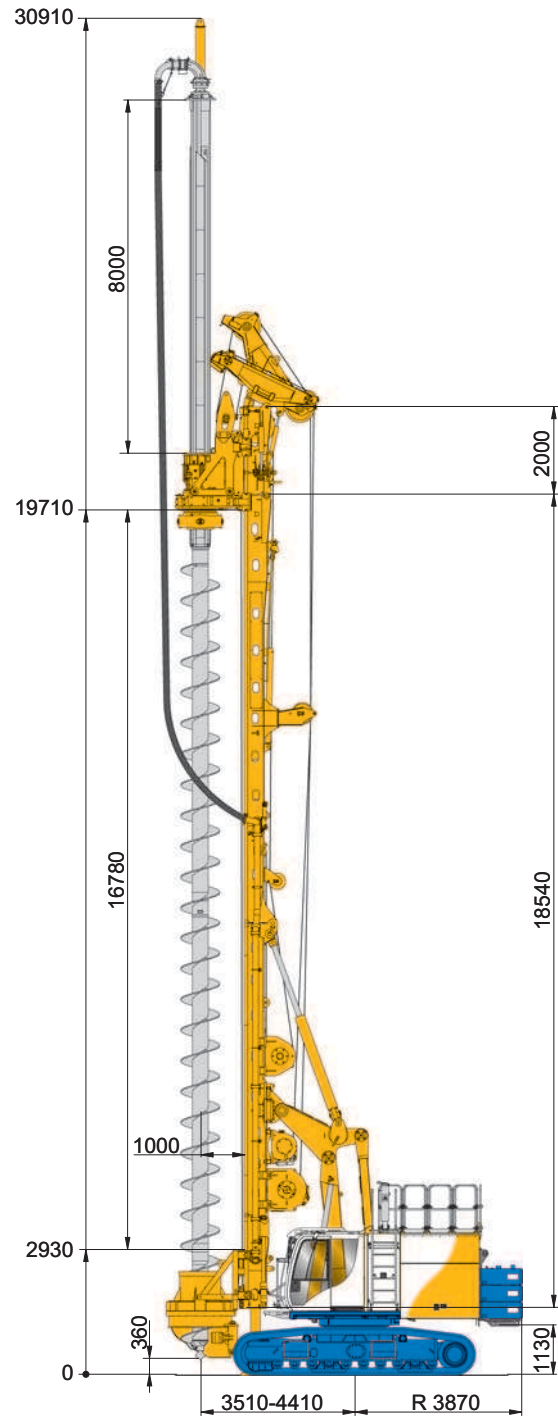
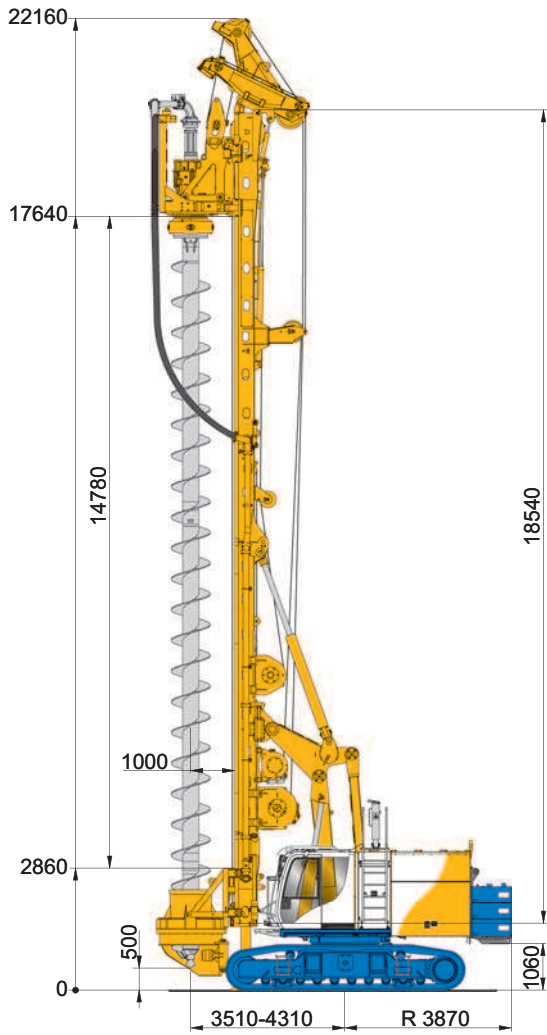


Further drilling diameters and drilling axes on request

### Cased Kelly drilling with Casing oscillator up to BV 1300 (UW 65) or BV 1500 HD-07 (UW 80)



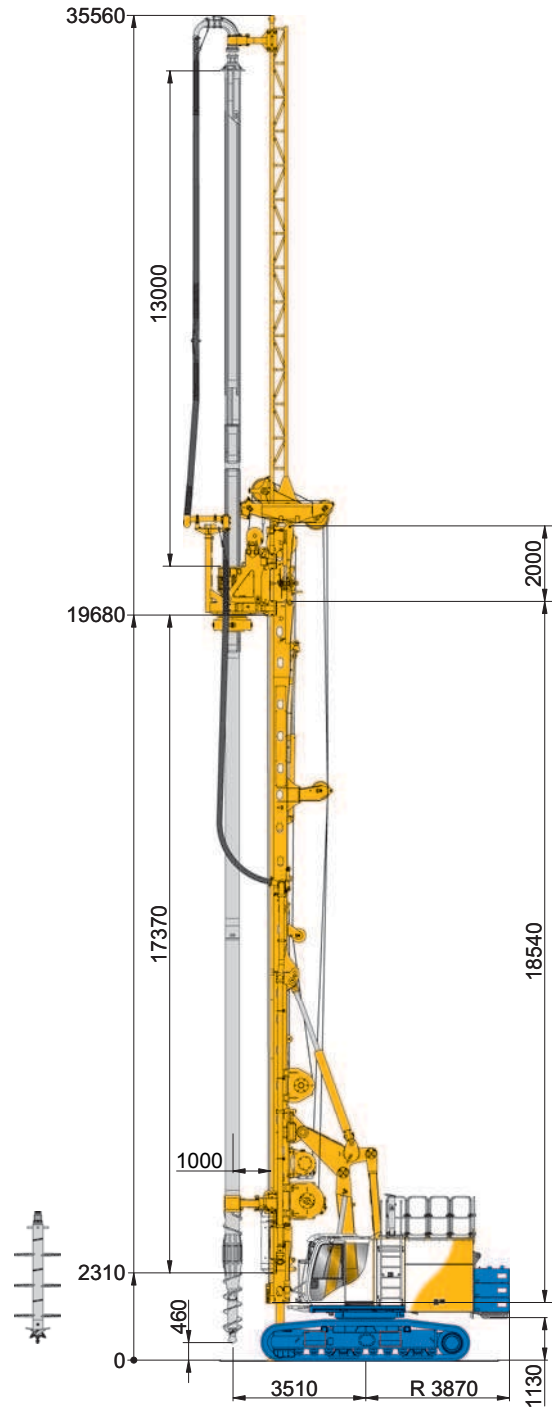
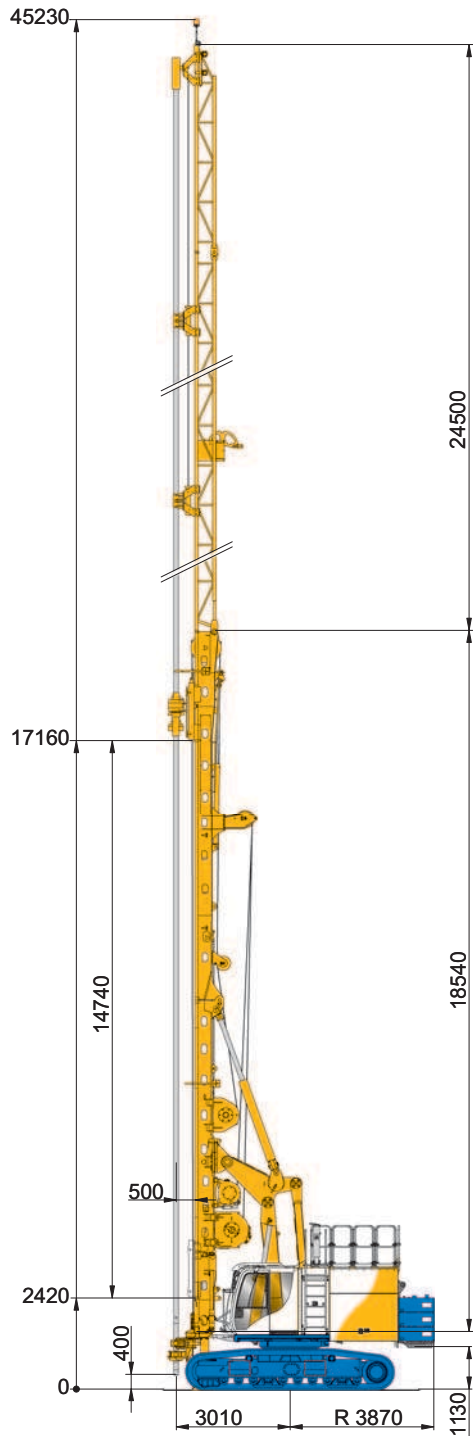
Casing length  
without BV = H<sub>w</sub> - 0.5 m  
with BV = H<sub>w</sub> - 1.6 m



Basic version	
Undercarriage	UW 65
Mast extension	without
Kelly extension	without
Max. drilling diameter	900 mm
Max. drilling depth (with auger cleaner)	14.3 m
Max. extraction force with crowd- and main winch (effective)	730 kN

Upgraded version	
Undercarriage	UW 80
Mast extension	2.0 m
Kelly extension	8.0 m
Max. drilling diameter	1,200 mm
Max. drilling depth (with auger cleaner)	24.3 m
Max. extraction force with crowd- and main winch (effective)	730 kN

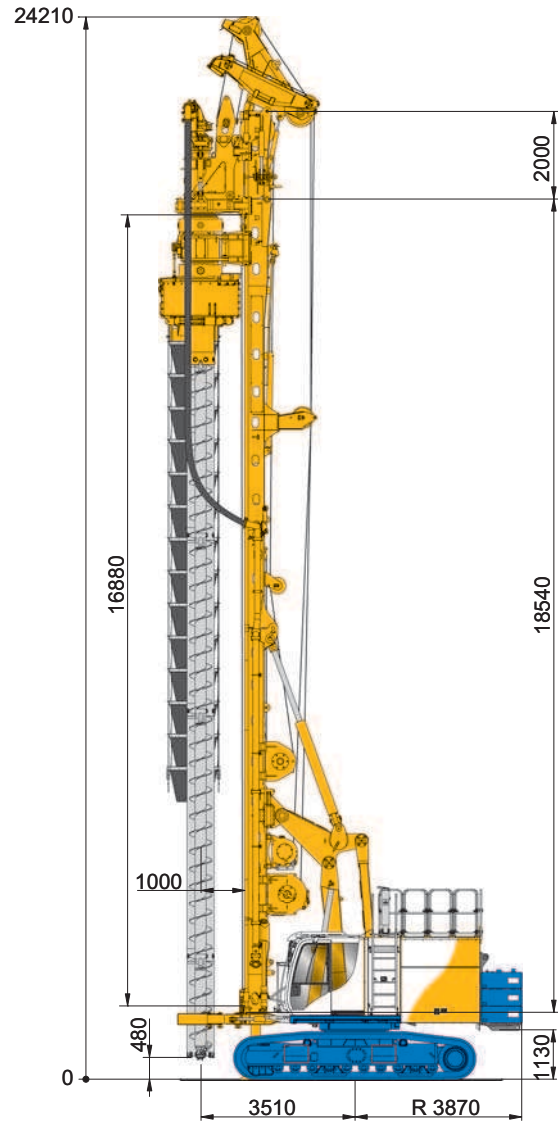
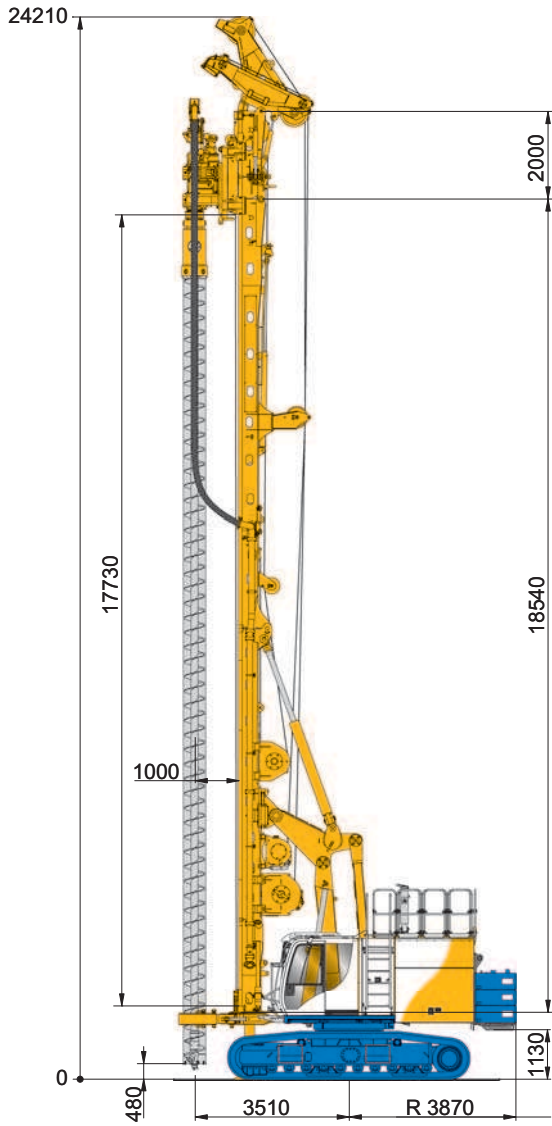




Jet Grouting – Upgraded version	
Undercarriage	UW 80
Lattice mast extension	24.5 m
Rod diameter	89 – 133 mm
Max. jetting depth	35.3 m
Rotary drive	KDK 10 S
Max. extraction force with crowd winch (effective)	330 kN

FDP- / SCM drilling – Upgraded version	
Undercarriage	UW 80
Mast extension	2.0m
Kelly extension	13.0m
Max. drilling diameter (FDP)	620 mm
Max. mixing diameter (SCM)	800 – 1,600 mm *
Max. drilling depth	30.0 m
Max. extraction force with crowd- and main winch (effective)	730 kN

\* Further mixing diameters on request

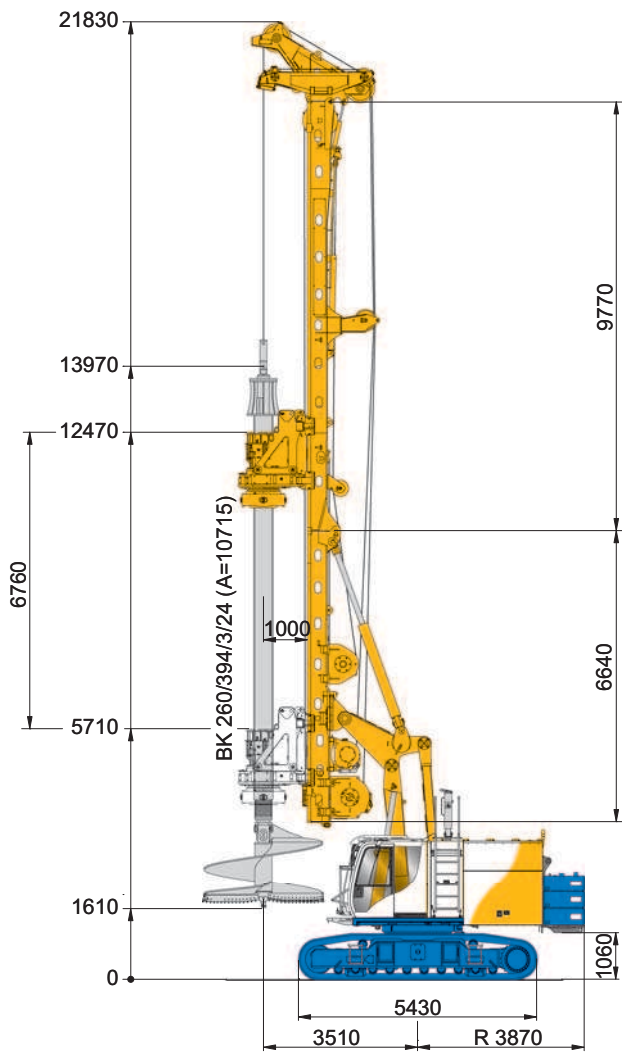


**VDW drilling – Upgraded version**

Undercarriage	UW 80
Mast extension	2.0 m
Drilling diameter	406 – 610 mm
Max. drilling depth	17.3 m
Rotary drive	DKS 50/100
Max. extraction force with crowd- and main winch (effective)	500 kN

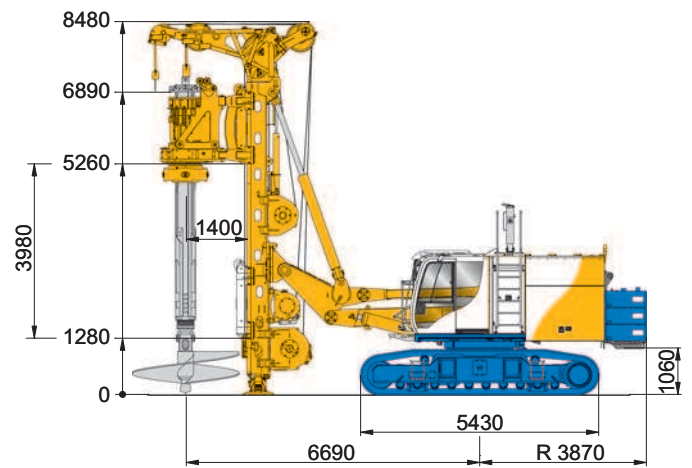
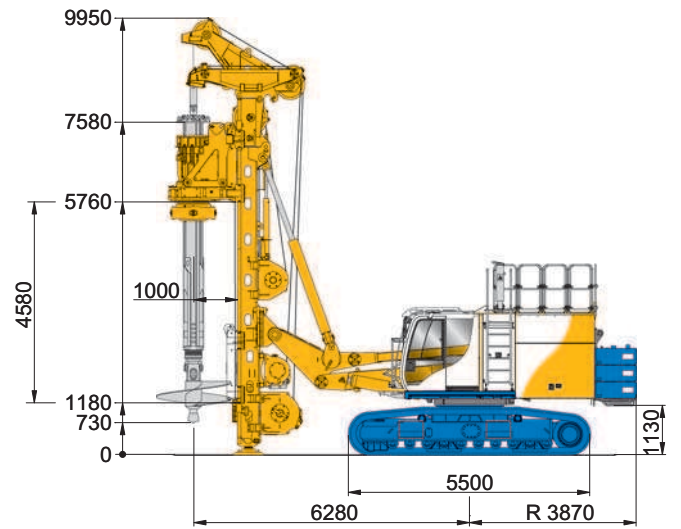
**CCFA drilling – Upgraded version**

Undercarriage	UW 80
Mast extension	2.0 m
Max. drilling diameter	750 mm
Max. drilling depth	16.4 m
Drive units:	
Auger (right-hand rotation)	KDK 280
Casing (left-hand rotation)	BTM 200
Max. extraction force with crowd- and main winch (effective)	730 kN



**Giant Drill - Basic version**

Undercarriage	UW 65
Lower mast extension	without
Drilling axis	1,000 mm
Max. drilling diameter	3,000 mm



**Low Headroom-System**

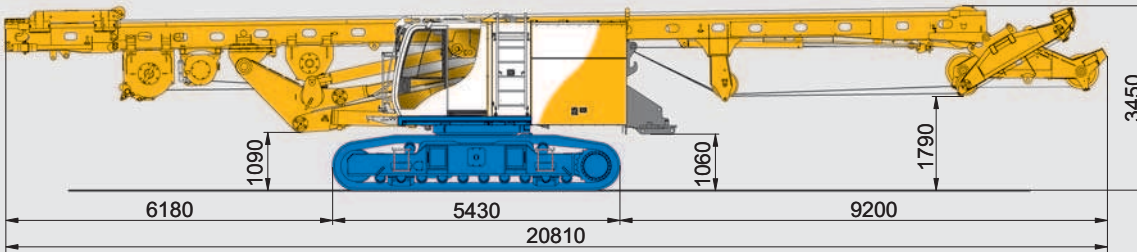
Undercarriage	UW 65 / UW 80
Drilling axis	1,000 / 1,400 mm
Max. drilling diameter	1,700 / 2,500 mm
Max. drilling depth (BK28/419/5/19)	19.5 m

G = Weight (t)  
B = Width, overall (mm)

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

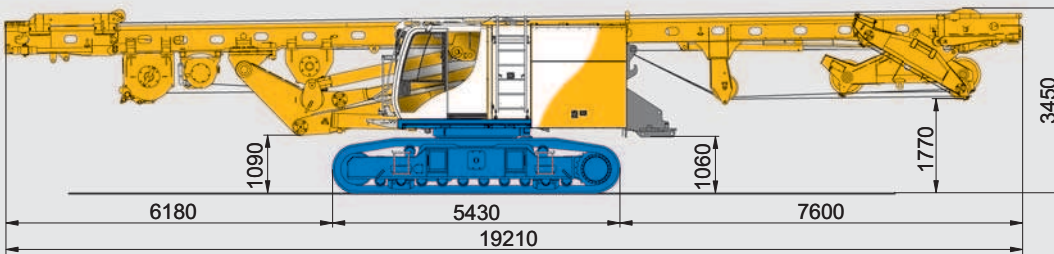
**Basic version**

**G = 58.6 B = 3,000**



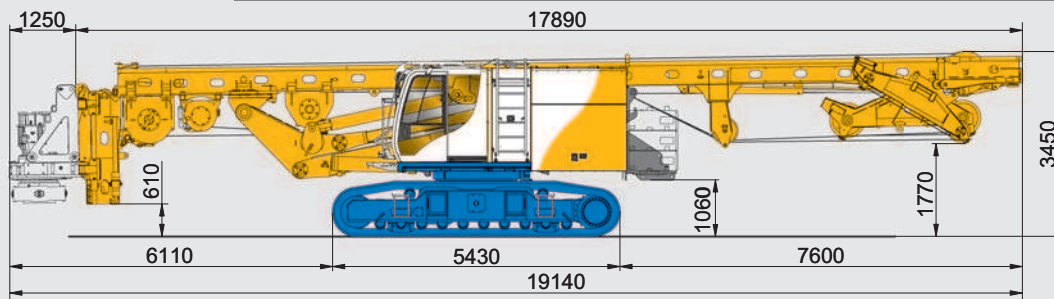
**Upper mast extension folded**

**G = 59.7 B = 3,000**



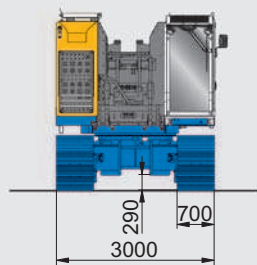
**Lower and upper mast extension folded**

**G = 59.7 B = 3,000**



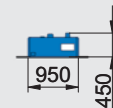
**G = 74.7**  
with KDK and  
counterweight

**Base carrier with UW 65 (Basic version)**



**Counterweight \***

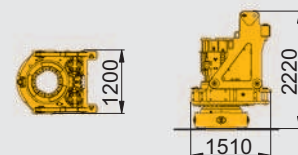
**G = 1 x 4.9 + 2 x 2.5**  
**B = 3,000**



\* depending on application

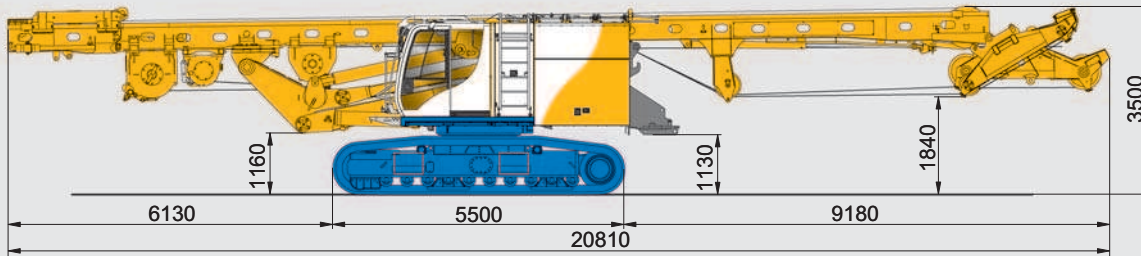
**Rotary drive**

**G = 5.1 B = 1,200**



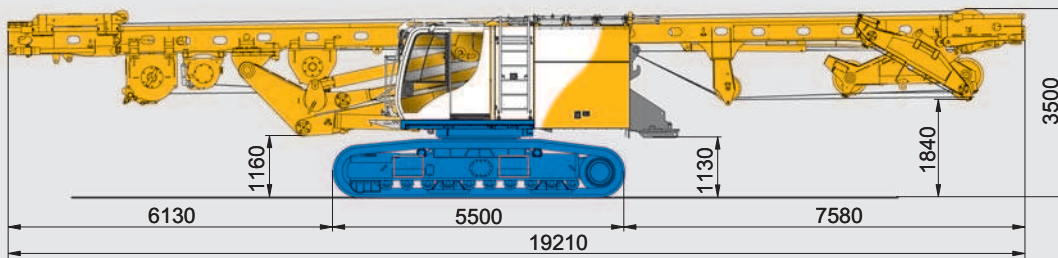
**Upgraded version**

**G = 62.9 B = 3,000**



**Upper mast extension folded**

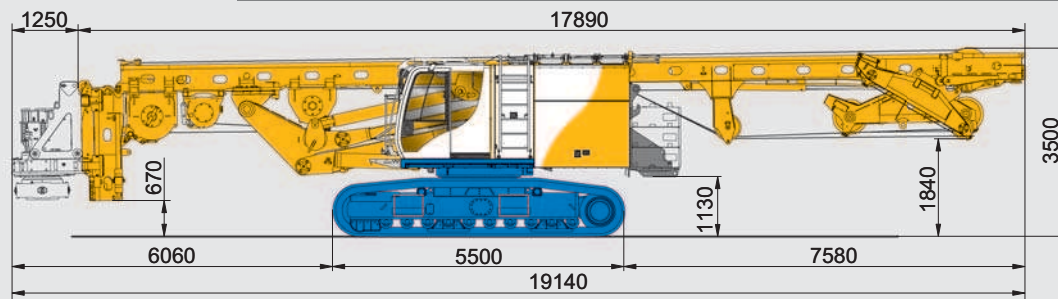
**G = 64.0 B = 3,000**



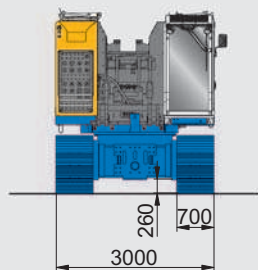
**Lower and upper mast extension folded**

**G = 64.0 B = 3,000**

**G = 81.4**  
with KDK and counterweight

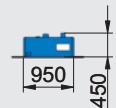


**Base carrier with UW 80 (Upgraded version)**



**Counterweight \***

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



\* depending on application

	<b>UW 65</b>	<b>UW 80</b>
<b>Track shoes</b>	700 mm	700 mm
<b>Overall width of crawlers retracted / extended</b>	3,000 – 4,400 mm	3,000 – 4,400 mm
	800 mm	3,300 – 4,500 mm
	900 mm	3,400 – 4,600 mm



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- Certified on-site operator's and technician's training



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