EN

LRB 23

LRB 2505.07
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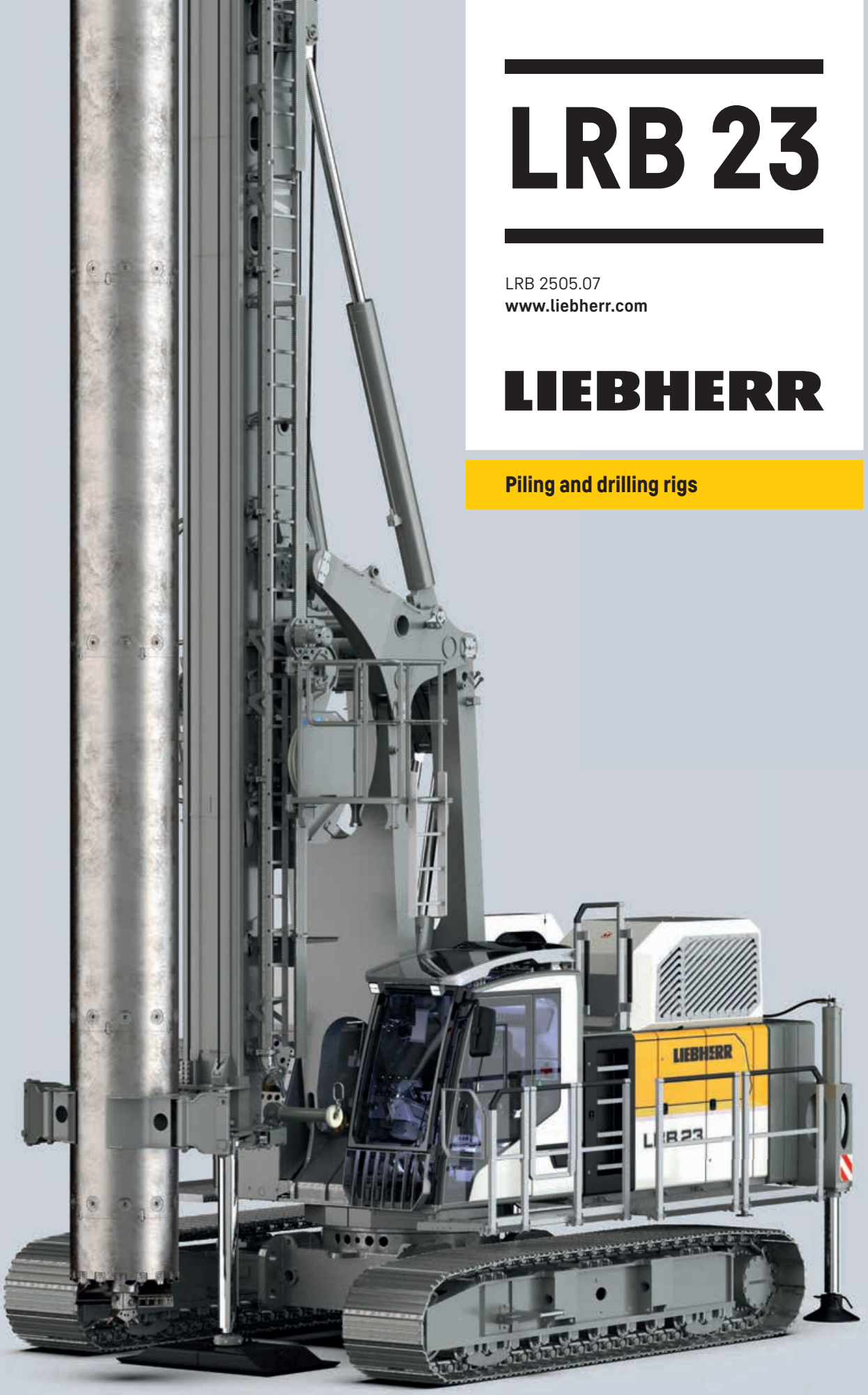
LIEBHERR

Piling and drilling rigs



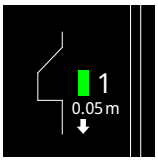
Concept and characteristics

PDE®
Process Data Recording

MyJobsite

LIPOS®
Positioning System

LiDAT®
Data Transmission



Kelly visualization

Ground pressure visualization

Radio remote control

Concrete pump

The robust universal machine for a wide variety of applications

- Continuous flight auger drilling
- Full displacement drilling
- Double rotary drilling
- Kelly drilling
- Soil mixing
- Vibrator slim design
- Hydraulic hammer
- Down-the-hole drilling

Assistance systems

- Cruise Control for all main functions
- Control lever for all machine functions
- Automatic shake-off function for working tools
- Kelly visualization
- Ground pressure visualization
- Radio remote control for concrete pump
- Drilling assistant (single-pass process)
- Leader inclination memory
- Display of auger filling level
- Kelly winch with freewheeling and with slack rope monitoring and prevention

Technical description

Diesel engine

Power rating according to ISO 9249	600 kW (804 hp) at 1700 rpm
Engine type	Liebherr D 976 A7-04
Fuel tank capacity	800 l with continuous level indicator and reserve warning
Exhaust certification	EU 2016/1628 Stage V EPA/CARB Tier 4f non-certified emission standard

Hydraulic system

Hydraulic pumps	
for attachments	3x 320 + 2x 320 l/min
for kinematics	166 l/min
Hydraulic oil tank capacity	725 l
Max. working pressure	400 bar
Hydraulic oil	electronic monitoring of all filters use of synthetic environmentally friendly oil possible

Crawlers

Drive system	with fixed axial piston hydraulic motors
Crawler side frames	maintenance-free, with hydraulic chain tensioning device
Brake	hydraulically released, spring-loaded multi-disc holding brake
Undercarriage type 205	
Drive speed	0-1.6 km/h
Track force	660 kN
Grousers	width 800 mm (option 700 mm)
Undercarriage type 225	
Drive speed	0-1.65 km/h
Track force	647 kN
Grousers	Width 800 mm (option 700 and 900 mm)

Swing gear

Drive system	with fixed axial piston hydraulic motors, planetary gearbox, pinion
Swing ring	triple-row roller bearing with external teeth and one swing drive
Brake	hydraulically released, spring-loaded multi-disc holding brake
Swing speed	0-3.5 rpm continuously variable

Kelly winch

Line pull effective	230 kN (1st layer)
Rope diameter	28 mm
Rope speed	0-80 m/min

Auxiliary winch

Line pull effective	50 kN (3rd layer)
Swing range	left 180°, right 90°
Radius adjustment device	2045 mm
Rope diameter	17 mm
Rope speed	0-87 m/min

Crowd system

Crowd force	320/320 kN (push/pull)
Line pull effective	160 kN
Travel	20.0 m
Rope speed	0-88 m/min

Noise measurement data and vibration

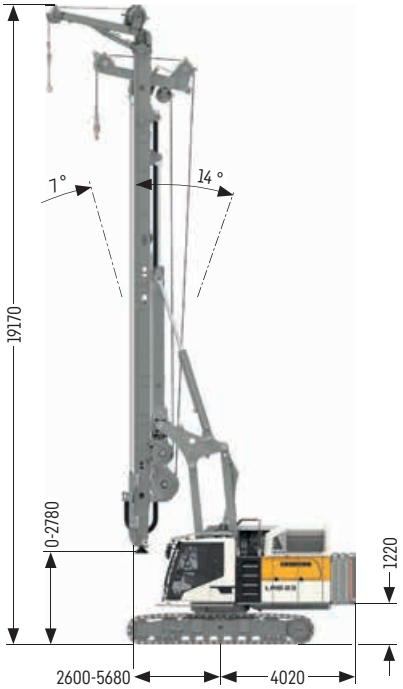
Noise emission	according to 2000/14/EC directive	
Emission sound pressure level L_{PA}	79.0 dB(A)	(in the cabin)
Guaranteed sound power level L_{WA}	110 dB(A)	(of the machine)
Vibration transmitted to the machine operator	< 2.5 m/s²	(to the hand-arm system)
	< 0.5 m/s²	(to the whole body)

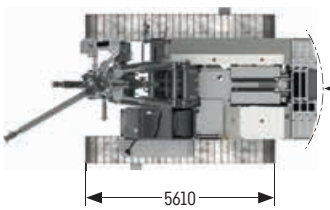
Remarks:

- Illustrations showing the types of application (e.g. Kelly drilling, continuous flight auger drilling etc.) are examples only.
- Weights and transport dimensions can vary with the final configuration of the machine. The figures in this brochure may include options which are not within the standard scope of supply of the machine.

Dimensions

Undercarriage type 205





R 4120 (15 t)
R 4300 (18 t)
R 4530 (18 t incl. rear support unit)

Operating weights

Total weight with 700 mm 3-web grousers	t	72.6
Total weight with 800 mm 3-web grousers	t	73.0

The operating weight includes the basic machine LRB 23 (ready for operation – including 20% filling of diesel tank) with Kelly equipment and 15 t counterweight, without attachment.

Operating weights

Total weight with 700 mm 3-web grousers	t	72.9
Total weight with 800 mm 3-web grousers	t	73.3

The operating weight includes the basic machine LRB 23 (ready for operation – including 20% filling of diesel tank) and 15 t counterweight, without attachment and Kelly equipment.

Operating weights

Total weight with 700 mm 3-web grousers	t	78.1
Total weight with 800 mm 3-web grousers	t	78.5

The operating weight includes the basic machine LRB 23 (ready for operation – including 20% filling of diesel tank) with Kelly equipment and 18 t counterweight, without attachment.

Undercarriage type 225

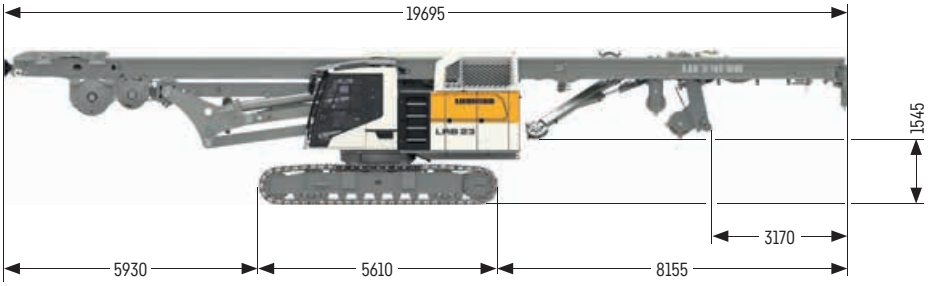
Operating weights

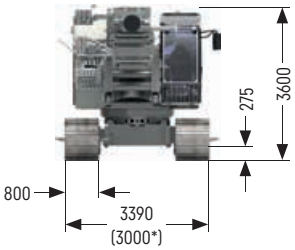
Total weight with 800 mm 3-web grousers	t	82.9

The operating weight includes the basic machine LRB 23 (ready for operation – including 20% filling of diesel tank) with Kelly equipment and 18 t counterweight, without attachment.

Transport dimensions and weights

Undercarriage type 205

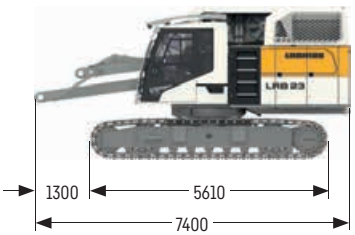


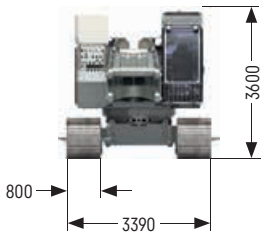


Operating weight

includes the basic machine LRB 23 (ready for operation – including 20 % filling of diesel tank) with Kelly equipment, without counterweight and attachment	t	60.4
includes the basic machine LRB 23 (ready for operation – including 20 % filling of diesel tank) without Kelly equipment, counterweight and attachment	t	58.2

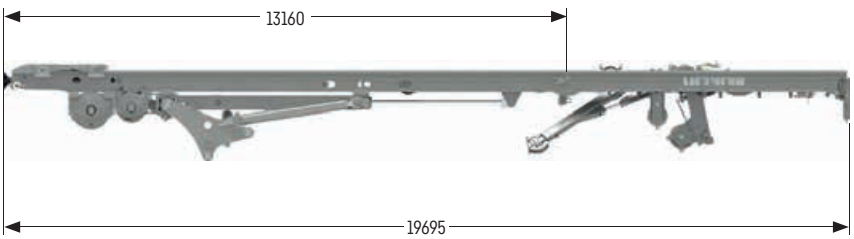
* transport width with 700 mm grousers

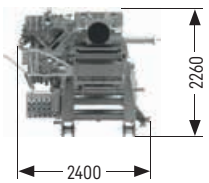




Basic machine

without counterweight and without adapter for casing oscillator	t	39.1





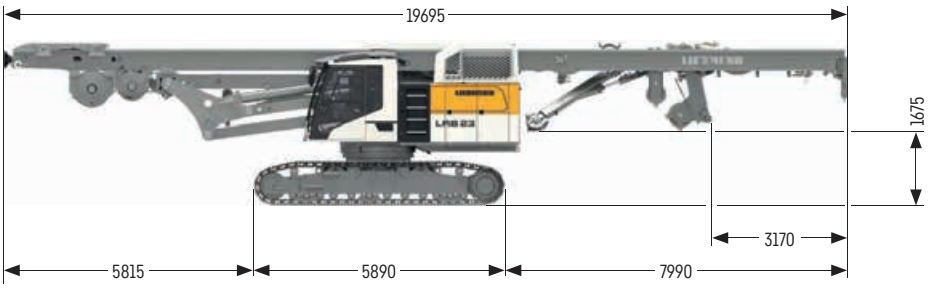
Leader

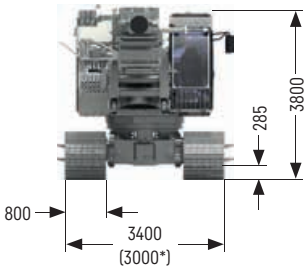
with Kelly equipment	t	21.3
without Kelly equipment	t	19.1

Options

Adapter for casing oscillator	t	0.8
Concrete supply line	t	0.6
All round platform with railings	t	0.4
Elevating working platform	t	0.9
Jack-up system	t	2.5

Undercarriage type 225

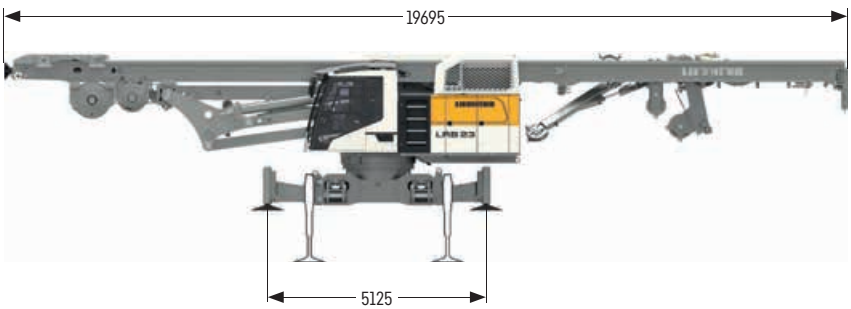


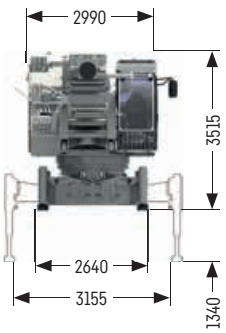


Operating weight

includes the basic machine LRB 23 (ready for operation – including 20 % filling of diesel tank) with Kelly equipment, without counterweight, jack-up system and attachment	t	64.8

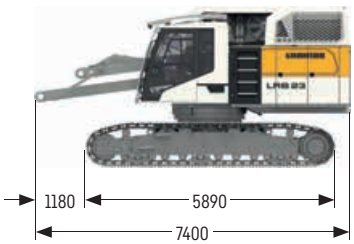
* Optional transport width with 700 mm grousers and non-detachable crawlers.
With this option, the transport weight is reduced by 2.2 t compared to the version with detachable crawlers.

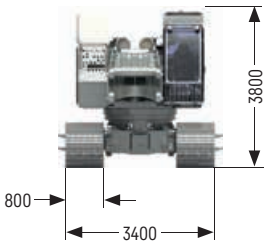


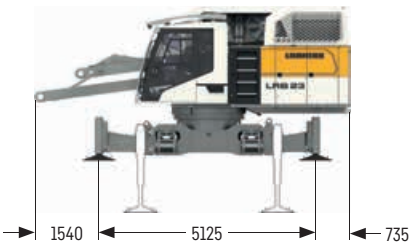


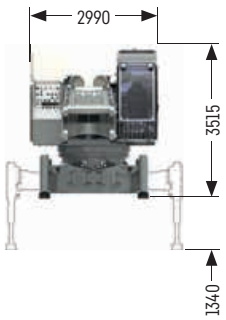
Operating weight without crawlers, with jack-up system

includes the basic machine LRB 23 (ready for operation – including 20 % filling of diesel tank) with Kelly equipment, without counterweight and attachment	t	54.1







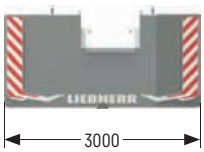


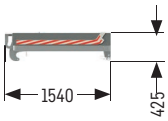
Basic machine

without counterweight, adapter for casing oscillator and without jack-up system	t	43.5

Basic machine

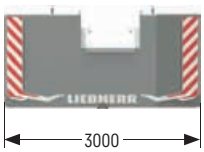
without counterweight and crawlers, with adapter for casing oscillator and with jack-up system	t	32.8

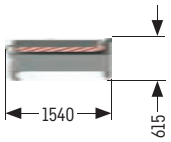




Rear counterweight

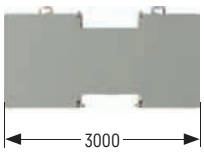
Weight	t	5.0

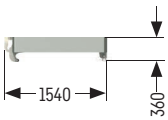




Rear counterweight

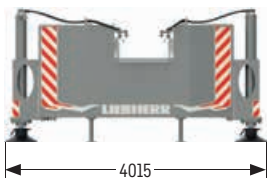
Weight	t	8.0

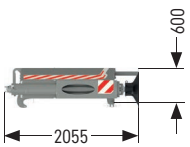




Intermediate slab

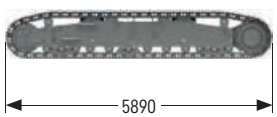
Weight	t	5.0

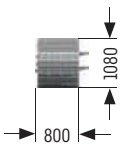




Rear counterweight with rear support unit

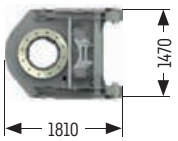
Weight	t	8.0





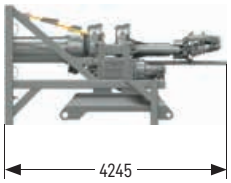
Crawler type 225

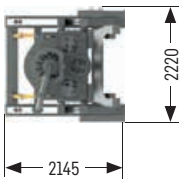
Weight	t	7.4



BAT 300

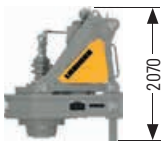
Weight	t	6.5

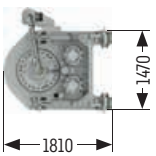




DBA 250

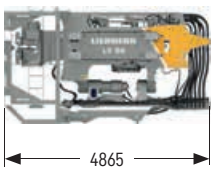
Weight	t	8.1

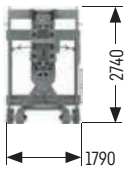




MA 180

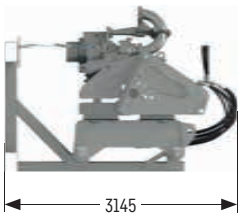
Weight	t	5.6

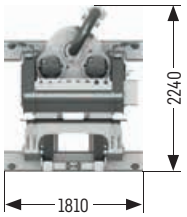




Vibrator slim design LV 36 and LV 36 F

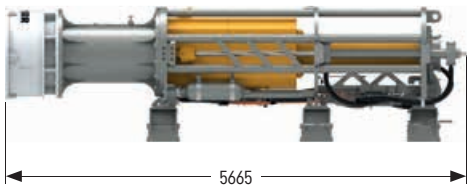
Weight	t	12.0

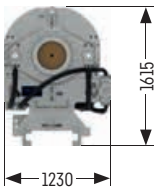




DHR 220

Transport weight	t	6.4





Hammer H 10-100

Weight incl. 10 t drop weight	t	16.2

Full displacement drilling

BAT 300

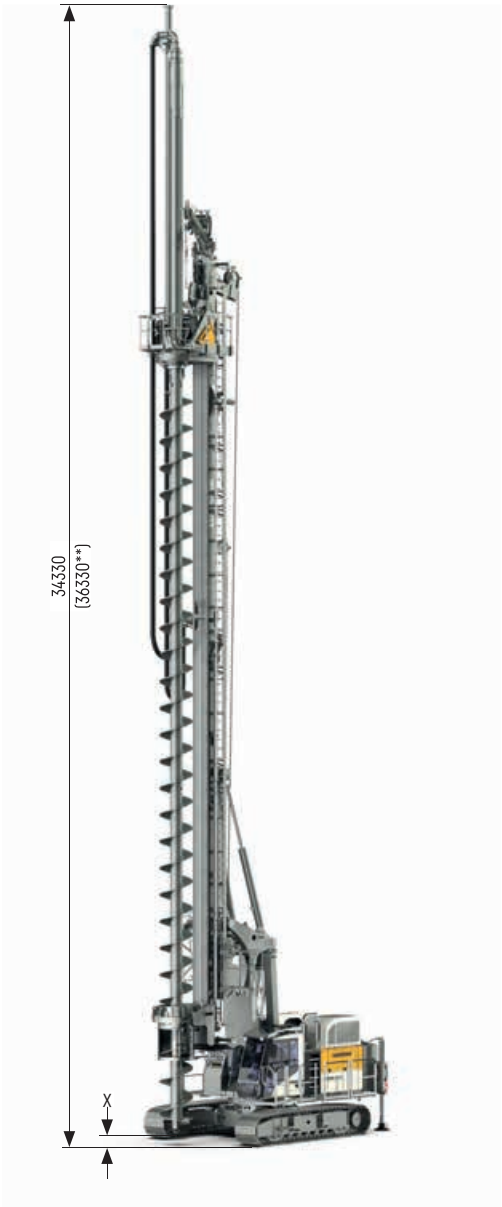
Performance data

Rotary drive - torque	kNm	300
Rotary drive - speed	rpm	0-46
Max. drilling depth	m	22.2
Drilling depth with 8 m Kelly extension	m	30.2
Drilling depth with 10 m Kelly extension	m	32.2
Max. drilling diameter*	mm	600
Max. pull force (crowd winch and Kelly winch)	kN	780

Above drilling depths are valid for the use of standard tools and for an X value of 530 mm (see above illustration).
* Other drilling diameters available on request
** With 10 m Kelly extension

Continuous flight auger drilling

BAT 300



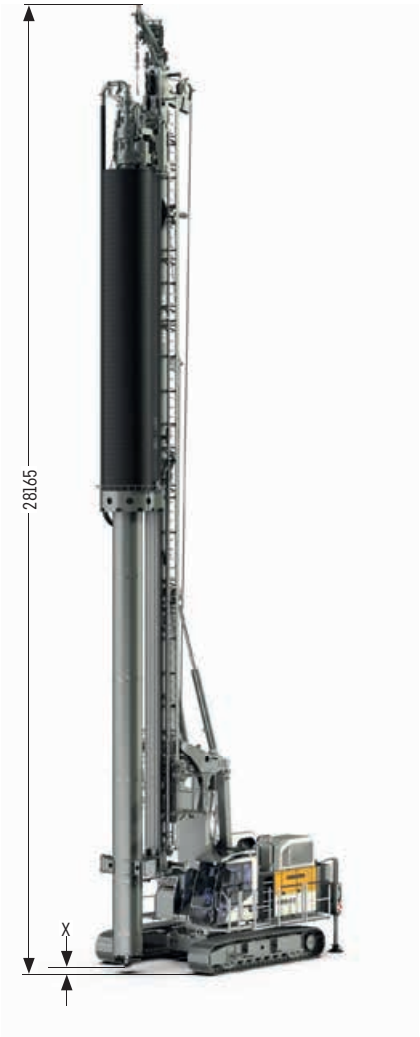
Performance data

Rotary drive - torque	kNm	300
Rotary drive - speed	rpm	0-46
Max. drilling depth	m	21.6
Drilling depth with 8 m Kelly extension	m	29.7
Drilling depth with 10 m Kelly extension	m	31.7
Max. drilling diameter*	mm	1200
Max. pull force (crowd winch and Kelly winch)	kN	780

Above drilling depths take into account that an auger cleaner is used and the cardan joint has been removed.
Above drilling depths are valid for the use of standard tools and for an X value of 340 mm (see above illustration).
* Other drilling diameters available on request
** With 10 m Kelly extension

Double rotary drilling

DBA 250



Performance data

Rotary drive I - torque	kNm	0-247
Rotary drive I - speed	rpm	0-30
Rotary drive II - torque	kNm	0-113
Rotary drive II - speed	rpm	0-34
Max. drilling diameter*	mm	900
Max. drilling depth**	m	22.2
Max. pull force (crowd winch and Kelly winch)	kN	780

Above drilling depths are valid for the use of standard tools and for an X value of 520 mm (see above illustration).
Due to differences in the max. admissible load capacities, the combinations of drilling depth and drilling diameter may be limited.
* Other drilling diameters available on request
** When using a protective hose, the maximum drilling depth has to be reduced by 875 mm.

Kelly drilling

BAT 300

Performance data

Rotary drive - torque	kNm	300
Rotary drive - speed	rpm	0-46
Max. drilling diameter uncased	mm	1900
Max. drilling diameter cased*	mm	1500
Max. drilling diameter below the leader	mm	2900

Other drilling diameters available on request
When using a casing oscillator (standard 118/120 KL und 150 KL), value X has to be reduced by 1500 mm. Other casing oscillators available on request
* Depends on the design of the casing driver

Technical data Kelly bars

Model	Length A [mm]	X [m]	Drilling depth [m]	Weight [t]
28/3/24	9885	12.4	24.1	5.3
28/3/27	10885	11.4	27.1	5.8
28/3/30	12040	10.2	30.1	6.4
28/3/33	12885	9.4	33.1	6.7
28/3/36	14040	8.2	36.1	7.3
28/4/24	8450	13.8	24.3	5.5
28/4/30	9940	12.3	30.1	6.8
28/4/36	11450	10.8	36.2	7.7
28/4/42	12950	9.3	42.1	8.7
28/4/48	14450	7.8	48.2	9.6
28/4/54	15950	6.3	54.2	10.6
28/4/60	17450	4.8	60.2	11.6
28/4/66	18950	3.3	66.3	11.7
28/4/72*	20450	1.8	72.0	12.5

* Installation only possible with assist crane

Soil mixing

MA 180

Performance data MA 180

Rotary drive - torque	kNm	180
Rotary drive - speed	rpm	0-80
Max. mixing depth	m	22.4
Mixing depth 8 m Kelly extension	m	30.4
Max. mixing diameter*	mm	1500
Max. pull force	kN	780

Above drilling depths are valid for the use of standard tools and for an X value of 300 mm.
* Other mixing diameters available on request

Performance data 3MA 65

Rotary drive - torque	kNm	65
Rotary drive - speed	rpm	100
Swing range mixing drive	°	+/- 30.0
Centre-to-centre distance adjustable in steps of 50 mm	mm	450-700
Max. mixing depth	m	22.2
Max. pull force	kN	550

Above mixing depth is valid for the use of standard tools and for an X value of 500 mm.
Longitudinal or transverse mounting of the mixing equipment possible

BAT 300

Performance data BAT 300

Rotary drive - torque	kNm	300
Rotary drive - speed	rpm	0-46
Max. mixing depth	m	22.0
Mixing depth with 8 m Kelly extension	m	30.0
Mixing depth with 10 m Kelly extension	m	32.0
Max. mixing diameter*	mm	2900
Max. pull force	kN	780

Above drilling depths are valid for the use of standard tools and for an X value of 705 mm.
* Other mixing diameters available on request
** With 10 m Kelly extension

Vibrator slim design

LV 36 and LV 36 F

Performance data		LV 36	LV 36 F
Static moment	kNm	0-36	0-36
Max. frequency	rpm	0-2400	0-2400
Max. centrifugal force	kN	1910	1910
Max. peak-to-peak amplitude with 240 t clamp	mm	11.4	11.4
Total weight with 240t clamp	kg	11165	11145
Dynamic weight including 240 t clamp	kg	6300	6505
Max. pile length	m	22.0	22.0
Swing range vibrator	°	+/- 87	+/- 50
Vibrator width in piling axis	mm	560	800
Piling axis	mm	1700	1700
Max. pull force	kN	320	320

Above pile length is valid for an X value of 500 mm.

Hydraulic hammer

H 6 and H 10

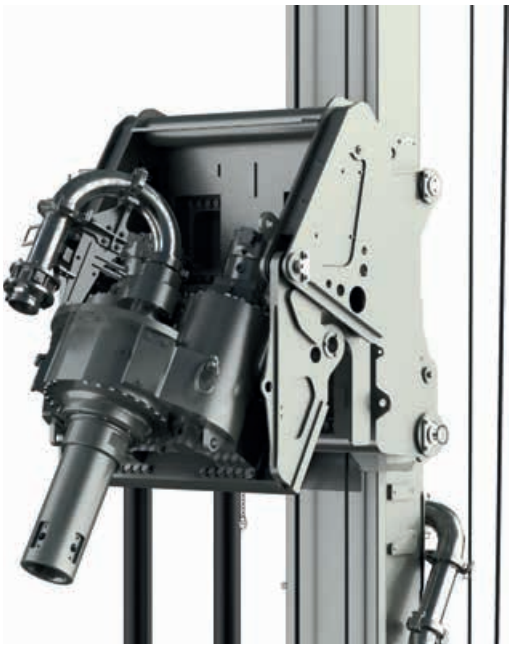
Performance data

Hammer type		H 6-3	H 6-4	H 6-5	H 6-6	H 10-75	H 10-100
Drop weight	kg	3000	4000	5000	6000	7500	10000
Max. rated energy	kNm	36	48	60	72	90	120
Blow rate	blows/min	50-150	50-150	50-150	40-150	50-150	50-150
Max. pile length	m	21.0	21.0	21.0	21.0	19.3	19.3
Pile winch*	kN	160	160	160	160	160	160
Hammer weight incl. pile helmet and dolly	kg	6700	7700	8700	9700	13700	16200

Various pile helmet sizes up to diameters of 630 mm for the hammer H 6, up to 785 mm for the hammer H 10 or in square design available as standard. Above pile length is valid for an X value of 500 mm.
Other pile helmet sizes available on request
* Existing Kelly winch with limitation

Down-the-hole drilling

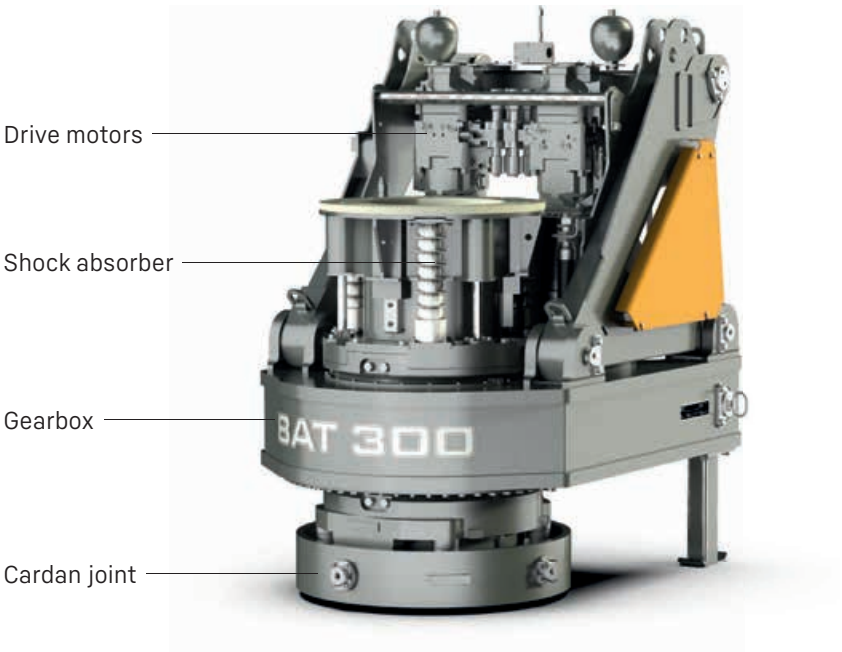
DHR 220



Performance data		DHR 220
Rotary drive - torque	kNm	218
Rotary drive - speed	rpm	42
Drilling depth	m	22.2
Folding function	°	0-90
Max. pull force	kN	780*/600**

Above drilling depths are valid for the use of standard tools and for an X value of 500 mm (see above illustration).
* Max. pull force in recovery operation
** Max. pull force in drilling operation

BAT 300

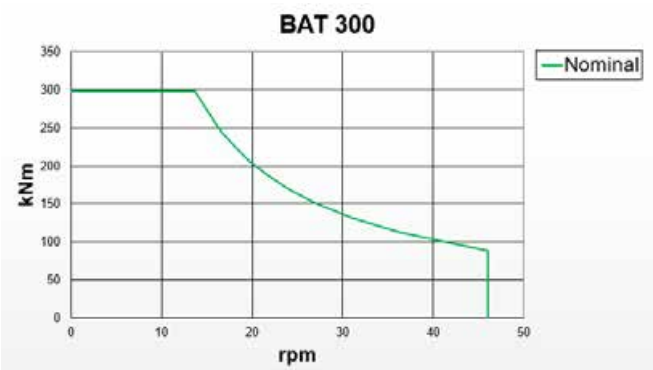


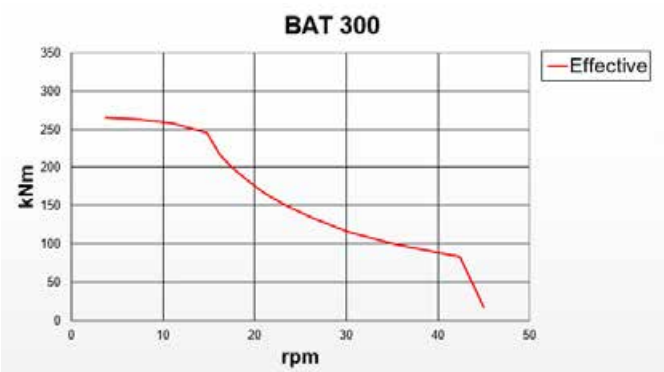
Kelly shock absorber:
- Newly developed Kelly shock absorber for highest demands
- Possibility of adjusting the strength of the Kelly shock absorber for different Kelly bar weights

Highest availability through easy set-up:
- No mechanical shift gearbox
- Low maintenance requirements

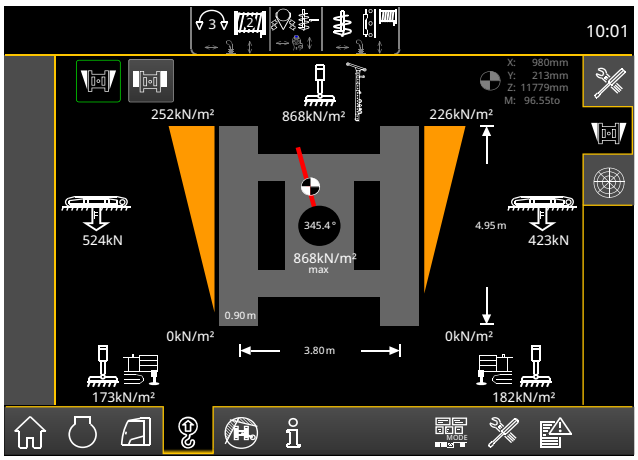
Automatic gearbox for best operating comfort:
- No stopping required to change gears
- No interruption of the drilling process
- Continuous optimization of speed

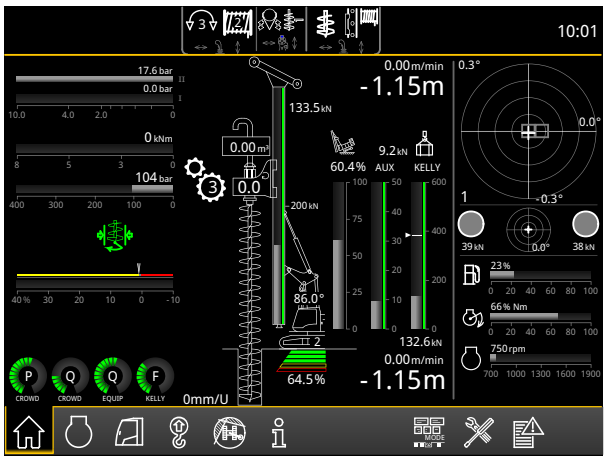
Flexibility through modular design:
- Exchangeable cardan joint for other casing drivers
- Exchangeable drive adapters for use of other Kelly bars
- Quickly exchangeable equipment for other methods of operation





Ground pressure visualization

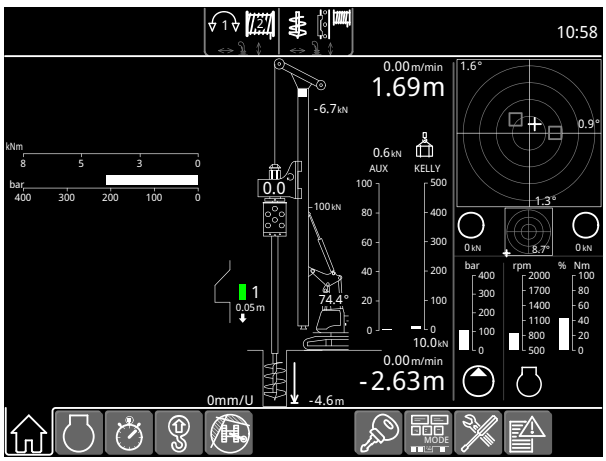




Features:
- The actual ground pressure is calculated in real time
- The maximum admissible ground pressure can be individually predefined
- The utilization is continuously calculated and displayed on the monitor in the operator's cabin
- Audible and visual warnings when the predefined values are approached

Your benefits:
- Increased safety on the jobsite due to consideration of prevailing ground conditions
- Higher operator comfort thanks to clearly displayed information and warning signals
- Prevention of critical or stressful situations before they occur
- User-friendly and intuitive handling in the operator's cabin

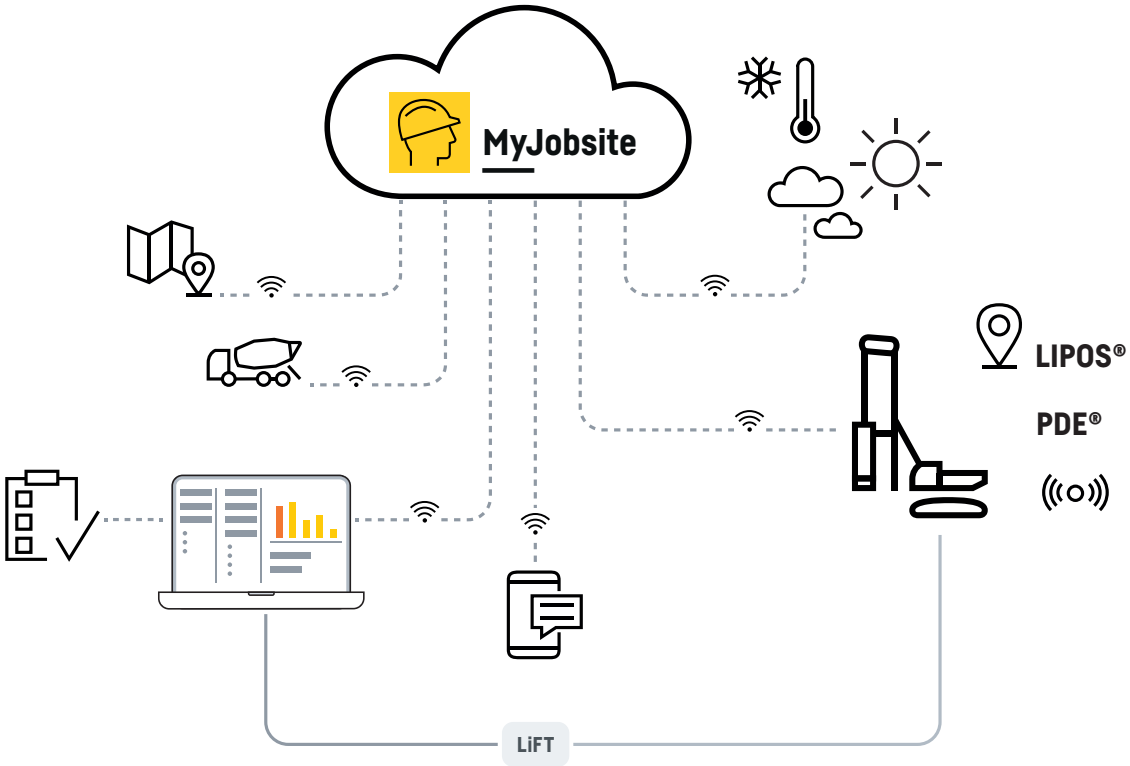
Kelly visualization



Your benefits:
- Time saving: the operator no longer needs to search for the interlocking recesses
- Higher availability: the machine needs less repair and maintenance work
- More safety: correct locking prevents damage to the Kelly bar
- Cost reduction: smooth operation results in higher performance and less wear

Digitalization in deep foundation work

As deep foundation expert, Liebherr has created a combination of the most diverse assistance systems and software solutions in order to record and evaluate complex processes and to be able to provide the corresponding evidence.



LIPOS - Liebherr positioning system
Using pre-installed components, LIPOS enables the direct integration of machine control systems from Trimble and Leica. These systems are based on modern DGNSS technology (Differential Global Navigation Satellite System) and so achieve the best possible conditions for a precise and efficient positioning of Liebherr machines and their attachment tools.

PDE
All working processes can be electronically recorded and visualized using the process data recording system PDE. The system is operated and displayed on the PDE touchscreen in the operator's cab. PDE records operating data from the Litronic control system, as well as data from external sensors.

MyJobsite
Using the MyJobsite software solution all relevant process, machine, construction site and positioning data (LIPOS) can be recorded, displayed, analysed, managed and evaluated in one central location. The collected data can be accessed via a web browser when an internet connection is active.

With the recorded PDE data, such as the driving progress of the pile per blow, the total number of blows, or the impact frequency per minute, a driving protocol is automatically generated as proof of quality directly after completion of a work process. The parameters of the driving protocol can be defined and assigned in advance. Using the templates saves a lot of time when creating the protocols.

MyJobsite is THE tool for quality control and documentation. The deluge of data, which s accrued each day from a wide variety of sources on the jobsite, can be recorded precisely and processed in an informative manner. Unpopular bureaucratic work is kept to a minimum and the amount of time required for it is significantly reduced. At the same time, the quality of administration work is maximised.

Download datasheet

Please contact us.

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