

EN

LB 30

LB 2003.07
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LIEBHERR

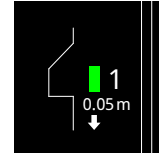
Drilling rigs



Concept and characteristics



PDE[®]
Process Data Recording



Kelly
visualization



MyJobsite



Ground
pressure
visualization



LIPOS[®]
Positioning System



Radio remote
control



LiDAT[®]
Data Transmission



Concrete
pump



The robust universal machine for a wide variety of applications

- Kelly drilling
- Continuous flight auger drilling
- Full displacement drilling
- Double rotary drilling
- Soil mixing
- 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
- 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	320 kW (429 hp) at 1700 rpm
Engine type	Liebherr D 936 A7-05
Fuel tank capacity	700 l with continuous level indicator and reserve warning
Exhaust certification	EU 2016/1628 Stage V EPA/CARB Tier 4f ECE-R.96 Power Band H non-certified emission standard



Hydraulic system

Hydraulic oil tank capacity	600 l
Max. working pressure	385 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
Drive speed	0-1.3 km/h
Track force	665 kN
Grousers	width 800 mm (option 700 mm)



Swing gear

Drive system	with fixed axial piston hydraulic motors, planetary gearbox, pinion
Swing ring	roller bearing with external teeth
Brake	hydraulically released, spring-loaded multi-disc holding brake
Swing speed	0-3.75 rpm continuously variable



Kelly winch with freewheeling

Line pull effective	230 kN (1st layer)
Rope diameter	28 mm
Rope speed	0-95 m/min



Auxiliary winch

Line pull effective	80 kN (1st layer)
Rope diameter	20 mm
Rope speed	0-82.5 m/min



Crowd system

Crowd force	320/320 kN (push/pull)
Line pull effective	160 kN (1st layer)
Rope diameter	24 mm
Travel with standard leader between mechanical limit stops	17.3 m
Travel with Ultra-Low-Head leader and short leader lower part	4.6 m
Rope speed	0-88 m/min



Noise measurement data and vibration

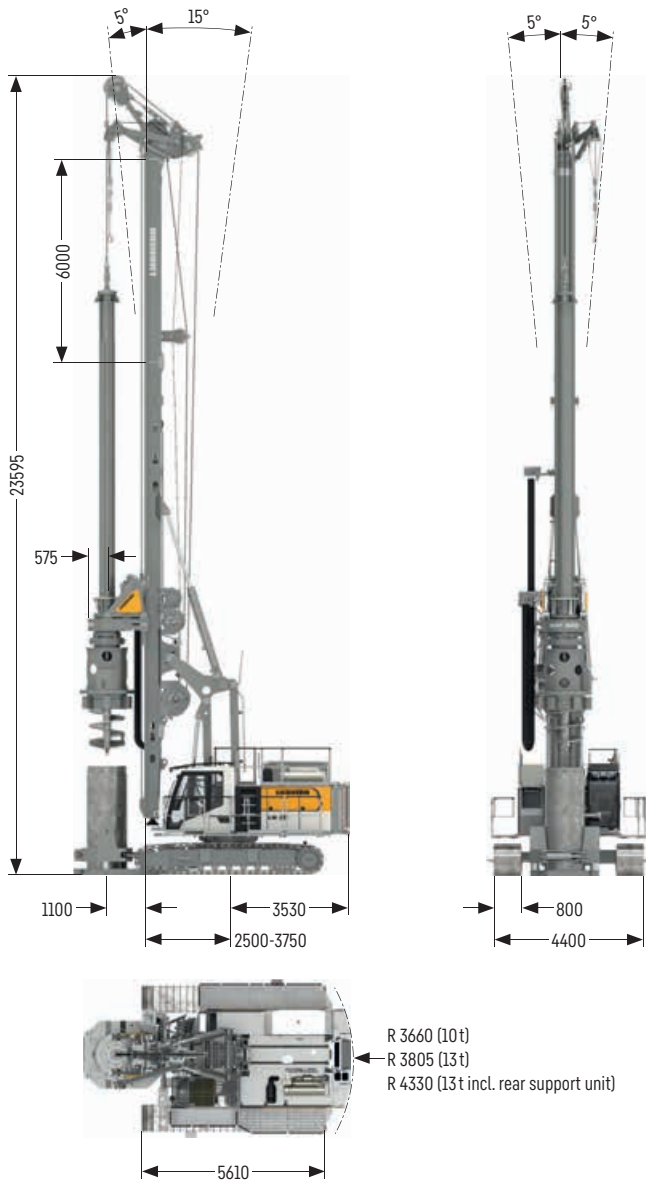
Noise emission	according to 2000/14/EC directive	
Emission sound pressure level L_{PA}	77.0 dB(A)	(in the cabin)
Guaranteed sound power level L_{WA}	108 dB(A)	(of the machine)
Vibration transmitted to the machine operator	< 2.5 m/s ² (to the hand-arm system)	
	< 0.5 m/s ² (to the whole body)	
Eco-Silent Mode (option)		
Guaranteed sound power level L_{WA}	-3 dB(A)	(of the machine)

Remarks:

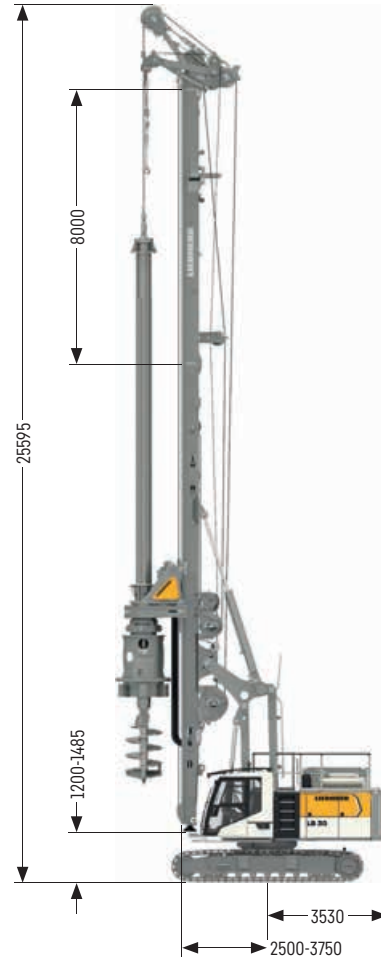
- Illustrations showing the types of application (e.g. Kelly drilling, continuous flight auger drilling etc.) are examples only.
- Weights and transport dimensions can vary with the final configuration of the machine. The figures in this brochure may include options which are not within the standard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

Dimensions

Standard



Folding leader



Operating weights

Total weight with 700 mm 3-web grousers	t 77.8
Total weight with 800 mm 3-web grousers	t 78.2

The operating weight includes the basic machine LB 30 with rotary and Kelly bar 28/3/30, 10t counterweight and equipment for casing oscillator.

Operating weights

Total weight with 700 mm 3-web grousers	t 79.8
Total weight with 800 mm 3-web grousers	t 80.2

The operating weight includes the basic machine LB 30 with rotary, Kelly bar 28/4/42 and 10t counterweight. Equipment for casing oscillator not included.

Folding leader

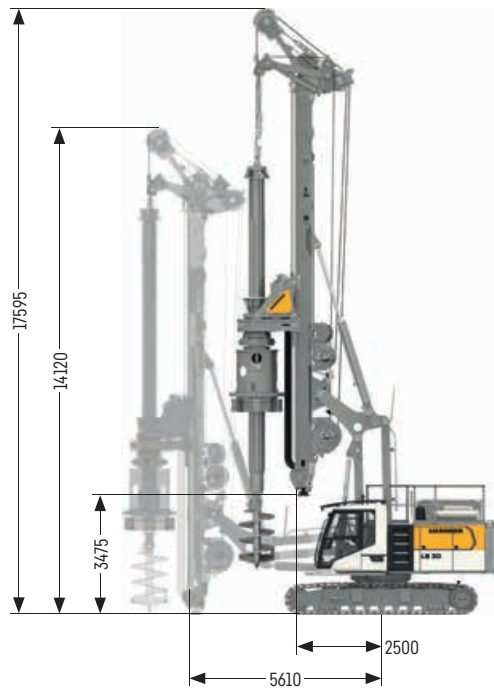


Operating weights

Total weight with 700 mm 3-web grousers	t 83.9
Total weight with 800 mm 3-web grousers	t 84.3

The operating weight includes the basic machine LB 30 with rotary, Kelly bar 28/4/42 and 13 t counterweight. Equipment for casing oscillator not included.

Low Head



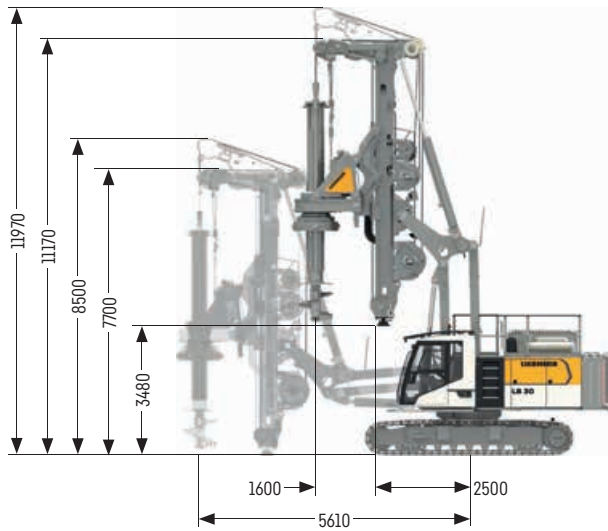
Operating weights

Total weight with 700 mm 3-web grousers	t 73.2
Total weight with 800 mm 3-web grousers	t 73.6

The operating weight includes the basic machine LB 30 with rotary, Kelly bar 28/3/24 and 10 t counterweight.

The line pull of the Kelly winch is reduced to 160 kN when working at a radius exceeding 3750 mm.

Ultra Low Head

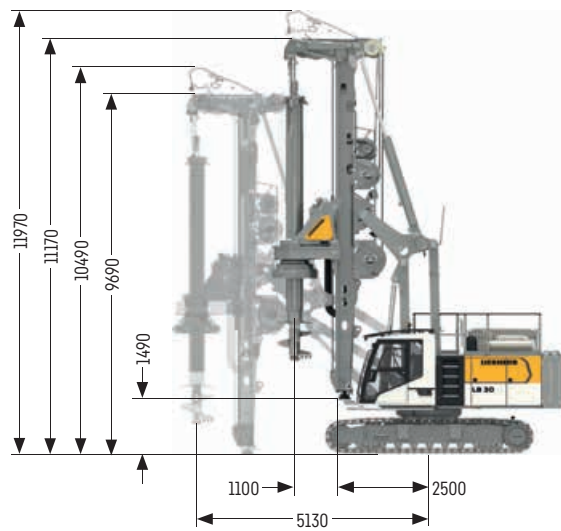


Operating weights

Total weight with 700 mm 3-web grousers	t 79.4
Total weight with 800 mm 3-web grousers	t 79.8

The operating weight includes the basic machine LB 30 with rotary, Kelly bar 28(470)/5/24 and 18 t counterweight. Equipment for casing oscillator not included.

The line pull of the Kelly winch is reduced to 160 kN when working at a radius exceeding 3750 mm.



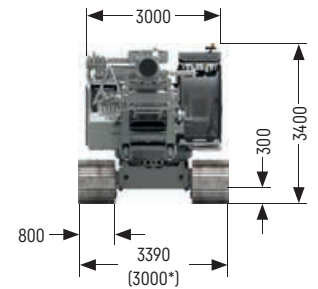
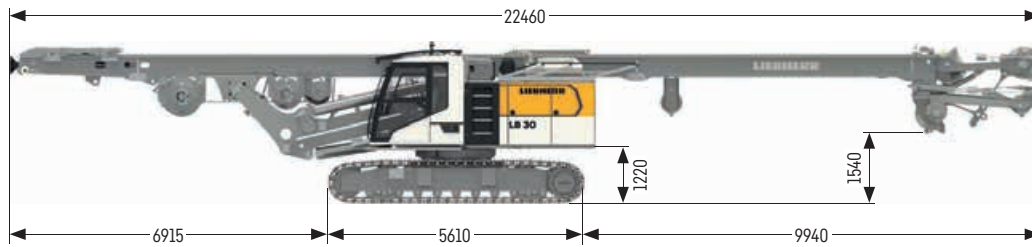
Operating weights

Total weight with 700 mm 3-web grousers	t 78.8
Total weight with 800 mm 3-web grousers	t 79.2

The operating weight includes the basic machine LB 30 with rotary, Kelly bar 28(470)/5/24 and 18 t counterweight. Equipment for casing oscillator not included.

The line pull of the Kelly winch is reduced to 160 kN when working at a radius exceeding 3750 mm.

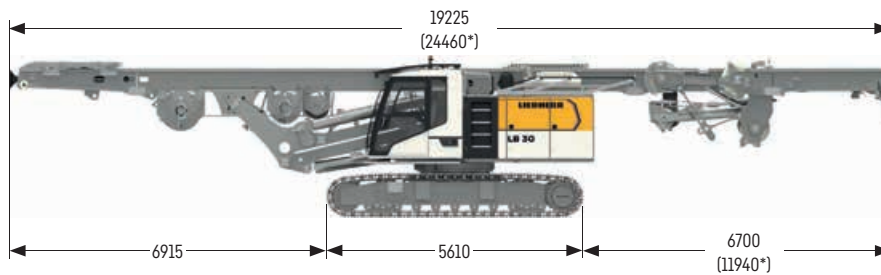
Transport dimensions and weights



Standard leader (6 m leader upper part)

includes the basic machine (fully tanked and ready for operation) with leader, t 52.6
without attachments (such as rotary, Kelly bar etc.), without counterweight
and without adapter for casing oscillator

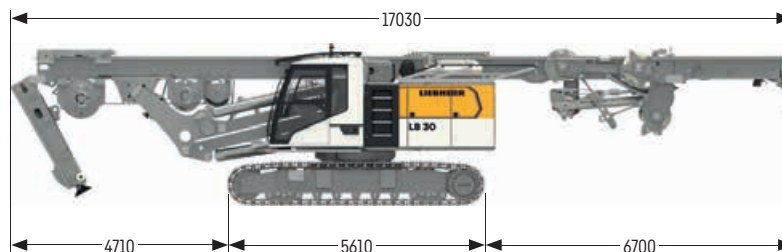
* transport width with 700mm grousers



Folding leader (8 m leader upper part)

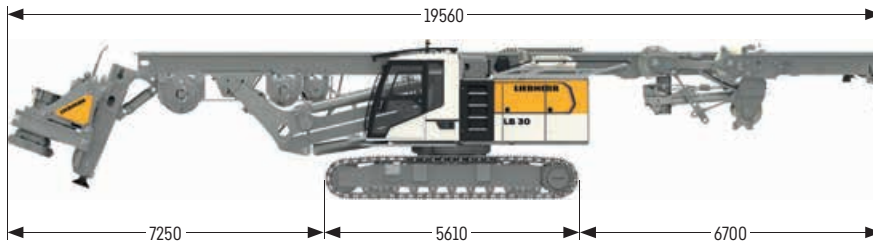
includes the basic machine (fully tanked and ready for operation) with leader, t 53.5
without attachments (such as rotary, Kelly bar etc.), without counterweight
and without adapter for casing oscillator

* Transport length leader not folded



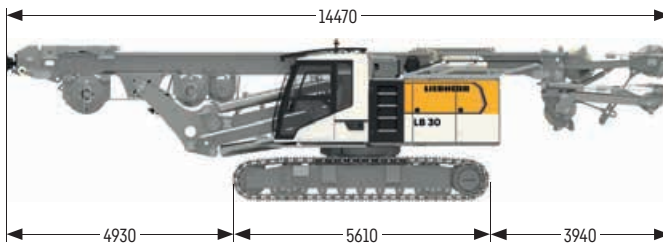
Leader lower and upper part folded

includes the basic machine (fully tanked and ready for operation) with leader, t 53.5
without attachments (such as rotary, Kelly bar etc.), without counterweight
and without adapter for casing oscillator



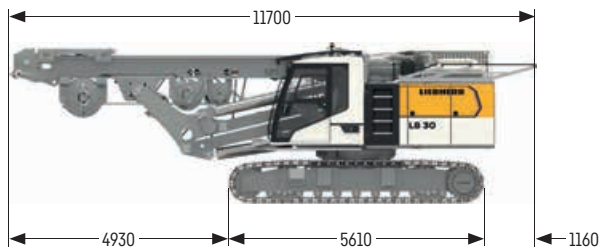
Leader lower and upper part folded (with BAT)

includes the basic machine (fully tanked and ready for operation) with leader, t 60.3
 BAT 300, without counterweight and without adapter for casing oscillator



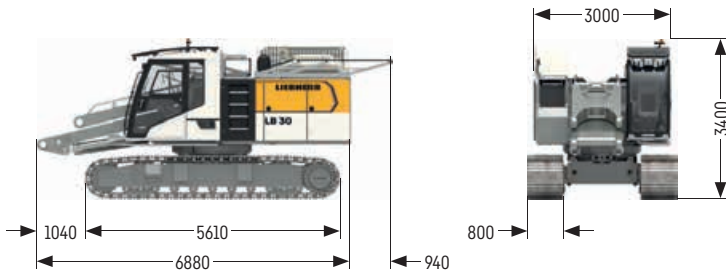
Low Head

includes the basic machine (fully tanked and ready for operation) with leader, t 50.3
 without attachments (such as rotary, Kelly bar etc.), without counterweight
 and without adapter for casing oscillator



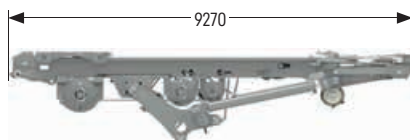
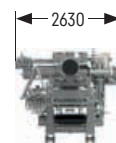
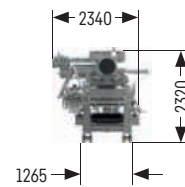
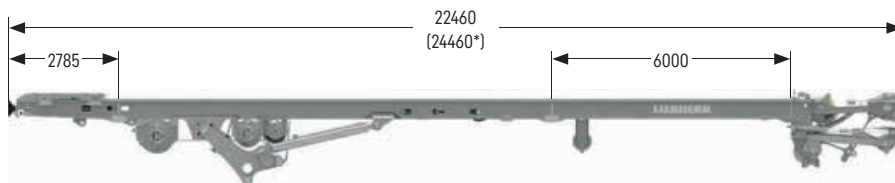
Ultra Low Head

includes the basic machine (fully tanked and ready for operation) with leader, t 48.0
 without attachments (such as rotary, Kelly bar etc.), without counterweight
 and without adapter for casing oscillator



Basic machine

with crawler side frames, without counterweight and without adapter for casing oscillator t 35.1



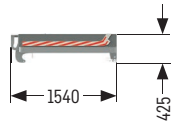
Leader versions

Standard leader	t 17.5
Folding leader	t 18.4
Ultra Low Head	t 12.9
Standard leader lower part	t 0.7
6 m leader extension	t 1.5
8 m leader extension	t 2.4
Leader top	t 1.7
Short leader lower part	t 0.3

* Transport length folding leader

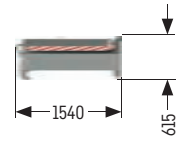
Options

Adapter for casing oscillator	t 0.8
Concrete supply line	t 0.6
All round platform with railings	t 0.4



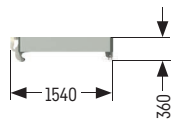
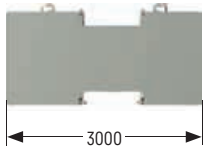
Counterweight

Weight t 5.0



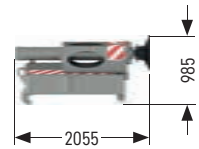
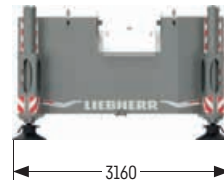
Counterweight

Weight t 8.0



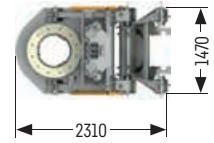
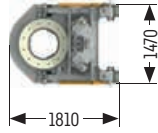
Intermediate slab

Weight t 5.0



Counterweight with rear support unit

Weight t 8.0

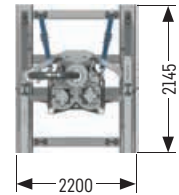
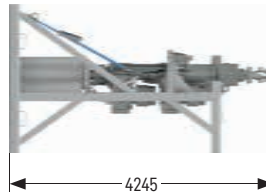
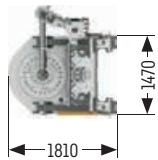
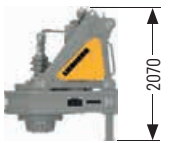


BAT 300

Transport weight t 6.5

BAT 300 with adapter for drilling axis 1600 mm

Transport weight t 7.6

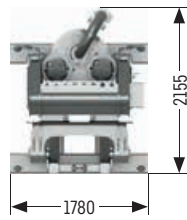
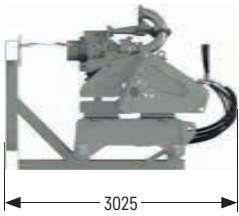


MA 180

Transport weight t 5.9

DBA 180

Transport weight t 8.1



DHR 110

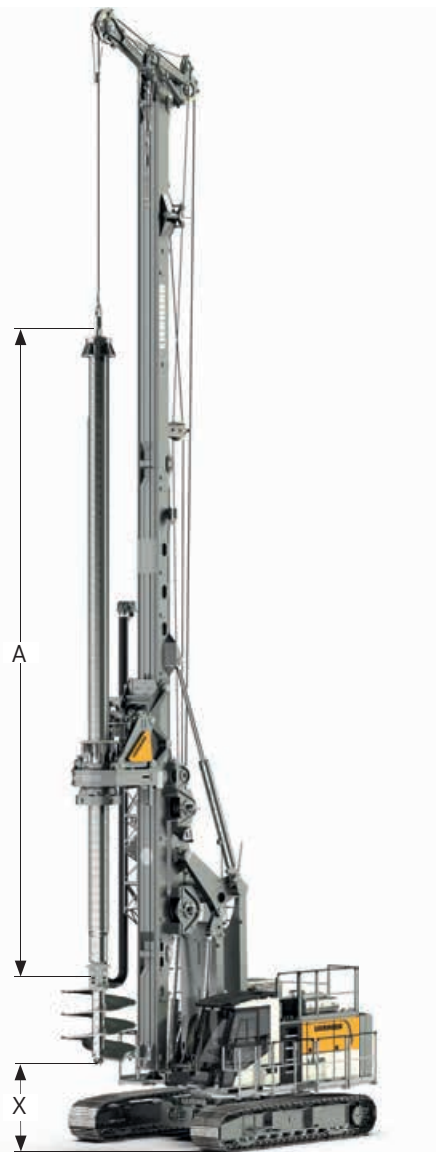
Transport weight t 5.4

Kelly drilling

Standard



Folding leader (large drilling axis)



Performance data

Rotary drive - torque	kNm	297	
Rotary drive - speed	rpm	43	
		Drilling axis 1100 mm	Drilling axis 1600 mm
Max. drilling diameter cased*	mm	1500	2500
Max. drilling diameter uncased	mm	1900	2900
Max. drilling diameter uncased with short leader lower part	mm	2800	3400

Above applications are sample illustrations. Other drilling diameters available on request.

* Depending on casing driver configuration.

Drilling depths with Low Head, standard and folding leader

Technical data Kelly bars

Kelly bars			Drilling depths											
Model	Length A [mm]	Weight [t]	Low Head				Standard				Folding leader			
			X [m]		Depth [m]		X [m]		Depth [m]		X [m]		Depth [m]	
			1100	1600	1100	1600	1100	1600	1100	1600	1100	1600	1100	1600
28/3/24	9880	5.3	3.1 ¹	2.6 ¹	22.6 ¹	23.1 ¹	9.1	8.6	22.6	23.1	11.1	10.6	22.6	23.1
28/3/27	10880	5.8	2.1 ¹	1.6 ¹	25.6 ¹	26.1 ¹	8.1	7.6	25.6	26.1	10.1	9.6	25.6	26.1
28/3/30	12040	6.4	1.0 ^{1/2}	0.5 ^{1/2}	28.6 ^{1/2}	29.1 ^{1/2}	7.0	6.5	28.6	29.1	9.0	8.5	28.6	29.1
28/3/33	12880	6.7	-	-	-	-	6.1	5.6	31.6	32.1	8.1	7.6	31.6	32.1
28/3/36	14040	7.3	-	-	-	-	5.0	4.5	34.6	35.1	7.0	6.5	34.6	35.1
28/4/36	11450	7.7	1.6 ¹	1.1 ¹	34.7 ¹	35.1 ¹	7.6	7.1	34.7	35.1	9.6	9.1	34.7	35.1
28/4/42	12950	8.7	-	-	-	-	6.1	5.6	40.6	41.1	8.1	7.6	40.6	41.1
28/4/48	14450	9.6	-	-	-	-	4.6	4.1	46.7	47.1	6.6	6.1	46.7	47.1
28/4/54	15950	10.6	-	-	-	-	3.1 ¹	2.6 ¹	52.7 ¹	53.1 ¹	5.1	4.6	52.7	53.1
28/4/60	17450	11.6	-	-	-	-	1.6 ¹	1.1 ¹	58.7 ¹	59.1 ¹	3.6	3.1	58.7	59.1
28/4/66	18950	11.7	-	-	-	-	-	-	-	-	2.1 ¹	1.6 ¹	64.8 ¹	65.3 ¹
28/4/72	20450	12.5	-	-	-	-	-	-	-	-	0.6 ^{1/2}	-	70.8 ^{1/2}	-

¹ When using a short leader lower part an assist crane is required for installation.

² Installation only possible using auxiliary equipment

Drilling axis 1100 mm

Drilling axis 1600 mm

Other Kelly bars available on request.

When using a casing oscillator (standard 118/120 KL), value X must be reduced by 1500 mm.

Other casing oscillators available on request.

When using a Kelly bar guide, value X has to be reduced by 550 mm.

When using a short leader lower part the drilling depth is reduced by 2000 mm for a drilling axis of 1100 mm, and by 2500 mm for a drilling axis of 1600 mm.

Length of drilling tool 1900 mm

Drilling depths with Ultra Low Head

Technical data Kelly bars

Kelly bars			Drilling depths with short leader lower part							
Model	Length A [mm]	Weight [t]	Leader top horizontal				Leader top raised			
			X [m]		Depth [m]		X [m]		Depth [m]	
			1100	1600	1100	1600	1100	1600	1100	1600
28(470)/5/14	4400	3.5	5.1	5.1	9.9	9.7	5.9	5.9	9.9	9.7
28(470)/5/18	5200	4.2	4.3	4.3	13.9	13.7	5.1	5.1	13.9	13.7
28(470)/5/20	5600	4.6	3.9 ¹	3.9	15.9 ¹	15.7	4.7	4.7	15.9	15.7
28(470)/5/24	6480	5.4	3.0 ¹	3.0 ¹	20.3 ¹	20.1 ¹	3.8 ¹	3.8	20.3 ¹	20.1
28(470)/5/26	6800	5.7	2.7 ¹	2.7 ¹	21.9 ¹	21.7 ¹	3.5 ¹	3.5	21.9 ¹	21.7
28(470)/5/30	7600	6.5	1.9 ²	1.9 ¹	25.9 ²	25.7 ¹	2.7 ²	2.7 ¹	25.9 ²	25.7 ¹
			Drilling depths with standard leader lower part							
28(470)/5/14	4400	3.5	5.1	5.1	11.9	12.2	5.9	5.9	11.9	12.2
28(470)/5/18	5200	4.2	4.3	4.3	15.9	16.2	5.1	5.1	15.9	16.2
28(470)/5/20	5600	4.6	3.9	3.9	17.9	18.2	4.7	4.7	17.9	18.2
28(470)/5/24	6480	5.4	3.0	3.0	23.3	22.6	3.8	3.8	23.3	22.6
28(470)/5/26	6800	5.7	2.7	2.7	23.9	24.2	3.5	3.5	23.9	24.2
28(470)/5/30	7600	6.5	1.9 ¹	1.9	27.9 ¹	28.2	2.7	2.7	27.9	28.2

¹ Installation of Kelly bar with raised leader top

² Installation only possible using auxiliary equipment

Drilling axis 1100 mm

Drilling axis 1600 mm

Other Kelly bars available on request.

Values indicated for minimum radius

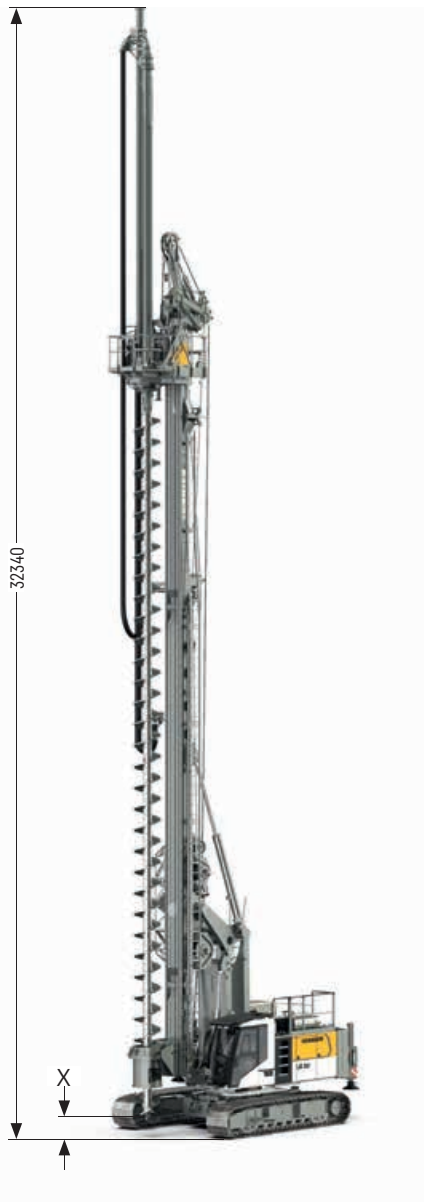
Length of drilling tool 710 mm

Special adapter on BAT for Kelly bar diameter 470 mm

If a standard BAT adapter for Kelly bar diameter 419 mm is used, Kelly bars and drilling depths on request

Continuous flight auger drilling

Folding leader



Performance data

Rotary drive - torque	kNm	270		
Rotary drive - speed	rpm	43		
Max. drilling diameter*	mm	1000		
		Low Head	Standard	Folding leader
Drilling depth without Kelly extension	m	10.0	16.0	18.0
Drilling depth with 8 m Kelly extension	m	18.0	24.0	26.0
Max. pull force	kN	780	780	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 the X value of 460mm (see above illustration).

* Other drilling diameters available on request

Full displacement drilling

Folding leader



Performance data

Rotary drive - torque	kNm	270		
Rotary drive - speed	rpm	43		
Max. drilling diameter*	mm	600		
		Low Head	Standard	Folding leader
Drilling depth without Kelly extension	m	10.6	16.6	18.6
Drilling depth with 8 m Kelly extension	m	18.6	24.6	26.6
Max. pull force	kN	780	780	780

Above drilling depths are valid for the use of standard tools and for an X value of 650 mm (see above illustration).

* Other drilling diameters available on request

Double rotary drilling

DBA 180



Performance data

Rotary drive I - torque	kNm	0-180		
Rotary drive I - speed	rpm	0-17		
Rotary drive II - torque	kNm	0-109		
Rotary drive II - speed	rpm	0-28		
Max. drilling diameter*	mm	750		
			Low Head	Standard
Drilling depth**	m	10.7	16.7	18.7
Max. pull force	kN	780	780	780

Above drilling depths are valid for the use of standard tools and for an X value of 530 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 on request

** When using a protective hose, the maximum drilling depth has to be reduced by 875 mm.

Soil mixing

MA 180 / BAT 300



Performance data MA 180

Rotary drive - torque	kNm	0-165		
Rotary drive - speed	rpm	0-80		
Max. mixing diameter*	mm	1500		
		Low Head	Standard	Folding leader
Mixing depth	m	11.0	17.0	19.0
Mixing depth with 8 m Kelly extension	m	19.0	25.0	27.0
Max. pull force	kN	780	780	780

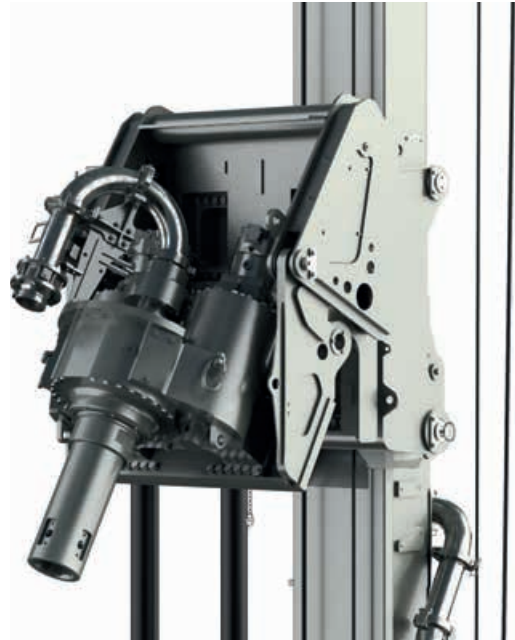
Performance data BAT 300

Rotary drive - torque	kNm	270		
Rotary drive - speed	rpm	43		
Max. mixing diameter*	mm	1900		
		Low Head	Standard	Folding leader
Mixing depth	m	10.6	16.6	18.6
Mixing depth with 8 m Kelly extension	m	18.6	24.6	26.6
Max. pull force	kN	780	780	780

Above mixing depths are valid for the use of standard tools and for an X value of 300 mm for MA 180, and 650 mm for BAT 300 (see above illustration).

* Other mixing diameters available on request

Down-the-hole drilling



Performance data DHR 110

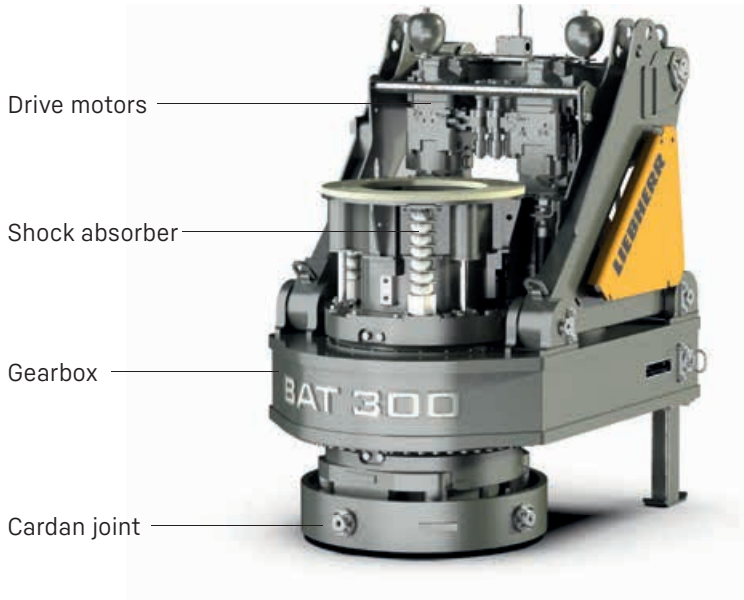
Rotary drive - torque	kNm	106		
Rotary drive - speed	rpm	41		
		Low Head	Standard	Folding leader
Drilling depth	m	10.7	16.7	18.7
Folding function	°	0-90	0-90	0-90
Max. pull force	kN	600*/350**	600*/350**	600*/350**

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 mode

** 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

Automatic gearbox for best operating comfort:

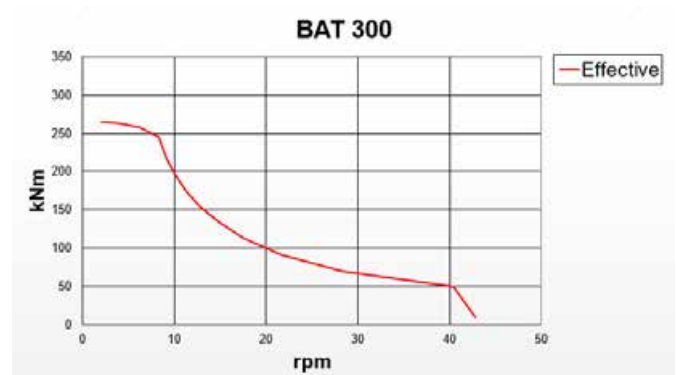
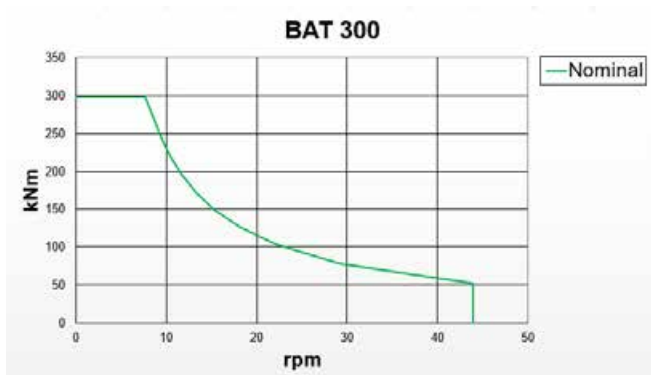
- No stopping required to change gears
- No interruption of the drilling process
- Continuous optimization of speed

Highest availability through easy set-up:

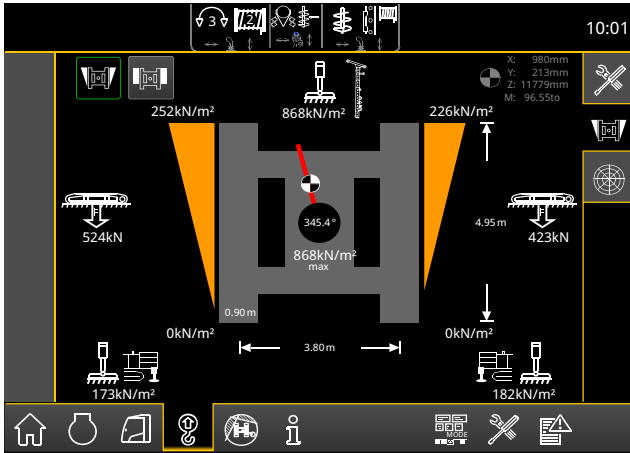
- No mechanical shift gearbox
- Low maintenance requirements

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

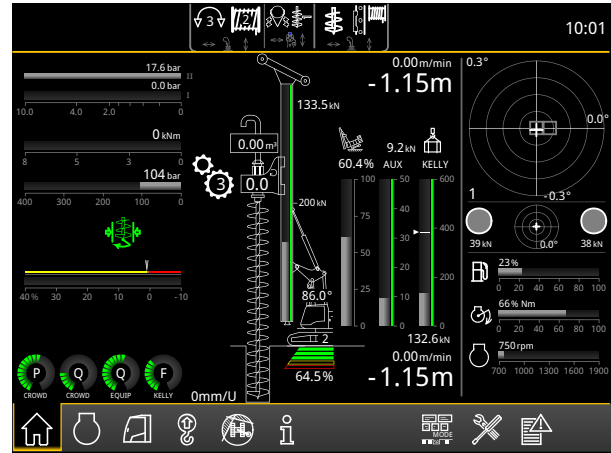


Ground pressure visualization



Features:

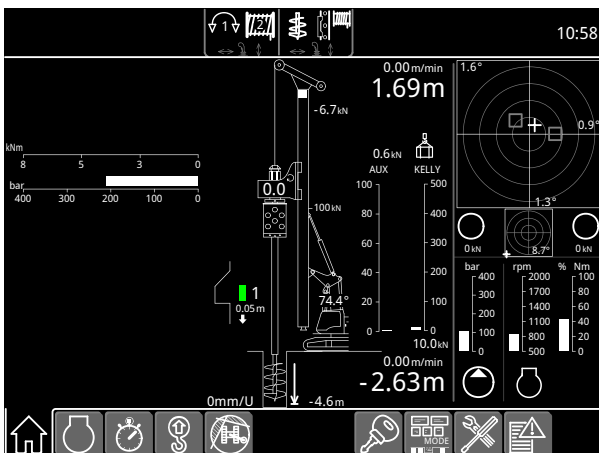
- The actual ground pressure is calculated in real time
- The maximum admissible ground pressure can be individually predefined
- The utilization is continuously calculated and displayed on the monitor in the operator's cabin
- Audible and visual warnings when the predefined values are approached



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

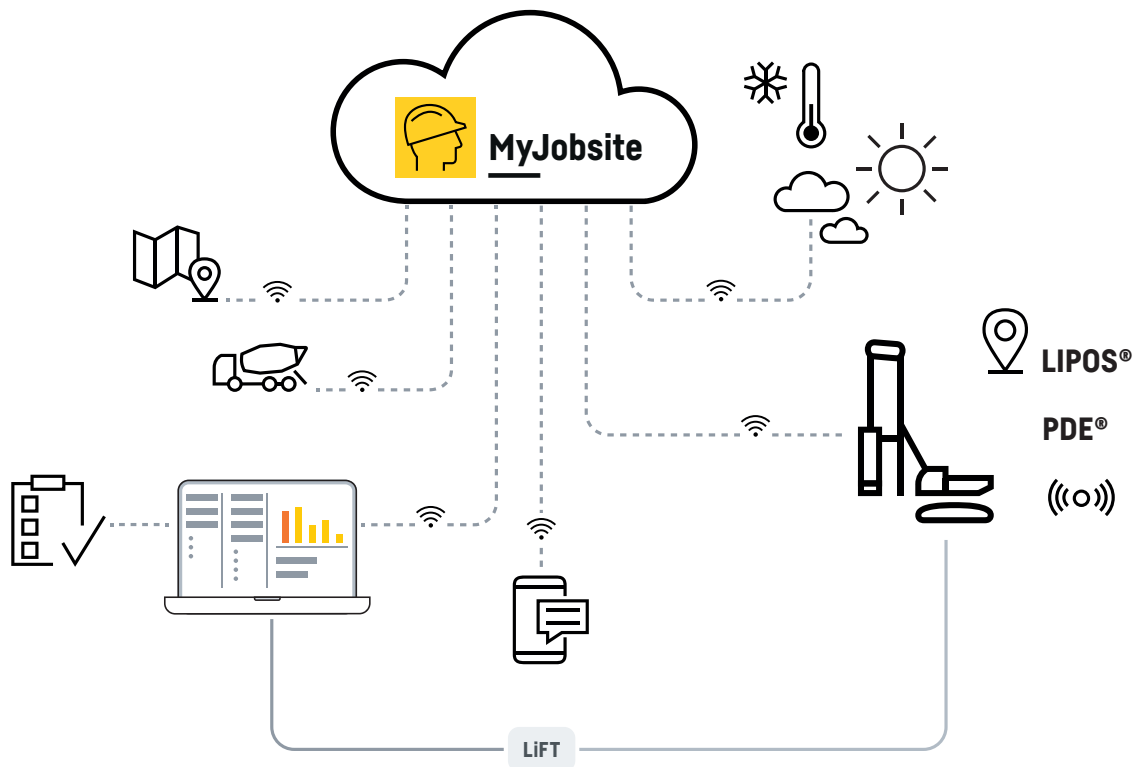


Your benefits:

- 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 is 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



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