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# LB 30 unplugged

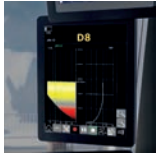
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LB 2103.07  
[www.liebherr.com](http://www.liebherr.com)

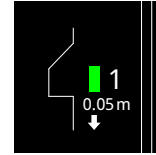
## LIEBHERR

Drilling rigs

# Concept and characteristics



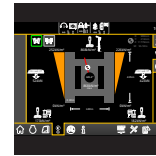
**PDE**<sup>®</sup>  
Process Data Recording



Kelly  
Visualization



**MyJobsite**



Ground  
Pressure  
Visualization



**LIPOS**<sup>®</sup>  
Positioning System



Radio remote  
control



**LiDAT**<sup>®</sup>  
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

## Assistance systems

- Cruise Control for all main functions
- Joystick control 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

## Drive system

Max. drive power	390 kW
Battery type	High Performance Battery System
Technology	Li-Ion NMC (nickel manganese cobalt)
Max. charging power	40 kW (CEE socket 63 A / 400 V AC) 20 kW (CEE socket 32 A / 400 V AC)
Option	80 kW (CEE socket 125 A / 400 V AC)
Mains voltage	400 V AC (3 phase + N + PE)
Capacity	standard 4 h*

\* in normal operation

## Hydraulic system

Hydraulic pumps	double axial displacement pump in open loop hydraulic system allows all functions to be operated simultaneously; automatic working pressure cut-off to minimize peak pressure
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

## Swing gear

Drive system	with fixed axial piston hydraulic motor, 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
Speed control	both swing modes are possible - speed control or free swing for speed control: a multi-disc holding brake locks automatically at zero swing motion

### 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.

## Kelly winch with freewheeling

Line pull effective	230 kN (1st layer)
Rope diameter	26 mm
Rope speed	0-80 m/min

## Auxiliary winch

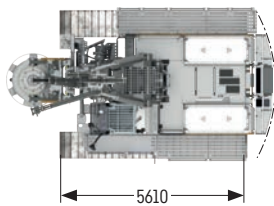
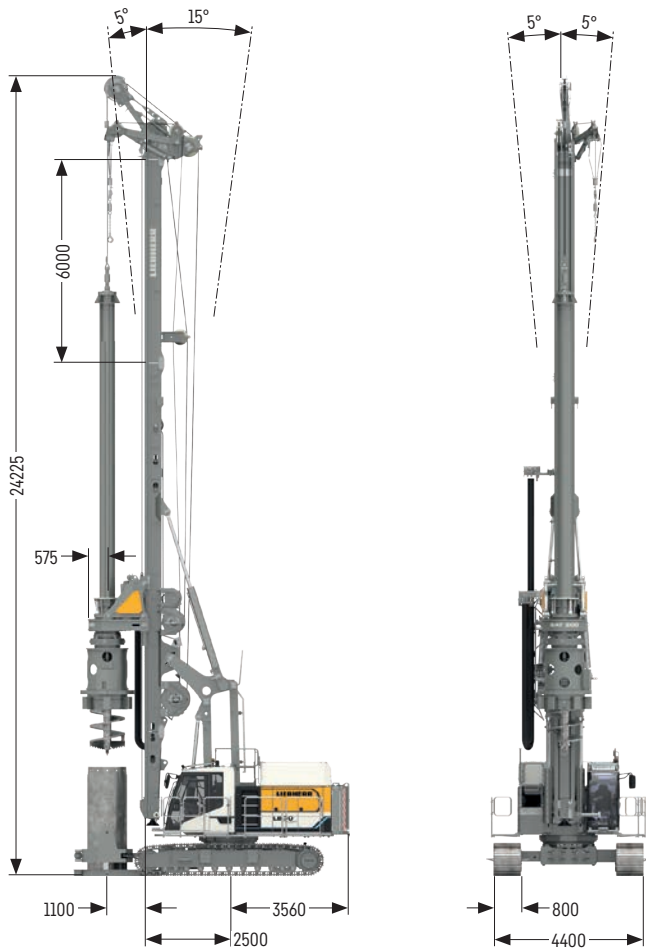
Line pull effective	80 kN (1st layer)
Rope diameter	20 mm
Rope speed	0-82.5 m/min

## 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
Rope speed	0-88 m/min

# Dimensions

## Standard



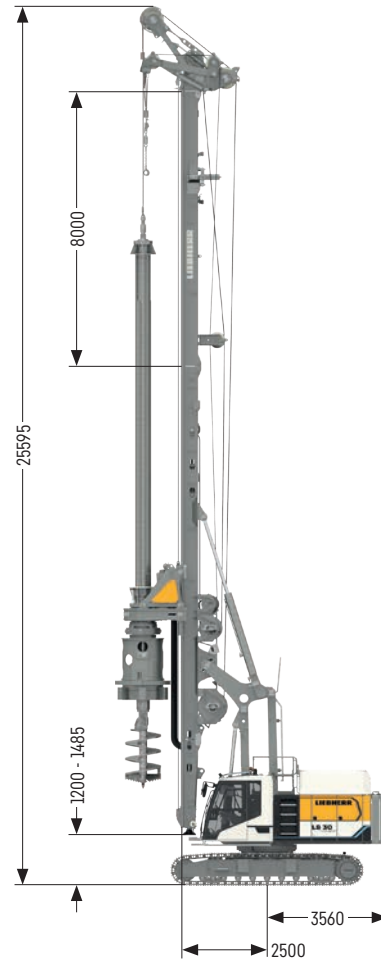
- ← R 3600 (8 t)
- ← R 3660 (10 t)
- ← R 4330 (13 t incl. rear support unit)

### Operating weight

Total weight with 700 mm 3-web grousers	t 79.9
Total weight with 800 mm 3-web grousers	t 80.1

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

## Folding leader

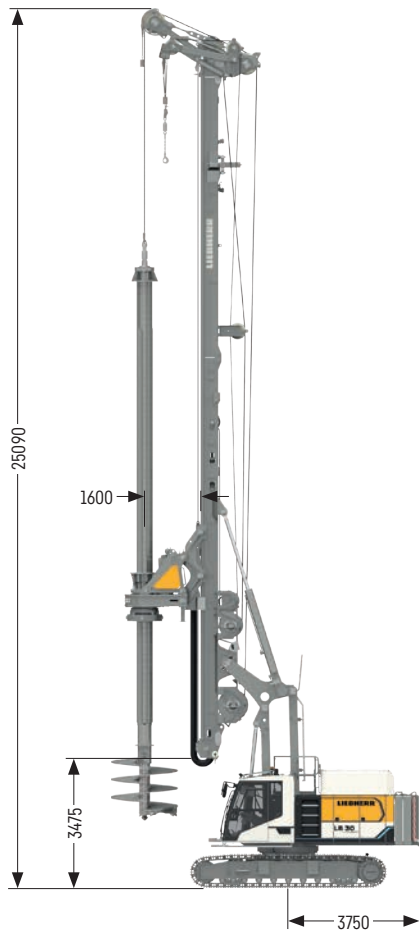


### Operating weight

Total weight with 700 mm 3-web grousers	t 81.7
Total weight with 800 mm 3-web grousers	t 82.1

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

## Folding leader

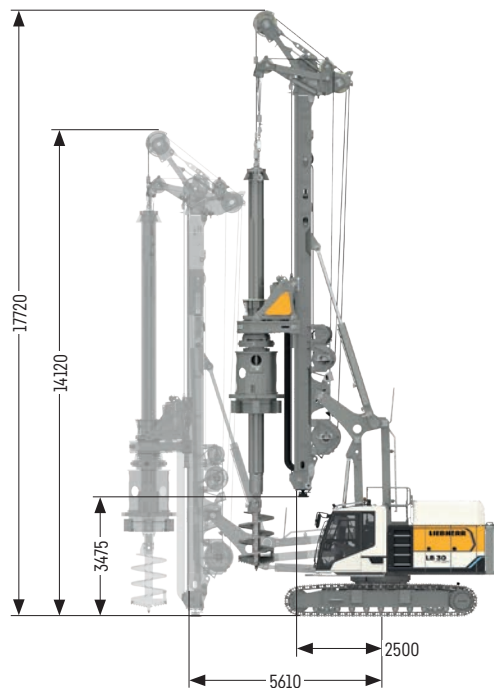


### Operating weight

Total weight with 700 mm 3-web grousers	t 85.1
Total weight with 800 mm 3-web grousers	t 85.5

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

## Low Head

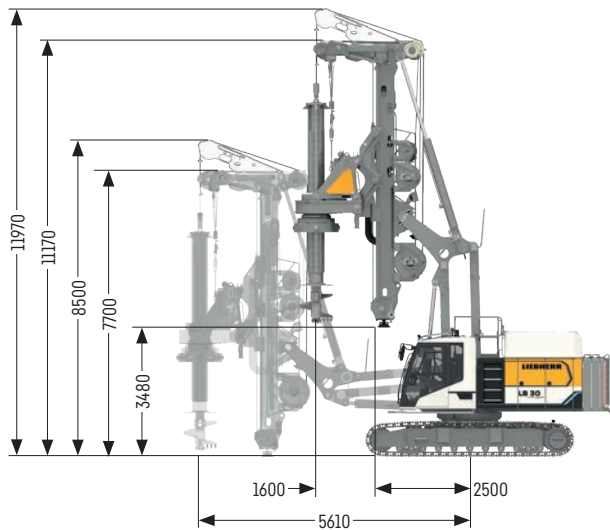


### Operating weight

Total weight with 700 mm 3-web grousers	t 75.5
Total weight with 800 mm 3-web grousers	t 75.9

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/3/24 and 10 t counterweight. Equipment for casing oscillator not included. The line pull of the Kelly winch is reduced to 100 kN when working at a radius exceeding 3750 mm.

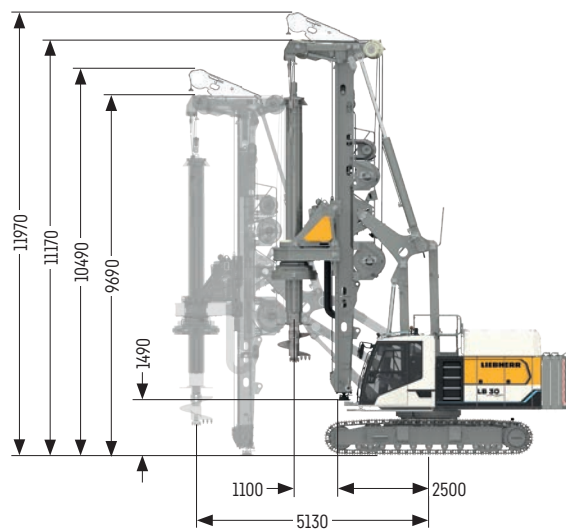
# Ultra Low Head



## Operating weight

Total weight with 700 mm 3-web grousers	t 80.9
Total weight with 800 mm 3-web grousers	t 81.3

The operating weight includes the basic machine LB 30 unplugged with rotary and Kelly bar 28/3/30, 18 t counterweight and equipment for casing oscillator.



## Operating weight

Total weight with 700 mm 3-web grousers	t 80.5
Total weight with 800 mm 3-web grousers	t 80.9

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/4/42 and 18 t counterweight. Equipment for casing oscillator not included.



# Local zero emission

## Emission-free

The new machines with alternative electro-hydraulic drive have a very low noise level and are also emission-free. That is a huge advantage in areas sensitive to noise and also for the people working on the jobsite.

## Operation

The LB 30 unplugged can be operated both connected to the power supply (plugged in) or powered by battery (unplugged).

## Sustainability

Liebherr is aware of its responsibility towards society and the environment and, with the unplugged series, strives for the best possible combination of environmental sustainability, customer benefit and efficiency.







### **Plugged in**

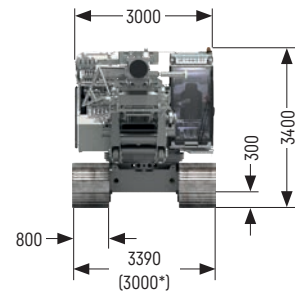
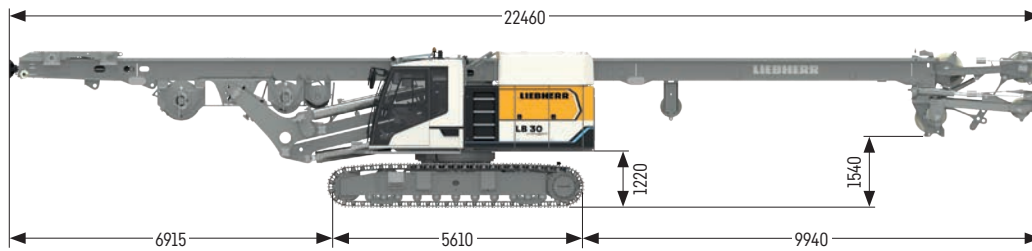
When connected to the power supply, there are no restrictions in performance and application of the machine when compared to the conventional version with diesel engine. The battery is constantly charged when connected to the power supply and therefore always provides sufficient energy.



### **Unplugged**

In Kelly application, the battery is designed for an operating time of 4 hours. It can be simply recharged using a conventional jobsite electric supply (32 A, 63 A). Using a 125 A supply, the battery can be fast-charged in barely 5 hours.

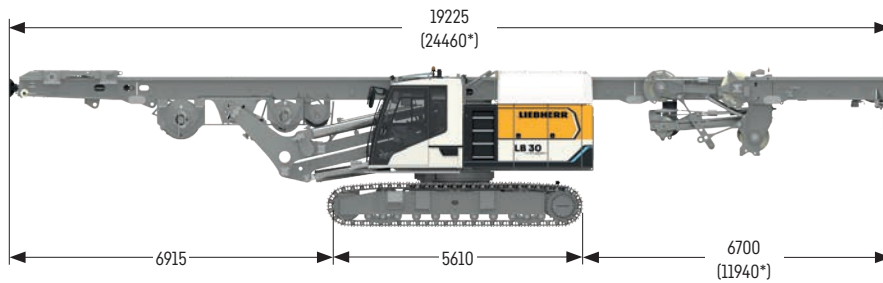
# Transport dimensions and weights



## Standard leader (6 m leader upper part)

includes the basic machine (ready for operation) with leader, without attachments (such as rotary, Kelly bar etc.), without counterweight and without adapter for casing oscillator t 54.5

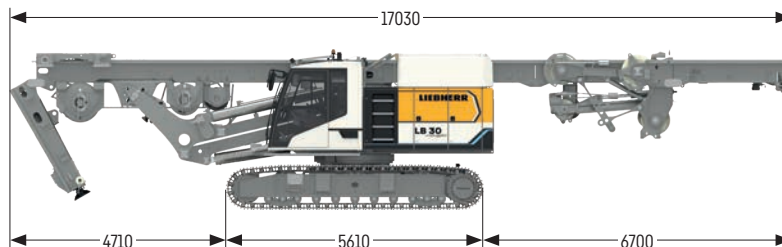
\* transport width with 700 mm grousers



## Folding leader (8 m leader upper part)

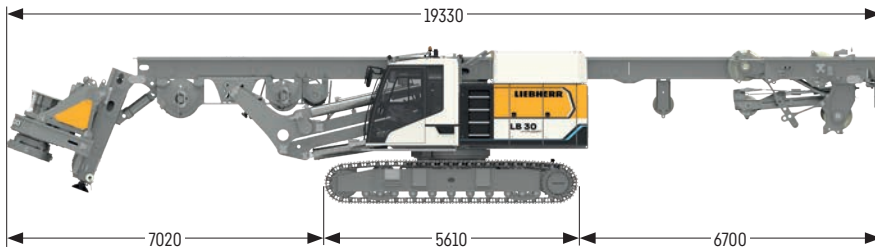
includes the basic machine (ready for operation) with leader, without attachments (such as rotary, Kelly bar etc.), without counterweight and without adapter for casing oscillator t 55.4

\* Transport length leader not folded



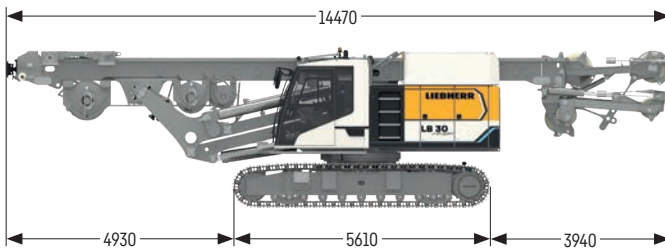
## Leader lower and upper part folded

includes the basic machine (ready for operation) with leader, without attachments (such as rotary, Kelly bar etc.), without counterweight and without adapter for casing oscillator t 55.4



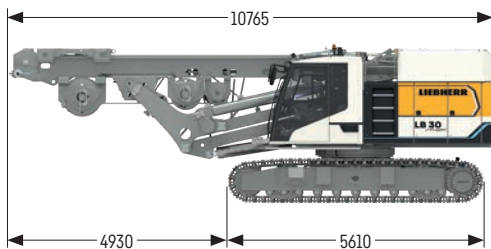
**Leader lower and upper part folded (with BAT)**

includes the basic machine (ready for operation) with leader, BAT 300, t 61.9  
 without counterweight and without adapter for casing oscillator



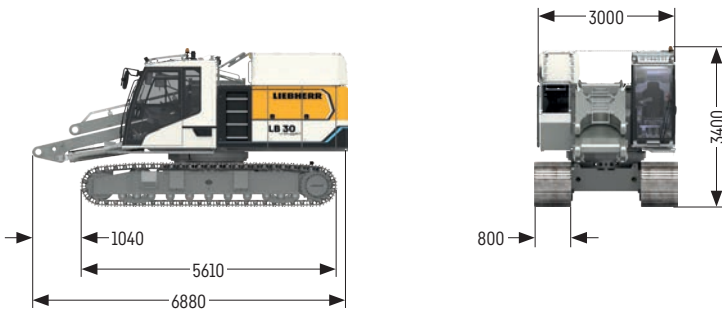
**Low Head**

includes the basic machine (ready for operation) with leader, without attach- t 53.2  
 ments (such as rotary, Kelly bar etc.), without counterweight and without  
 adapter for casing oscillator



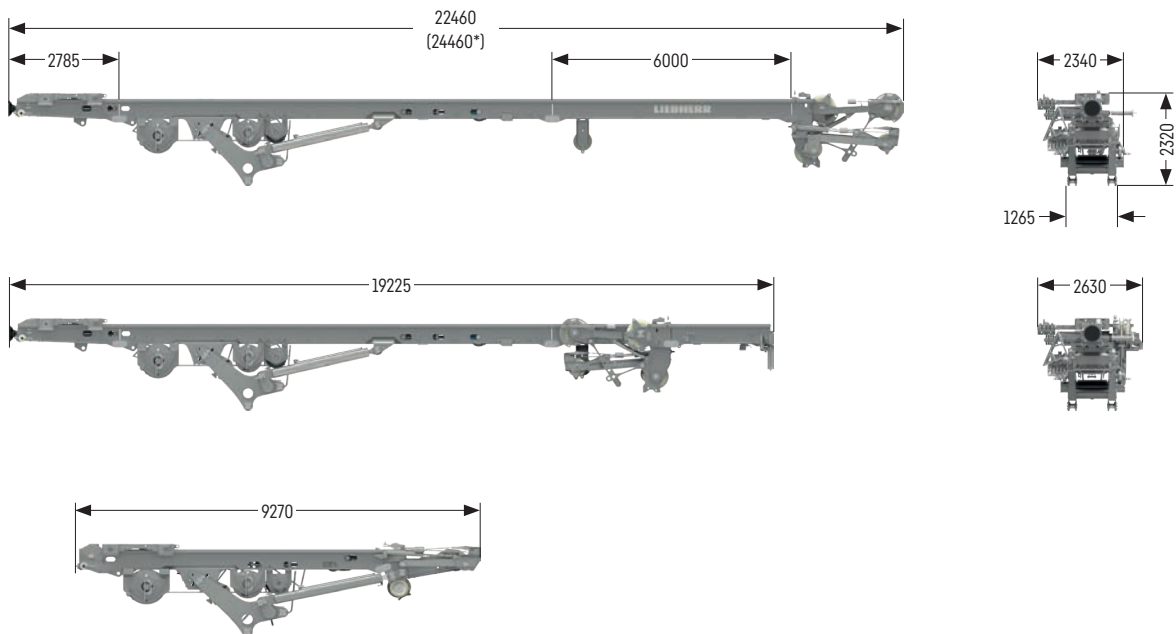
**Ultra Low Head**

includes the basic machine (ready for operation) with leader, without attach- t 51.3  
 ments (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 37.5



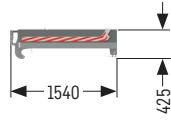
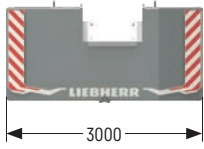
### Leader versions

Standard leader	t 17.8
Folding leader	t 18.7
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

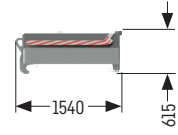
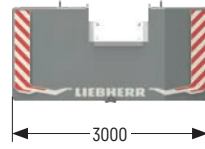
### Options

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



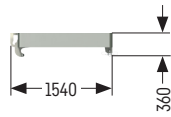
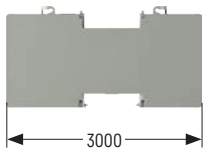
**Counterweight**

Weight t 5.0



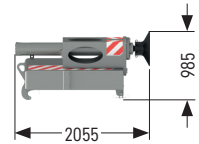
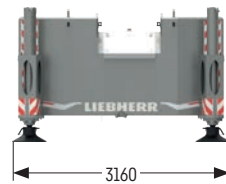
**Counterweight**

Weight t 8.0



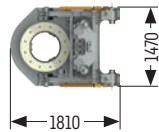
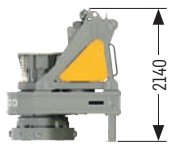
**Intermediate slab**

Weight t 5.0



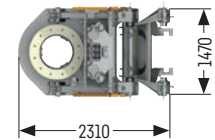
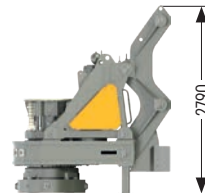
**Counterweight with rear support unit**

Weight t 8.0



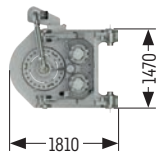
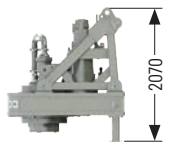
**BAT 300**

Transport weight t 6.5



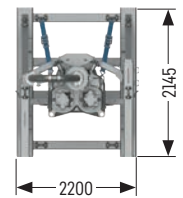
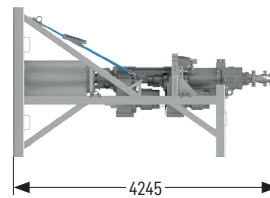
**BAT 300 with adapter for drilling axis 1600 mm**

Transport weight t 7.6



**MAT 100.1**

Transport weight t 5.6

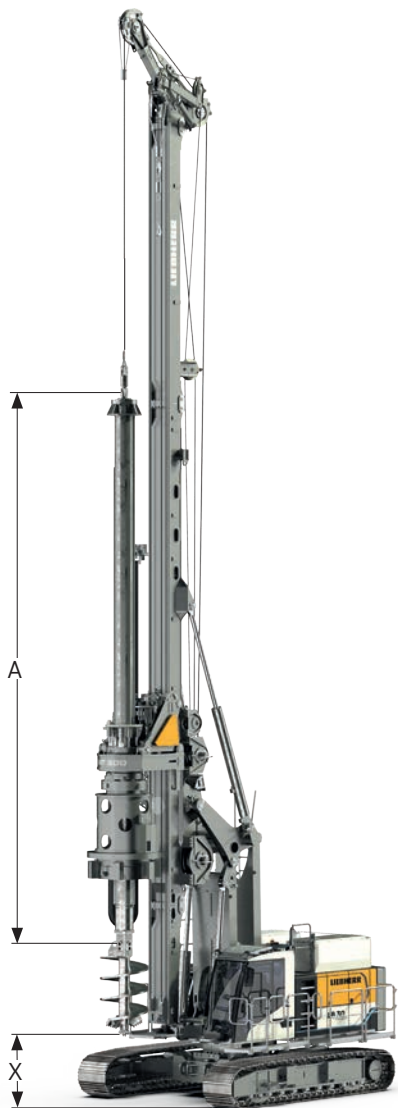


**DBA 160**

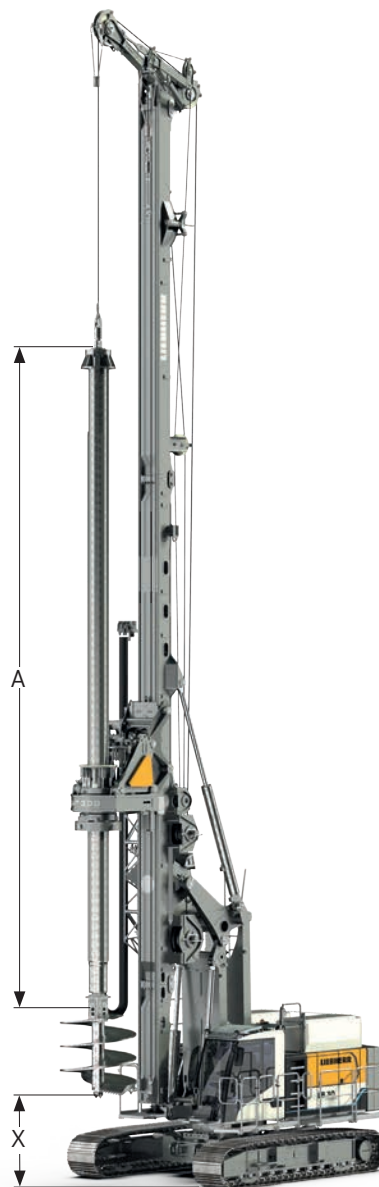
Transport weight t 8.1

# 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 <sup>1</sup>	2.6 <sup>1</sup>	22.6 <sup>1</sup>	23.1 <sup>1</sup>	9.1	8.6	22.6	23.1	11.1	10.6	22.6	23.1
28/3/27	10880	5.8	2.1 <sup>1</sup>	1.6 <sup>1</sup>	25.6 <sup>1</sup>	26.1 <sup>1</sup>	8.1	7.6	25.6	26.1	10.1	9.6	25.6	26.1
28/3/30	12040	6.4	1.0 <sup>1/2</sup>	0.5 <sup>1/2</sup>	28.6 <sup>1/2</sup>	29.1 <sup>1/2</sup>	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 <sup>1</sup>	1.1 <sup>1</sup>	34.7 <sup>1</sup>	35.1 <sup>1</sup>	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 <sup>1</sup>	2.6 <sup>1</sup>	52.7 <sup>1</sup>	53.1 <sup>1</sup>	5.1	4.6	52.7	53.1
28/4/60	17450	11.6	-	-	-	-	1.6 <sup>1</sup>	1.1 <sup>1</sup>	58.7 <sup>1</sup>	59.1 <sup>1</sup>	3.6	3.1	58.7	59.1
28/4/66	18950	11.7	-	-	-	-	-	-	-	-	2.1 <sup>1</sup>	1.6 <sup>1</sup>	64.8 <sup>1</sup>	65.3 <sup>1</sup>
28/4/72	20450	12.5	-	-	-	-	-	-	-	-	0.6 <sup>1/2</sup>	-	70.8 <sup>1/2</sup>	-

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

<sup>2</sup> 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, value X must be reduced by 1500 mm.

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 <sup>1</sup>	3.9	15.9 <sup>1</sup>	15.7	4.7	4.7	15.9	15.7
28(470)/5/24	6480	5.4	3.0 <sup>1</sup>	3.0 <sup>1</sup>	20.3 <sup>1</sup>	20.1 <sup>1</sup>	3.8 <sup>1</sup>	3.8	20.3 <sup>1</sup>	20.1
28(470)/5/26	6800	5.7	2.7 <sup>1</sup>	2.7 <sup>1</sup>	21.9 <sup>1</sup>	21.7 <sup>1</sup>	3.5 <sup>1</sup>	3.5	21.9 <sup>1</sup>	21.7
28(470)/5/30	7600	6.5	1.9 <sup>2</sup>	1.9 <sup>1</sup>	25.9 <sup>2</sup>	25.7 <sup>1</sup>	2.7 <sup>2</sup>	2.7 <sup>1</sup>	25.9 <sup>2</sup>	25.7 <sup>1</sup>
Kelly bars			Drilling depths with standard 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	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 <sup>1</sup>	1.9	27.9 <sup>1</sup>	28.2	2.7	2.7	27.9	28.2

<sup>1</sup> Installation of Kelly bar with raised leader top

<sup>2</sup> 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

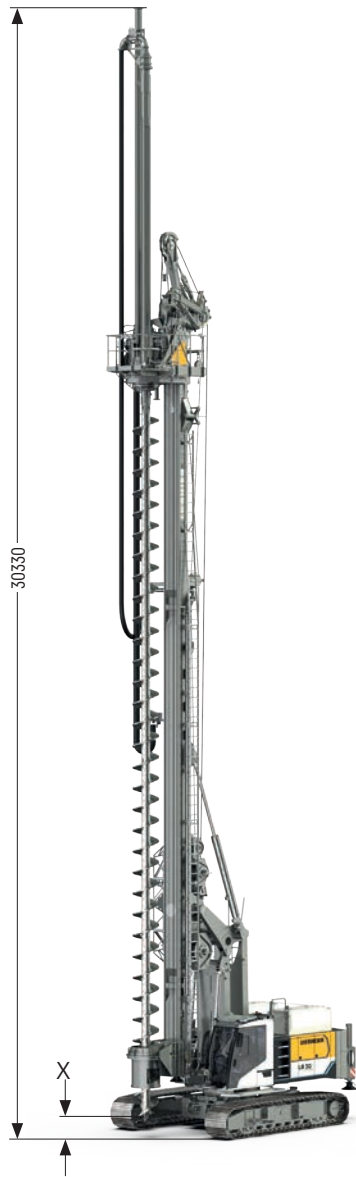
Length of drilling tool 710 mm

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.

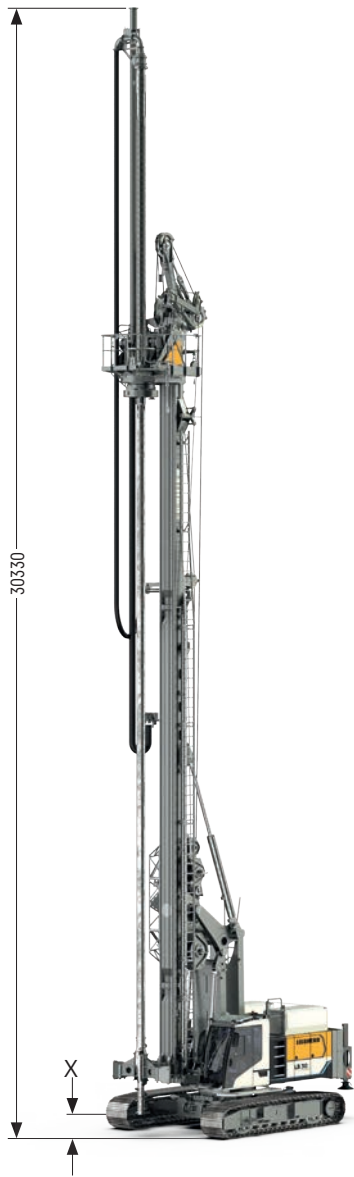
Above drilling depths are valid for the use of standard tools and for the X value of 460 mm (see above illustration).

\* 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 160



### Performance data

Rotary drive I - torque	kNm	0-160		
Rotary drive I - speed	rpm	0-16		
Rotary drive II - torque	kNm	0-105		
Rotary drive II - speed	rpm	0-28		
Max. drilling diameter*	mm	750		
		Low Head	Standard	Folding leader
Drilling depth**	m	10.7	16.7	18.7
Max. pull force	kN	550	550	550

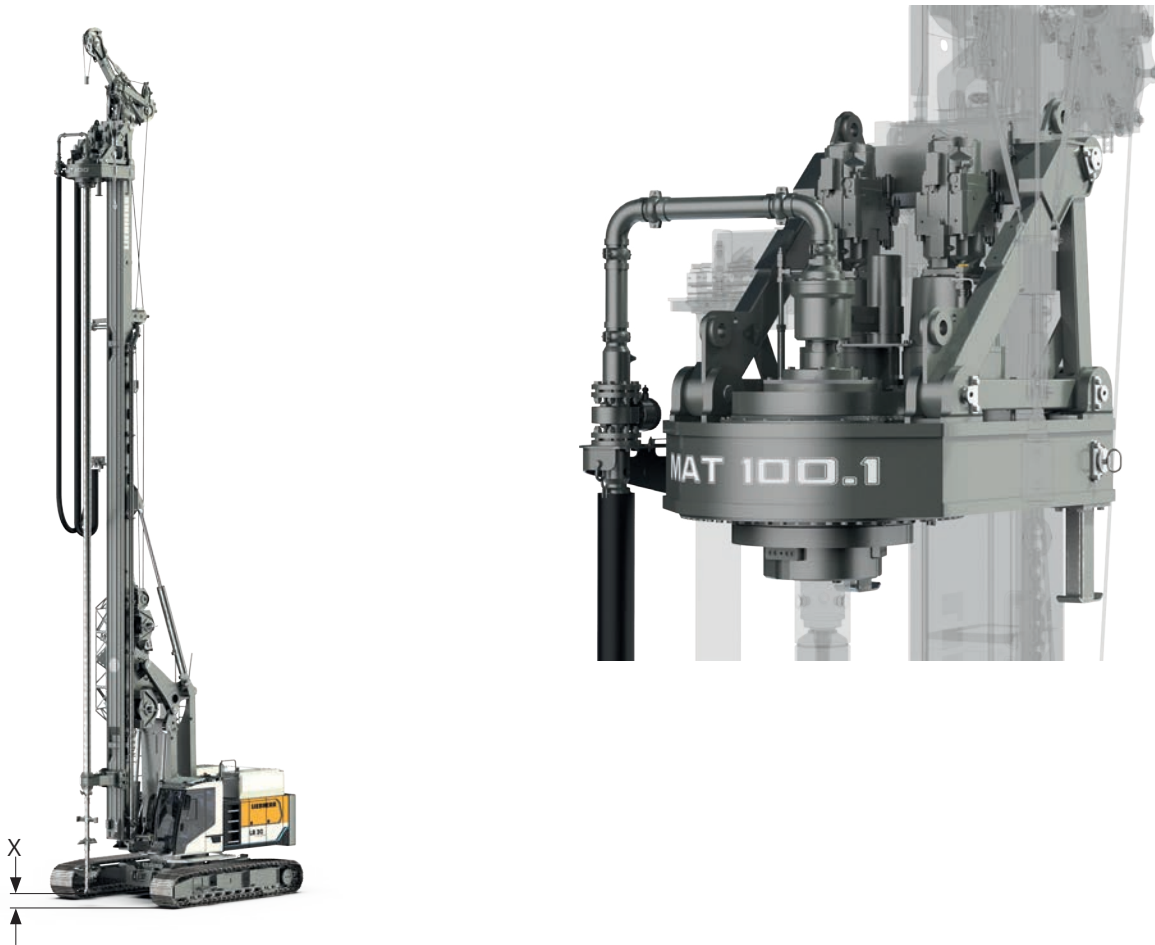
Above drilling depths are valid for the use of standard tools and for an X value of 530 mm (see above illustration). Due to differences in the max. admissible load capacities, the combinations of drilling depth and drilling diameter may be limited.

\*Other drilling diameters on request

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

# Soil mixing

## MAT 100.1 / BAT 300



### Performance data MAT 100.1

Rotary drive - torque	kNm	0-95		
Rotary drive - speed	rpm	0-100		
Max. mixing diameter*	mm	1500		
		Low Head	Standard	Folding leader
Mixing depth	m	11.0	17.0	19.0
Max. pull force	kN	320	320	320

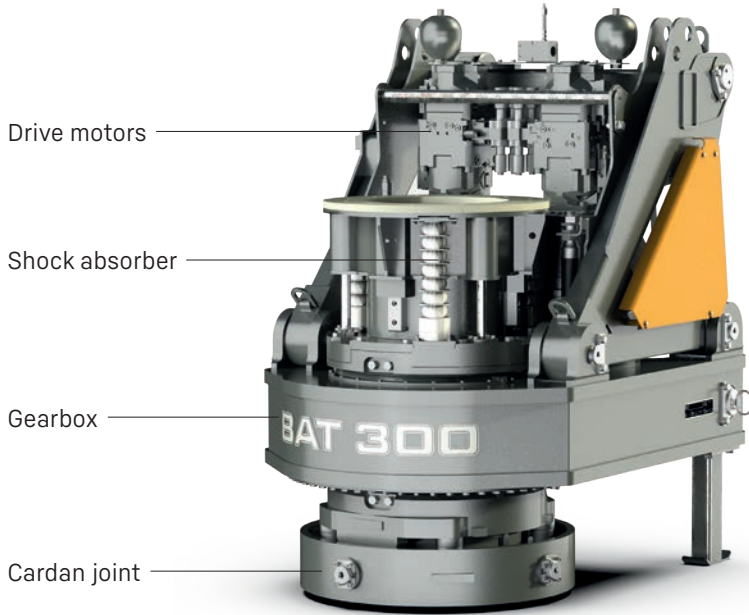
### Performance data BAT 300

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 MAT 100.1, and 650 mm for BAT 300 (see above illustration).

\* Other mixing diameters available on request

# 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:

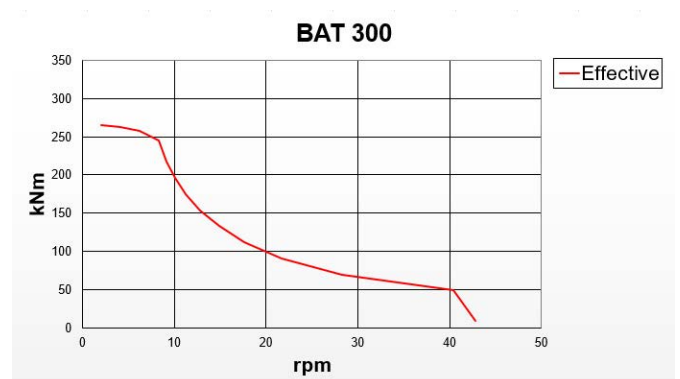
- No mechanical shift gearbox
- Low maintenance requirements

### Automatic gearbox for best operating comfort:

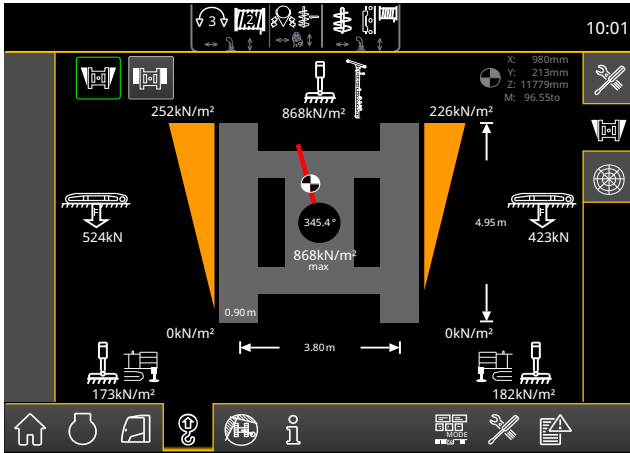
- No stopping required to change gears
- No interruption of the drilling process
- Continuous optimization of speed

### 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

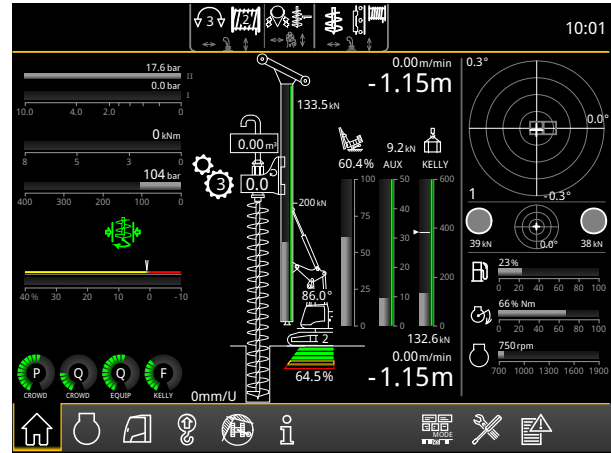


# Ground Pressure Visualization



## Features:

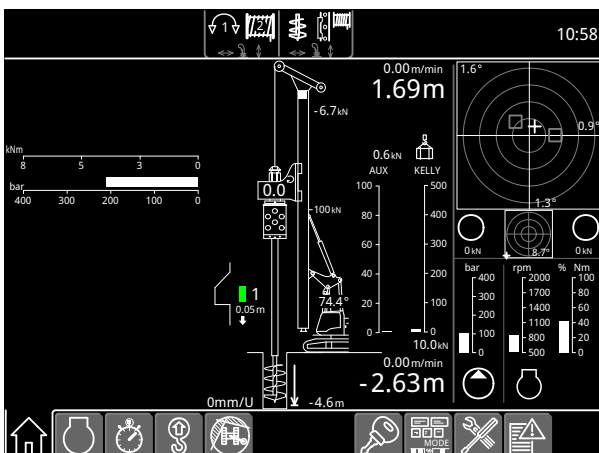
- The actual ground pressure is calculated in real time
- The maximum admissible ground pressure can be individually predefined
- The utilization is continuously calculated and displayed on the monitor in the operator's cab
- Audible and visual warnings when the predefined values are approached



## 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 cab

# Kelly Visualization

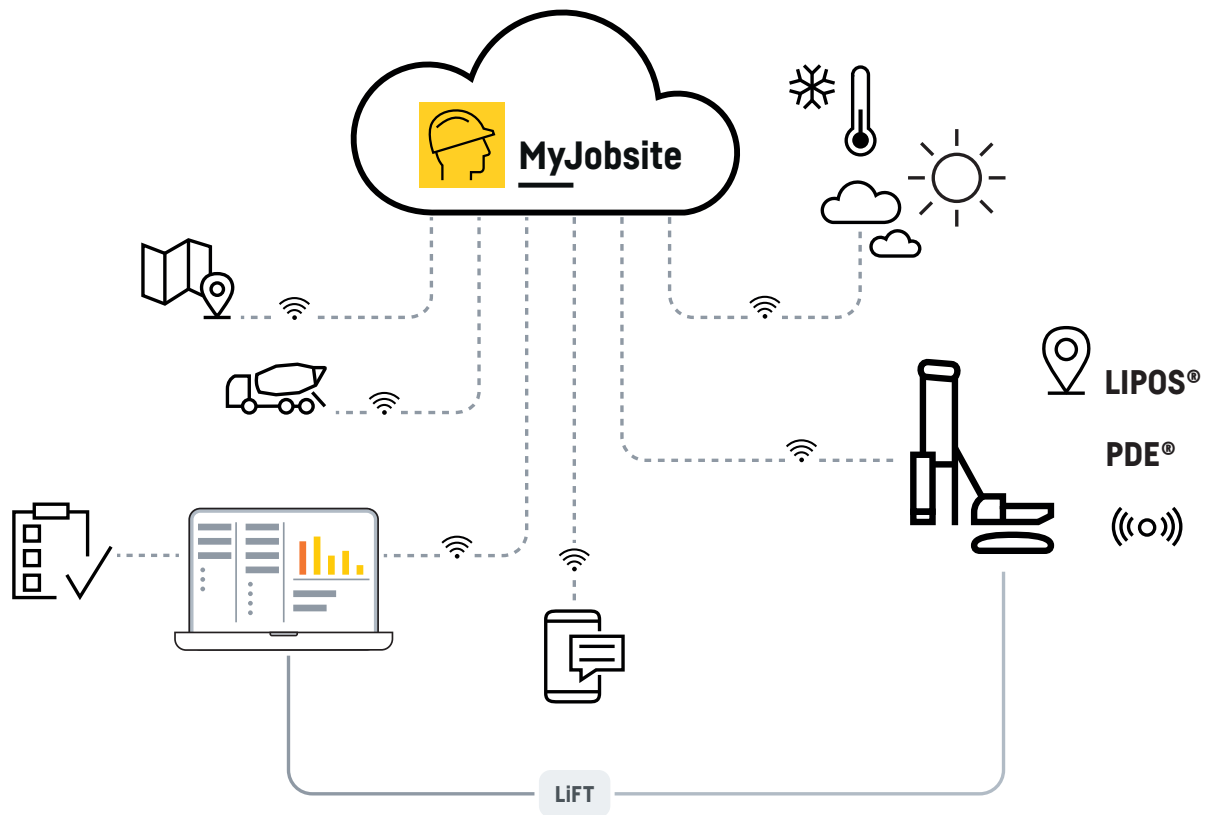


## Your benefits:

- 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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