EN

LB 30 unplugged

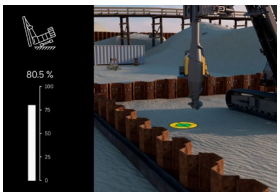
LB 2103.07
www.liebherr.com

LIEBHERR

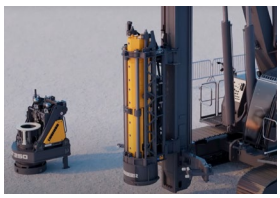
Drilling rigs

Assistance systems

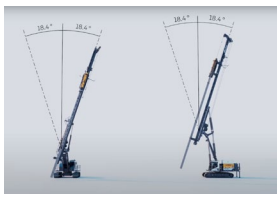
Remote-controlled assembly and disassembly
The remote control facilitates the safe assembly and disassembly of the machine. The operator can change position and thus has a better view of collision points.



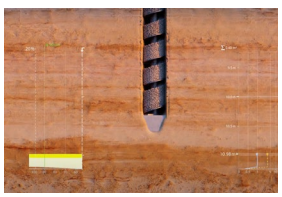
Ground pressure visualisation
Changes in the leader position or swinging the uppercarriage lead to a shift in the centre of gravity. Centres of gravity, load moments and ground pressure distribution under the crawler are calculated in real time.



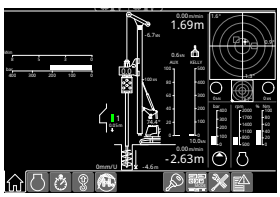
Attachment recognition
The basic machine's control system detects attachments, records their operating hours and optimises oil quantities and pressures. Operating parameters and faults are recorded and can be recalled via LiDAT.



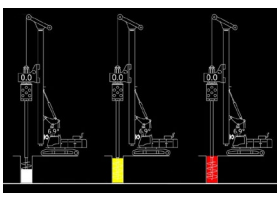
Automatic leader adjustment
The operator can save the leader inclination. At the touch of a button, the leader can be set to the desired inclination at the piling or drilling point for each new working step. This saves time and ensures precise results.



Drilling assistant for single pass method
The rope crowd system, rotary drive and the amount of flowing concrete are optimally matched during drilling and subsequent extraction.



Kelly visualisation
- Time savings
- Higher availability
- More safety
- Cost reduction



Assistance systems for Kelly drilling
- Automatic shake-off function for working tools
- Auger filling level display for drilling tools
- Kelly winch with freewheeling and with slack rope monitoring, reduction and limitation
- Crowd booster

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	20 kW (CEE socket 32 A / 400 VAC) 40 kW (CEE socket 63 A / 400 VAC) 80 kW (CEE socket 125 A / 400 VAC)
Mains voltage	400 VAC (3 phase + N + PE)
Capacity	4 h*
Option	6 h*

* in normal operation

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

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	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
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

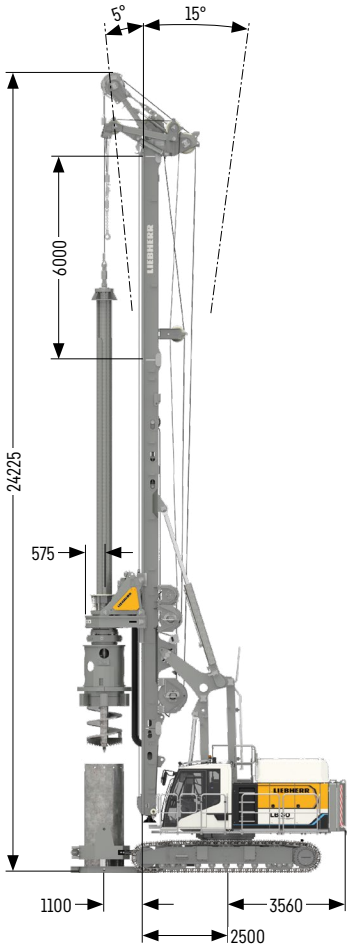
Noise emission	according to 2000/14/EC directive	
Emission sound pressure level L_{PA}	69.0 dB(A)	(in the cabin)
Guaranteed sound power level L_{WA}	102 dB(A)	(of the machine)
Vibration transmitted to the machine operator	< 2.5 m/s²	(to the hand-arm system)
	< 0.5 m/s²	(to the whole body)

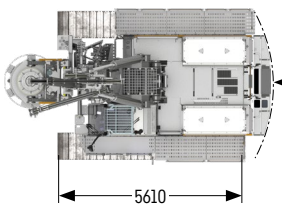
Remarks:

- 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

Standard





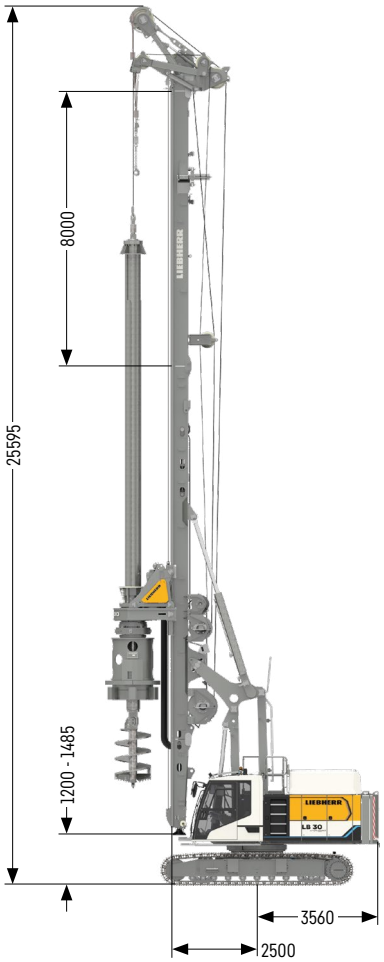
R 3600 (8 t)
R 3660 (10 t)
R 4330 (13 t incl. rear support unit)

Operating weights

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, Kelly bar 28/3/30, 10 t counterweight and equipment for casing oscillator.

Folding leader

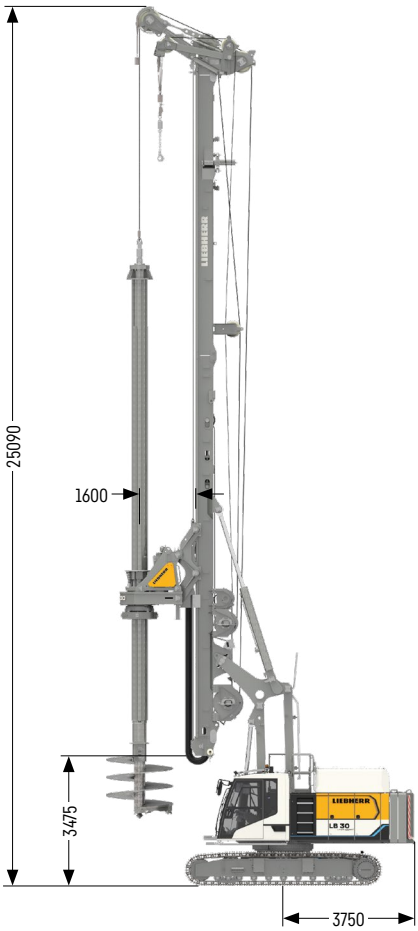


Operating weights

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

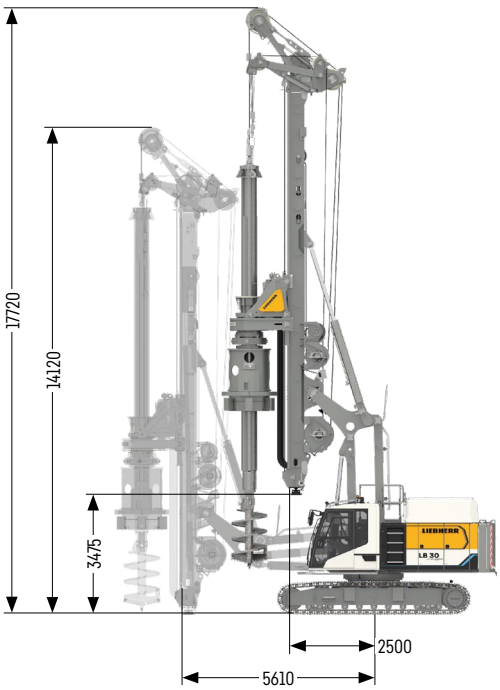


Operating weights

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

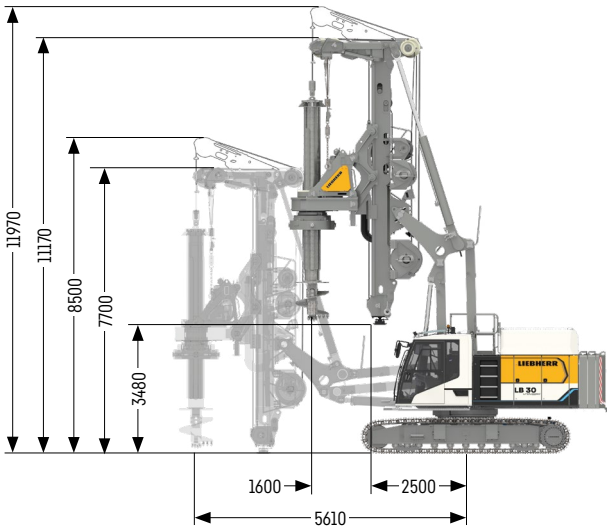


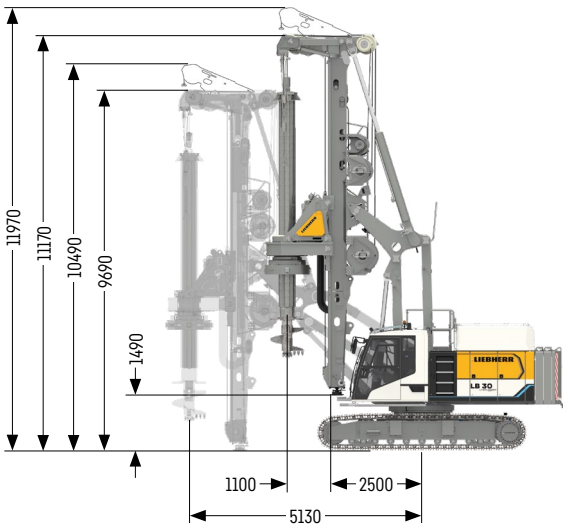
Operating weights

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 weights

Total weight with 700 mm 3-web grousers	t	78.4
Total weight with 800 mm 3-web grousers	t	78.8

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

Operating weights

Total weight with 700 mm 3-web grousers	t	77.9
Total weight with 800 mm 3-web grousers	t	78.3

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.

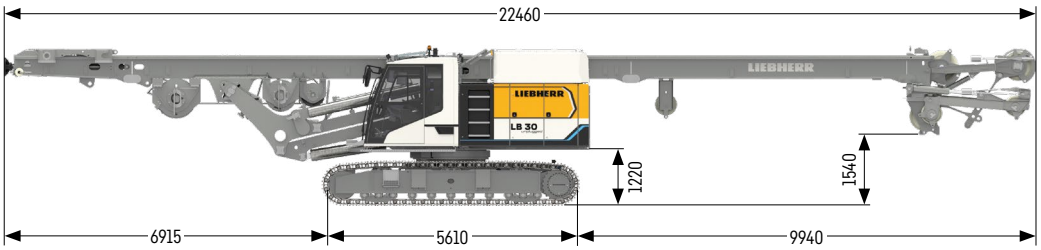
Operation
The LB 30 unplugged can be operated both connected to the power supply (plugged in) or powered by battery (unplugged).

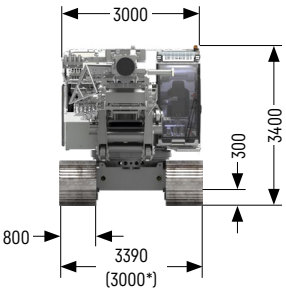
Sustainability
Liebherr is aware of its responsibility towards society and the environment and, with the unplugged series, strives for the best possible combination of environmental sustainability, customer benefit and efficiency.

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 normal operation, the battery is designed for an operating time of 4 hours (standard) or 6 hours (option). It can be simply recharged using a conventional jobsite electric supply (32 A, 63 A, 125 A).

Transport dimensions and weights

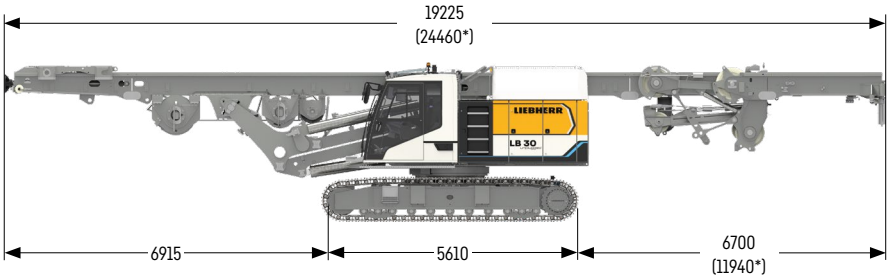




Standard leader (6 m leader upper part)

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

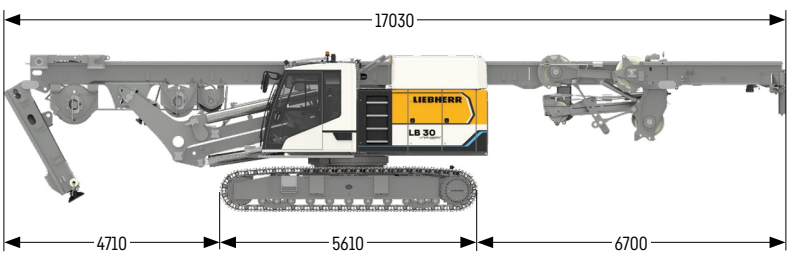
* transport width with 700 mm grousers



Folding leader (8 m leader upper part)

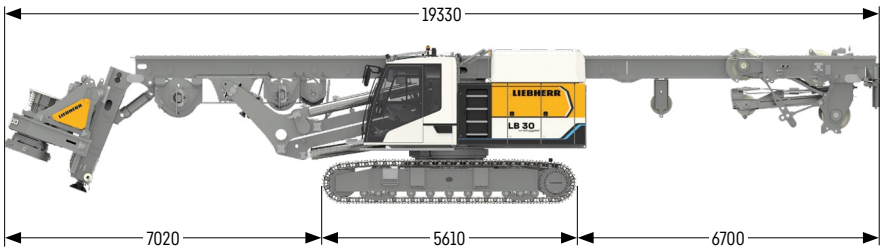
includes the basic machine (ready for operation) with leader, without attachments (such as rotary, Kelly bar etc.), without counterweight and without adapter for casing oscillator	t	55.4

* Transport length leader not folded



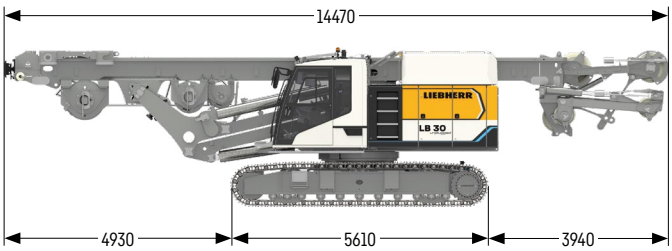
Leader lower and upper part folded

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



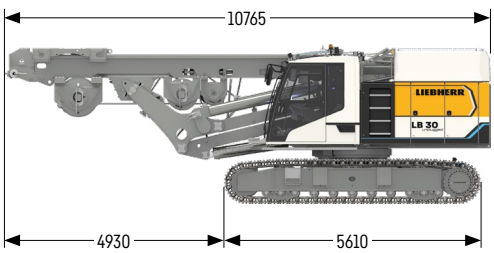
Leader lower and upper part folded (with BAT)

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



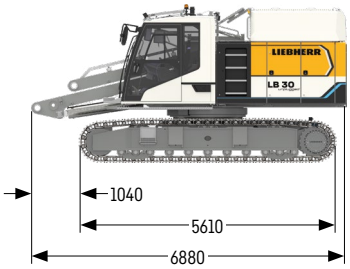
Low Head

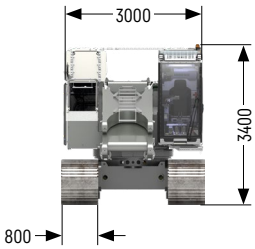
includes the basic machine (ready for operation) with leader, without attachments (such as rotary, Kelly bar etc.), without counterweight and without adapter for casing oscillator	t	53.2



Ultra Low Head

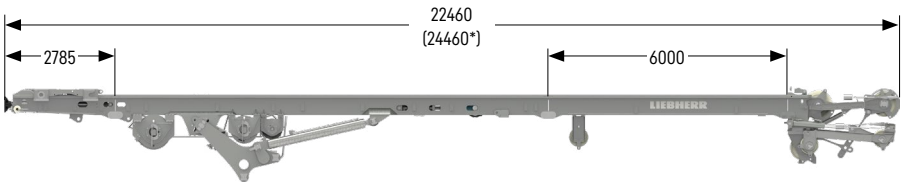
includes the basic machine (ready for operation) with leader, without attachments (such as rotary, Kelly bar etc.), without counterweight and without adapter for casing oscillator	t	51.3

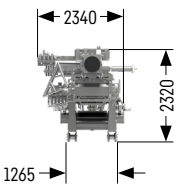


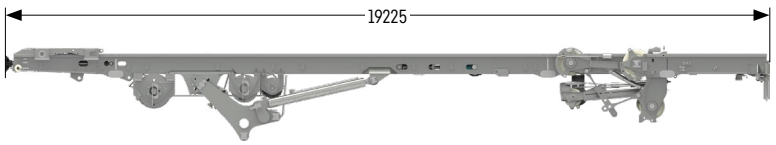


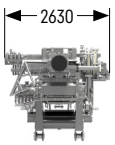
Basic machine

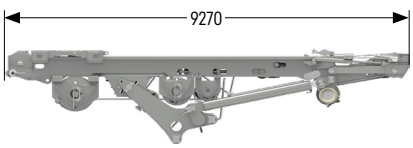
with crawler side frames, without counterweight and without adapter for casing oscillator	t	37.5











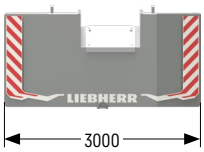
Leader versions

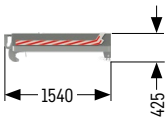
Standard leader	t	17.8
Folding leader	t	18.7
Standard leader lower part	t	0.7
6 m leader extension	t	1.5
8 m leader extension	t	2.4
Leader top	t	1.7
Short leader lower part	t	0.3

* Transport length folding leader

Options

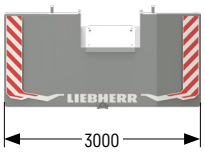
Adapter for casing oscillator	t	0.8
Concrete supply line	t	0.6
All round platform with railings	t	0.4

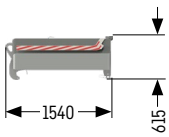




Counterweight

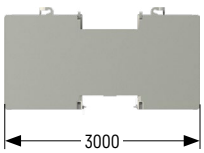
Weight	t	5.0

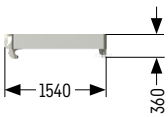




Counterweight

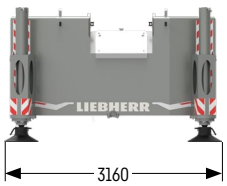
Weight	t	8.0

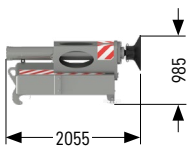




Intermediate slab

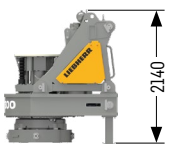
Weight	t	5.0

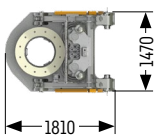




Counterweight with rear support unit

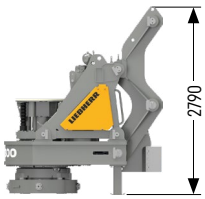
Weight	t	8.0

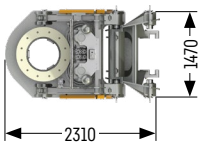




BAT 300

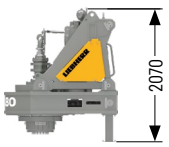
Transport weight	t	6.5

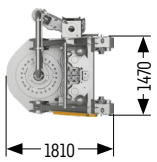




BAT 300 with adapter for drilling axis 1600 mm

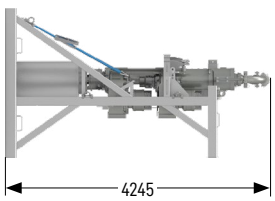
Transport weight	t	7.6

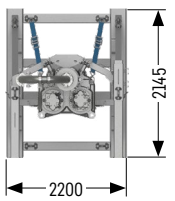




MA 180

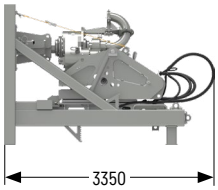
Transport weight	t	5.6

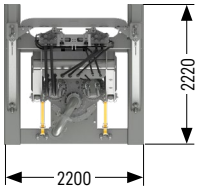




DBA 180

Transport weight	t	8.1



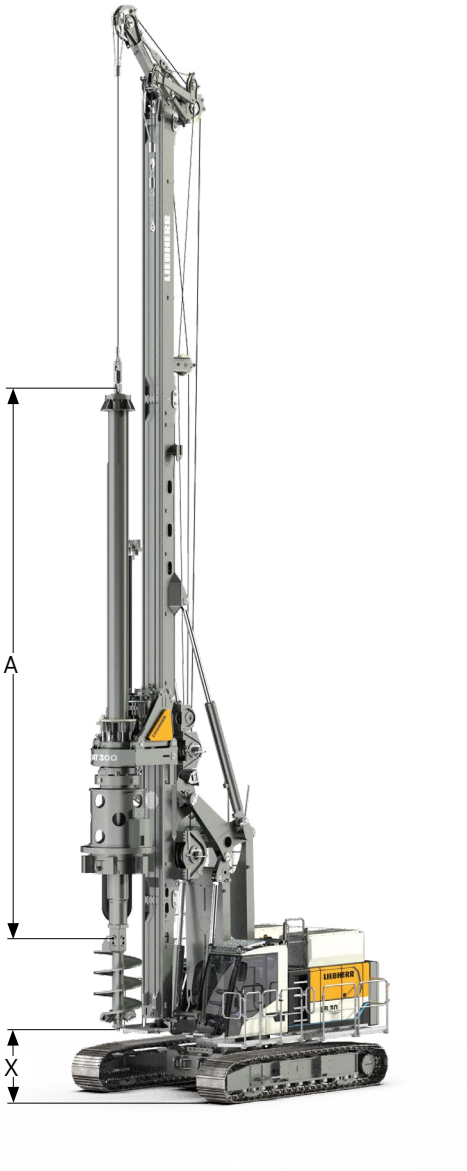


DHR 110

Transport weight	t	5.8

Kelly drilling

Standard



Folding leader (large drilling axis)

Performance data

Rotary drive - torque	kNm	0-297	
Rotary drive - speed	rpm	0-43	
		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											
			Low Head				Standard				Folding leader			
Model	Length A [mm]	Weight [t]	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.
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							
			Leader top horizontal				Leader top raised			
Model	Length A [mm]	Weight [t]	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

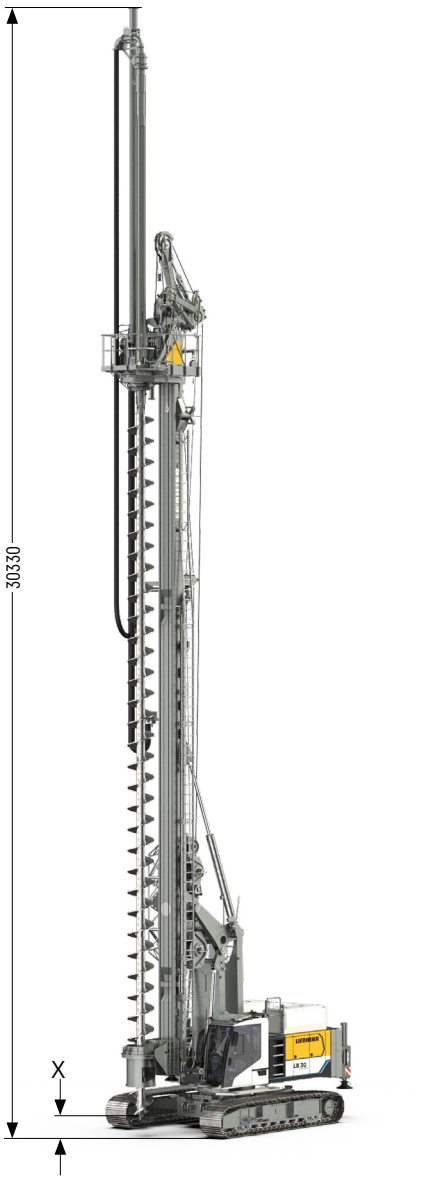
[1] Installation of Kelly bar with raised leader top
[2] Installation only possible using auxiliary equipment

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



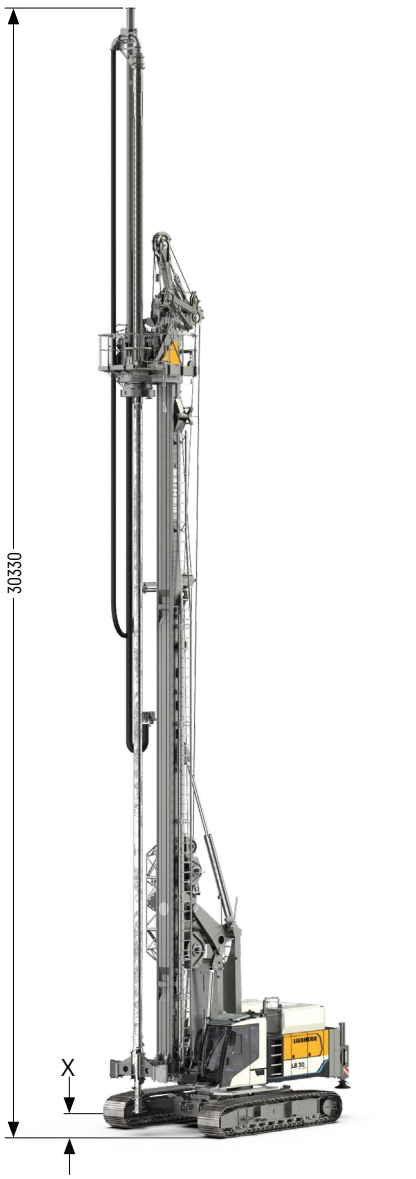
Performance data

Rotary drive - torque	kNm	0-270		
Rotary drive - speed	rpm	0-43		
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	0-270		
Rotary drive - speed	rpm	0-43		
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	Folding leader
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	320	320	320

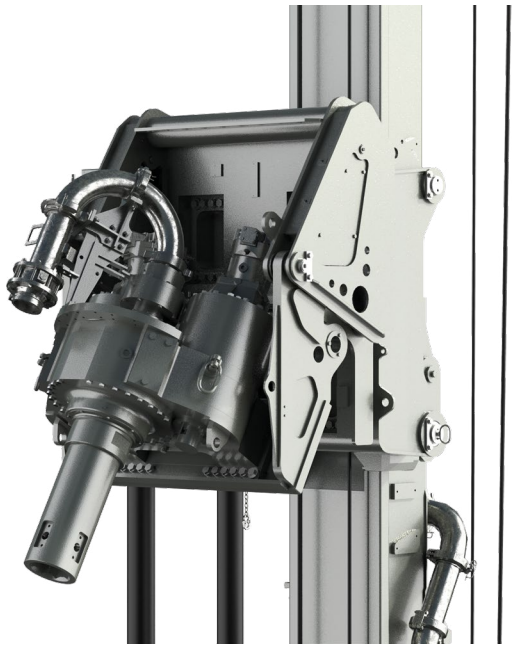
Performance data BAT 300

Rotary drive - torque	kNm	0-270		
Rotary drive - speed	rpm	0-43		
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

DHR 110

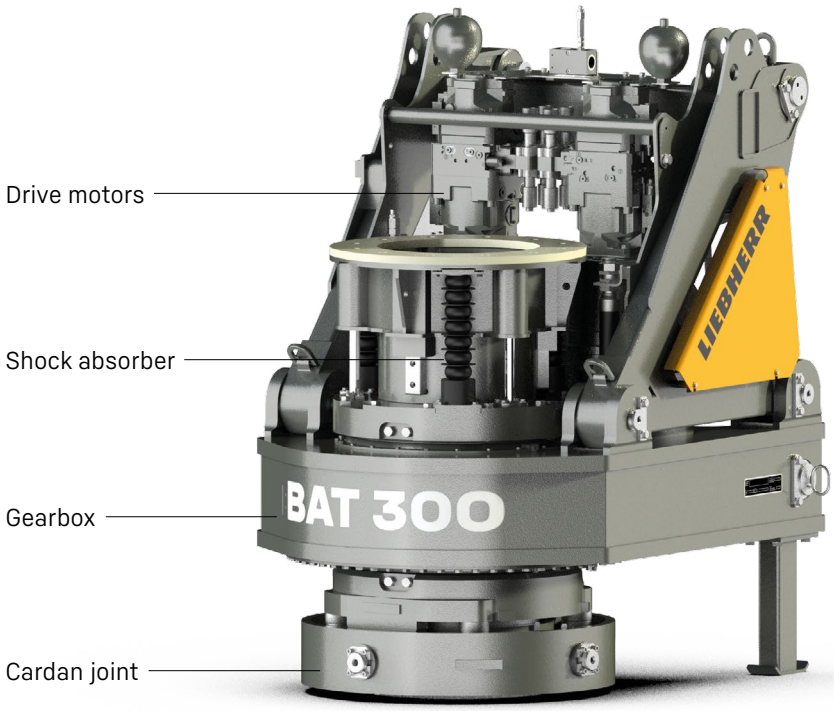


Performance data DHR 110

Rotary drive - torque	kNm	0-106		
Rotary drive - speed	rpm	0-41		
		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

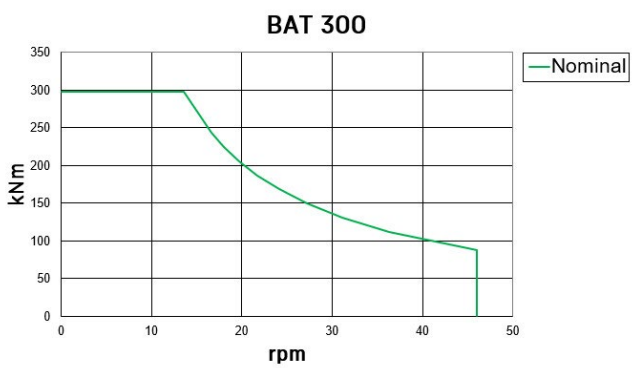


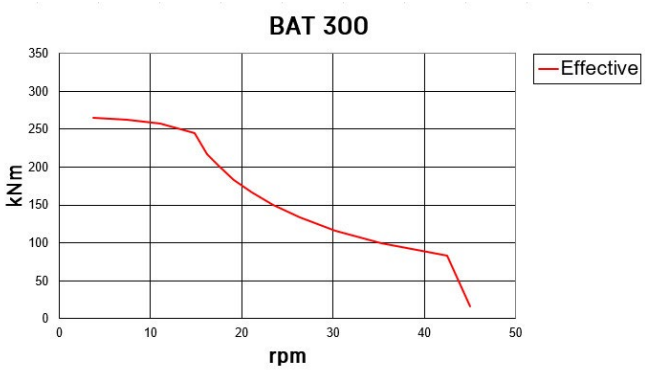
Kelly shock absorber:
- Newly developed Kelly shock absorber for highest demands
- Possibility of adjusting the strength of the Kelly shock absorber for different Kelly bar weights

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





Digital solutions

Liebherr-Werk Nenzing GmbH has set itself the goal of using digital solutions to network and optimise processes on the jobsite.
In the progression from an experienced machine manufacturer to a full-service provider Liebherr already has a number of digital solutions, which provide substantial support for all those involved in the construction site.

MyLiebherr

One portal, all services

PDE

Process data recording

MyJobsite

Your jobsite at a glance

LIPOS

Positioning system

XpertAssist

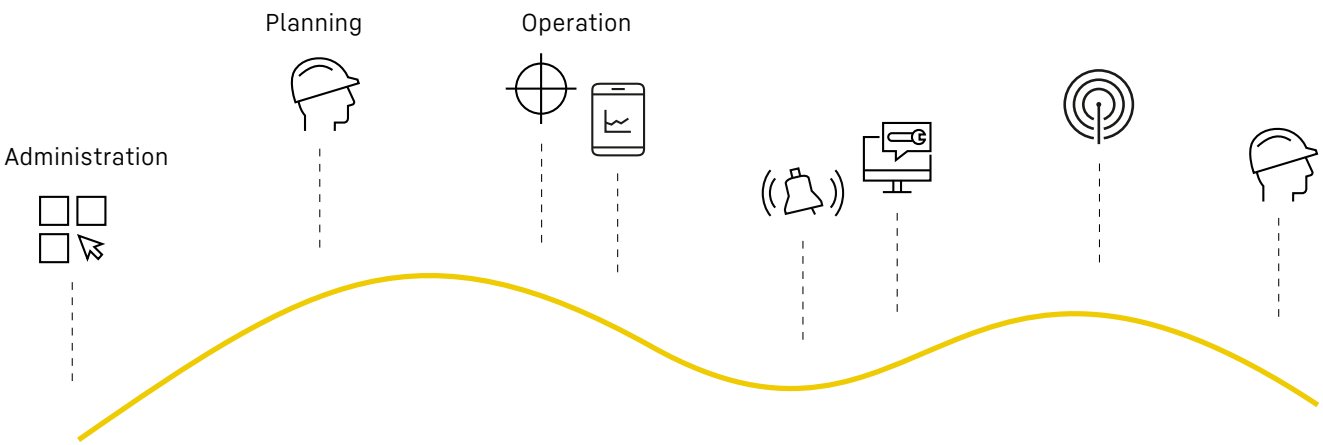
Remote support in real time

LiDAT

Data transfer and positioning system

MyNotifier

Monitoring tool for wind conditions and battery status



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