

EN-US



LB 30 unplugged

LB 2103.07

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LIEBHERR

Drilling rigs

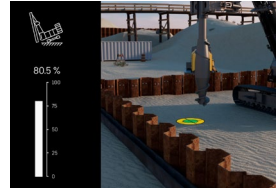


Assistance systems



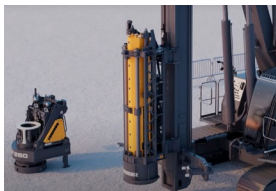
Remote-controlled assembly and disassembly

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.



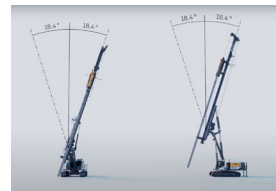
Ground pressure visualisation

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.



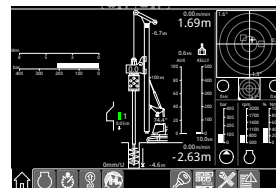
Automatic leader adjustment

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.



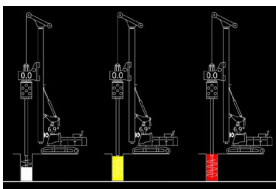
Drilling assistant for single pass method

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	159 gal
Max. working pressure	5,584 PSI
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	0-0.83 mph
Track force	149,498 lbf
Grousers	Width 31.5 inch



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	51,706 lbf (1st layer)
Rope diameter	26 mm
Rope speed	0-262 ft/min



Auxiliary winch

Line pull effective	17,985 lbf (1st layer)
Rope diameter	20 mm
Rope speed	0-271 ft/min



Crowd system

Crowd force	71,939/71,939 lbf (push/pull)
Line pull effective	35,969 kN (1st layer)
Rope diameter	24 mm
Travel with standard leader between mechanical limit stops	56.8 ft
Travel with Ultra-Low-Head leader and short leader lower part	15.1 ft
Rope speed	0-289 ft/min



Noise measurement data and vibration

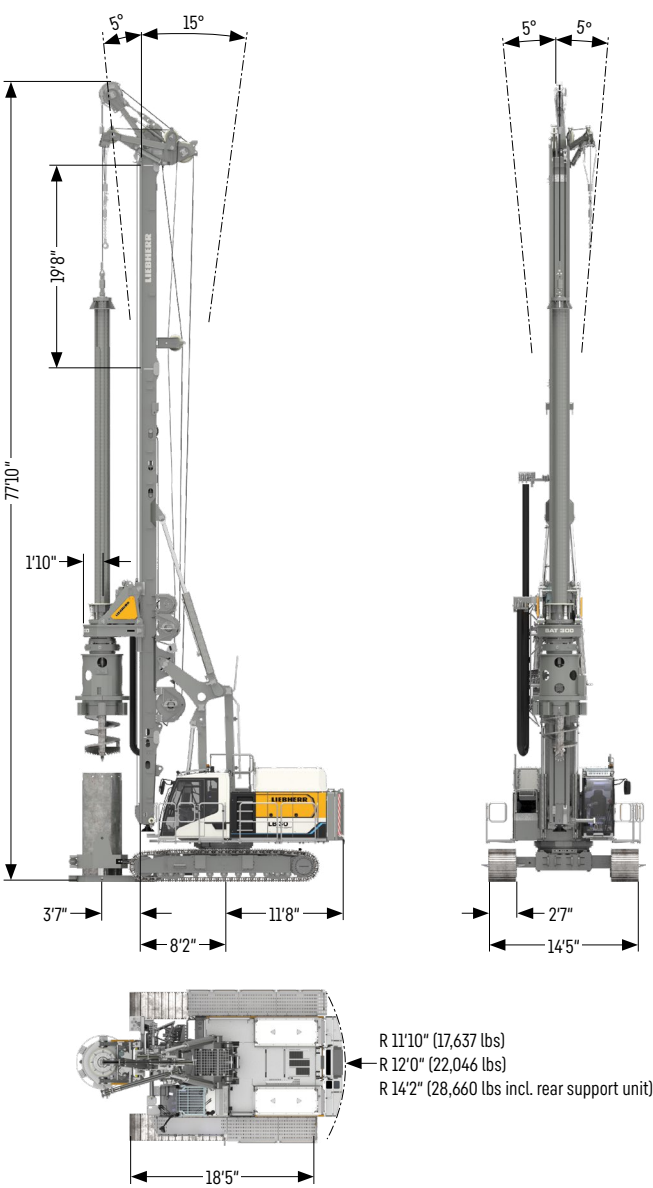
Noise emission	according to 2000/14/EC directive	
Emission sound pressure level L_{PA}	69.0 dB(A)	(in the cabin)
Guaranteed sound power level L_{WA}	102 dB(A)	(of the machine)
Vibration transmitted to the machine operator	< 8.2 ft/s ²	(to the hand-arm system)
	< 1.6 ft/s ²	(to the whole body)

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

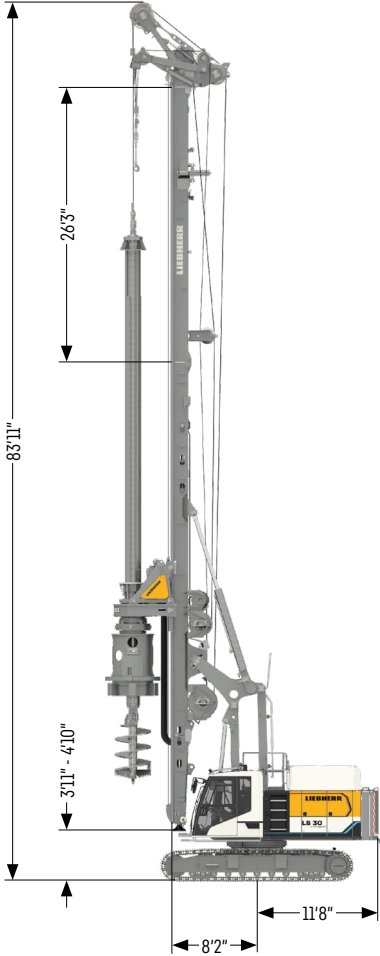


Operating weights

Total weight with 27.6 inch 3-web grousers	lbs	176,149
Total weight with 31.5 inch 3-web grousers	lbs	176,590

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/3/30, 22,046 lbs counterweight and equipment for casing oscillator.

Folding leader

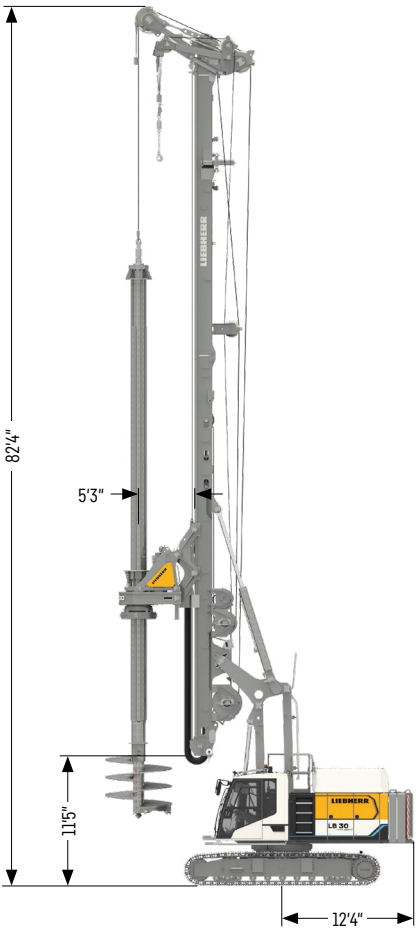


Operating weights

Total weight with 27.6 inch 3-web grousers	lbs	180,117
Total weight with 31.5 inch 3-web grousers	lbs	181,000

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/4/42 and 122,046 lbs counterweight. Equipment for casing oscillator not included.

Folding leader

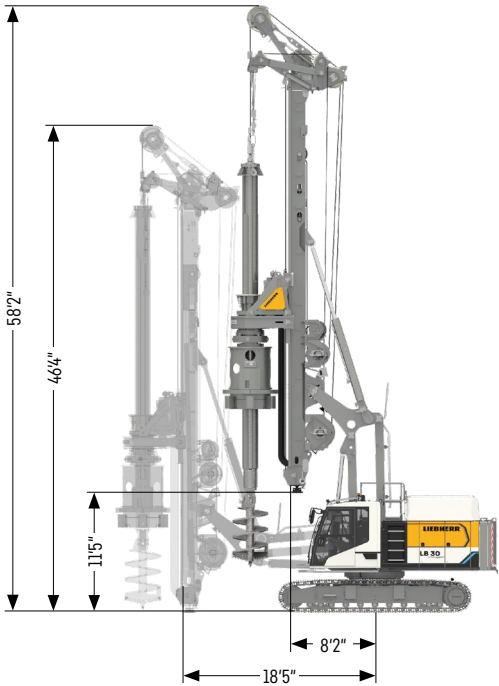


Operating weights

Total weight with 27.6 inch 3-web grousers	lbs 187,613
Total weight with 31.5 inch 3-web grousers	lbs 188,495

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/4/42 and 28,660 lbs counterweight. Equipment for casing oscillator not included.

Low Head

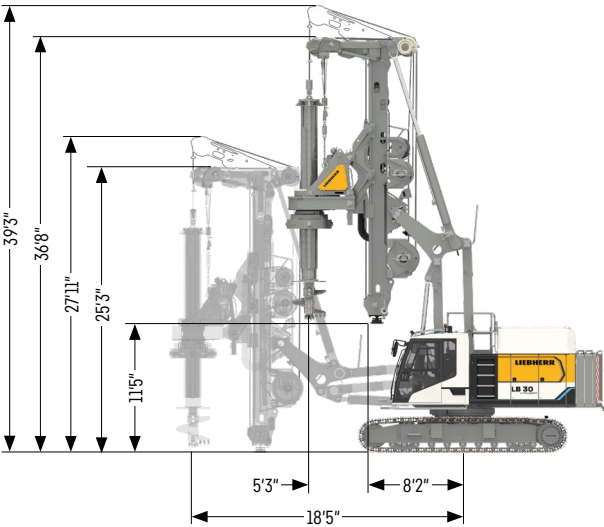


Operating weights

Total weight with 27.6 inch 3-web grousers	lbs 166,449
Total weight with 31.5 inch 3-web grousers	lbs 167,331

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/3/24 and 22,046 lbs counterweight. Equipment for casing oscillator not included. The line pull of the Kelly winch is reduced to 22,480 lbf when working at a radius exceeding 12.3 ft.

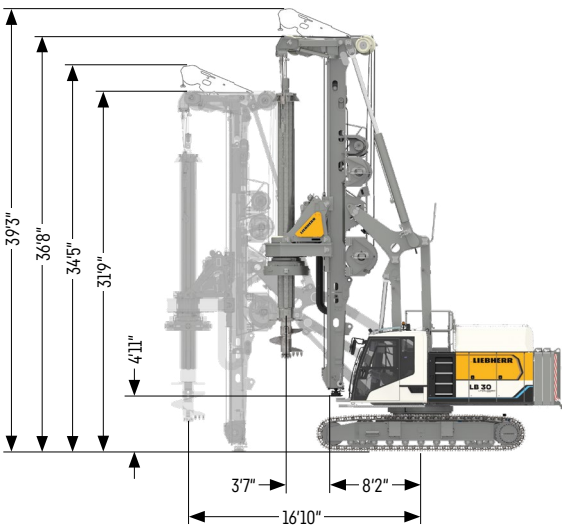
Ultra Low Head



Operating weights

Total weight with 27.6 inch 3-web grousers	lbs 172,842
Total weight with 31.5 inch 3-web grousers	lbs 173,724

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/3/30, 39,683 lbs counterweight and equipment for casing oscillator.



Operating weights

Total weight with 27.6 inch 3-web grousers	lbs 171,740
Total weight with 31.5 inch 3-web grousers	lbs 172,622

The operating weight includes the basic machine LB 30 unplugged with rotary, Kelly bar 28/4/42 and 39,683 lbs 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

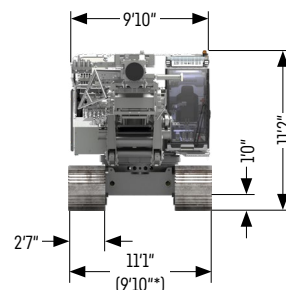
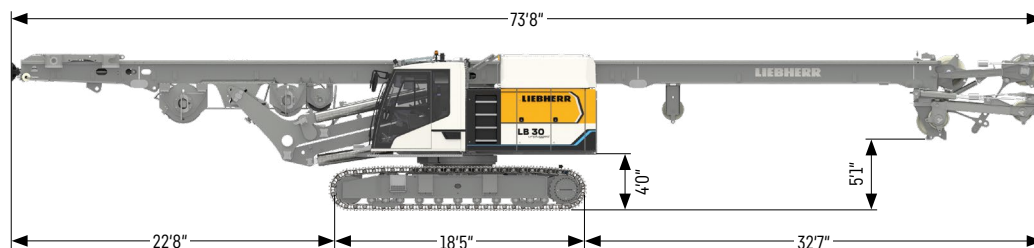
When connected to the power supply, there are no restrictions in performance and application of the machine when compared to the conventional version with diesel engine. The battery is constantly charged when connected to the power supply and therefore always provides sufficient energy.



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

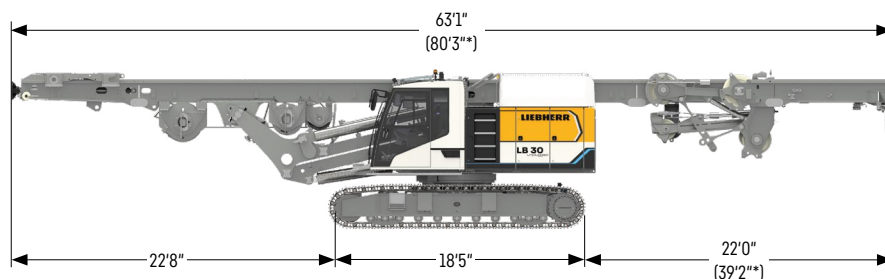


Standard leader (19.7 ft leader upper part)

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

lbs 120,152

* transport width with 2.3 ft grousers

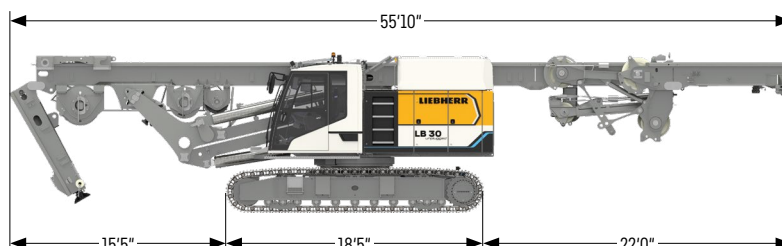


Folding leader (26.2 ft leader upper part)

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

lbs 122,136

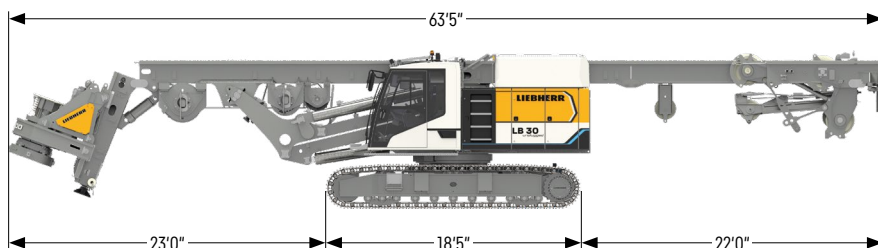
* Transport length leader not folded



Leader lower and upper part folded

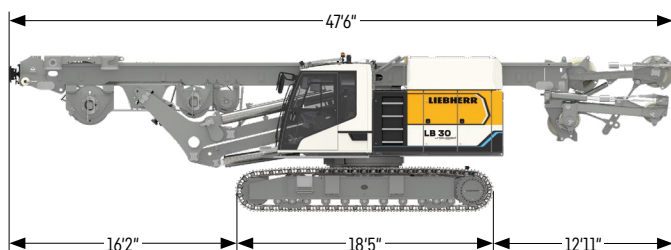
includes the basic machine (ready for operation) with leader, without attachments (such as rotary, Kelly bar etc.), without counterweight and without adapter for casing oscillator

lbs 122,136



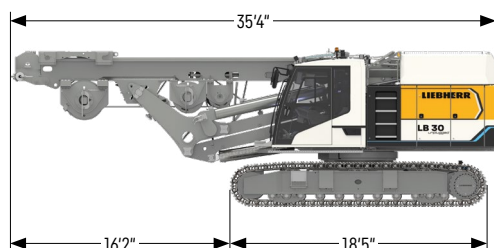
Leader lower and upper part folded (with BAT)

includes the basic machine (ready for operation) with leader, BAT 300, without counterweight and without adapter for casing oscillator lbs 136,466



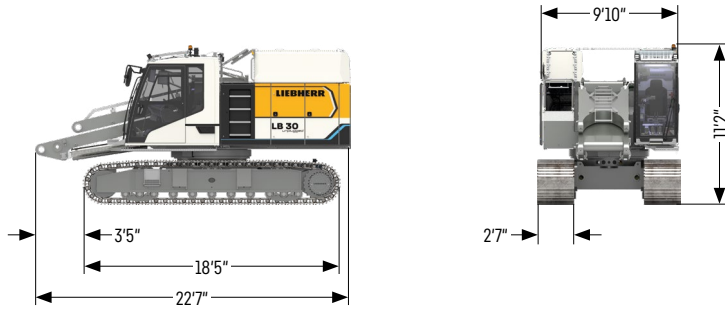
Low Head

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 lbs 117,286



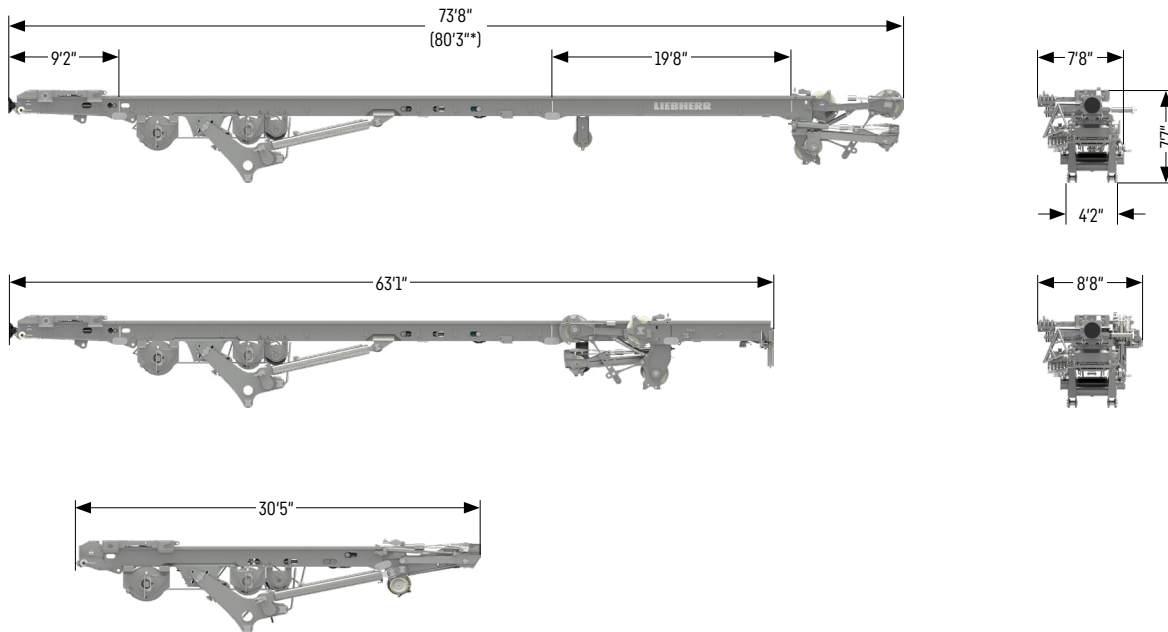
Ultra Low Head

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 lbs 113,097



Basic machine

with crawler side frames, without counterweight and without adapter for casing oscillator lbs 82,673



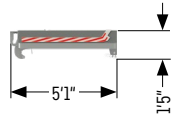
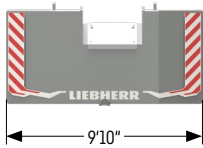
Leader versions

Standard leader	lbs 39,242
Folding leader	lbs 41,226
Standard leader lower part	lbs 1,543
19.7 ft leader extension	lbs 3,306
26.2 ft leader extension	lbs 5,291
Leader top	lbs 3,748
Short leader lower part	lbs 661

* Transport length folding leader

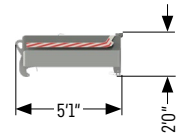
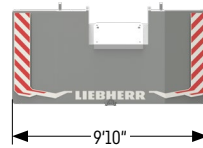
Options

Adapter for casing oscillator	lbs 1,764
Concrete supply line	lbs 1,323
All round platform with railings	lbs 882



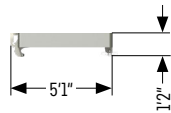
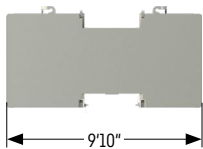
Counterweight

Weight lbs 11,023



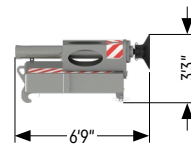
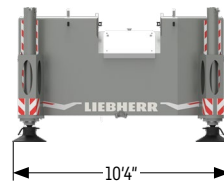
Counterweight

Weight lbs 17,637



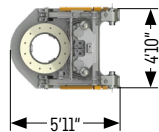
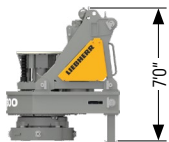
Intermediate slab

Weight lbs 11,023



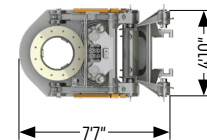
Counterweight with rear support unit

Weight lbs 17,637



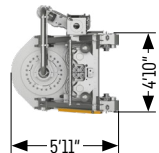
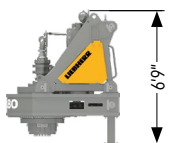
BAT 300

Transport weight lbs 14,330



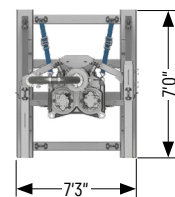
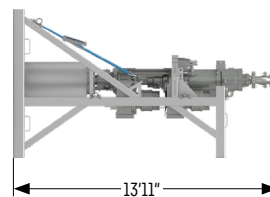
BAT 300 with adapter for drilling axis 5.2 ft

Transport weight lbs 16,755



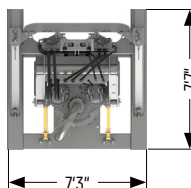
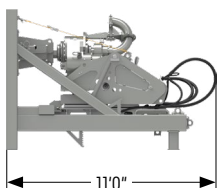
MA 180

Transport weight lbs 12,346



DBA 180

Transport weight lbs 17,857

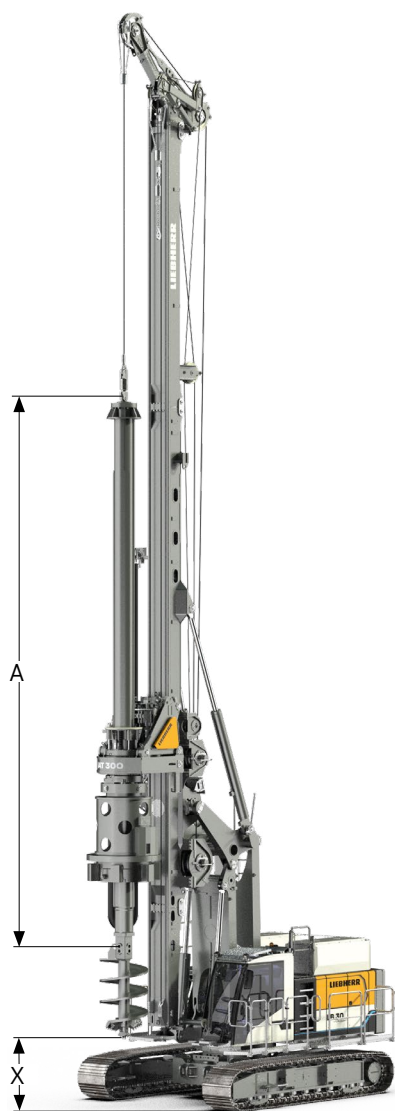


DHR 110

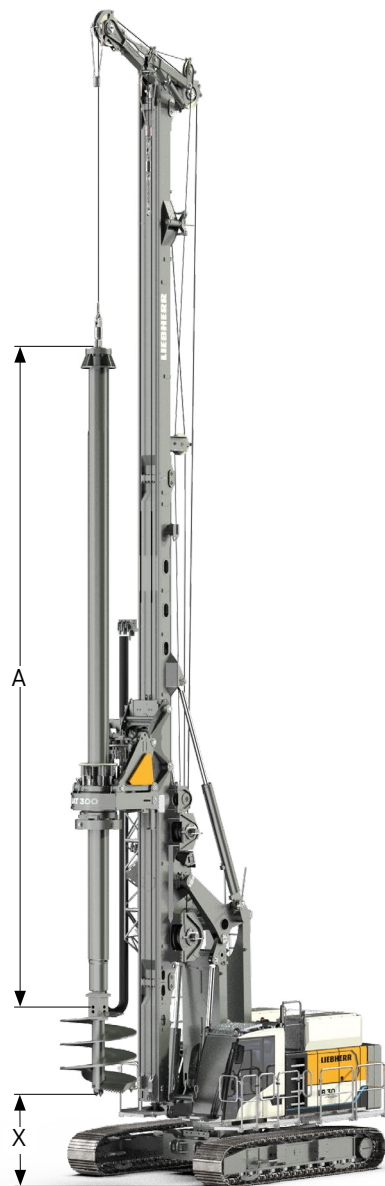
Transport weight lbs 12,787

Kelly drilling

Standard



Folding leader (large drilling axis)



Performance data

Rotary drive - torque	lbf-ft	0-219,056	
Rotary drive - speed	rpm	0-43	
		Drilling axis 3.6 ft	Drilling axis 5.2 ft
Max. drilling diameter cased*	ft	4.9	8.2
Max. drilling diameter uncased	ft	6.2	9.5
Max. drilling diameter uncased with short leader lower part	ft	9.2	11.2

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 [ft]	Weight [lbs]	Low Head				Standard				Folding leader			
			X [ft]		Depth [ft]		X [ft]		Depth [ft]		X [ft]		Depth [ft]	
			3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
28/3/24	32.4	11,684	10.1 ¹	8.5 ¹	74.1 ¹	75.8 ¹	29.9	28.2	74.1	75.8	36.4	34.8	74.1	75.8
28/3/27	35.7	12,787	6.9 ¹	5.2 ¹	84.0 ¹	85.6 ¹	26.6	24.9	84.0	85.6	33.1	31.5	84.0	85.6
28/3/30	39.5	14,110	3.3 ^{1/2}	1.6 ^{1/2}	93.8 ^{1/2}	95.5 ^{1/2}	23.0	21.3	93.8	95.5	29.5	27.9	93.8	95.5
28/3/33	42.3	14,771	-	-	-	-	20.0	18.4	103.7	105.3	26.6	24.9	103.7	105.3
28/3/36	46.1	16,094	-	-	-	-	16.4	14.8	113.5	115.2	23.0	21.3	113.5	115.2
28/4/36	37.6	16,976	5.2 ¹	3.6 ¹	113.8 ¹	115.2 ¹	24.9	23.3	113.8	115.2	31.5	29.9	113.8	115.2
28/4/42	42.5	19,180	-	-	-	-	20.0	18.4	133.2	134.8	26.6	24.9	133.2	134.8
28/4/48	47.4	21,164	-	-	-	-	15.1	13.5	153.2	154.2	21.7	20.0	153.2	154.2
28/4/54	52.3	23,369	-	-	-	-	10.2 ¹	8.5 ¹	172.9 ¹	174.2 ¹	16.7	15.1	172.9	174.2
28/4/60	57.2	25,573	-	-	-	-	5.2 ¹	3.6 ¹	192.6 ¹	193.9 ¹	11.8	10.2	192.6	193.9
28/4/66	62.2	25,794	-	-	-	-	-	-	-	-	6.9 ¹	5.2 ¹	212.6 ¹	214.2 ¹
28/4/72	67.1	27,558	-	-	-	-	-	-	-	-	2.0 ^{1/2}	-	232.3 ^{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 3.6 ft

Drilling axis 5.2 ft

Other Kelly bars available on request

When using a casing oscillator (standard 118/120 KL), value X must be reduced by 4.9 ft.

When using a Kelly bar guide, value X has to be reduced by 1.8 ft.

When using a short leader lower part the drilling depth is reduced by 6.6 ft for a drilling axis of 3.6 ft, and by 8.2 ft for a drilling axis of 5.2 ft.

Length of drilling tool 6.2 ft

Drilling depths with Ultra Low Head

Technical data Kelly bars

Kelly bars			Drilling depths short leader lower part							
Model	Length A [ft]	Weight [ft]	Leader top horizontal				Leader top raised			
			X [ft]		Depth [ft]		X [ft]		Depth [ft]	
			3.6	5.2	3.6	5.2	3.6	5.2	3.6	5.2
28(470)/5/14	14.4	7,716	16.7	16.7	32.5	31.8	19.4	19.4	32.5	31.8
28(470)/5/18	17.0	9,259	14.1	14.1	45.6	44.9	16.7	16.7	45.6	44.9
28(470)/5/20	18.4	10,141	12.8 ¹	12.8	52.2 ¹	51.5	15.4	15.4	52.2	51.5
28(470)/5/24	21.3	11,905	9.8 ¹	9.8 ¹	66.6 ¹	65.9 ¹	12.5 ¹	12.5	66.6 ¹	65.9
28(470)/5/26	22.3	12,566	8.9 ¹	8.9 ¹	71.8 ¹	71.2 ¹	11.5 ¹	11.5	71.8 ¹	71.2
28(470)/5/30	24.9	14,330	6.2 ²	6.2 ¹	85.0 ²	84.3 ¹	8.9 ²	8.9 ¹	85.0 ²	84.3 ¹
			Drilling depths standard leader lower part							
28(470)/5/14	14.4	7,716	16.7	16.7	39.0	40.0	19.4	19.4	39.0	40.0
28(470)/5/18	17.0	9,259	14.1	14.1	52.2	53.1	16.7	16.7	52.2	53.1
28(470)/5/20	18.4	10,141	12.8	12.8	58.7	59.7	15.4	15.4	58.7	59.7
28(470)/5/24	21.3	11,905	9.8	9.8	76.4	74.1	12.5	12.5	76.4	74.1
28(470)/5/26	22.3	12,566	8.9	8.9	78.4	79.4	11.5	11.5	78.4	79.4
28(470)/5/30	24.9	14,330	6.2 ¹	6.2	91.5 ¹	92.5	8.9	8.9	91.5	92.5

¹ Installation of Kelly bar with raised leader top

² Installation only possible using auxiliary equipment

Drilling axis 3.6 ft

Drilling axis 5.2 ft

Other Kelly bars available on request

Values indicated for minimum radius

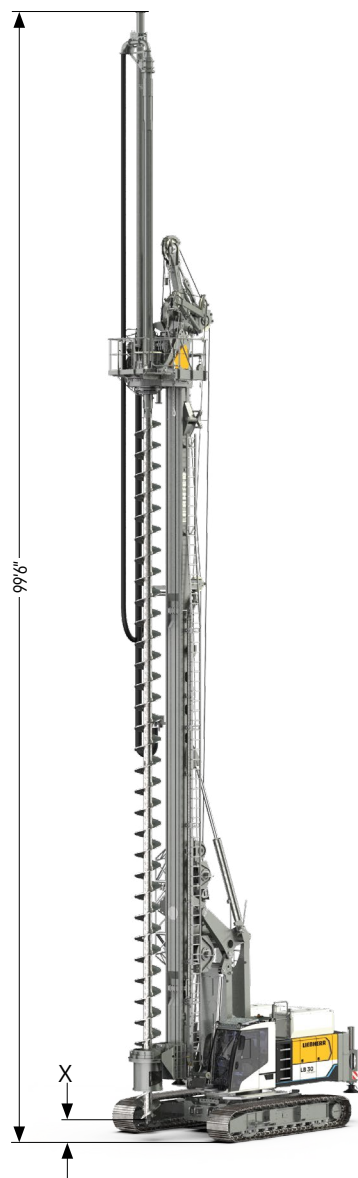
Length of drilling tool 2.3 ft

Special adapter on BAT for Kelly bar diameter 1.5 ft

If a standard BAT adapter for Kelly bar diameter 1.4 ft is used, Kelly bars and drilling depths on request

Continuous flight auger drilling

Folding leader



Performance data

Rotary drive - torque	lbf-ft	0-199,142		
Rotary drive - speed	rpm	0-43		
Max. drilling diameter*	ft	3.2		
		Low Head	Standard	Folding leader
Drilling depth without Kelly extension	ft	32.8	52.5	59.1
Drilling depth with 26.2 ft Kelly extension	ft	59.1	78.7	85.3
Max. pull force	lbf	175,351	175,351	175,351

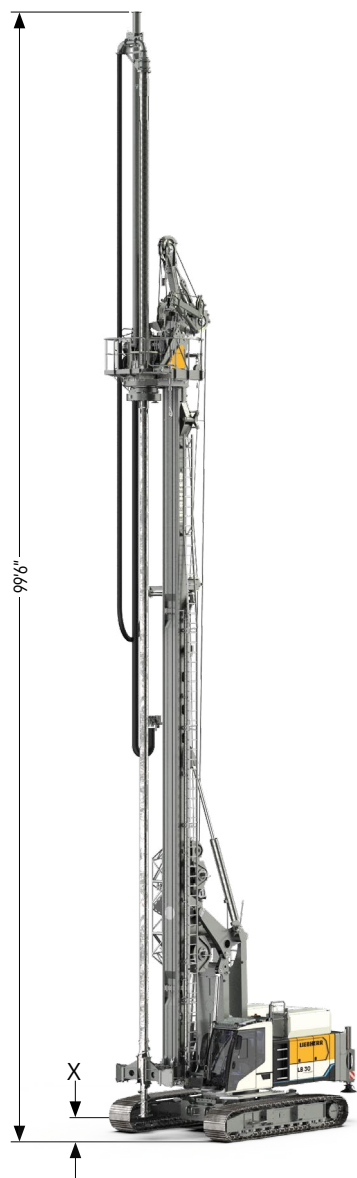
Above drilling depths take into account that an auger cleaner is used and the cardan joint has been removed.

Above drilling depths are valid for the use of standard tools and for the X value of 1.5 ft (see above illustration).

* Other drilling diameters available on request

Full displacement drilling

Folding leader



Performance data

Rotary drive - torque	lbf-ft	0-199,142		
Rotary drive - speed	rpm	0-43		
Max. drilling diameter*	ft	2.0		
		Low Head	Standard	Folding leader
Drilling depth without Kelly extension	ft	34.8	54.5	61.0
Drilling depth with 26.2 ft Kelly extension	ft	61.0	80.7	87.3
Max. pull force	lbf	175,351	175,351	175,351

Above drilling depths are valid for the use of standard tools and for an X value of 2.1 ft (see above illustration).

* Other drilling diameters available on request

Double rotary drilling

DBA 180



Performance data

Rotary drive I - torque	lbf-ft	0-132,761		
Rotary drive I - speed	rpm	0-17		
Rotary drive II - torque	lbf-ft	0-80,394		
Rotary drive II - speed	rpm	0-28		
Max. drilling diameter*	ft	2.5		
		Low Head	Standard	Folding leader
Drilling depth**	ft	35.1	54.8	61.4
Max. pull force	lbf	175,351	175,351	175,351

Above drilling depths are valid for the use of standard tools and for an X value of 1.7 ft (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 2.9 ft.

Soil mixing

MA 180 / BAT 300



Performance data MA 180

Rotary drive - torque	lbf-ft	0-121,698		
Rotary drive - speed	rpm	0-80		
Max. mixing diameter*	ft	4.9		
		Low Head	Standard	Folding leader
Mixing depth	ft	36.1	55.8	62.3
Mixing depth with 26.2 ft Kelly extension	ft	62.3	82.0	88.6
Max. pull force	lbf	71,939	71,939	71,939

Performance data BAT 300

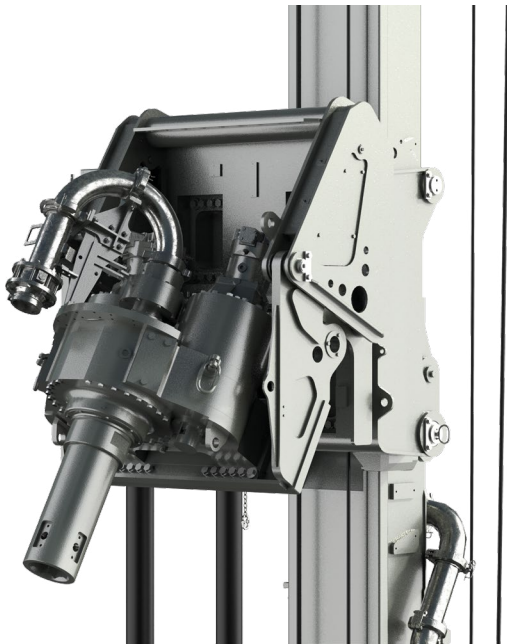
Rotary drive - torque	lbf-ft	199,142		
Rotary drive - speed	rpm	0-43		
Max. mixing diameter*	ft	6.2		
		Low Head	Standard	Folding leader
Mixing depth	ft	34.8	16.6	18.6
Mixing depth with 26.2 ft Kelly extension	ft	61.0	24.6	26.6
Max. pull force	lbf	175,351	175,351	175,351

Above mixing depths are valid for the use of standard tools and for an X value of 1.0 ft for MA 180, and 2.1 ft for BAT 300 (see above illustration).

* Other mixing diameters available on request

Down-the-hole drilling

DHR 110



Performance data DHR 110

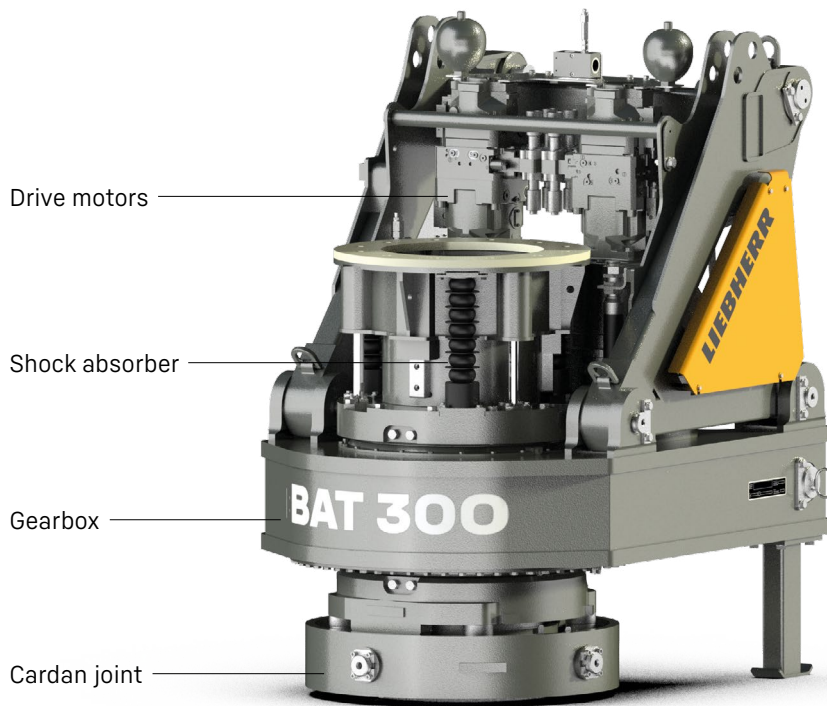
Rotary drive - torque	lbf-ft	0-78,182		
Rotary drive - speed	rpm	0-41		
		Low Head	Standard	Folding leader
Drilling depth	ft	35.1	54.8	61.4
Folding function	°	0-90	0-90	0-90
Max. pull force	lbf	134,885*/78,683**	134,885*/78,683**	134,885*/78,683**

Above drilling depths are valid for the use of standard tools and for an X value of 1.6 ft (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:

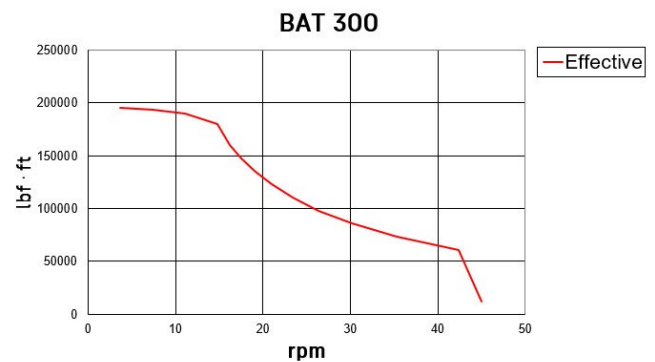
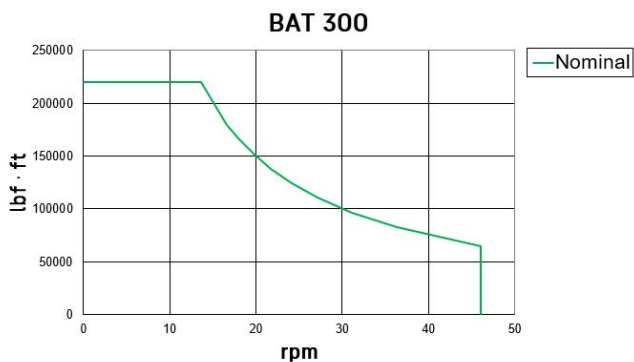
- No mechanical shift gearbox
- Low maintenance requirements

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 Nenzling 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



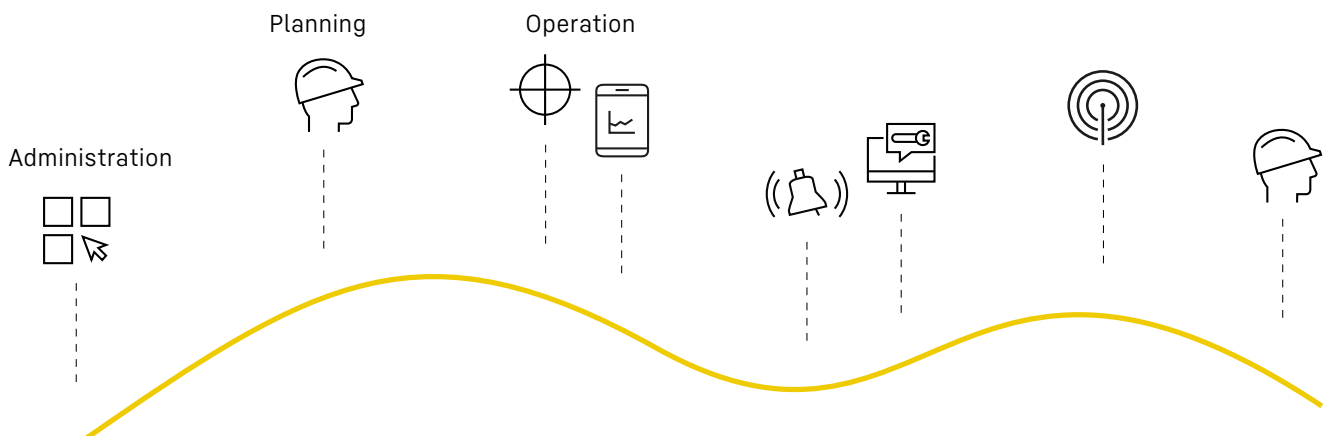
LiDAT

Data transfer and positioning system



MyNotifier

Monitoring tool for wind conditions and battery status





Download datasheet



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