

Technical data
Rotary drilling rig

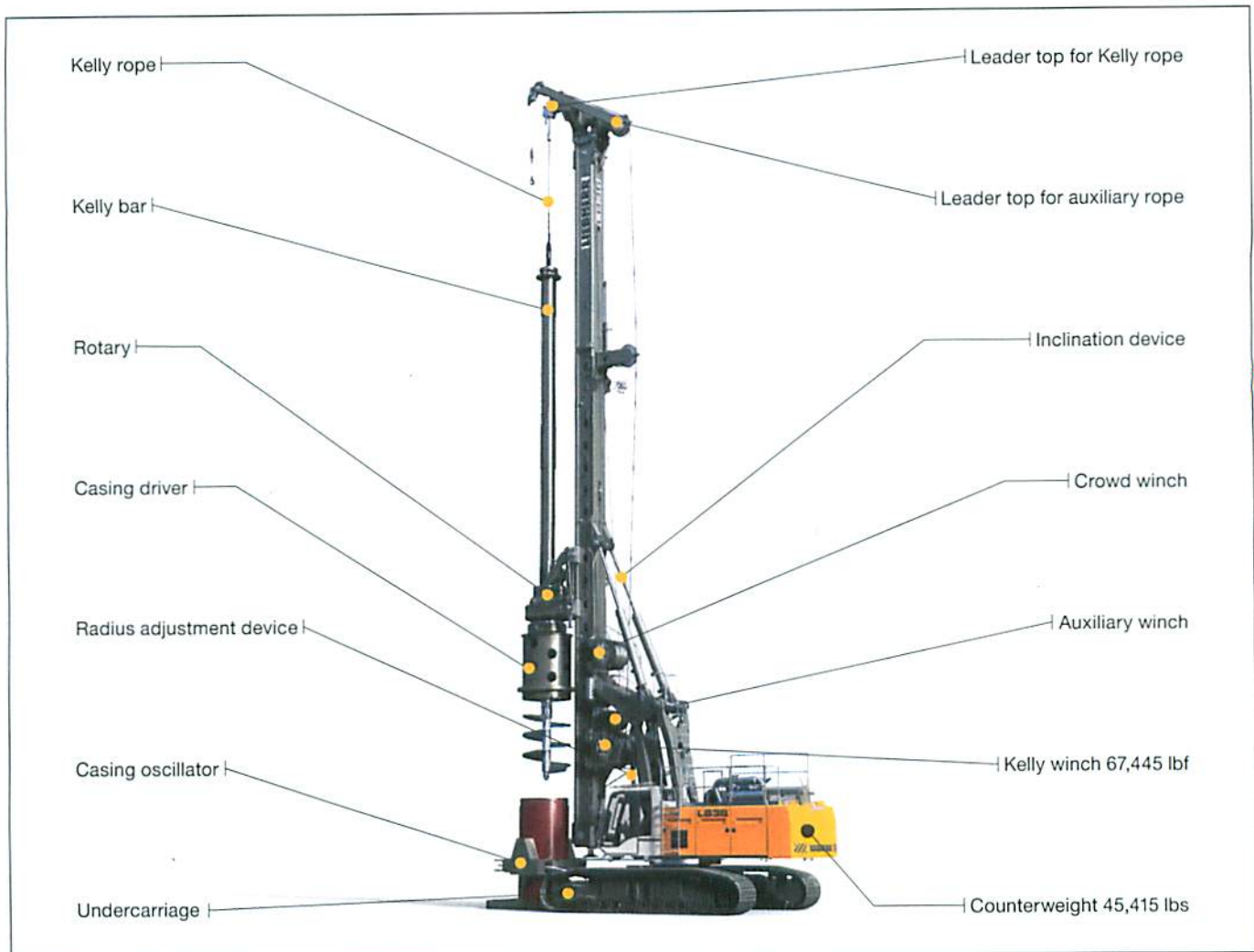
LB 36-410
Litronic®



LIEBHERR

Concept and characteristics

LB 36



The robust universal machine for a wide variety of applications:

- Kelly drilling
- Auger drilling
- Full displacement drilling
- Double rotary drilling

The solid undercarriage offers excellent stability and low ground bearing pressure.

The uppercarriage with its small swing radius enables operation in restricted space.

Parallel kinematics with a large working area allow to fold back the leader.

The rigid leader absorbs high torque and is fitted with a rope crowd system for high pull forces.

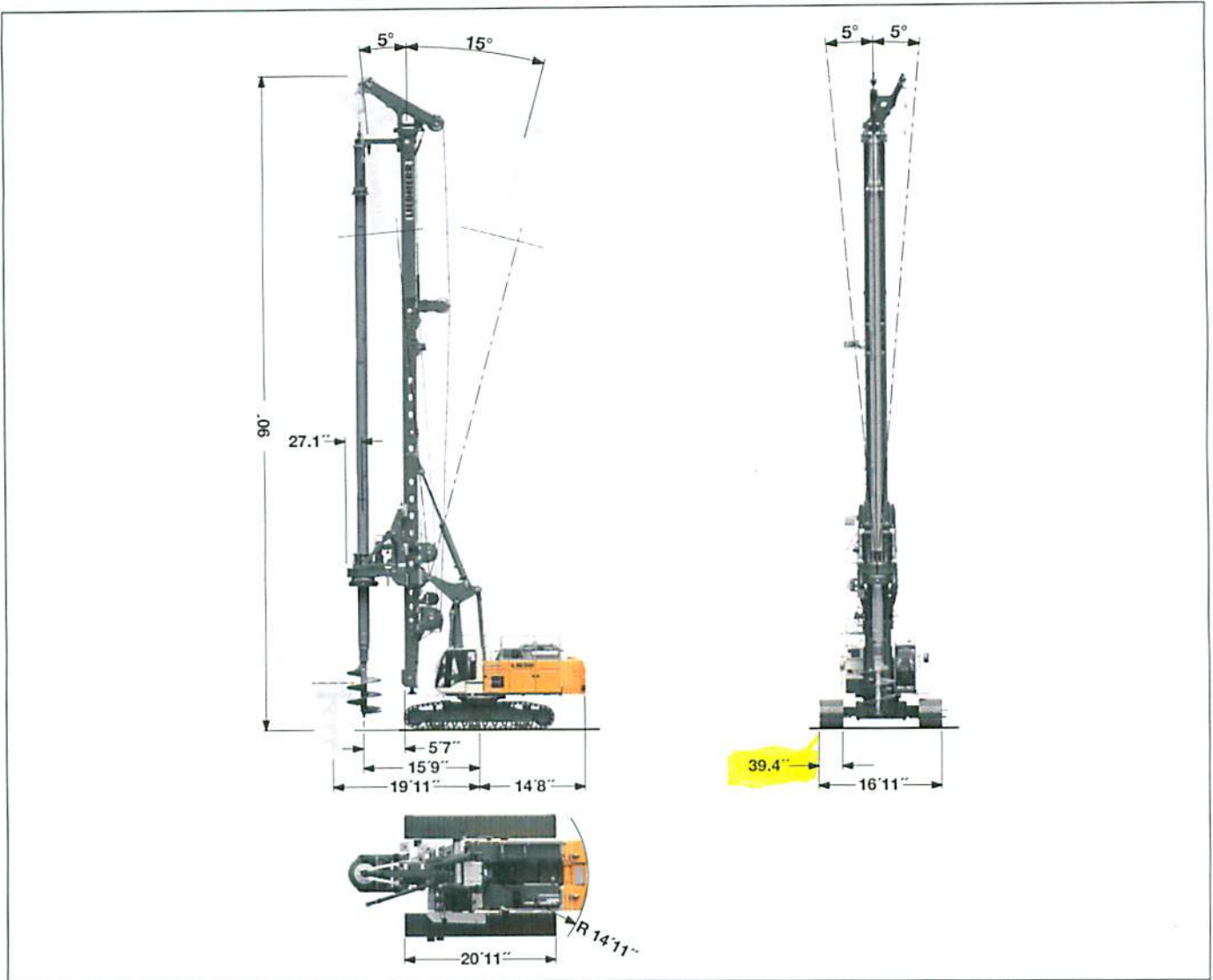
All winches are mounted on the leader, which provides a direct view of the main winch from the operator's cab.

The rotary drive of the BAT series combines exceptional torque with optimum operating comfort.

The powerful Liebherr diesel engine is low in emission and economical through SCR technology.

Dimensions

Basic machine LB 36 with optional equipment



Technical data LB 36 with optional equipment

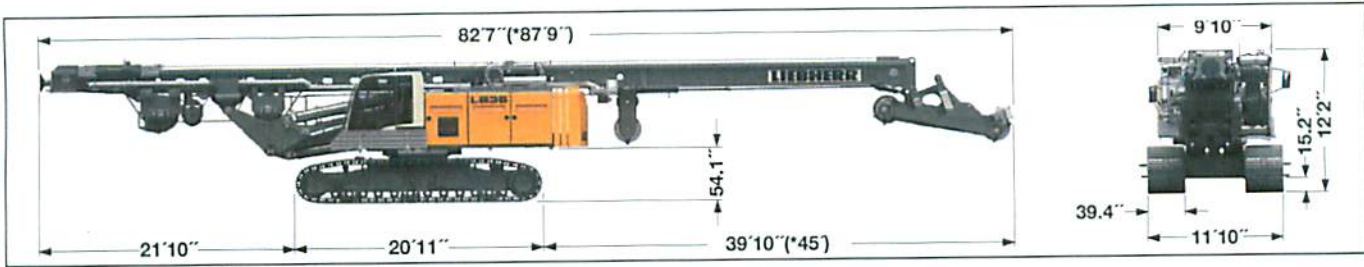
Total height	90 ft
Max. pull, leader on ground	89,925 lbf
Continuous rig inclination adjustment	
Lateral inclination	± 5°
Forward inclination	5°
Backward inclination	15°

Operating weight LB 36 with optional equipment

Total weight	with 35.4 inch 3-web shoes	265,660 lbs
	with 39.4 inch 3-web shoes	267,200 lbs

The operating weight includes the basic machine LB 36 (with rotary and Kelly bar MD 36/3/30) and 49,385 lbs counterweight, without equipment for casing oscillator.

Transport dimensions and weights



Transport standard

includes the basic machine (ready for operation) with leader, without working tools (such as rotary, Kelly bar etc.) and without counterweight.

Dimensions and weights

Length ————— 82.6 ft
 Weight complete without counterweight — (*177,030) 173,285 lbs

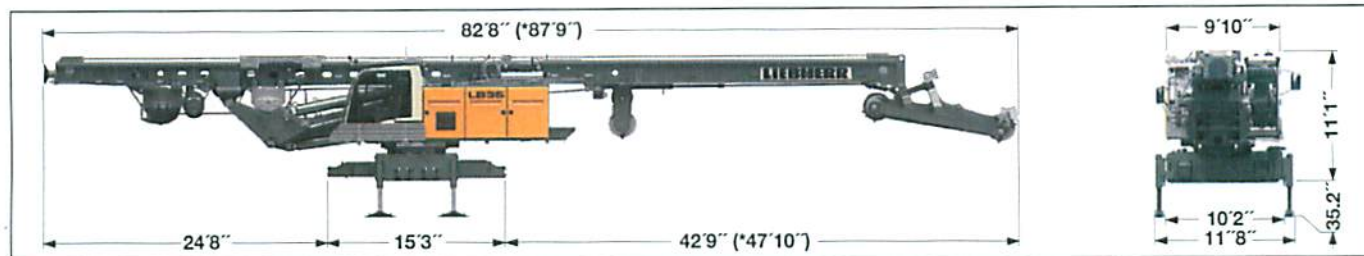


Transport option leader folded

includes the basic machine (ready for operation) with leader, without working tools (such as rotary, Kelly bar etc.) and without counterweight.

Dimensions and weights

Length ————— 67.2 ft
 Weight complete without counterweight — (*177,915) 174,165 lbs

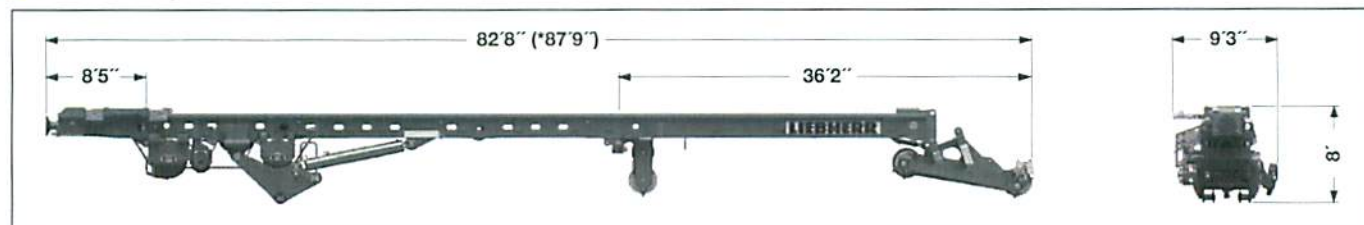


Transport with optional equipment

includes the basic machine (ready for operation) with leader, without working tools (such as rotary, Kelly bar etc.), without crawlers and without counterweight.

Dimensions and weights

Length ————— 86.3 ft
 Weight complete without counterweight — (*136,025) 132,060 lbs



Transport leader

includes the leader without working tools (such as rotary, Kelly bar etc.).

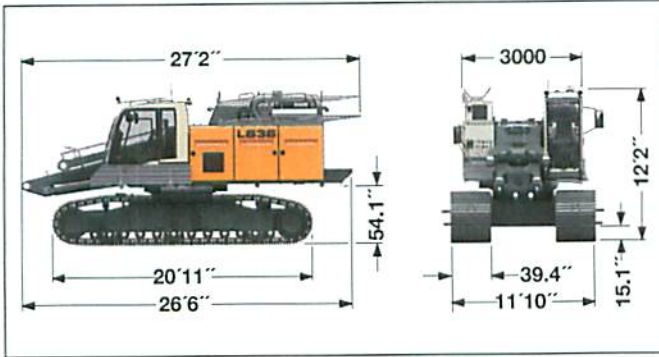
Weights

Weight complete ————— (*64,155) 60,186 lbs
 Lower part of the leader ————— 3,970 lbs
 Upper part of the leader with leader top ————— (*10,585) 10,140 lbs

*) Rigs with optional equipment

The figures in this brochure may include options which are not within the standard scope of supply of the machine.

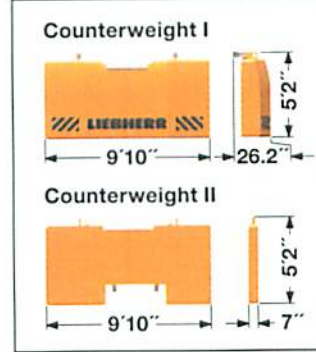
Transport dimensions and weights



Transport basic machine

ready for operation, without counterweight.

Transport weight without self-assembly system — 112,880 lbs

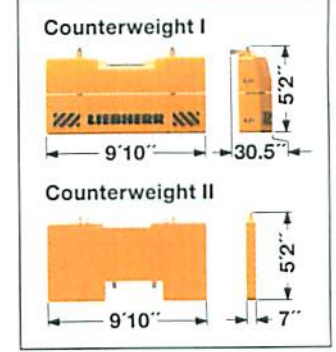


Counterweight

(standard)

Counterweight I — 22,490 lbs

Counterweight II 2x 11,465 lbs

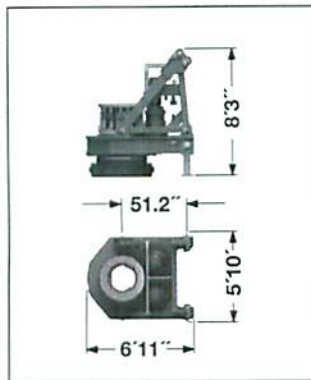


Counterweight

(optional equipment)

Counterweight I · 2x 13,230 lbs

Counterweight II 2x 11,465 lbs

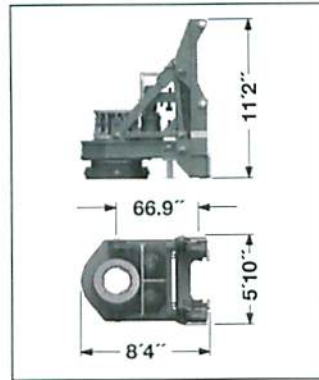


Rotary

LB 36

Transport weight

BAT 410 — 20,065 lbs

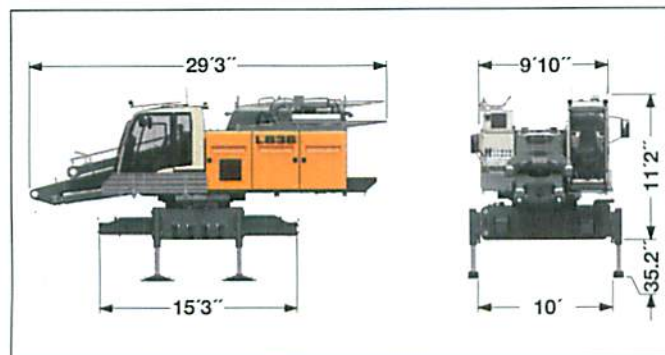


Rotary

with optional equipment

Transport weight

BAT 410 — 24,470 lbs

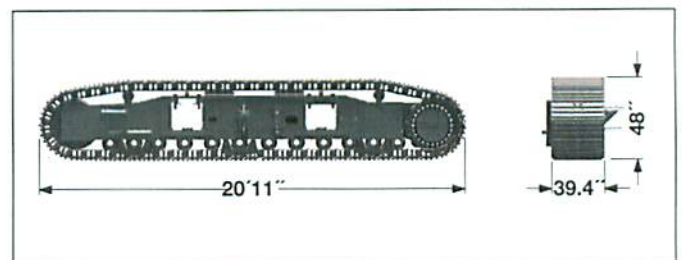


Transport basic machine

ready for operation, without crawlers and without counterweight.

Transport weight — 71,870 lbs

Weights can vary with the final configuration of the machine.

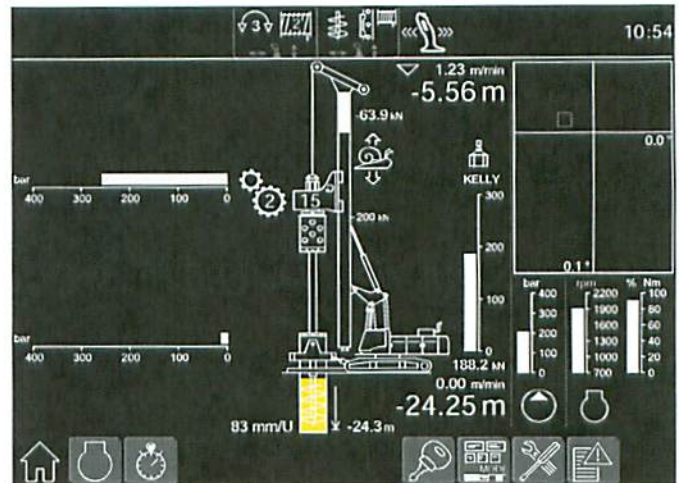


Crawlers

Crawler left — 22,270 lbs

Crawler right — 22,270 lbs

Kelly drilling with optional equipment



Display for Kelly drilling

Technical data

Rotary drive - torque _____ 302,400 lbf-ft

Rotary drive - speed _____ 37 rpm

Performance data

Max. drilling diameter* _____ 9.8 ft uncased

Max. drilling diameter* _____ 8.2 ft cased

*) Other drilling diameters available on request

Other Kelly bars available on request

When using a casing oscillator, value X has to be reduced by 5.3 ft.

Kelly bars

	A	X	Drilling depth	Weight	Kelly Ø
	(ft)	(ft)	(ft)	(lbs)	(inch)
MD 36/3/30	39.0	36.4	91.9	16,755	18.5
MD 36/3/36	45.6	29.9	111.5	19,400	18.5
MD 36/4/42	42.5	33.2	131.2	22,710	18.5
MD 36/4/48	47.4	28.2	150.9	25,355	18.5
MD 36/4/54	52.3	23.3	170.6	28,000	18.5
MD 36/4/60	57.3	18.4	190.3	30,645	18.5
MD 36/4/66	62.2	13.5	210.0	33,290	18.5
MD 36/4/72	67.1	8.5	229.7	35,935	18.5
MD 28/5/78	59.9	16.1	249.3	30,865	20.0
MD 28/5/84	63.8	12.2	269.0	33,070	20.0
MD 28/5/90	67.8	7.9	288.7	37,040	20.0

Technical description



Engine

Power rating according to ISO 9249, 390 kW (523 hp) at 1900 rpm
Engine type ————— Liebherr D 856 A7 SCR
Fuel tank ————— 185 gal capacity with continuous level indicator and reserve warning
Engine complies with NRMM exhaust certification EPA/CARB Tier 4i or 97/68 EC Stage III B.



Hydraulic system

The main pumps are operated by a distributor gearbox. Axial piston displacement pumps work in open circuits supplying oil only when needed (flow control on demand).
The hydraulic pressure peaks are absorbed by the integrated automatic pressure compensation, which relieves the pump and saves fuel.

Pumps for working tools ————— 2x 92.4 gal/min
Separate pump for kinematics ————— 47.6 gal/min
Hydraulic oil tank ————— 211 gal
Max. working pressure ————— 5076 PSI

The cleaning of the hydraulic oils occurs via an electronically monitored pressure and return filter.
Any clogging is shown on the display in the cab.
The use of synthetic environmentally friendly oil is also possible.



Crawlers

Propulsion through axial piston motor, hydraulically released spring loaded multi-disc brake, maintenance-free crawler tracks, hydraulic chain tensioning device.

Drive speed ————— 0 – 0.9 mph
Track force ————— 182,995 lbf
Width of 3-web grousers ————— 39.4 inch
Transport width ————— 11.8 ft

Option:
Width of 3-web grousers ————— 35.4 inch
Transport width ————— 11.5 ft
2-speed hydraulic motor for higher travel speed



Swing

Consists of triple-row roller bearing with external teeth and two swing drives, fixed axial piston hydraulic motor, spring loaded and hydraulically released multi-disc holding brake, planetary gearbox and pinion. Selector for 3 speed ranges to increase swing precision. Swing speed from 0 – 2 rpm is continuously variable.



Control

The control system – developed and manufactured by Liebherr – is designed to withstand extreme temperatures and the many heavy-duty construction tasks for which this machine has been designed. Complete machine operating data are displayed on a high resolution monitor screen. A GSM/GPRS telematics module allows for remote inquiry of machine data and operational conditions. To ensure clarity of the information on display, different levels of data are shown in enlarged lettering and symbols.

Control and monitoring of the sensors are also handled by this high technology system. Error indications are automatically displayed on the monitor in clear text. The machine is equipped with proportional control for all movements, which can be carried out simultaneously. Two joysticks are required for operation. Pedal control can be changed to hand control.

Option:
PDE®: Process data recording



Kelly winch with freewheeling

Line pull effective (1st layer) ————— 67,445 lbf
Rope diameter ————— 34 mm
Line speed ————— 0-233 ft/min

Option:
Line pull effective (1st layer) ————— 89,925 lbf
Rope diameter ————— 38 mm
Line speed ————— 0-194 ft/min



Auxiliary winch

Line pull effective (1st layer) ————— 22,480 lbf
Rope diameter ————— 20 mm
Line speed ————— 0-292 ft/min



Rope crowd system

Crowd force push/pull ————— 89,925/89,925 lbf
Line pull (effective) ————— 44,965 lbf
Rope diameter ————— 28 mm
Travel ————— 60.7 ft
Line speed ————— 0-230 ft/min

The winches are noted for compact, easily mounted design. Propulsion is via a maintenance-free planetary gearbox in oil bath. Load support by the hydraulic system; additional safety factor by a spring-loaded, multi-disc holding brake. All line pull values are effective values. The efficiency factor of approx. 25% has already been deducted.

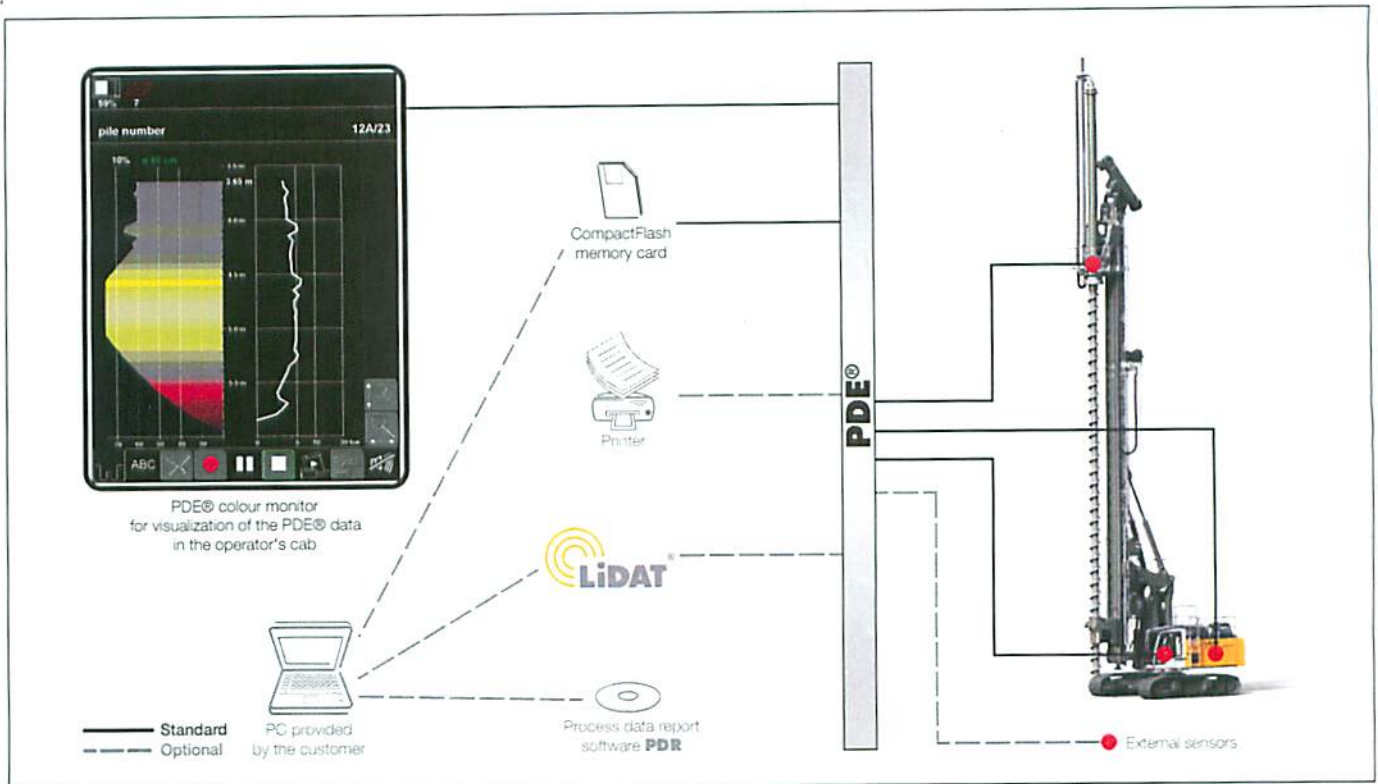


Noise emission

Noise emissions correspond with 2000/14/EC directive on noise emission by equipment used outdoors.

Process data recording system - PDE® (additional equipment)

The Liebherr process data recording system PDE® constantly records the relevant process data during the working process.



Depending on the application the recorded and processed data are displayed on the PDE® touchscreen in the operator's cab, e.g. in the form of an online cast-in-place pile.

At the same time the PDE® is operated using this touchscreen. The operator can enter various details (e.g. jobsite name, pile number, etc.) and start and stop recordings. A recording of every start-stop cycle carried out in the PDE® is established on a CompactFlash memory card.

The PDE® can be configured in a number of ways, e.g. for the connection of external sensors, for the generation of a simple protocol as graphic file and/or for a printout directly in the operator's cab.

Process data reporting - PDR (additional equipment)

Comprehensive data evaluation and generation of reports on a PC is possible using the software PDR.

Recordings management - The recordings generated by the PDE® system can be imported and managed in PDR. The data can be imported directly from the CompactFlash card or via the Liebherr telematics system LiDAT. Certain recordings, e.g. for a particular day or jobsite, can be found using filter functions.

Viewing data - The data in each record is displayed tabularly. Combining several recordings provides results, for example, regarding the total concrete consumption or the average depth. Furthermore, a diagram editor is available for quick analysis.

Generating reports - A vital element of PDR is the report generator, which allows for the generation of individual reports. These can be printed out directly or stored as pdf files. In the process the size, colour, line thickness or even the desired logo can be configured. Moreover, the reports can be displayed in different languages, e.g. in English and in the national language.

