Piling Rig

LRH 100 Litronic®

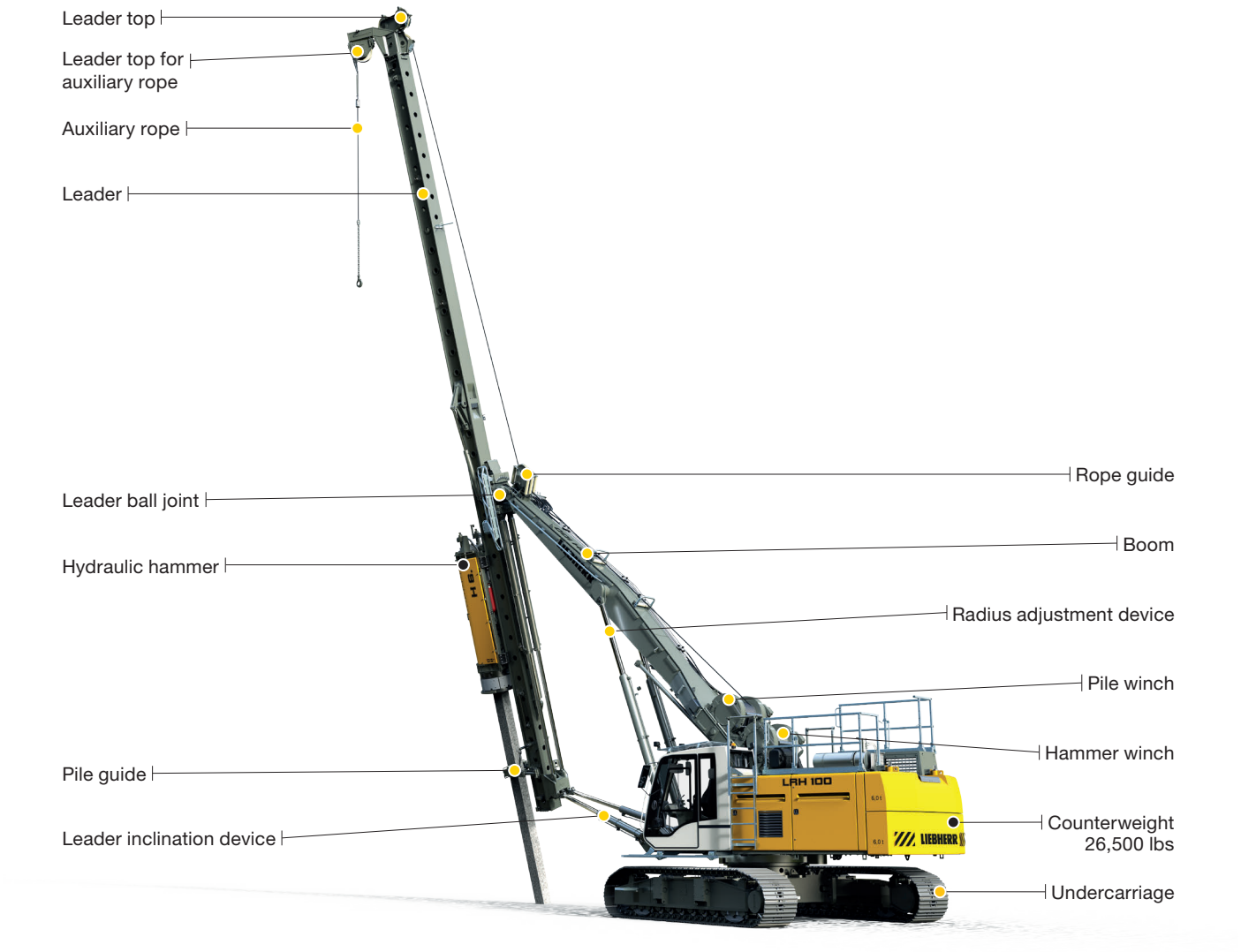
enUS

LRH 3001.05

LIEBHERR

Concept and characteristics

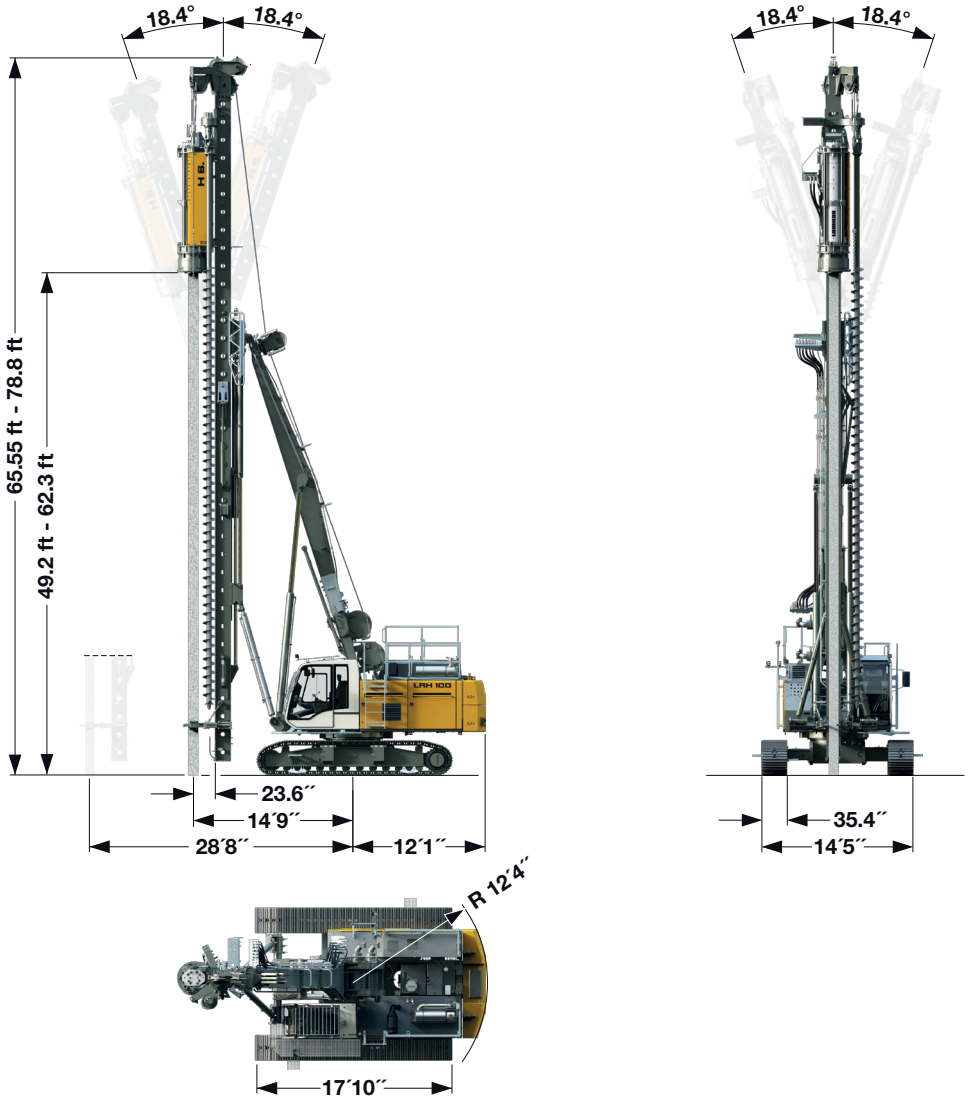
LRH 100



- The LRH 100 is based on the well-proven LB 20 basic machine
- Thanks to the special leader kinematics a radius of 28.7 ft as well as a continuous inclination adjustment of 1:3 in all directions is achieved
- The flexible hammer design offers the possibility of mounting drop weights between 6,615 lbs and 13,230 lbs. This guarantees optimum adaptation to the required pile type
- A new joystick design allows for leader movements to be carried out at all times and simultaneously to other machine movements
- Automatic vertical leader alignment at the push of a button
- Automatic parallel adjustment in both axes
- Automatic slack rope prevention
- Transport fully assembled with or without mounted hammer
- Completely self-rigging (no auxiliary machines required)
- Simultaneous control of several movements via Load-sensing multi-circuit hydraulics
- Small rear swing radius
- Equipment design according to latest European regulations and standards
- High manufacturing quality through quality control by PDE system
- Evaluation and visualisation using the new Liebherr process data report software (PDR)

Dimension and weights

LRH 100



Technical data

Total height	65.55 – 78.8 ft
Max. pile length	62.3 ft
Drop weight*	6,615 – 13,230 lbs
Hammer weight incl. drop weight*	13,560 – 20,835 lbs
Leader inclination continuously variable	
Lateral inclination	± 18.4°
Forward inclination	18.4°
Backward inclination	18.4°

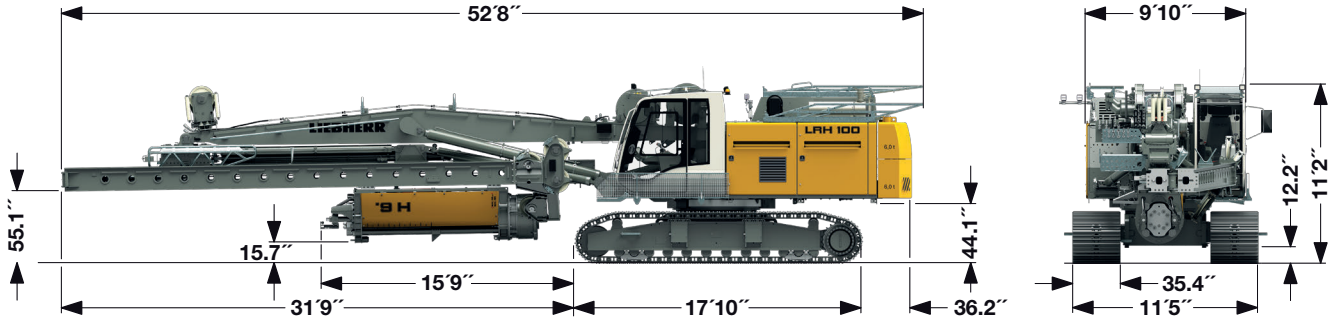
*) See table on page 6.

Operating weight

Total weight with 35.4 inch 3–web grousers	144,750 lbs
Weight of hydraulic hammer H6	see table on page 6

The operating weight includes the basic machine (hydraulic hammer H6 with 13,560 lbs dead weight) and 26,500 lbs counterweight.

Transport dimensions and weights



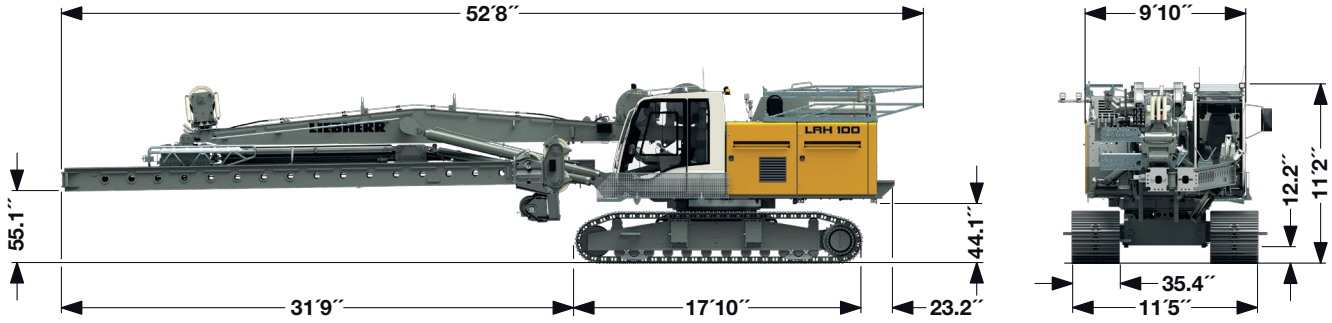
Transport - with hydraulic hammer

includes the basic machine (ready for operation) with leader, hydraulic hammer type H6 and counterweight.

Weights

Weight complete
with hydraulic hammer and counterweight ——— 144,750 lbs
Weight of hydraulic hammer ——— see table on page 6

The operating weight includes the basic machine (hydraulic hammer H6 with 13,560 lbs dead weight) and 26,500 lbs counterweight.



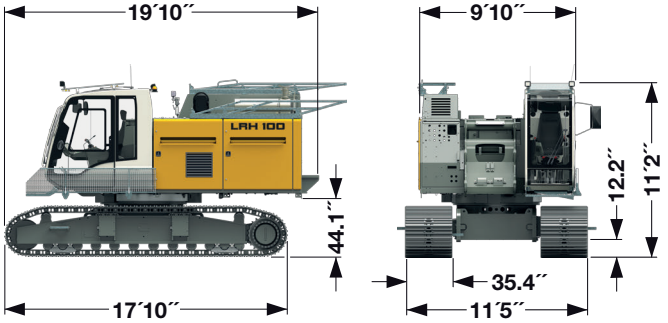
Transport - standard

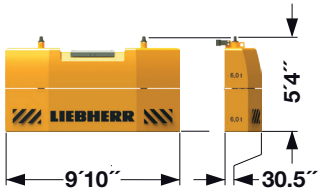
includes the basic machine (ready for operation) with leader without working tools and counterweight.

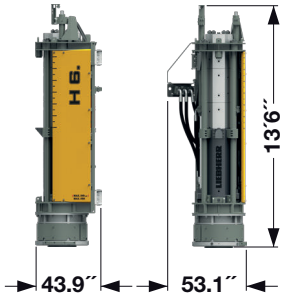
Weights

Weight complete without counterweight ——— 104,720 lbs

Transport dimensions and weights







Transport basic machine

ready for operation, without counterweight.

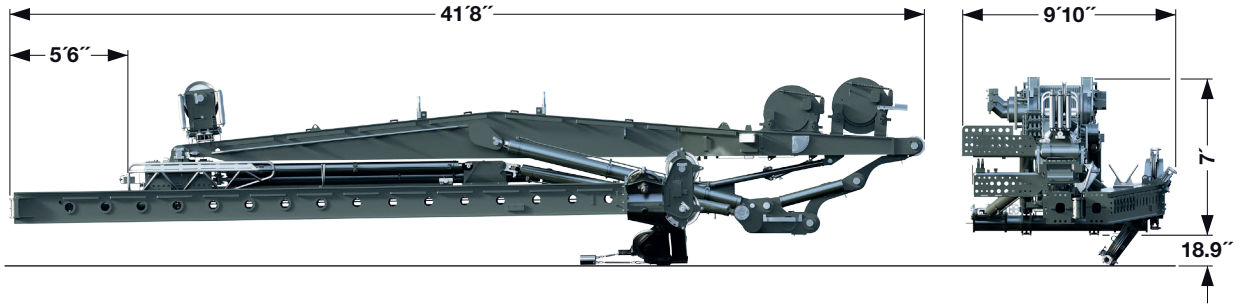
Transport weight	69,445 lbs

Counterweight

Counterweight	13,230 lbs
Counterweight	13,230 lbs

Hammer

Transport weight	
H6	13,560 lbs
with 6,615 lbs drop weight	



Transport leader

includes the leader without working tools (hydraulic hammer, pre-drill etc.).

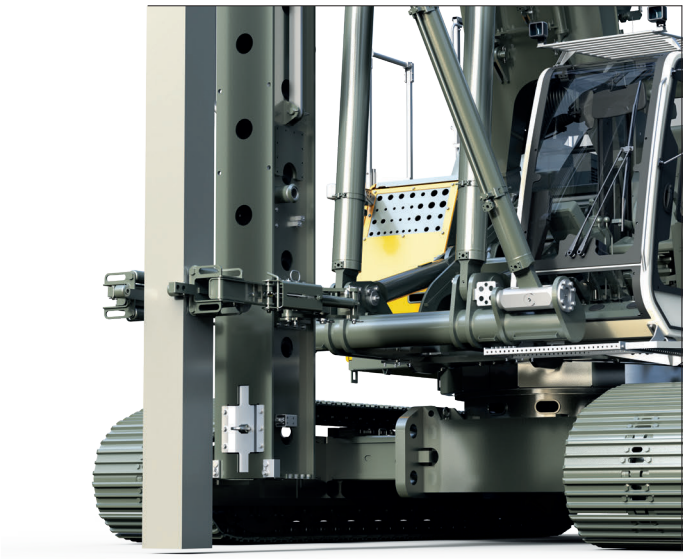
Weights

Weight complete	35,275 lbs

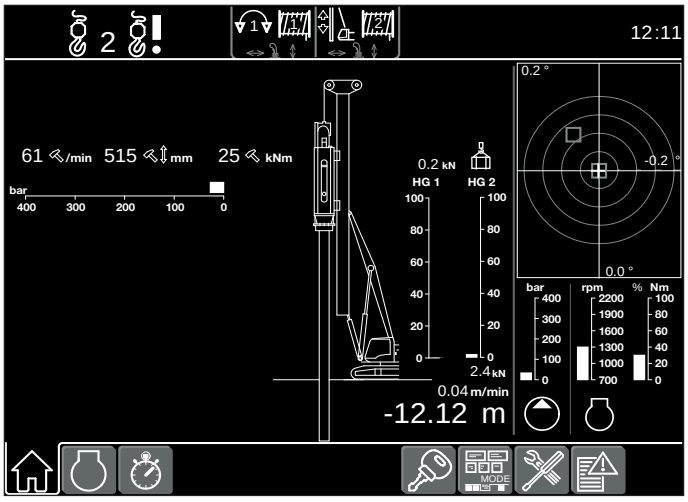
The figures include options which are not within the standard scope of supply of the rig.

Hydraulic hammer

H6



Pile with pile guide



Display for hydraulic hammer

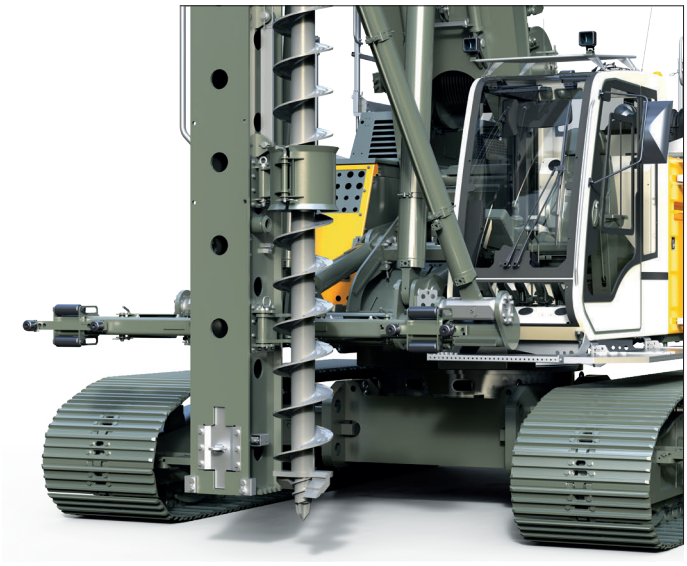
Technical data H6

Hammer type	H6	H6	H6	H6
Drop weight	6,615 lbs	8,820 lbs	11,025 lbs	13,230 lbs
Max. rated energy	26,552 lbf-ft	35,403 lbf-ft	44,254 lbf-ft	53,105 lbf-ft
Blow rate - blows/min	50-150	50-150	50-150	40-150
Hammer weight incl. pile helmet and dolly	13,560 lbs	15,765 lbs	17,970 lbs	20,175 lbs

Various pile helmet sizes available on request (max. diameter 25.2 inch).

Pre-drill

BA 12



Auger with auger guide

Technical data

Rotary drive - torque	0 – 8,850	lbf-ft
Rotary drive - speed	0 – 65	rpm
Max. drilling diameter	0 – 13.8	inch
Max. drilling depth	39.4	ft

Other drilling diameters available on request.

Technical data

Engine

Engine type — Liebherr D 936 A7-04
Power rating to ISO 9249 — 250 kW (335 hp) at 1700 rpm
Fuel tank — 185 gal capacity with continuous level indicator and reserve warning
Engine complies with NRMM exhaust certification EPA/CARB Tier 4f and 97/68 EC Stage IV.

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 63.4 gal/min
Separate pump for kinematics — 36.2 gal/min
Hydraulic oil tank — 158.5 gal
Max. working pressure — 4,980 PSI

The cleaning of the hydraulic oils occurs via an electronically monitored pressure and return filter. Any clogging is shown on the monitor 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 of telescopic undercarriage — 0 – 1.12 mph
Track force — 103,415 lbf
Width of 3–web–grousers — 34.4 inch
Transport width — 11´5˝

Swing

Swing ring with triple row roller bearing, external teeth and one swing drive, 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 – 3.5 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. A GSM/GPRS/GPS-modem allows for remote inquiry of machine data and error indications. 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 electro-hydraulic continuous 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.
Options:
PDE® – process data recording
GSM/GPRS/GPS-modem

Hammer winch with free fall

Line pull (effektiv) — 23,380 lbf
Rope diameter — 24 mm
Rope speed — 0 – 180 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.

Pile winch with free fall

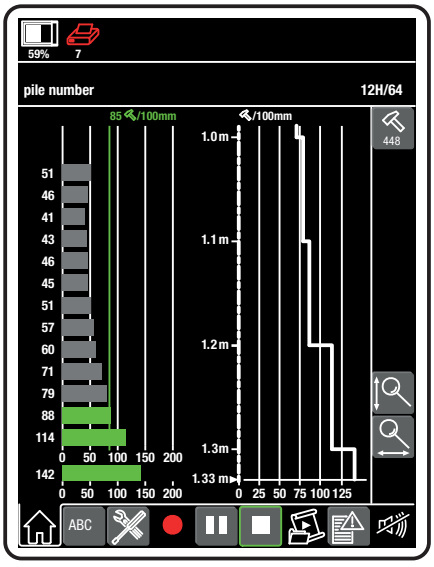
Line pull (effective) — 18,000 lbf
Rope diameter — 20 mm
Rope speed — 0 – 180 ft/min
The winches are noted for compact, easily mounted design. Propulsion is via a maintenance-free planetary gearbox in oil bath. Load support by the hydraulic system; additional safety factor by a spring-loaded, multi-disc holding brake.

Noise emission

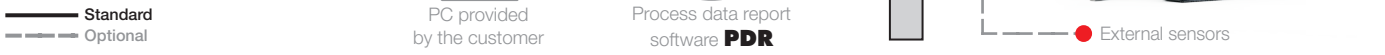
Noise emissions correspond with 2000/14/EC directive.
Guaranteed average sound pressure level L_{PA} in the cabin - ≤ 75.4 dB(A)
Guaranteed sound power level L_{WA} — ≤ 110 dB(A)
Vibration transmitted to the hand-arm system of the machine operator — < 8.20 ft/s²
Vibration transmitted to the whole body of the machine operator — < 1.64 ft/s²

Process data recording system - PDE® (additional equipment)

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



PDE® colour monitor for visualization of the PDE® data in the operator's cab



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 and/or for the generation of a simple protocol as graphic file.

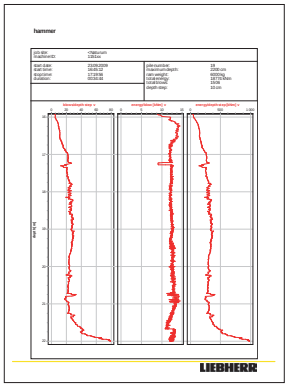
Process data reporting - PDR (additional equipment)

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.



LRH 100 at work

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