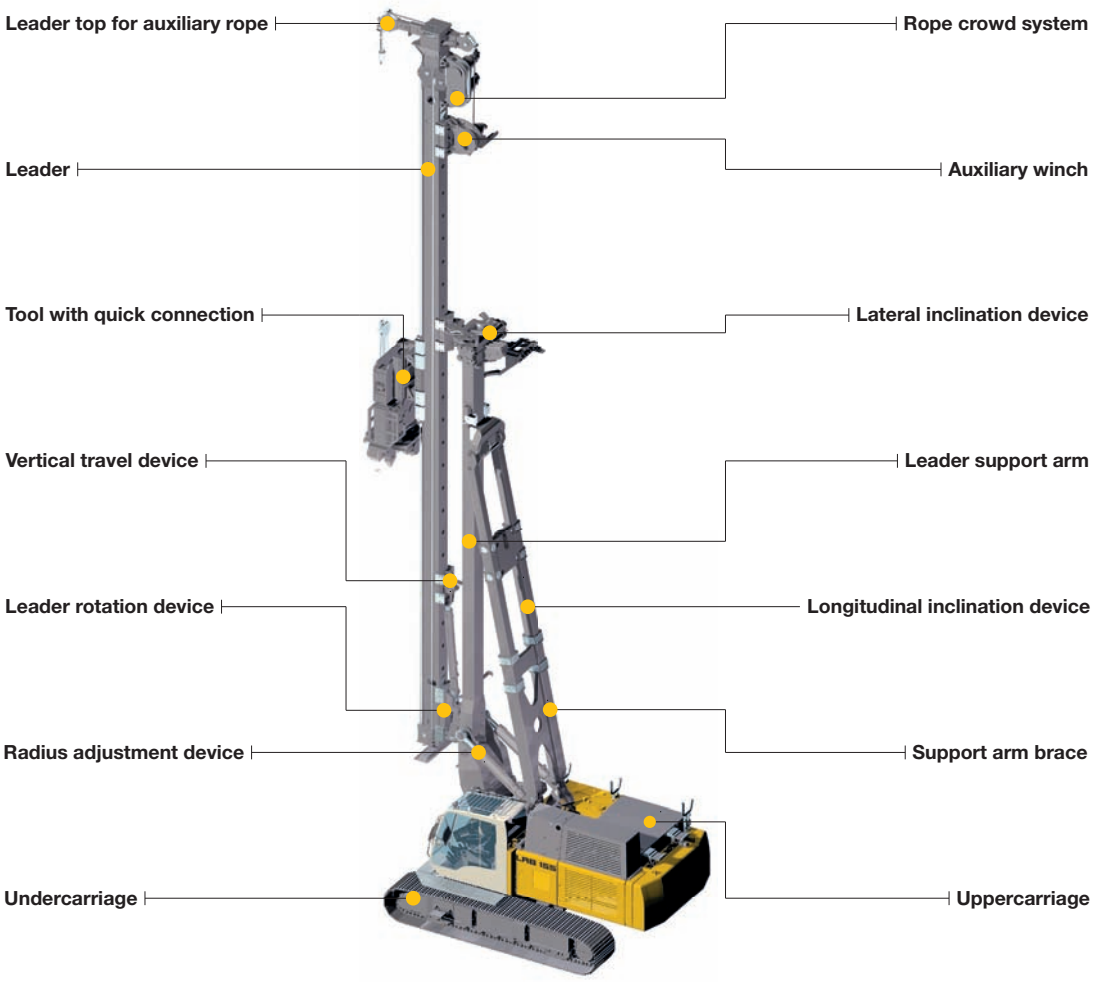
Technical data
Piling and drilling rig

LRB 155
Litronic®

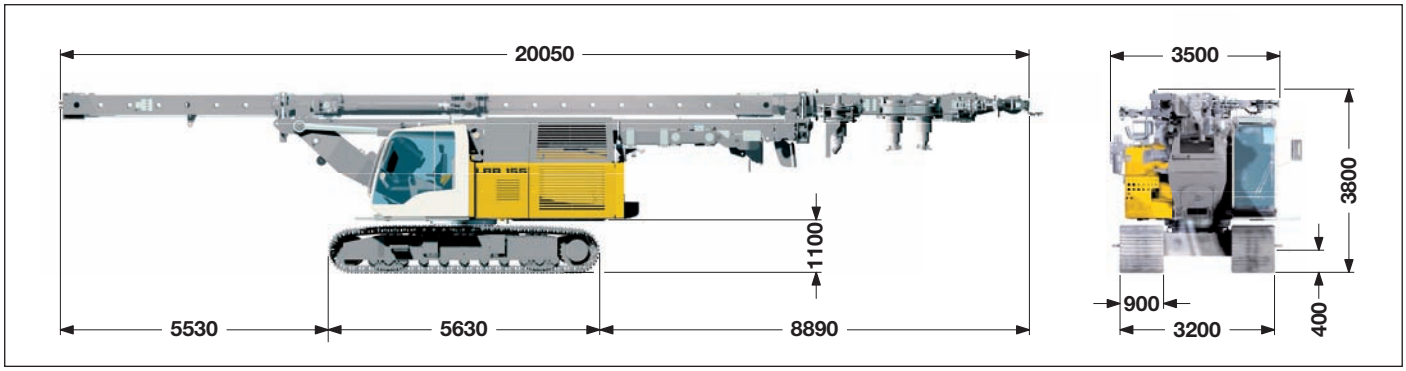
LIEBHERR

Concept and characteristics



- High engine output with automatic engine speed control
- Controlled entirely from cab
- Sturdy and solid rig design
- Solid parallel kinematics on the basic machine
- High push and pull forces
- High torque
- Completely self–rigging (no auxiliary machines required)
- Large range of working tools (all piling and drilling works can be performed)
- Stepless leader inclination 1:6 forward – 1:3 backward depending on type of equipment
- Leader swing range ± 90°
- Increase of effective leader length (up to 3 m) via vertical travel device
- Automatic vertical alignment
- High alignment forces
- Simultaneous control of several movements via Load–sensing multi–circuit hydraulics
- Quick change of equipment possible through quick connection
- Equipment design according to latest European regulations and standards
- High manufacturing quality through quality control by PDE®–system

Transport dimensions and weights

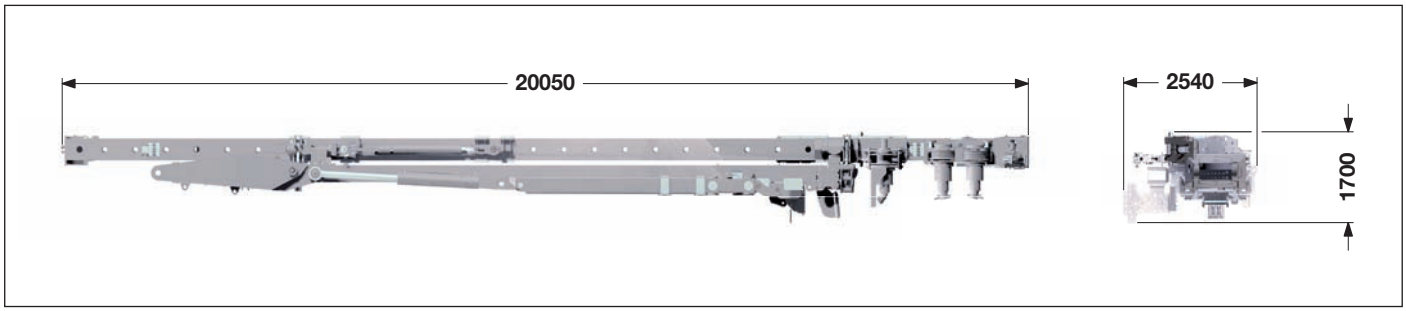


Transport with leader

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

Dimensions and weights

Leader length	18.2 m – 21.2 m – 24.2 m
Weight complete without counterweight	58.6 t — 59.3 t — 60.1 t

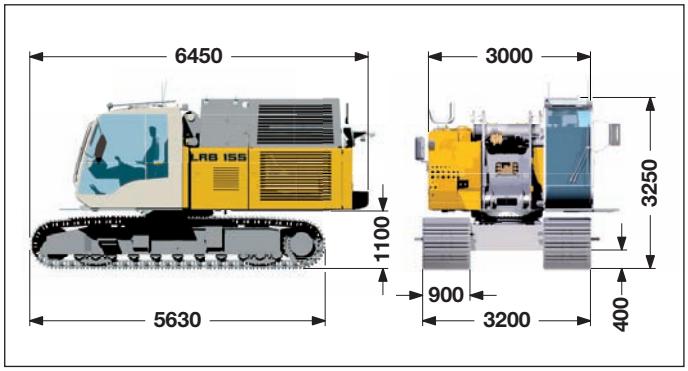


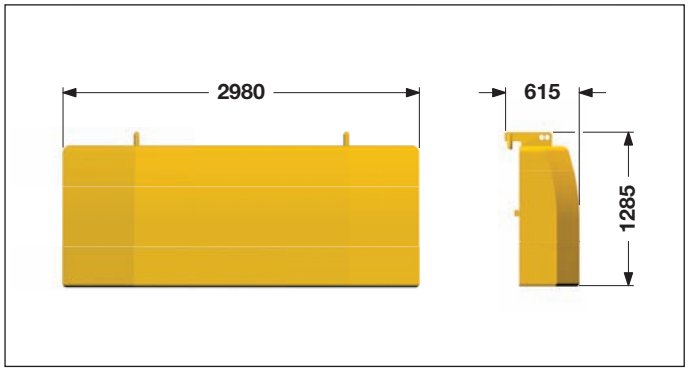
Transport leader

includes the leader without working tools (such as rotary, torque support etc.).

Dimensions and weights

Leader length	18.2 m – 21.2 m – 24.2 m
Weight	23.8 t — 24.5 t — 25.3 t





Transport basic machine

ready for operation

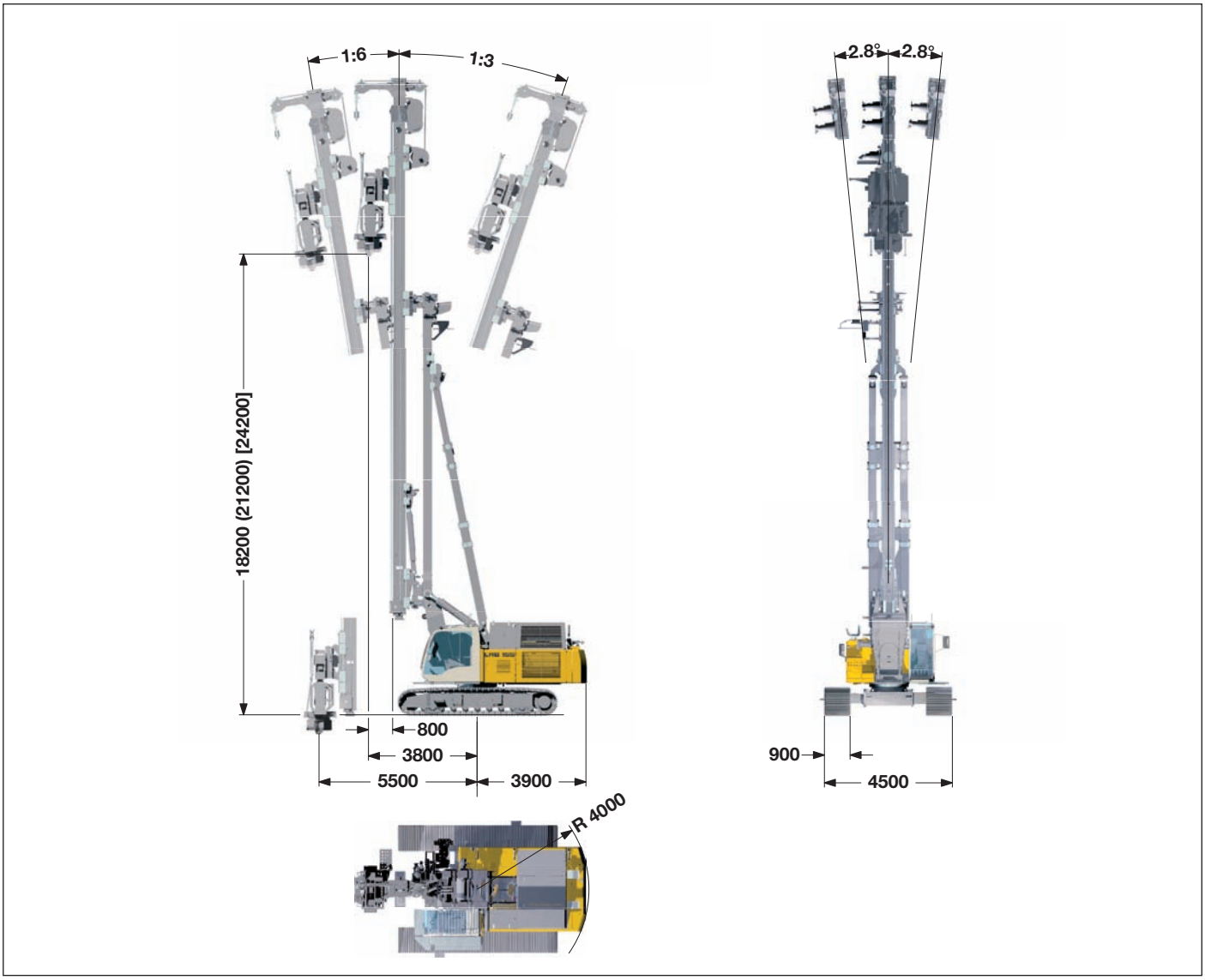
Basic machine	34.8 t

Weights

Counterweight	8.0 t

Weights 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
Basic machine LRB 155



Technical data

Leader length	18 m — 21 m — 24 m
Capacity hammer including cap plus pile	15 t
Max. hammer weight	8 t
Max. pile weight	7 t
Max. pull, leader on ground	300 kN
Max. torque	220 kNm
Working radius machine center of rotation — front edge leader	3.0 — 4.7 m
Stepless rig inclination adjustment	
Lateral inclination	± 1:20
Forward inclination	1:6
Backward inclination	1:3
Vertical leader adjustment	
above ground level (depending on radius)	3 m
below ground level (depending on leader length)	5 m
Leader swing range	± 90°

Operating weight and ground pressure

Total weight with 900 mm 3–web shoes	66.6 t
Ground bearing pressure	0.79 kg/cm²

The operating weight includes the basic machine LRB 155 (leader length 18.2 m, without working tools) and 8.0 t counterweight.

Technical data

Engine

Power rating according to ISO 9249, 450 kW (603 hp) at 1900 rpm
Engine type — Liebherr D 9508 A7
Fuel tank — 800 l capacity with continuous level indicator and reserve warning
Engine complies with NRMM exhaust certification EPA/CARB Tier 3 and 97/68 EC Stage III.

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 350 l/min
Separate pump for kinematics — 190 l/min
Hydraulic oil tank — 825 l
Max. working pressure — 350 bar

No auxiliary power packs are required as application specific hydraulics supply power to all components.
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.

Swing

Consists of single-row ball bearing with internal teeth, 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.
Free swing reduces wear to a minimum because rotation moment is sustained through the hydraulic system by the diesel engine.
Swing speed from 0 – 3.7 rpm is continuously variable.

Crawlers

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

Drive speed — 0 – 1.5 km/h
Track force — 632 kN
Width of 3-web track shoesn — 700 mm – 800 mm – 900 mm

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 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 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-modem

Kelly winch with free fall

Line pull (effective) — 160 kN
Rope diameter — 26 mm
Line speed — 0 - 94 m/min

Auxiliary winch

Line pull (effective) — 80 kN
Rope diameter — 20 mm
Drum diameter — 320 mm
Line speed — 0 - 73 m/min

Rope crowd system

Crowd force push/pull — 300/300 kN
Line pull (effective) — 150 kN
Rope diameter — 24 mm
Line speed — 0 - 60 m/min
The ropes are precisely actuated via a powerful winch.

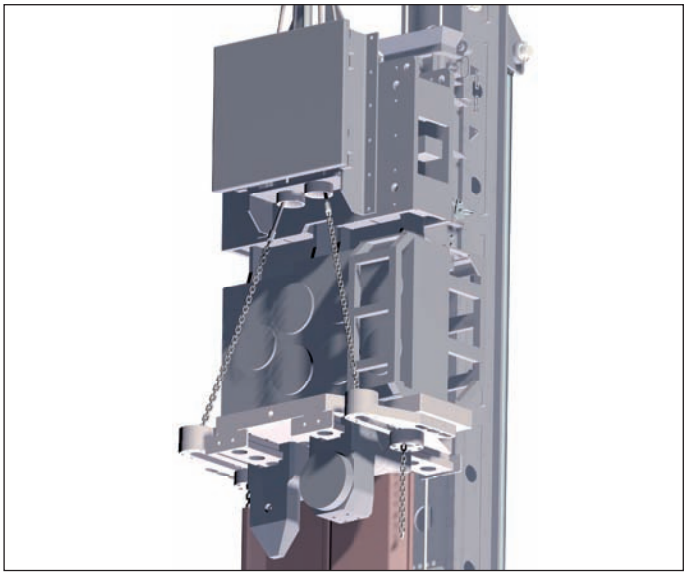
The winches are noted for compact, easily mounted design. Propulsion is via a maintenance-free planetary gearbox in oil bath. Load support by the hydraulic system; additional safety factor by a spring–loaded, multi–disc holding brake. All line pull values are effective values. The efficiency factor of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

Noise emission

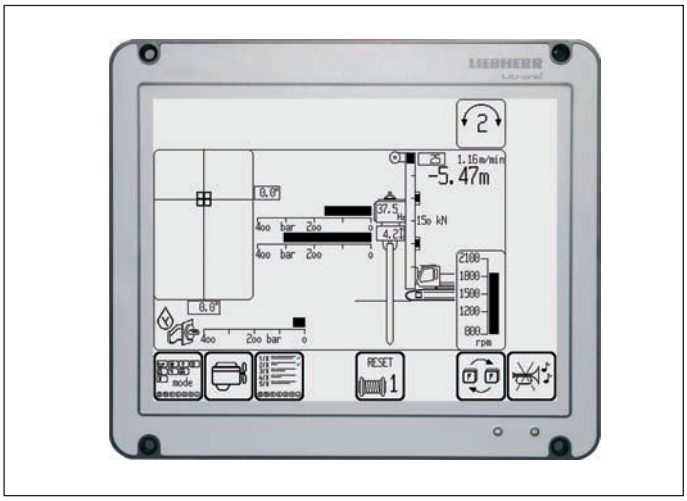
Noise emissions correspond with 2000/14/EC directive on noise emission by equipment used outdoors.

High frequency vibrator
Model 23 VML with hydraulic sheet pile feeder

Effective length – 21 m



Double clamp and hydraulic sheet pile feeder



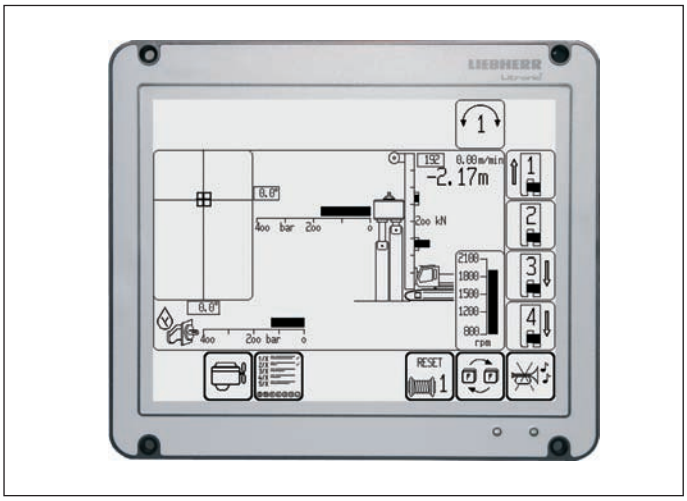
Display for vibrating

Technical data

Static moment	0 – 23	kgm
Max. speed	2300	rpm
Max. centrifugal force	1350	kN
Amplitude	0 - 17	mm
Total weight without clamp	4000	kg
Dynamic weight with clamp	5250	kg

Sheet pile press
Model 4080

Effective length – 21 m



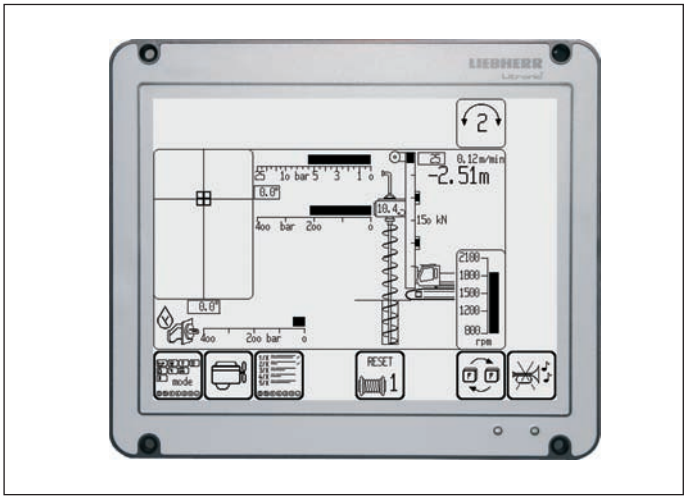
Display for sheet pile press

Technical data

Push force	4x 800 kN
Pull force	4x 700 kN
Stroke of cylinders	400 mm
Sheet piles	U and Z profile
Weight	7000 kg

Pre-drill
Model BA 45

Effective length – 21 m



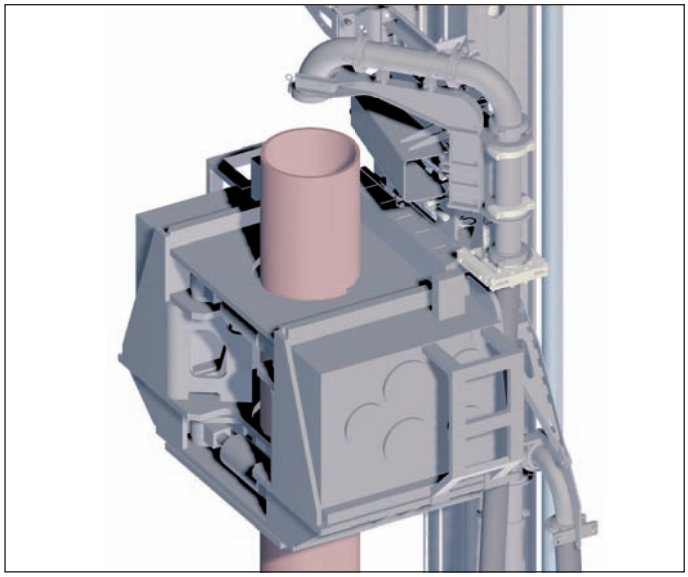
Display for continuous flight auger drilling

Technical data

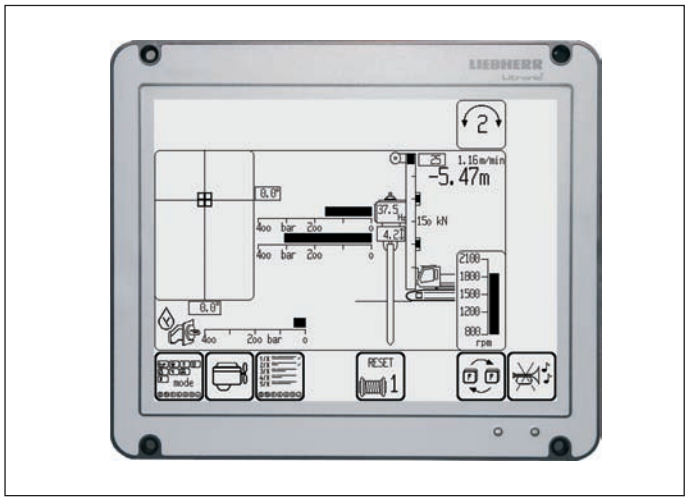
Drilling drive – torque	45 kNm
Drilling drive – speed	95 rpm
Max. drilling diameter	800 mm

High frequency ring vibrator
Model 20 VMR

Effective length – 34 m



Ring vibrator with concreting system



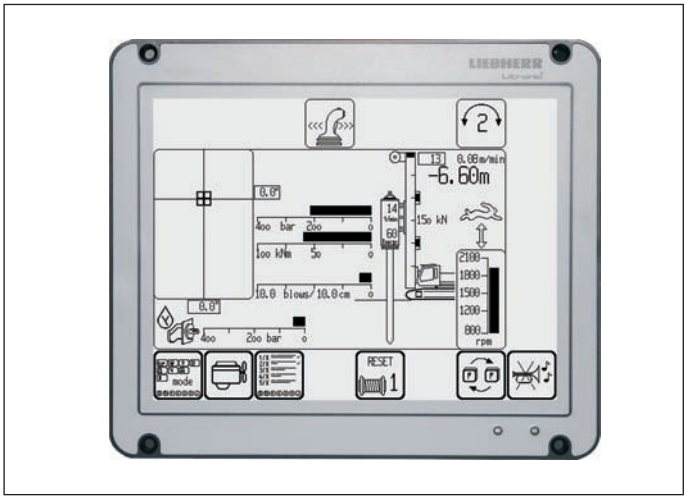
Display for vibrating

Technical data

Static moment	0 – 20	kgm
Max. speed	2300	rpm
Max. centrifugal force	1160	kN
Max. pull force	300	kN
Max. pull down	300	kN
Amplitude	0 - 6.5	mm
Casing diameter	355 - 510	mm
Total weight	6200	kg
Max. hydraulic pressure	350	bar
Hydraulic flow	550	l/min

Hydraulic hammer
Model H 85

Effective length – 21 m



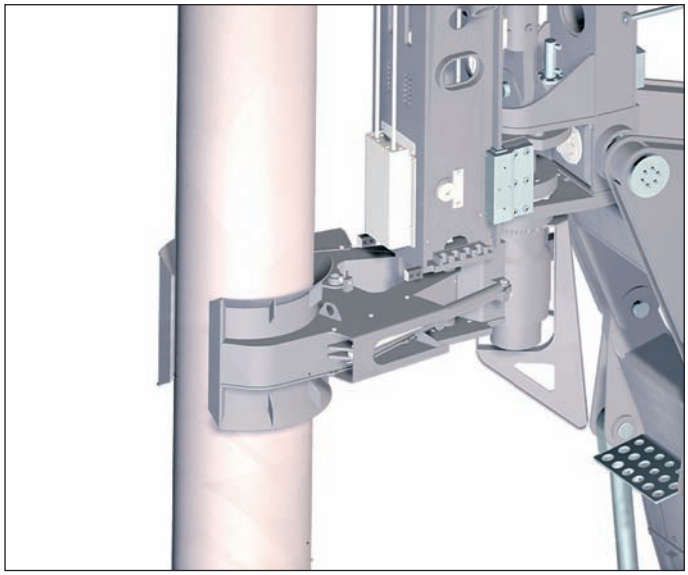
Display for impact driving

Technical data

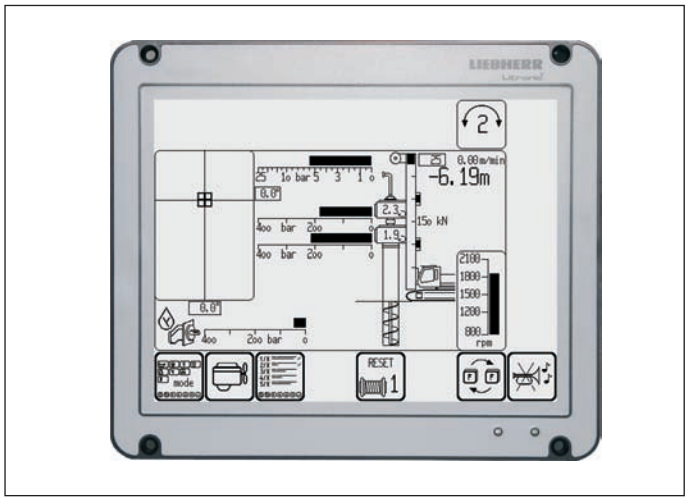
Hammer model	H 85/7	H 85/5*
Ram weight	7000 kg	5000 kg
Max. rated energy	83 kNm	60 kNm
Blow rate	45-100 blows/min	50-100 blows/min
Hammer weight incl. ram	10200 kg	8300 kg
Hydraulic pressure	240 bar	240 bar
Hydraulic flow	200 l/min	200 l/min

*) The 7000 kg ram can be replaced by a 5000 kg ram.

Double rotary drilling
Model DBA 200



Hydraulic casing guide



Display for double rotary drilling

Technical data

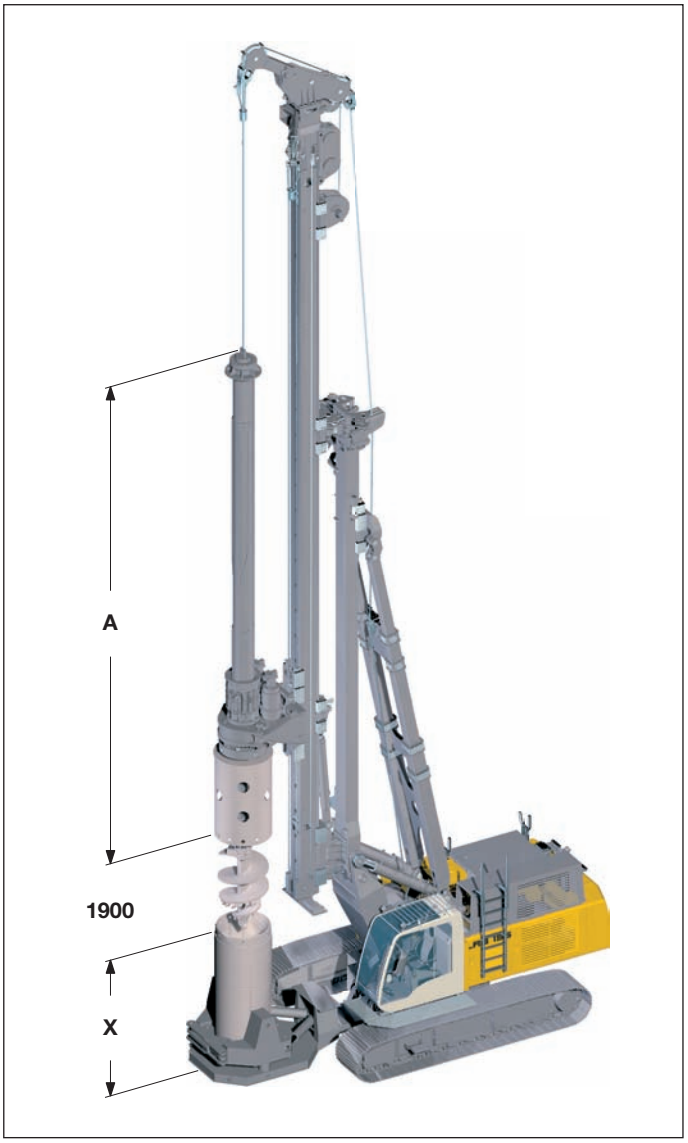
Drilling drive I – speed	1st gear	7 rpm
Drilling drive I – torque	1st gear	196 kNm
Drilling drive I – speed	2nd gear	14 rpm
Drilling drive I – torque	2nd gear	98 kNm
Drilling drive II – speed	1st gear	15 rpm
Drilling drive II – torque	1st gear	98 kNm
Drilling drive II – speed	2nd gear	30 rpm
Drilling drive II – torque	2nd gear	49 kNm

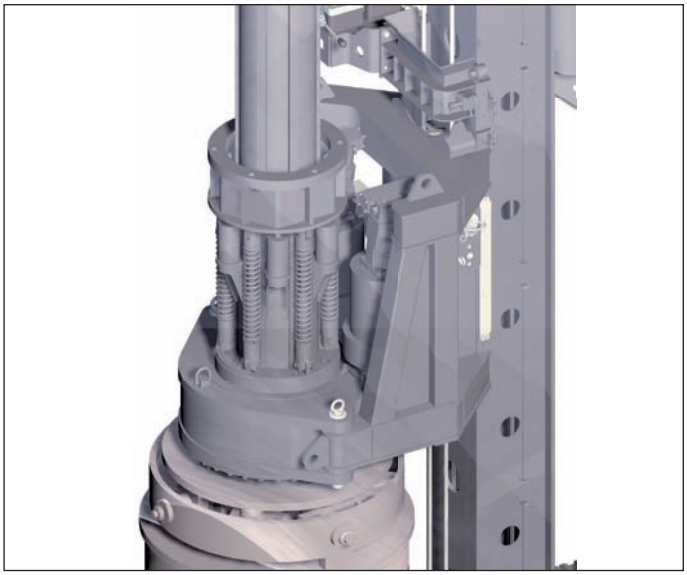
Performance data

Max. drilling diameter*	620	mm
Max. drilling depth*	15	m
Max. pull force (crowd winch and Kelly winch)	460	kN

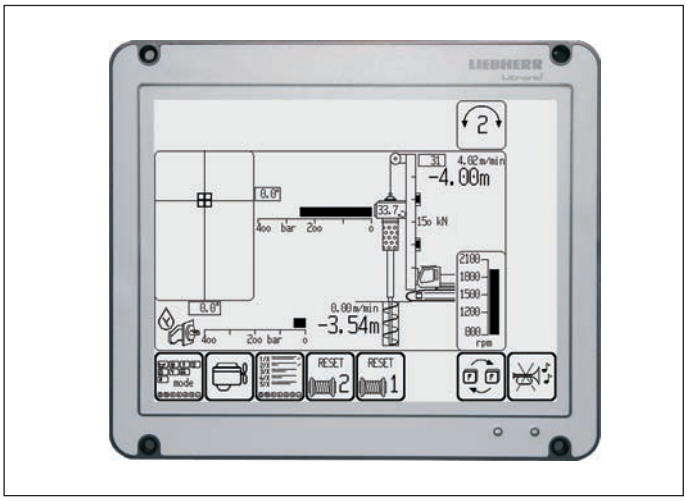
*) Other drilling diameters and drilling depths available on request

Kelly drilling
Model BA 220





Shock absorber for Kelly bar



Display for Kelly drilling

Technical data

Drilling drive - torque	1st gear	220	kNm
Drilling drive - speed	1st gear	25	rpm
Drilling drive - torque	2nd gear	110	kNm
Drilling drive - speed	2nd gear	50	rpm

Performance data

Max. drilling diameter without casing oscillator*	2200	mm
Max. drilling diameter with casing oscillator*	1500	mm
Line pull Kelly winch	160	kN
Line speed Kelly winch	0 – 94	m/min

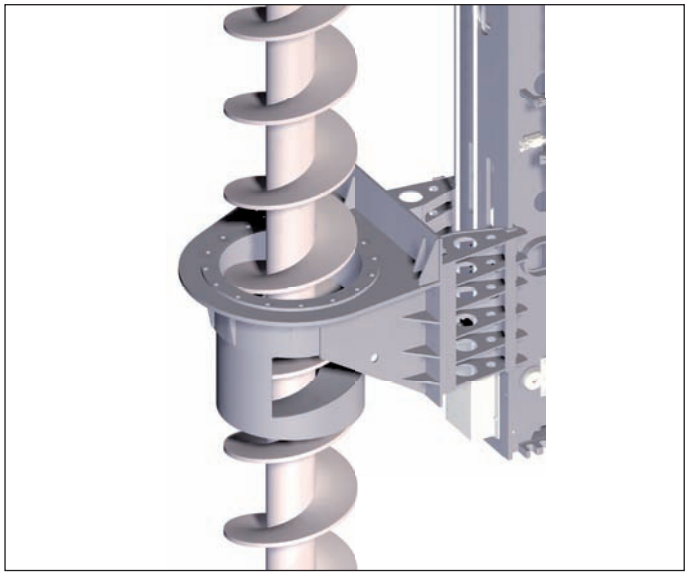
*) Other drilling diameters available on request.

Kelly bars

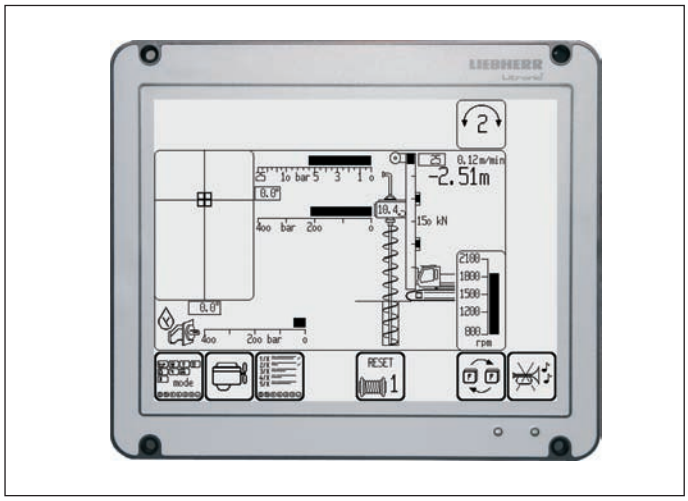
	A	X	Drilling depth	Weight	Kelly Ø
	(mm)	(mm)	(m)	(t)	(mm)
MD 28/3/24	9880	12000	21.8	5.0	419
MD 28/3/27	10880	11000	24.8	5.5	419
MD 28/3/30	11880	10000	27.8	5.9	419
MD 28/3/33	12880	9000	30.8	6.4	419
MD 28/3/36	13880	8000	33.8	6.8	419
MD 28/4/36	11450	10750	33.8	7.2	419
MD 28/4/42	12950	9250	39.8	8.1	419
MD 28/4/48	14450	7750	45.8	9.0	419
MD 28/4/54	15950	6250	51.8	9.8	419

Other Kelly bars available on request. When using a casing oscillator, value X has to be reduced by 1500 mm.

Continuous flight auger drilling
Model BA 220



Auger with hydraulic auger cleaner



Display for continuous flight auger drilling

Technical data

Drilling drive - torque	1st gear	220	kNm
Drilling drive - speed	1st gear	25	rpm
Drilling drive - torque	2nd gear	110	kNm
Drilling drive - speed	2nd gear	50	rpm

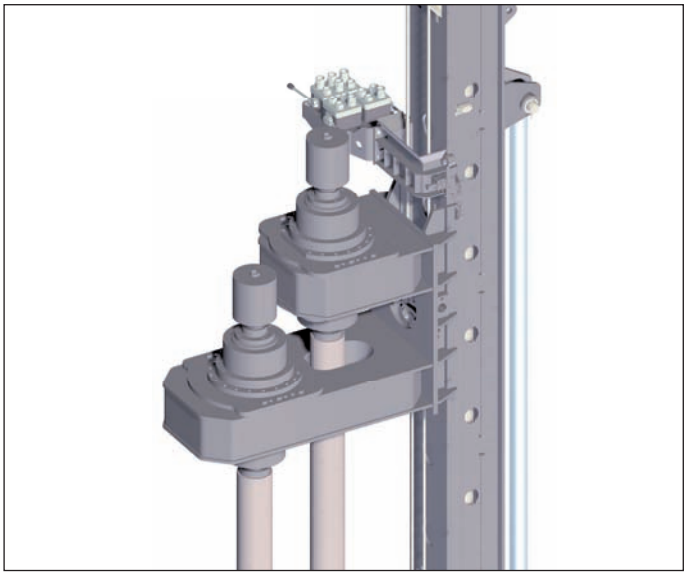
Performance data

Drilling depth without auger cleaner*	17.5	m
Drilling depth with auger cleaner*	16	m
Max. pull force (crowd winch and Kelly winch)	460	kN
Max. push force (weight of rotary and auger to be added)	200	kN
Max. drilling diameter*	700	mm

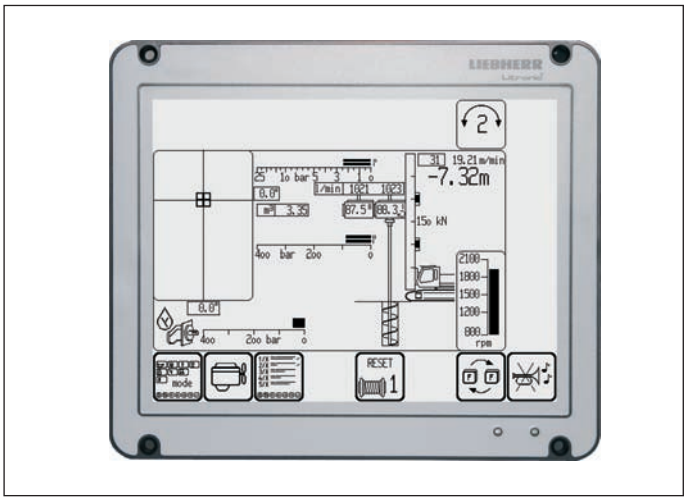
*) Other drilling diameters and drilling depths available on request

Twin mix equipment
Model DMA 35

Effective length – 17.5 m



Set up for operation on dams



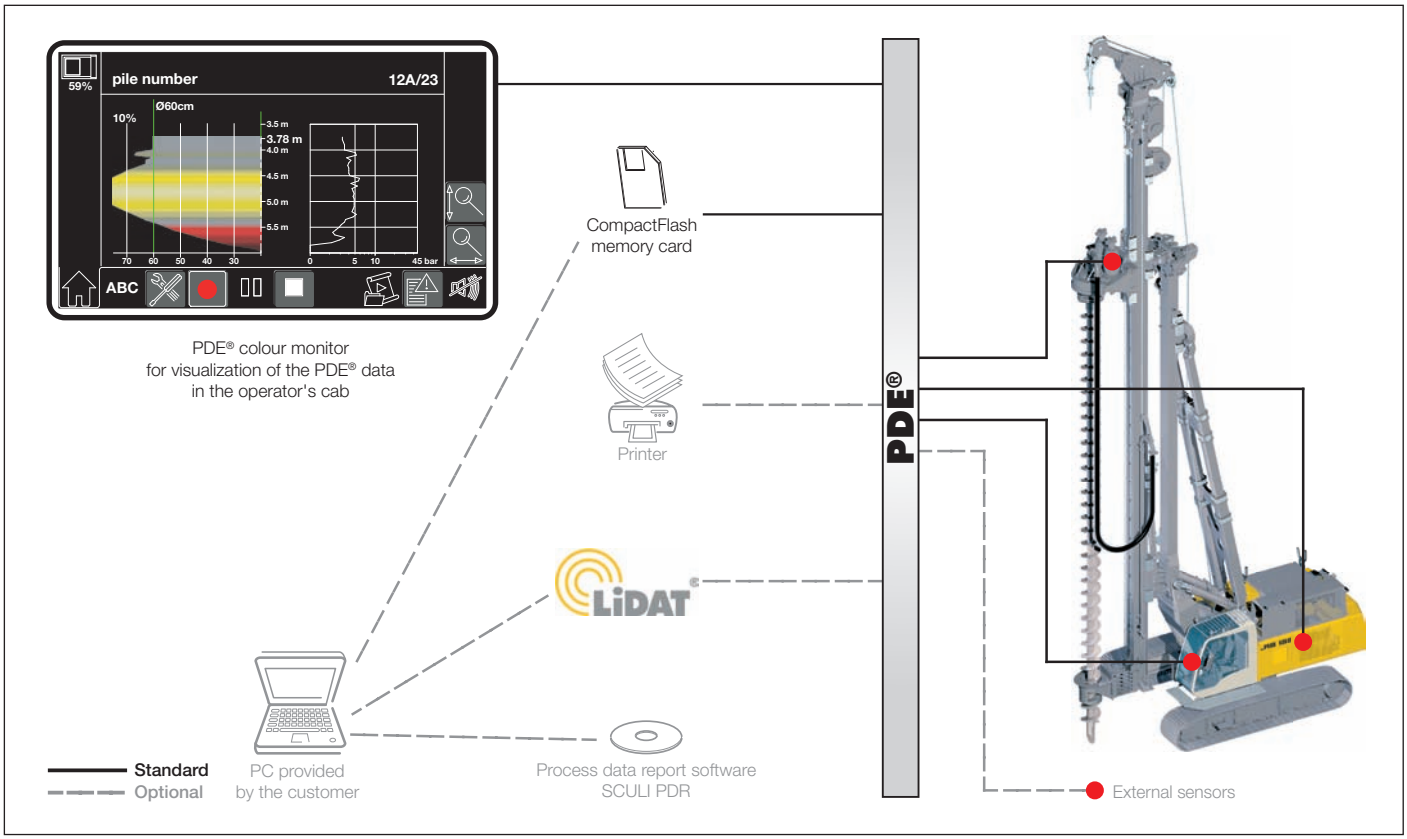
Display for soil mixing

Technical data

Drilling drive - torque	1st gear	35	kNm
Drilling drive - speed	1st gear	60	rpm
Drilling drive - torque	2nd gear	17.5	kNm
Drilling drive - speed	2nd gear	120	rpm

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.

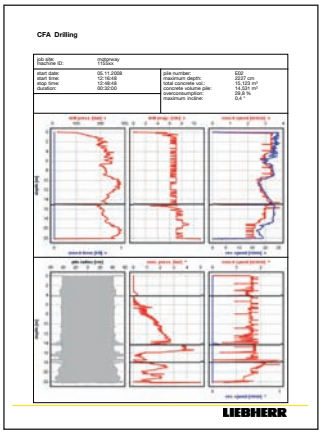
Process data reporting - PDR (additional equipment)

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

Recordings management - The recordings generated by the PDE® system can be imported and managed in SCULI 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 SCULI 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.



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