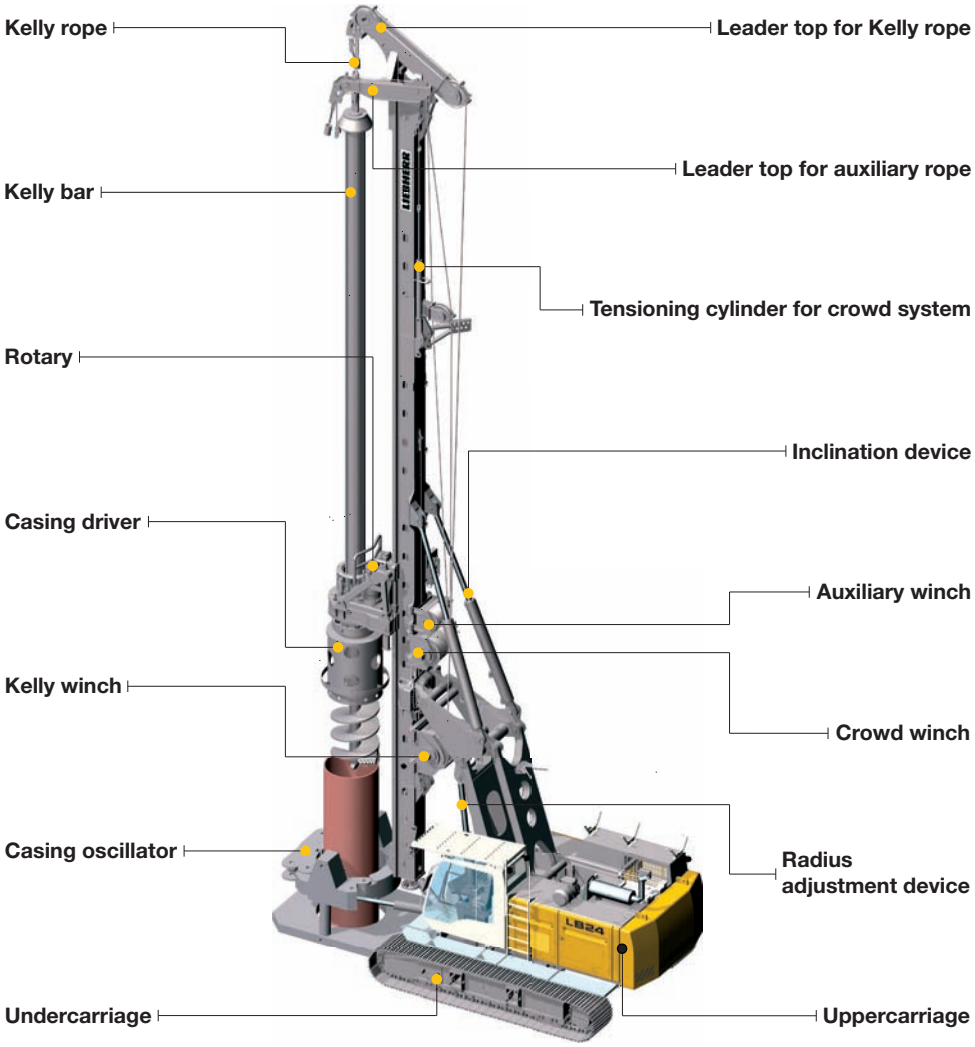
Technical data
Drilling rig

LB 24
Litronic®

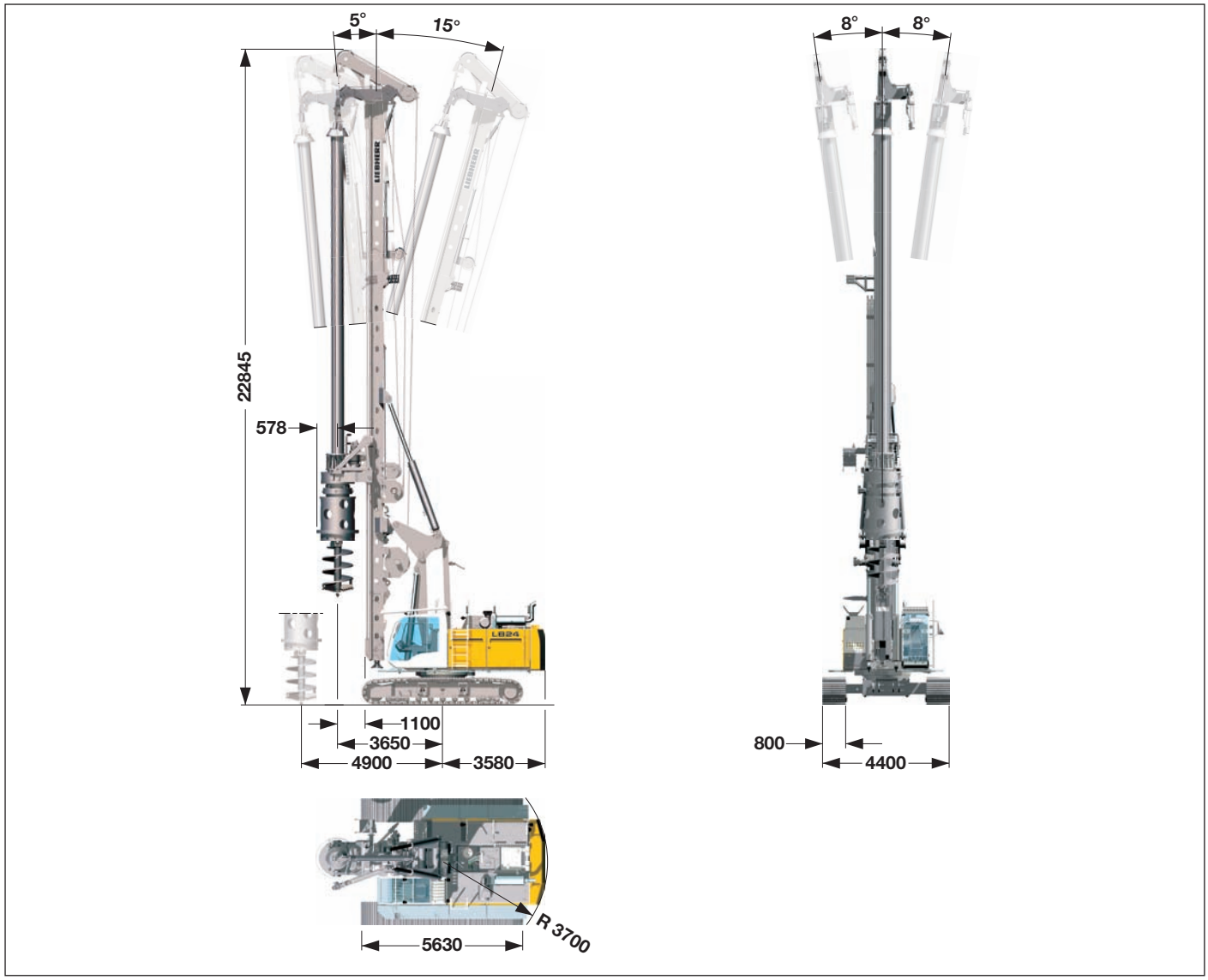
LIEBHERR

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 pull and push forces
- High torque
- Completely self-rigging (no auxiliary machines required)
- Large range of working tools (all common drilling works can be performed)
- Stepless leader inclination 5° forward - 15° backward depending on type of equipment
- Automatic vertical alignment
- High alignment forces
- Simultaneous control of several movements via Load-sensing multi-circuit hydraulics
- Quick assembly of rotary possible through quick connection
- Equipment design according to latest European regulations and standards
- All components designed to fulfill the special requirements of a drilling rig
- High manufacturing quality through quality control by PDE®-system

Dimensions
Basic machine LB 24



Technical data

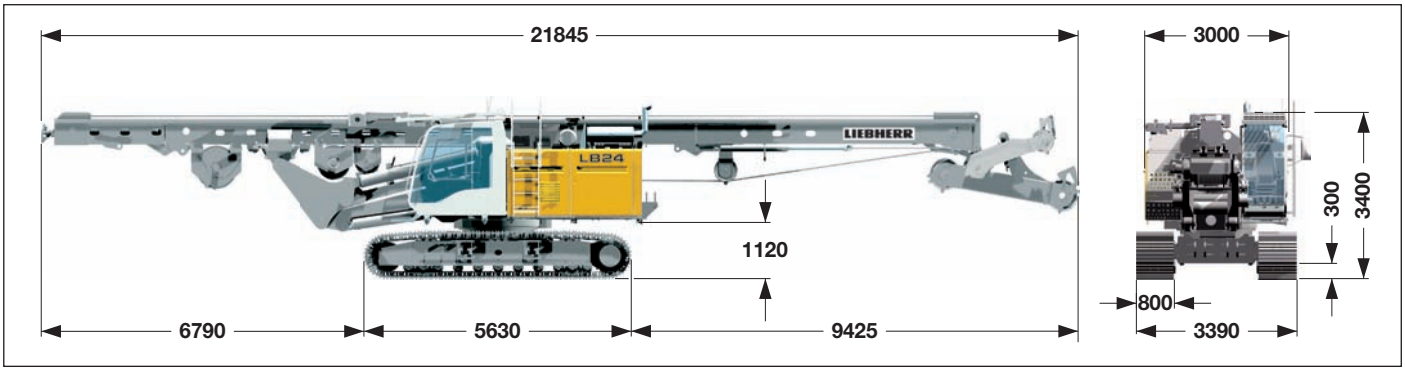
Total height	22.85 m
Max. pull, leader on ground	320 kN
Max. torque	252 kNm
Stepless leader inclination	
Lateral inclination	± 8°
Forward inclination	5°
Backward inclination	15°

Operating weight

Total weight	with 700 mm 3–web shoes	75.0 t
	with 800 mm 3–web shoes	75.5 t
	with 900 mm 3–web shoes	76.0 t

The operating weight includes the basic machine (with rotary and Kelly bar MD 28/3/24) and 10.2 t counterweight.

Transport dimensions and weights

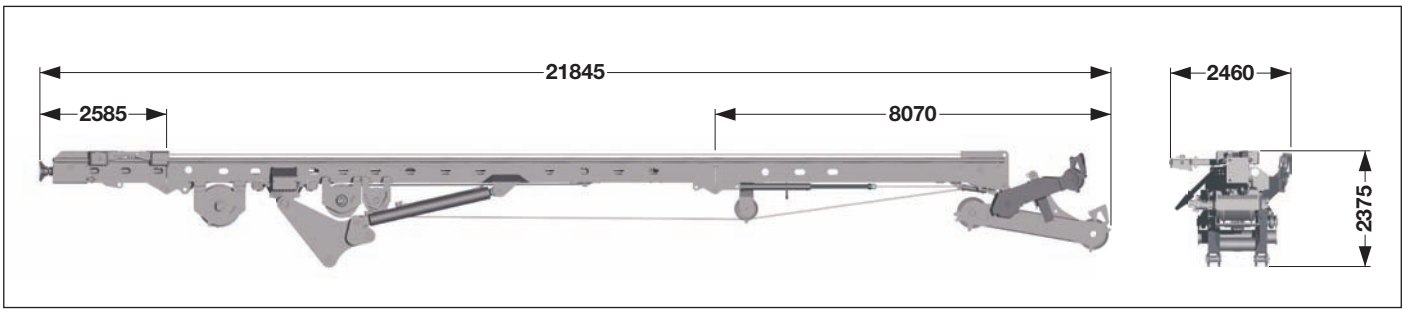


Transport with leader

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

Dimensions and weights

Leader length	19.41 m
Weight complete without counterweight	54.1 t



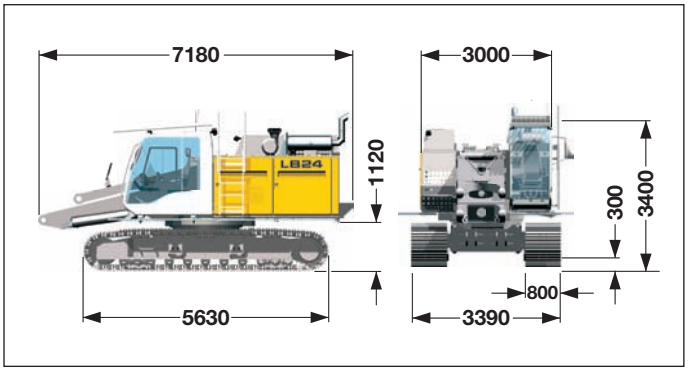
Transport leader

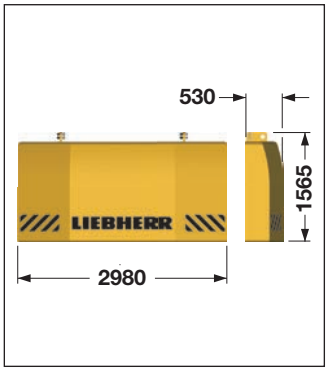
includes the leader without working tools (such as rotary, Kelly bar etc.).

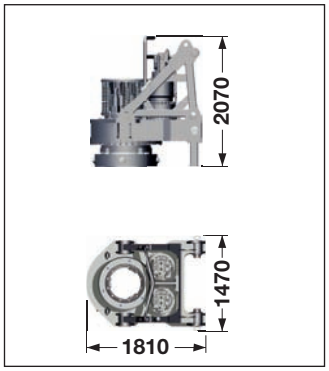
Dimensions and weights

Leader length	19.41 m
Weight complete	18.7 t
Lower part of the leader	1.2 t
Upper part of the leader with leader top	3.0 t

Transport dimensions and weights







Transport basic machine

ready for operation, without counterweight.

Transport weight — 35.4 t

Counterweight

Weight — 10.2 t

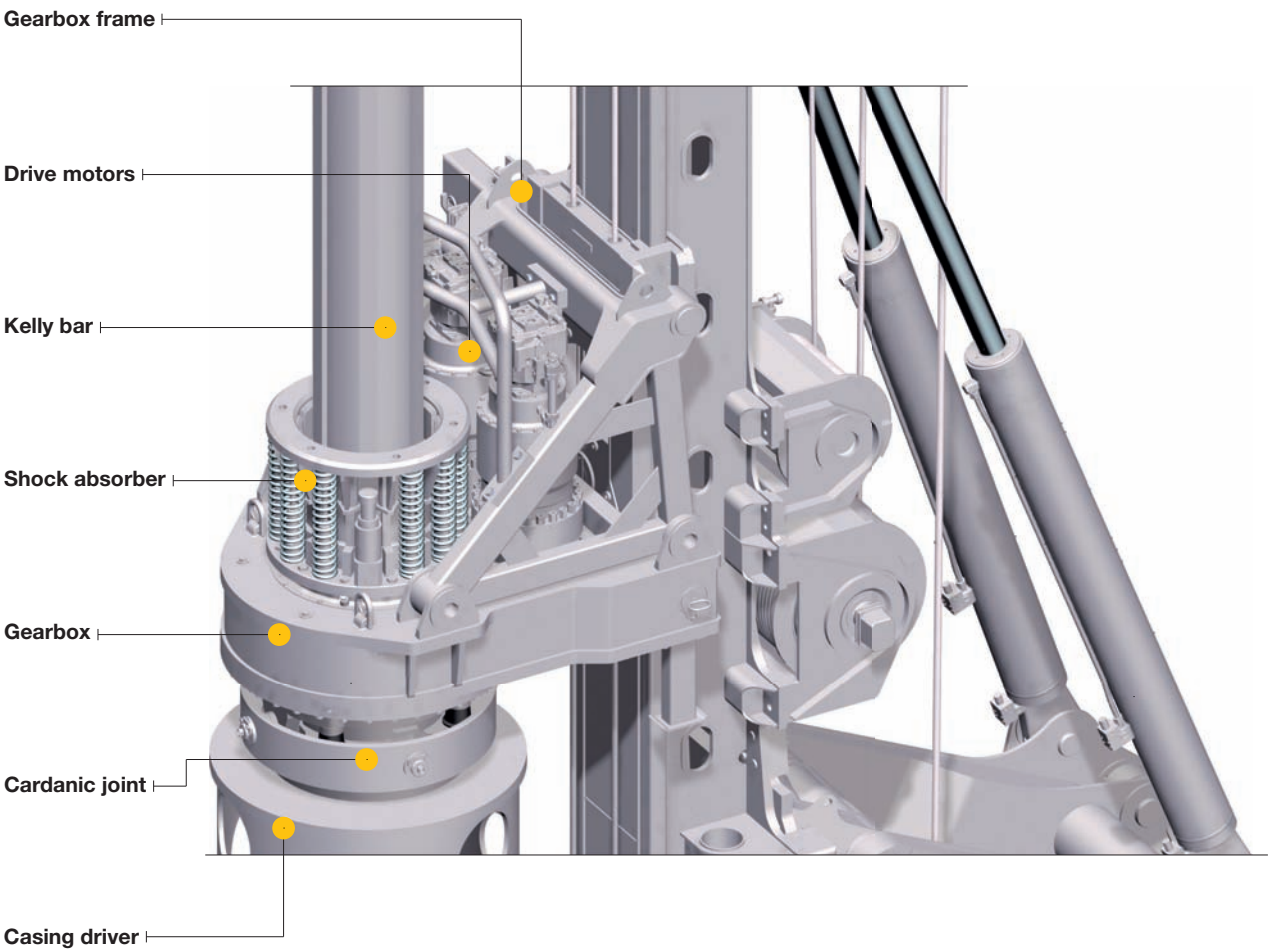
Rotary

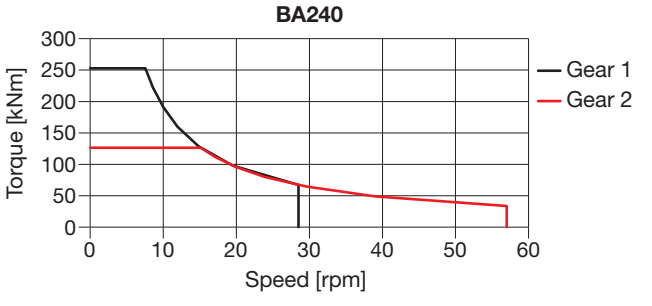
Transport weight

BA 240 — 6.2 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.

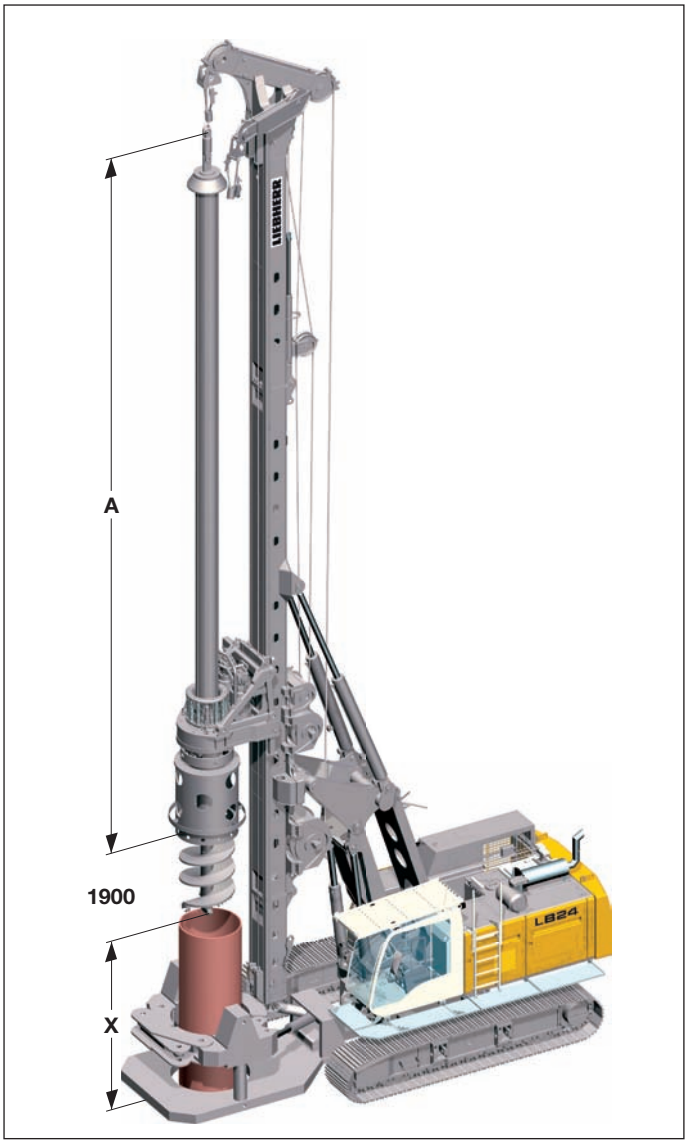
Rotary BA 240 with shock absorber

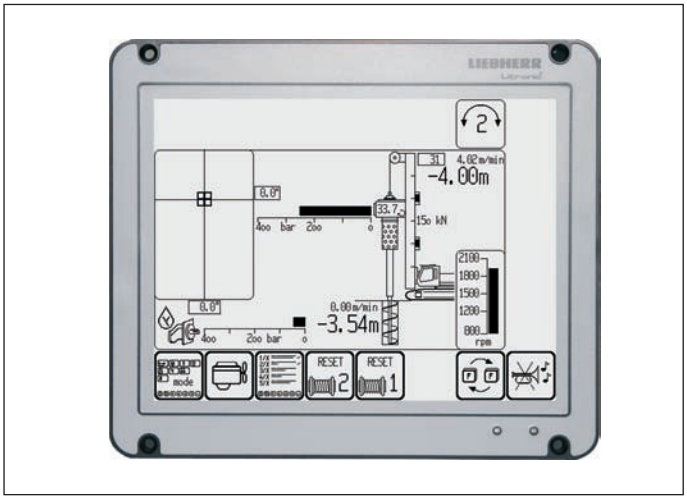




- 2-stage-gear drive for flexible adaptation to soil conditions
- Due to stepless speed control via joystick optimum and precise alignment and rock drilling is possible even at low speed levels; it is not required to preselect an operating mode
- Kelly shock absorber and rubber bearing relieve the material and reduce noise emission
- Thanks to the Kelly shock absorber the Kelly bar is guided at greater length
- Various drive adapters provide compatibility with other systems

Kelly drilling





Display for Kelly drilling

Technical data

Drilling drive - torque	1st gear	252	kNm
Drilling drive - speed	1st gear	28	rpm
Drilling drive - torque	2nd gear	126	kNm
Drilling drive - speed	2nd gear	57	rpm

Performance data

Max. drilling diameter*	1900	mm uncased
Max. drilling diameter*	1500	mm cased

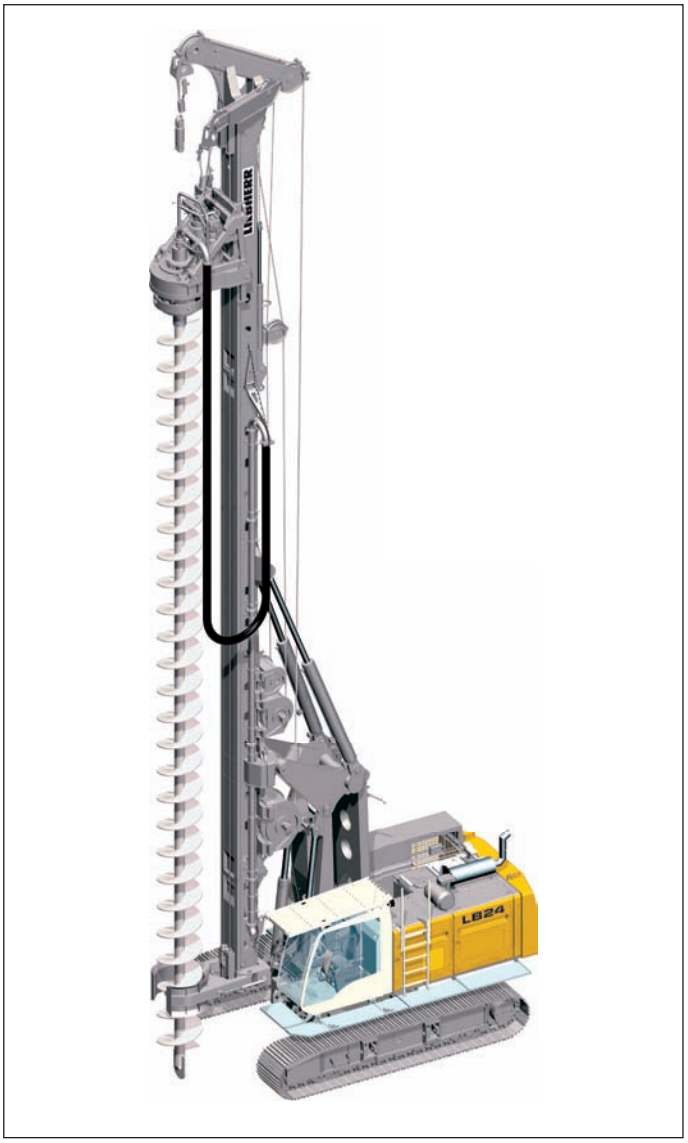
*) Other drilling diameters available on request.

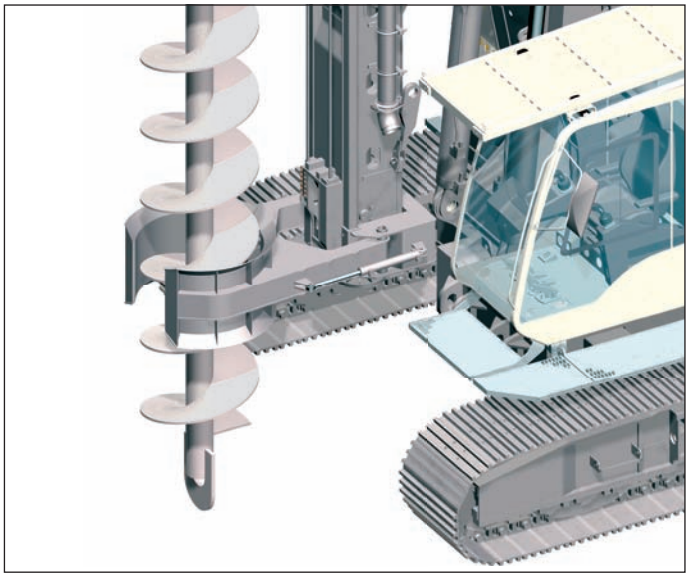
Kelly bars

	A	X	Drilling depth	Weight	Kelly Ø
	(mm)	(mm)	(m)	(t)	(mm)
MD 28/3/24	9880	8500	22.0	5.0	419
MD 28/3/27	10880	7500	25.0	5.5	419
MD 28/3/30	11880	6500	28.0	5.9	419
MD 28/3/33	12880	5500	31.0	6.4	419
MD 28/3/36	13880	4500	34.0	6.8	419
MD 28/4/36	11450	6900	34.0	7.2	419
MD 28/4/42	12950	5400	40.0	8.1	419
MD 28/4/48	14450	3900	46.0	9.0	419
MD 28/4/54	15950	2400	52.0	9.8	419
MD 28/4/60	17450	900	58.0	10.7	419

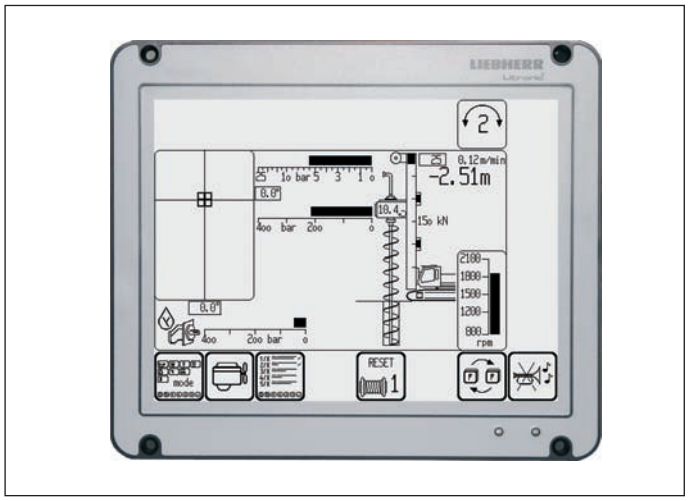
Other Kelly bars available on request.
When using a casing oscillator, value X has to be reduced by 1500 mm.

Continuous flight auger drilling





Auger with auger guide



Display for continuous flight auger drilling

Technical data

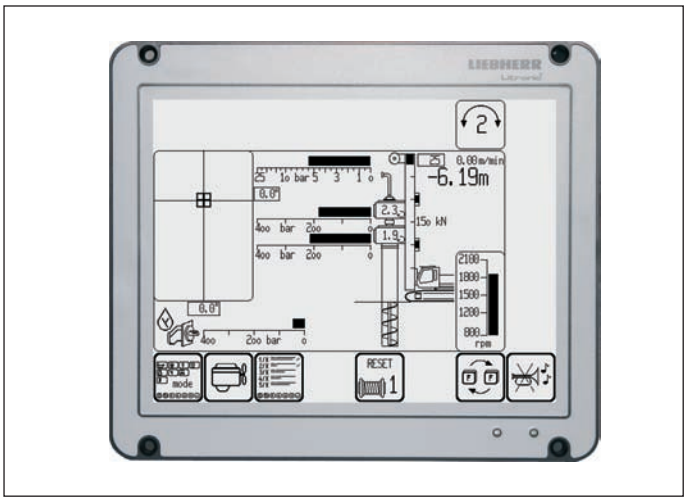
Drilling drive - torque	1st gear	252 kNm
Drilling drive - speed	1st gear	28 rpm
Drilling drive - torque	2nd gear	126 kNm
Drilling drive - speed	2nd gear	57 rpm

Performance data

Drilling depth with auger cleaner*	15.1 m
Drilling depth without auger cleaner*	15.6 m
Drilling depth with 6 m Kelly extension, without auger cleaner	21.6 m
Max. pull force (crowd winch and Kelly winch)	720 kN
Max. push force (weight of rotary and auger to be added)	150 kN
Max. drilling diameter**	1000 mm

*) Without Kelly extension
**) Other drilling diameters available on request.

Double rotary drilling
Model DBA 80



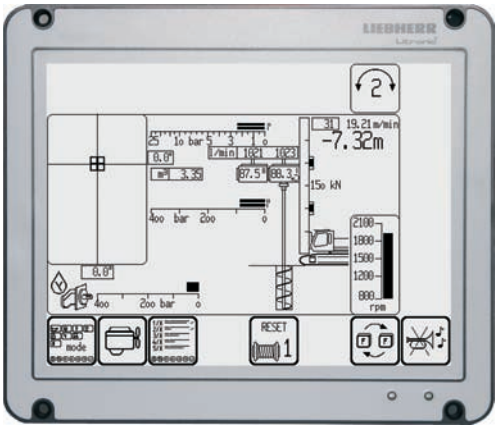
Display for double rotary drilling

Technical data

Drilling drive I - torque	1st gear	83	kNm
Drilling drive I - speed	1st gear	14	rpm
Drilling drive I - torque	2nd gear	41	kNm
Drilling drive I - speed	2nd gear	28	rpm
Drilling drive II - torque	1st gear	62	kNm
Drilling drive II - speed	1st gear	19	rpm
Drilling drive II - torque	2nd gear	31	kNm
Drilling drive II - speed	2nd gear	38	rpm
Max. drilling diameter*		620	mm
Max. drilling depth		15.4	m
Max. pull force		500	kN

*) Other drilling diameters available on request.

Twin mix equipment
Model DMA 35



Display for soil mixing

Technical data

Drilling drive - torque	1st gear	35	kNm
Drilling drive - speed	1st gear	38	rpm
Drilling drive - torque	2nd gear	17.5	kNm
Drilling drive - speed	2nd gear	76	rpm
Max. drilling depth		15.4	m
Max. drilling diameter*		700	mm

*) Other diameters available on request.

Technical description

Engine

Power rating according to ISO 9249, 270 kW (362 hp) at 2000 rpm

Engine type	Liebherr D 936 L A6
Fuel tank	700 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 A.

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 240 l/min
Separate pump for kinematics	137 l/min
Hydraulic oil tank	600 l
Max. working pressure	350 bar

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 – 1.1 km/h
Track force	634 kN
Width of 3-web track shoes	800 mm
Transport width	3390 mm

Option:

Width of 3-web track shoes	700 mm
Transport width	3000 mm
Width of 3-web track shoes	900 mm
Transport width	3490 mm

Swing

Consists of triple-row roller bearing with external teeth and one swing drive, fixed axial piston hydraulic motors, 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 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 freewheeling

Line pull effective (2nd layer)	200 kN
Rope diameter	28 mm
Line speed	0-79 m/min

Auxiliary winch

Line pull effective (1st layer)	80 kN
Rope diameter	20 mm
Line speed	0-71 m/min

Rope crowd system

Crowd force (push/pull)	320/320 kN
Line pull (effective)	160 kN
Rope diameter	24 mm
Travel of working tool	16 m
Line speed	0-76 m/min

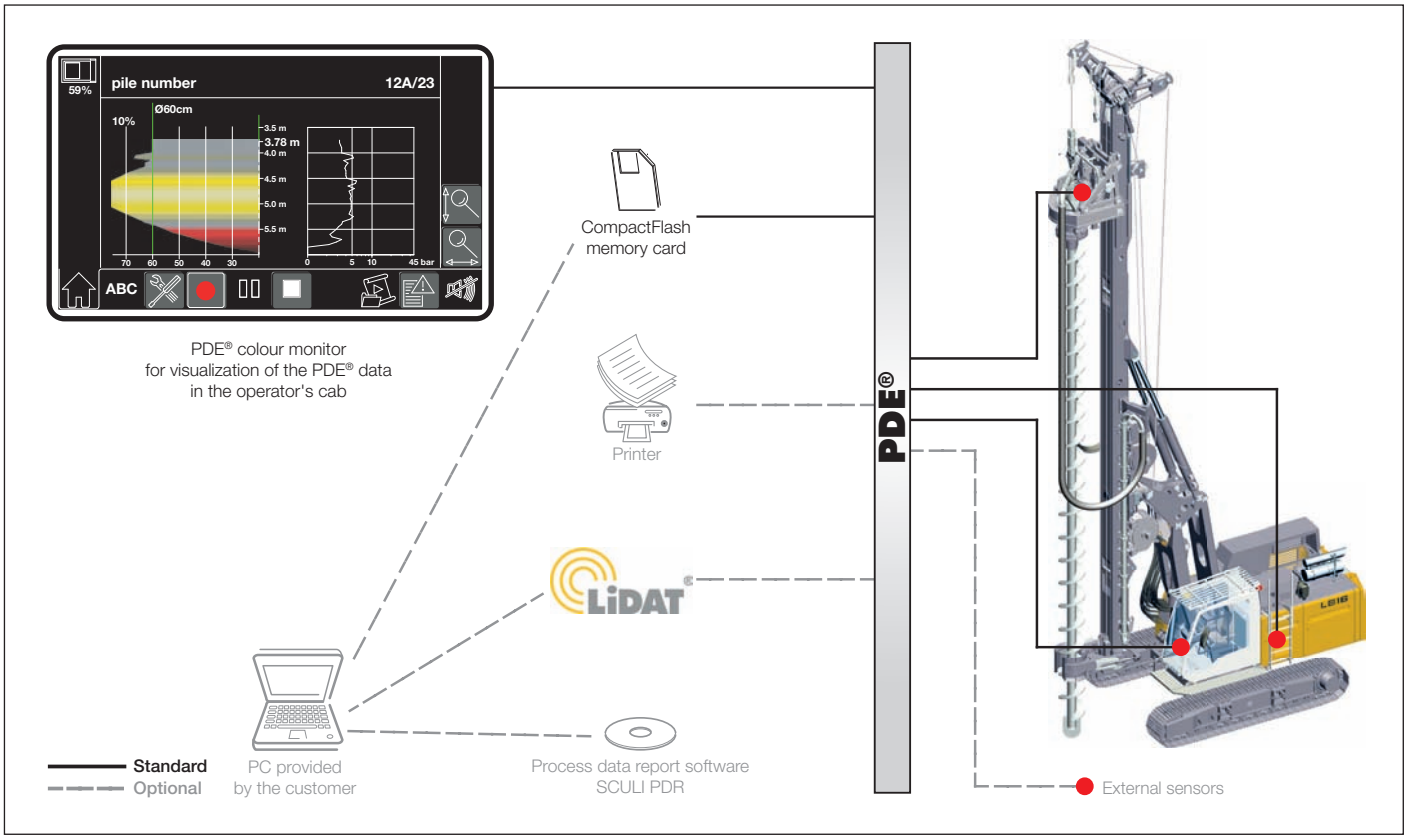
The winches are noted for compact, easily mounted design. Propulsion is via a maintenance-free planetary gearbox in oil bath. Load support by the hydraulic system; additional safety factor by a spring-loaded, multi-disc holding brake. All line pull values are effective values. The efficiency factor of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

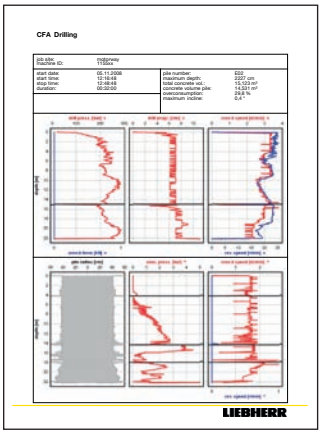
Process data reporting - PDR (additional equipment)

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