EN

Solutions for lifting operations

Crawler cranes LR series up to 400 t

LIEBHERR

Liebherr-Werk Nenzing GmbH

The applications

The machines

Those certain extras

The applications

Lifting structural elements

Liebherr crawler cranes excel with excellent performance features and high mobility. They are mainly used in the building industry. Here they have numerous application possibilities and are indispensable for the erection of a wide variety of buildings worldwide.

Prefabricated concrete elements

Prefabricated concrete elements are installed using a lifting beam. The smooth control of the cranes assists in the exact positioning of the loads.

Concrete or steel elements

The lifting of different kinds of structural elements on large jobsites is one of the most common tasks performed. The crawler crane convinces with high lifting capacities and mobility, and also with especially short working cycles.

Bridges

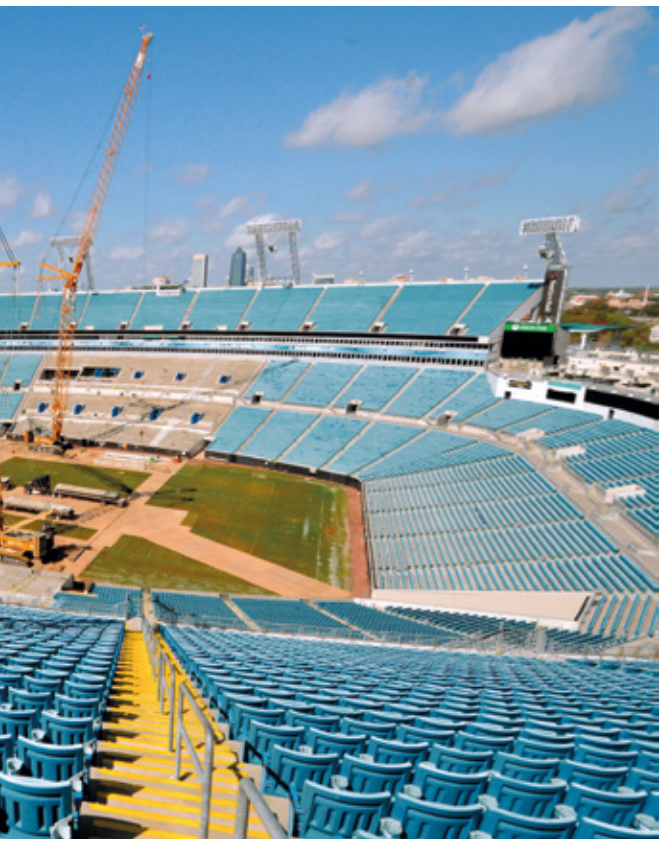
In most cases, only limited space is available when building bridges. Long bridge elements are often positioned using demanding tandem lifts.

Dams

Travelling with the load is extremely important during the construction of dams and treatment plants.

Stadiums

Boom systems with large working out-reaches are required for building stadiums.



Factories

Mainly large cranes configured for heavy lifts are deployed for building factories.

Port and barge applications

Liebherr crawler cranes are certified for lifting jobs on barges. The application as floating crane opens up a multitude of possibilities. Rivers can be used as an extended working area especially in built-up areas where space is restricted.

Barges/pontoons

Crawler cranes carry out lifting work on floating constructions. Building material that is transported by water reduces road transport and so relieves traffic in the inner city.

Ports

Liebherr's crawler cranes also carry out work on land in ports. They are in demand due to their versatility in material handling.

Jack-up platforms

Jack-up platforms serve as a working area for crawler cranes during port development.

Deep foundation work

Crawler cranes are also used as carrier machines in many deep foundation applications. With a leader system fitted, they are suitable for common piling and drilling methods, as well as for deep compaction to improve building ground. Long booms and large radii enable extensive working ranges as well as enormous effective lengths.

Deep compaction

Using vibro-replacement the prevailing ground is improved through dynamic energy input. The vibro-flot is mounted free hanging on ropes and sunk into the ground. Through the vibration the surrounding soil is compacted.

Drilling

A fixed leader is fitted on the carrier machine LR 1300.1 SX. Hence a drilling machine is created for the installation of cast-in-place piles using the continuous flight auger drilling method. Drilling depths down to 50 metres can be achieved.

Vibrating

Using a vibratory hammer with vibration damper, various steel beams can be installed.

Further applications

One thing is sure, Liebherr crawler cranes are versatile. The wide crawlers can deal with all kinds of terrain. Flexible boom configurations master a wide number of lifting tasks.

Pipe-laying

Crawler cranes can not only lift heavy structural elements to great heights. By means of a multiple lift, also complicated or especially long elements can be easily moved.

Grab operation

Grab operation is not common for this type of machine. Nevertheless, a grab can be installed if required, and light excavating tasks can be carried out.

Wind farms

The installation and maintenance of wind turbines is advancing worldwide. Due to the optimum coordination of the lifting capacity, lifting height and working radius, Liebherr crawler cranes are ideally suited for this task. The cranes do not require an auxiliary crane for erection, which is a huge advantage at remote wind farms.

The machines

LR series

Mobile and versatile

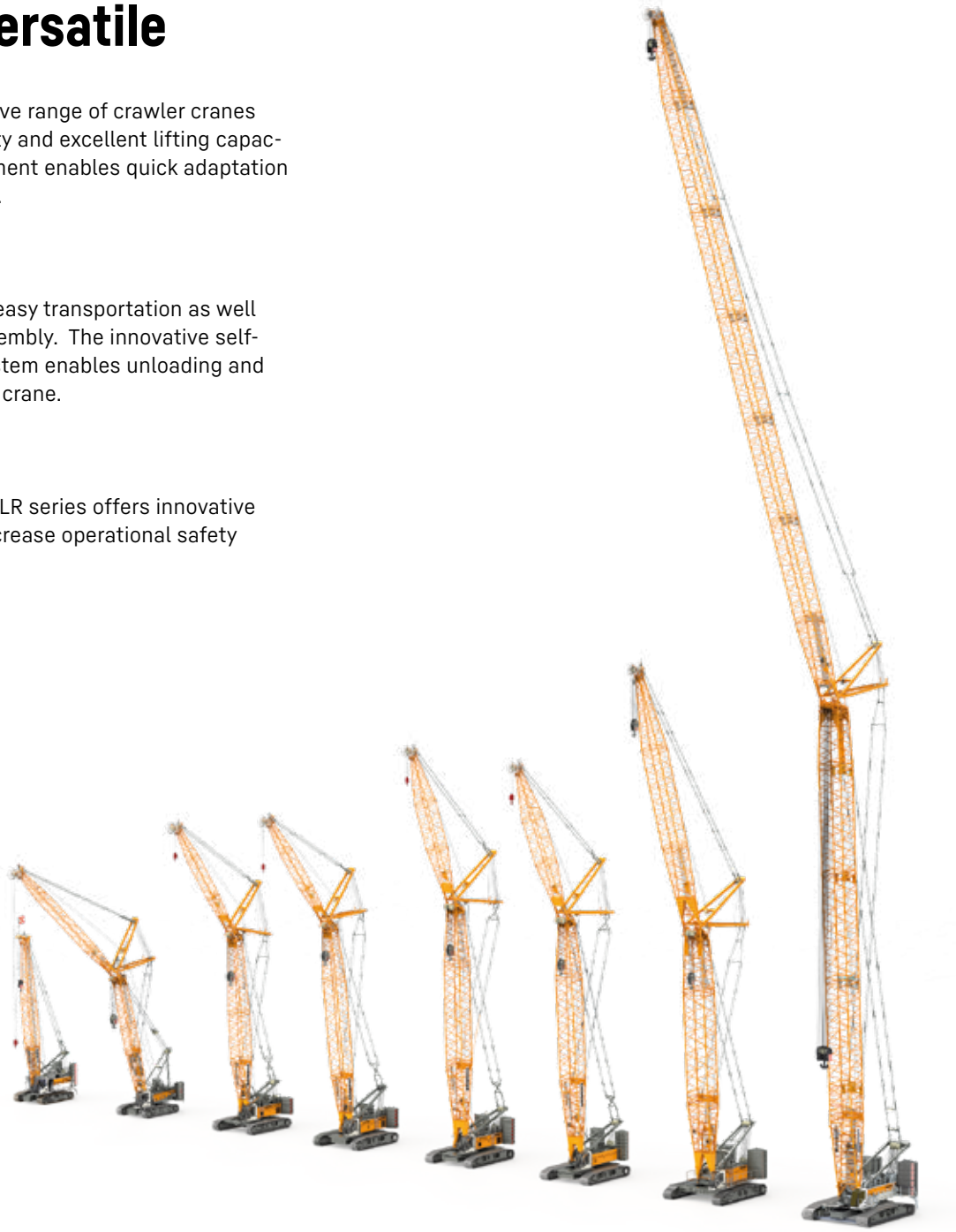
Liebherr offers a comprehensive range of crawler cranes which excels with high mobility and excellent lifting capacities. Easy exchange of equipment enables quick adaptation to different jobsite conditions.

Taxi crane

The compact design ensures easy transportation as well as quick assembly and disassembly. The innovative self-assembly and self-loading system enables unloading and assembly without an auxiliary crane.

Intelligent control

The newest generation of the LR series offers innovative assistance systems, which increase operational safety and simplify handling.



	LR 1100.1	LR 1110	LR 1130.1	LR 1160.1	LR 1200.1	LR 1250.1	LR 1300.1 SX	LR 1400 SX
Max. capacity	100 t (110 US t)	110 t (127.3 US t)	137,2 t (151.2 US t)	160 t (176.4 US t)	220 t (242.5 US t)	250 t (275.5 US t)	300,5 t (331.2 US t)	400 t (441 US t)
Max. main boom	62 m (203 ft)	71 m (233 ft)	80 m (262 ft)	87,5 m (287 ft)	89 m (291 ft)	86 m (282 ft)	92 / *110 m (302 / *361 ft)	95 m (312 ft)
Max. main boom and jib	64 m (210 ft)	104,8 m (344 ft)	125,5 m (412 ft)	133,6 m (438 ft)	148 m (486 ft)	148 m (486 ft)	169 / *196 m (554 / *643 ft)	178 m (377 ft)
Engine (Liebherr)	230 kW	230 kW	230 kW	230 kW	230 kW	230 kW	390 kW	450 kW
Max. line pull of hoist winches	120 kN (26,977 lbf)	120 kN (26,977 lbf)	120 kN (26,977 lbf)	120 kN (26,977 lbf)	120 kN (26,977 lbf)	120 kN (26,977 lbf)	150 kN (33,721 lbf)	158,40 kN (35,610 lbf)
Available as battery-powered version			**LR 1130.1 unplugged**	**LR 1160.1 unplugged**	**LR 1200.1 unplugged**	**LR 1250.1 unplugged**		

* with derrick

Characteristics

The high degree of in-house manufacturing is one the main characteristics of the crawler cranes. Key components such as swing ring, power pack or hydraulic systems are all manufactured by Liebherr and perfectly harmonized - this extends to the control system, which is also developed in-house.

Efficient self-assembly system and short assembly times

This system enables safe, autonomous and quick assembly or disassembly of the crawlers, the carbody and rear counterweights, as well as the boom elements.

Boom

A variety of boom systems and configurations allow for optimum operation on the most diverse jobsites.

Comfortable cab

Optimised field of vision combined with enhanced comfort: this includes an orthopaedic operator's seat including heating and cooling functions, as well as precise and ergonomic joysticks.

Control system

Easy and intuitive handling of control, service and machine functions via a large, clear colour monitor. Built for extreme environmental conditions.

Mobility

Maximum mobility as the crane parts are optimized for transportation. The maximum transport width is 3 metres.

Cabin access

Safe and non-slip direct access to the cabin of the new LR 1400 SX is via convenient foldable steps and continues on illuminated platforms. Since access is no longer via the track pads, we fulfil the highest possible safety standard.

Easy service

The design ensures easy maintenance and service as well as safe access to the components.

High performance

Strong, efficient and reliable diesel engines of the newest generation provide high performance and enable several movements to be carried out simultaneously.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Boom configurations

The compatible boom configurations can be applied across all product types. This offers more flexibility for fleet managers, simplifies logistics, and reduces the levels of storage.

			Main boom													Fixed jib						
			Mode 1								Mode 2					Mode 3						
	Pendants									 Auxiliary jib				 L-boom			Wind jib/heavy lift jib						
	Steel	CFRP	1512. 21	1512. 22	2017	2018	2320	2821	2825		2017 1309	2018 1309	2018 1713	2320 1916	2821 2316	0906	1507	0806. 21	0806	1008	1713	1916
LR 1100.1	▪		▪							▪								▪				
LR 1110	▪			▪						▪									▪			
LR 1130.1*	▪				▪					▪	▪								▪			
LR 1160.1*	▪					▪				▪		▪	▪						▪	▪		
LR 1200.1*	▪	▪					▪			▪				▪		▪			▪	▪		
LR 1250.1*	▪	▪					▪			▪				▪		▪			▪	▪		
LR 1300.1 SX	▪	▪						▪		▪					▪	▪	▪			▪	▪	
LR 1400 SX	▪								▪	▪							▪				▪	▪

* Also available as unplugged version

Luffing jib										Derrick			
Mode 4										Mode 5				Mode 6	Mode 8	Mode 9
					 Auxiliary jib					 Mid fall					 Suspended counterweight	
1309	1713	1916	2316	2421	1309	1713	1916	2316	2421	1309	1713	1916	2316	2220		
▪					▪											
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Heavy lift configurations

LR 1300.1 SX with derrick equipment

The crane can be fitted with a derrick boom for heavy lifts. The swing radius of the suspended counterweight can be adjusted hydraulically from 12.2 to 15.8 metres.

Swinging counterweight LR 1110

An optional swinging rear counterweight further increases the lifting capacity by approx. 20 %. The counterweight is swung back hydraulically, so achieving higher stability with improved lifting capacities.

Leader systems

Highlight

Fixed leader LRH 600

The combination of crawler crane and solid lattice boom leader provides a deep foundation machine for piling and drilling work that has a considerable effective length and large radii. Hammer or rotary drive can be operated directly by the on-board hydraulics of the LR 1300.1 SX.

Swinging leader LRH 600

The leader hangs on a special traverse. Raked impact driving of especially long piling elements of steel or reinforced concrete is thus possible. Swinging leaders are often used for embankment work.

Optional equipment

Low temperatures

Reliable operation even in Arctic regions with extreme conditions and temperatures between -25° and -40° C is possible with low temperature packages.

Additional lighting

Operation in the dark without loss of productivity is also possible. High performance LED lights on the boom and uppercarriage provide optimum illumination.

Cabin elevation

Thanks to continuous cabin elevation, the cab can be raised to over 9 metres above the ground to increase the field of vision. This extra is of enormous assistance to the operator especially in harbours when loading or unloading vessels.

Adjustable track width

The track width can be reduced to a minimum so allowing the crane to travel in narrow spaces, fully equipped including boom and counterweight.

CFRP Pendants

Carbon fibre reinforced plastic (CFRP) pendants are maintenance-free, easy to handle and also have reduced weight. This results in higher lifting capacities and longer self-assembly booms.

Customer-specific paintwork

Give your crane an individual touch. It can be painted in your company colours and there is plenty of room for your logo.

Boom camera

Safety is of utmost importance. With an aerial view of the site, the crane operator has everything continuously under control. The camera has a multiple zoom ratio and can be controlled with the foot pedal, so keeping hands free for the joysticks.

Radio remote control

All crane movements can be controlled from outside the cabin. Loads can therefore be moved to positions which are not otherwise visible. The remote control also offers huge advantages for the assembly and disassembly of the machine.

Unplugged

Zero emission

Our contribution to a greener future

Liebherr consciously demonstrates its responsiblitiy towards society and the environment and strives for the best possible combination of environmental compatibility, customer benefit, and efficiency.

With battery-powered equipment, we already offer a wide range of emission-free construction machines. The unplugged series is being continuously expanded.

LR 1130.1
unplugged

LR 1160.1
unplugged

LR 1200.1
unplugged

LR 1250.1
unplugged

Battery-powered “unplugged”
The performance for battery operation enables, for example, the erection of the main boom and luffing jib, travel over a distance of approx. 650 metres fully ballasted, or average crane operation for a duration of about 8 hours.

Cable operation “plugged in”
When plugged in, the performance of the crane is in no way inferior to the diesel-driven version. The crane can be used without any restrictions.

Further information

Those certain extras

Operator comfort

Modern cabins

With Liebherr machines, the focus is on the operator. High operator comfort makes the handling of the crawler crane machines considerably easier. The innovative design of the cabin sets new standards in the construction industry regarding ergonomics, interior fittings, and air conditioning. Furthermore, the optimum visability from the cabin allows for precise and safe operation.

Optimized visibility
Safety on site is Liebherr's highest priority. An unobstructed view from the cabin combined with a camera system for all working areas ensures this important factor.

Sunshade
A standard sliding window and sun-shade serve as additional features for improving comfort.

Comfortable operator seat
The orthopaedic seat with automatic adjustment can be heated or cooled as required.

Ergonomic operating elements
All operating elements including redesigned joysticks, control buttons and pedals are ergonomically arranged and allow for precise control of all machine movements.

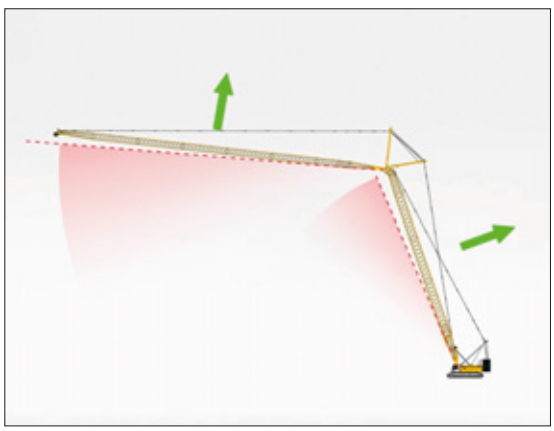
Ingenious interior

An optional cooler for provisions, various storage areas and surfaces, as well as a holder and USB port for mobile phones are all within easy reach of the comfortable seat.

Assistance systems

Operating a crane can be very demanding. The newest generation of crawler cranes offers innovative assistance systems, which increase operational safety and simplify handling.

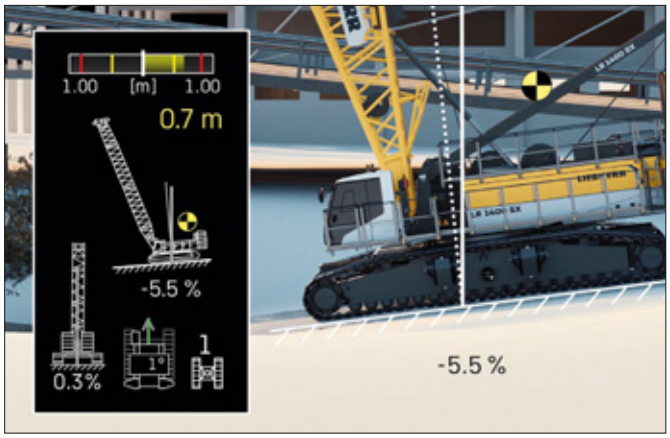
Explanatory video



Boom Up-and-Down Assistant

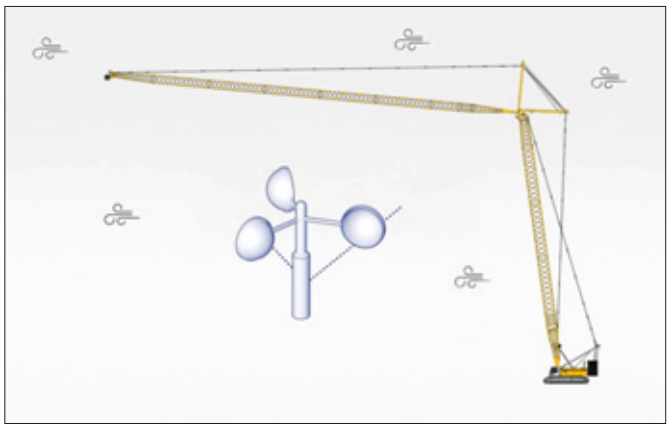
When erecting or lowering the boom, the Boom Up-and-Down Assistant indicates the approach to the tipping border and automatically stops operation before the operator unintentionally enters an unsafe zone. It assists the operator in safely leaving the danger zone without having to activate the safety bypass switch.

Explanatory video



Gradient Travel Aid

Safely on the move: on uneven terrain the centre of gravity is automatically calculated. The Gradient Travel Aid warns the operator before travelling in an unsafe position.



Preselecting the wind speed

Sensors on the main boom and luffing jib measure the wind speed, and the actual crane configuration (boom length, boom angle) is taken into consideration when calculating the current hazardous situation for the crane. When the conditions become too dangerous, the system gives a warning. The actual status is visible for the operator on the monitor at all times.

MyNotifier

Strong winds make it difficult for even the most experienced of operators to assess the situation. MyNotifier provides the most important data in real time.

The windsensors on the boom of the crawler crane permanently measure the wind speeds. The maximum permitted values, depending on the length and the configuration of the boom, are continuously monitored and compared.

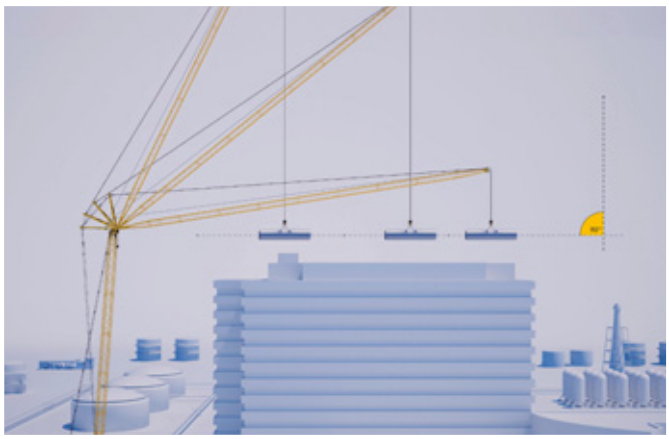
An early warning system provides the operator with timely information about expected critical wind speeds. Hazardous siutations can so be avoided. This early warning system is active round the clock, even when the crawler crane is not in operation.

The exact position of the crawler crane is determined via GPS. There are professional wind and weather forecasts for this position with a preview of up to 72 hours. This means that the boom can be proactively lowered when critical wind speeds are predicted.

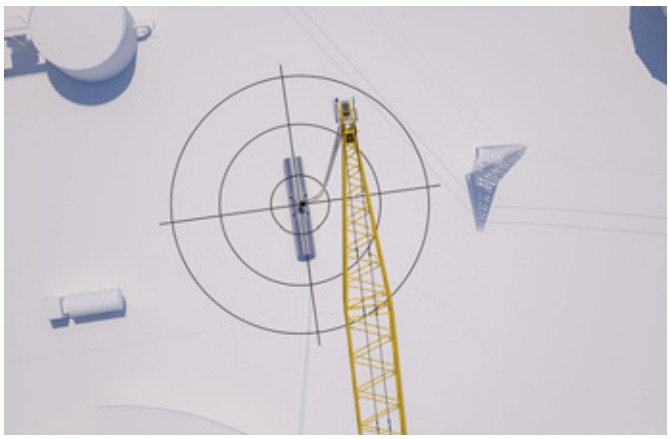
MyNotifier has a further important function for our unplugged machines: the battery status is displayed live. This means the operator is constantly informed of the availability of the unplugged crawler crane.

Safety on the jobsite

Loads must often be moved over substantial distances with restricted visibility. Intelligent assistance systems monitor both the load path and the load distribution. Therefore, stresses on the steel construction are avoided.



Horizontal load path
At the press of a button on the control panel the load moves along the horizontal load path during luffing. Thanks to the short pendant heights, loads can be moved to their intended position more quickly and the coordination of multiple lifts is easier.

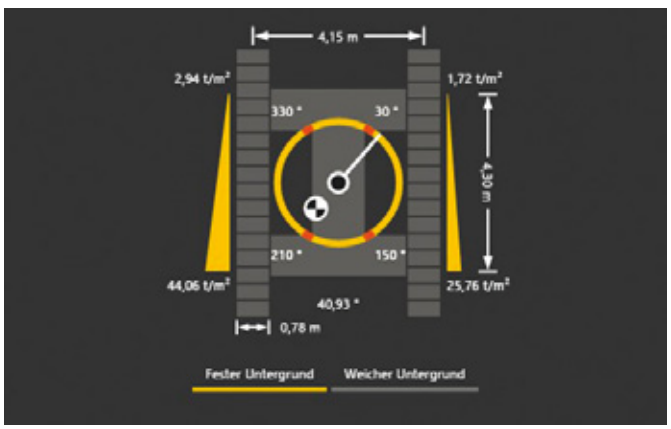


Vertical Line Finder
The boom head is positioned exactly vertically above the planned load. This prevents swinging load and any possible contact with surrounding obstacles. The service life of the crane is also extended through lower dynamic forces on the boom.

The ground pressure is displayed on the monitor and the operator is permanently aware of whether the machine is in or approaching a critical area. Dangerous work steps can so be avoided or safely adapted to in good time.

Ground pressure visualization

The ground load-bearing capacity and the monitoring of the ground pressure are paramount for the safe operation of a crane. Ground pressure visualization calculates the current ground pressure of the machine in real time and compares it with the specified safety limits that the operator has entered in the control system.



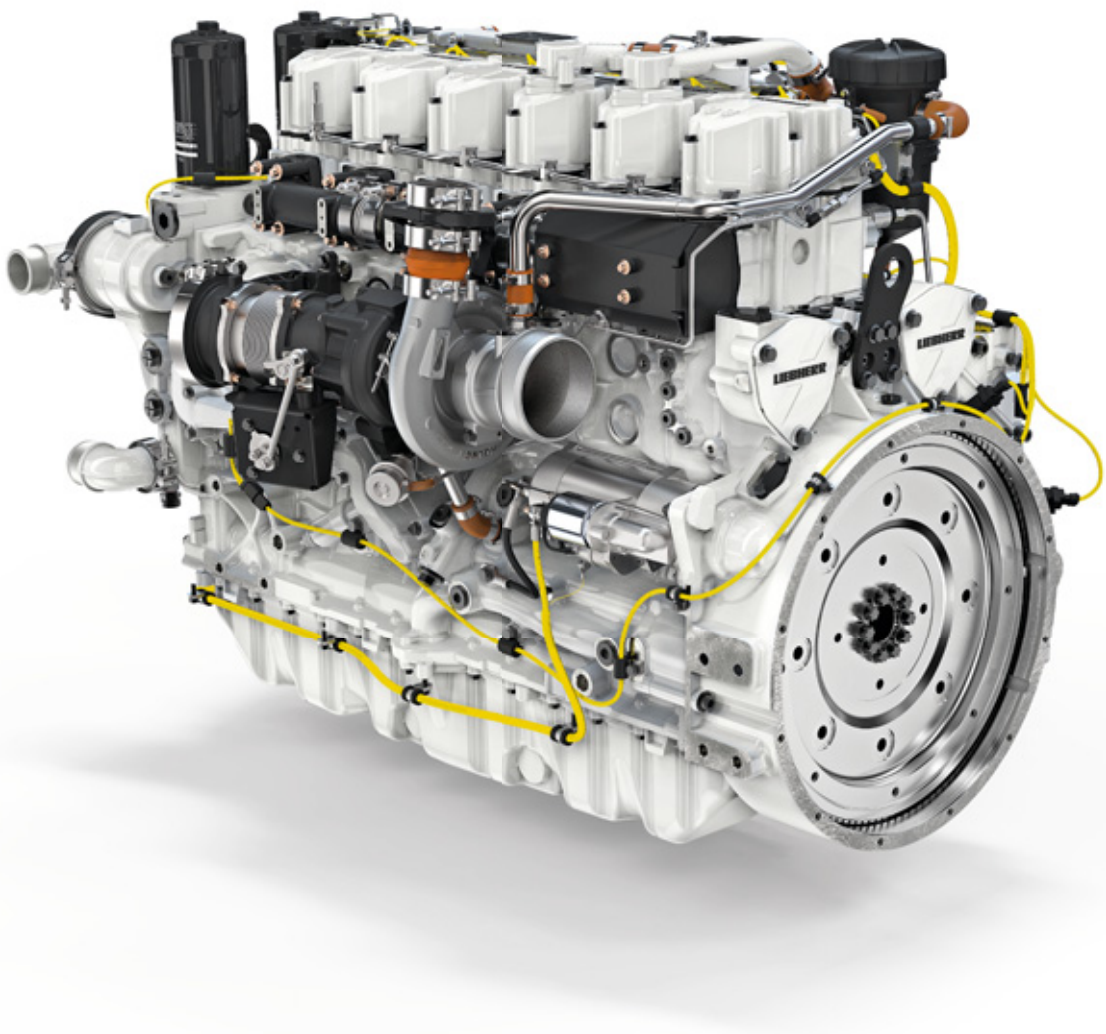
Angle values of the maximum prevailing ground pressure and position of the centre of gravity.

The ground pressure rosette shows the course of the maximum ground pressure over 360°.

Fuel costs matter

Reduction of noise emission and fuel consumption

The newest drive and control systems help to reduce fuel consumption and emissions, and at the same time increase the reliability and performance of crawler crane machines.



The powerful Liebherr diesel engine D946, 6-cylinder in-line engine (390 kW/523 hp) is installed in the crawler crane LR 1300.1 SX.

Engine functions for increased efficiency

Downsizing of the engine

Thanks to the machine's optimized hydraulic system the size of the primary source can be reduced without negative effects on the performance.

Automatic Engine Stop Control

This control system switches the engine off automatically during longer idling periods, after having checked certain system functions.

Lower engine speed while idling

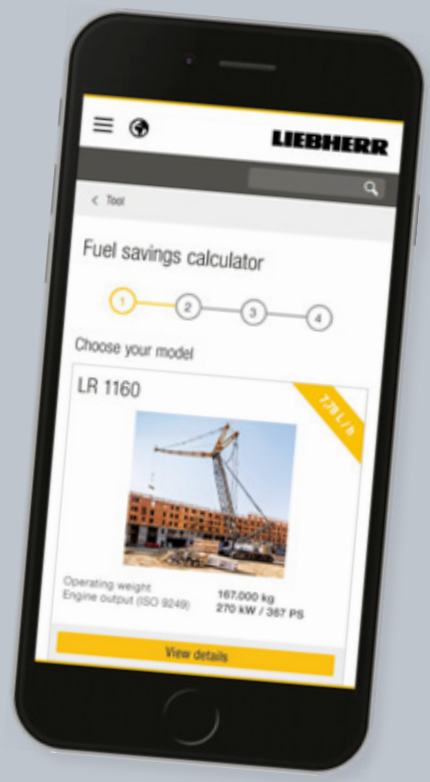
Crawler cranes are in idling mode for 60 % of their operating time. With the lowering of the engine speed from 950 rpm to 750 rpm while the machine is in idling mode, up to two litres of fuel can be saved per hour.

Eco-Silent Mode

With the aid of this feature the engine speed is reduced to a required predefined level.

Auxiliary power unit with remote starter

During crane operation there are often down-times when the operator has to be on standby in the cab. An additional auxiliary power pack provides the power meaning the main engine can be switched off. Air conditioning and light-ing are therefore always available with a comparatively low consumption.



Fuel savings calculator

Check how much fuel you can save! Compare your consumption with worldwide fleet values.

Further information

Modes of operation

Barge operation

For lifting work on floating barges, the crane operator can enter the barge inclination in the control system and lifting capacities are adjusted accordingly.

Driving with load on the hook

Driving is always in “safe mode” with active Load Moment Limiter, and is dependent on the driving speed. The control system automatically adjusts the lifting capacities to suit the driving speed, when driving with a load on the hook. At the lowest speed the full lifting capacity can even be lifted.

Deep foundation work

Deep foundation mode reduces the lifting capacities and Load Moment Limiter in accordance with the applicable regulations for the deep foundation industry.

Diesel-hydraulic plug and play emergency generator

Personnel lifting

The newest generation of crawler cranes is approved for personnel lifting. This mode is selected using a separate key switch, and the required emergency generator and controls are a plug and play solution. Thanks to the EC type approval certificate for the occasional lifting of persons, local approval from an acceptance authority is no longer required. In case of emergencies, the availability of the crane can be restored within a few minutes. With reduced speed, the work cage with personnel can thus be safely lowered and the crane can be put into a safe parking position.

Transport and set-up

Focus on cost-efficiency

Special attention was given to the uncomplicated and economic transportation of Liebherr's crawler cranes. Thanks to minimum set-up work, the machine can be quickly mobilized between jobsites so promoting economic deployment.

Designed for road transportation
All components have a space-saving design and weights are optimized so allowing for smooth transportation on all roads in accordance with current international transport rules. The disassembled crawler crane has a compact transport width of maximum 3 metres.

Economic transport
The middle sections of the boom and luffing jib can be transported within each other, thus saving space and costs.

Jack-up system
First of all, the uppercarriage is unloaded independently using a jack-up system, whereby the crawler crane is supported by hydraulic jack-up cylinders.

Easy assembly
The self-assembly and self-loading systems allow for quick and easy, and above all, safe assembly of the crawler crane. All assembly work and changes of equipment can be carried out without the need for an auxiliary crane.

Unloading and assembly
Subsequently the crawlers, counterweights and boom sections are unloaded and assembled using either the A-frame or boom foot.

Pin connections
Hydraulically activated pins and quick connections accelerate the assembly process.

Fall protection
This system, designed by Liebherr, protects personnel during assembly work on the lattice boom.

Erecting and lowering the boom
All boom configurations can be erected within a very short time.

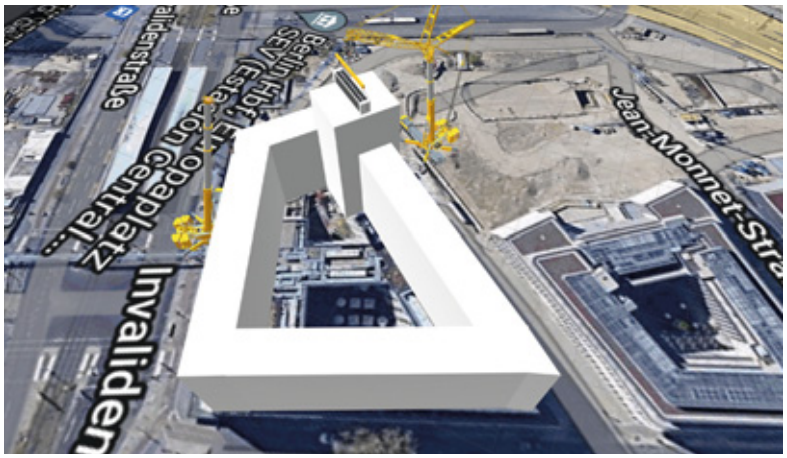
Digital solutions

3D software for lift planning

Planning a heavy lift is a demanding task. But even supposedly simple lifting operations using mobile and crawler cranes can turn out to be more complicated than initially expected. Crane Planner 2.0 helps you to take all eventualities into account and to find solutions in advance so that you can carry out your lift in the best possible way.

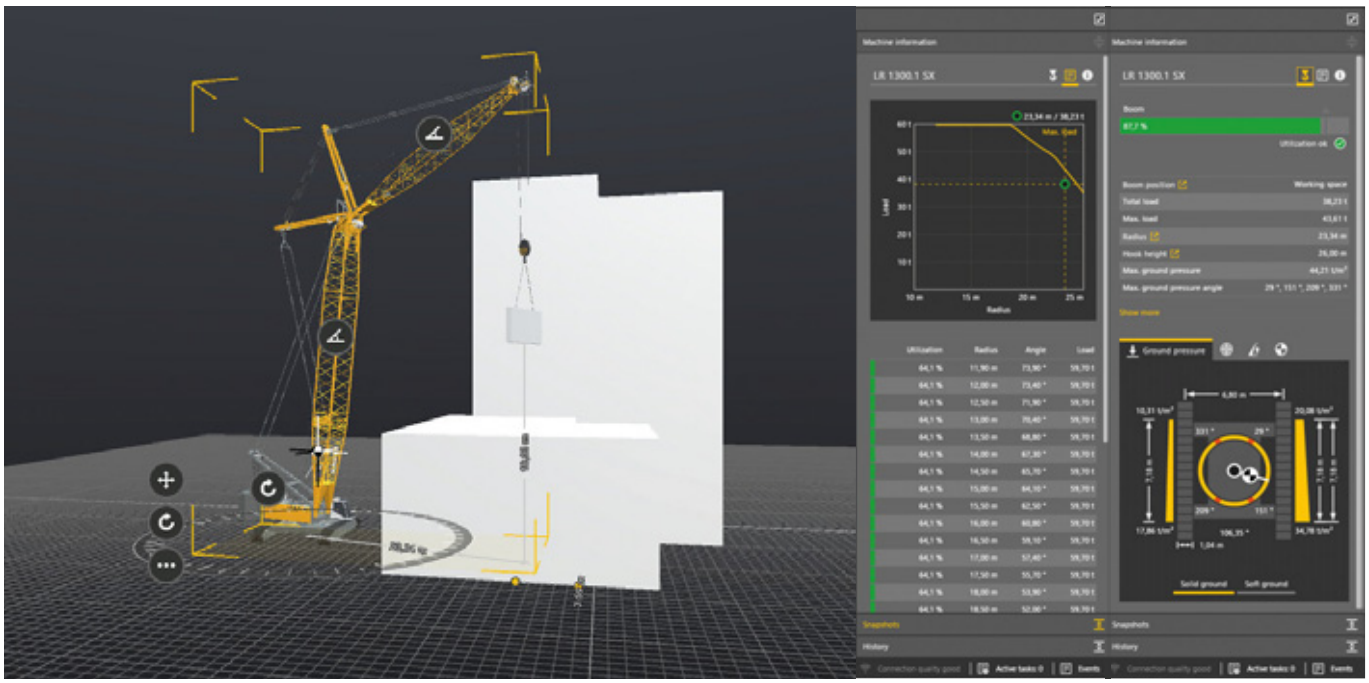
The combination of an attractive, three-dimensional user interface and the exact machine data of the load moment limitation (LMB / LICCON) is unique. The data displayed in Crane Planner 2.0 are determined by exactly the same calculation logic as the live data of the real mobile and crawler cranes. At the same time, important key figures, such as ground pressures, support pressures, loads and centres of gravity are determined.

With Crane Planner 2.0, Liebherr provides you with modern lift planning software. There is no need for expensive licences, elaborate hardware and extensive training for CAD software. Our engineers and software developers work daily on new functions and on the integration of further Liebherr cranes. The Crane-Planner 2.0 updates are provided to you regularly as part of the selected licence.



Impressive visualisation

- interactive 3D models
- supporting visualisation of dimensions and load
- integration of Google Maps data
- import of 3D objects
- warning of potential collisions of machine, load or surroundings



Reliable database

- exact load capacities, ground pressures/ support forces and centre of gravity calculations
- original LMB and LICCON data of Liebherr mobile and crawler cranes
- real-time data calculation
- preparation of professional reports

Further information

Customer service

Your reliable service partner

The combination of customer focus, high quality, innovation, and commitment ensure the highest level of service. Based on many years of experience, we offer you effective support in all matters worldwide.

Further information

Technical support and field service

Professional field engineers provide support from the moment the machine leaves the factory and accompany it throughout its whole service life. Whether ad hoc or on a contractual basis, they have the knowledge and equipment to solve every problem. Immediate assistance and fault analysis are also possible via audio-visual connection. In order to provide the best possible service around the world, continuous improvement and expansion of the service network is one of our most fundamental commitments.

Parts and service products

Liebherr original spare parts are optimally suited to Liebherr machines and fulfil the highest quality standards. This significantly increases efficiency and value retention of your machine. The availability of cost-effective new parts is ensured over the lifetime of your machine. A wide range of products that support you in your daily tasks is also available.

All parts and products can be viewed and ordered online to provide round-the-clock service.

Applications

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