

# **Liebherr crawler cranes up to 300 t capacity**



# **LIEBHERR**



# Quality, durability and efficiency for many years

Excellent performance and high mobility are the distinguishing features of the hydraulically driven crawler cranes with lattice boom (LR series), manufactured in Liebherr-Werk Nenzing GmbH, Austria. These cranes are suitable for a multitude of applications ranging from pure lifting jobs to simple clamshell operation, and for some types even dragline operation. New, improved material and components, enhanced precision of the control system, optimized drive technology as well as perfect handling for transport and assembly are just a few of the characteristics which provide optimum customer benefit. Quality and efficiency are factors which have emphasized the durability and reliability of the LR series for many years.





1

## Profitability

For many years the main advantages of the Liebherr crawler crane series are economical transport, quick and easy assembly and low operating costs as well as high flexibility resulting from the consistent modular design principle, which enables the efficient use of the same parts for more than one type of machine.

2

## Efficiency

The high flexibility of the solid boom system allows the crane to fulfil specific requirements on site and to quickly adapt to any necessary changes. The Liebherr Litronic control system based on CAN-Bus technology offers efficient control of all functions including online load chart calculation.

3

## Operating comfort and safety

The ergonomic cabin design provides the operator with an unobstructed view of the entire working area. Even the standard equipment of the Liebherr crawler crane series includes numerous innovative technical features ensuring ease of operation.

4

## Reliable service

With minimal product maintenance requirements, the possibility of remote diagnoses, quick assembly on site and a reliable spare parts supply, Liebherr guarantees permanent availability of its crawler cranes. LiDAT, Liebherr's comprehensive machine park management, is a data transmission and positioning system, which optimizes service.\* Modern repair and training centres as well as a comprehensive network of service stations ensure worldwide customer service.

\* available in selected countries







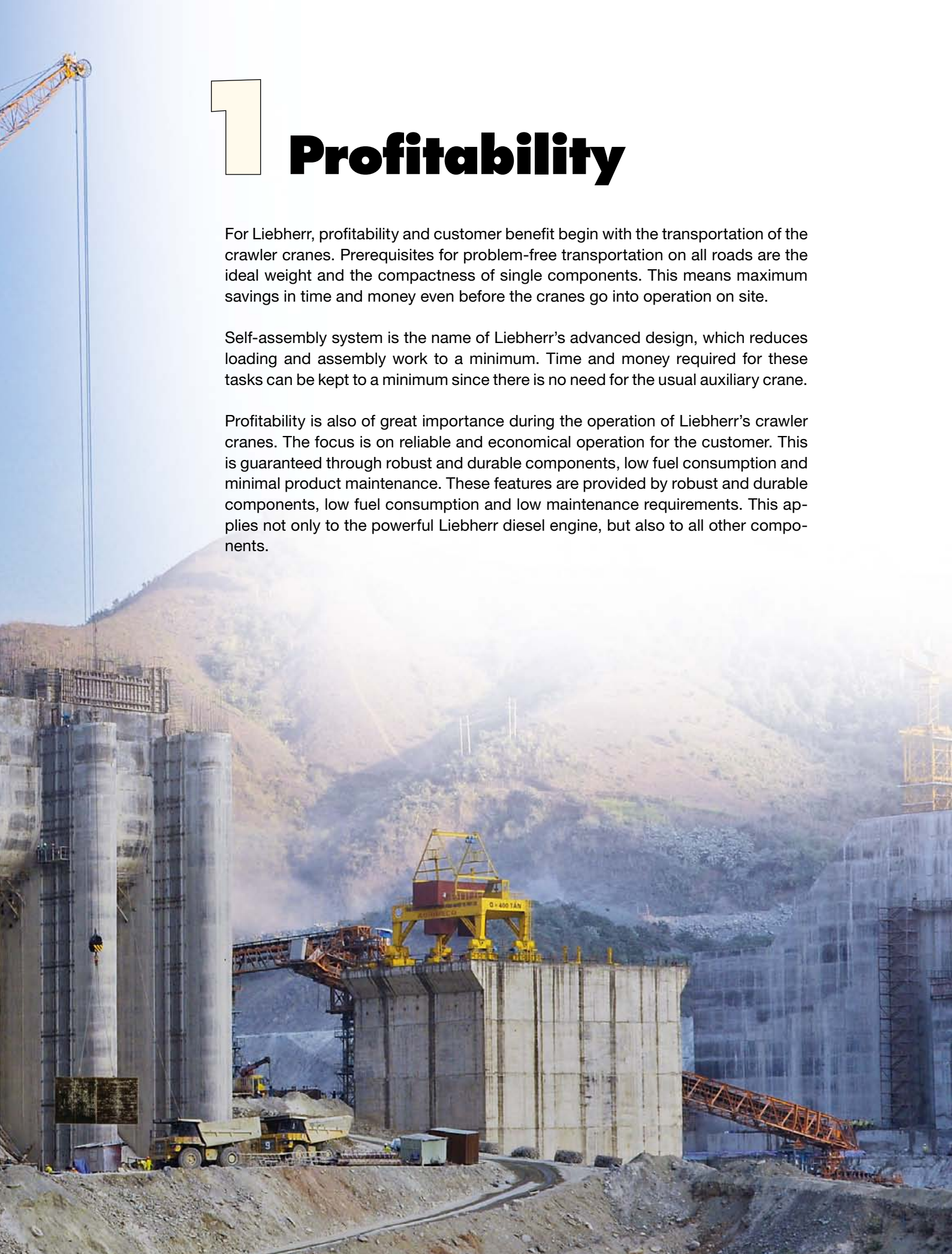


# 1 Profitability

For Liebherr, profitability and customer benefit begin with the transportation of the crawler cranes. Prerequisites for problem-free transportation on all roads are the ideal weight and the compactness of single components. This means maximum savings in time and money even before the cranes go into operation on site.

Self-assembly system is the name of Liebherr's advanced design, which reduces loading and assembly work to a minimum. Time and money required for these tasks can be kept to a minimum since there is no need for the usual auxiliary crane.

Profitability is also of great importance during the operation of Liebherr's crawler cranes. The focus is on reliable and economical operation for the customer. This is guaranteed through robust and durable components, low fuel consumption and minimal product maintenance. These features are provided by robust and durable components, low fuel consumption and low maintenance requirements. This applies not only to the powerful Liebherr diesel engine, but also to all other components.





# Efficient transport

Weight-optimized construction and compact design distinguish the components of Liebherr crawler cranes. Both of these basic features – low transport weight and low dimensions – enable Liebherr to guarantee quick and economical transportation to the site. All equipment can be transported on standard trucks and many crane parts are designed to fit into standard containers.

Furthermore, the transport volume is reduced by placing the luffing jib sections into the main boom sections on easy-slide pads, and thanks to their low height, counterweight pieces can be placed below the boom sections for transportation. Specially designed brackets allow storage of the pendants and pins on the boom sections.









# Quick and easy self-assembly

Liebherr's self-assembly system enables quick, easy and above all safe assembly of the cranes. Self-assembly starts with the unloading of the basic machine. The Liebherr crawler crane raises itself using four hydraulic jacks (Jack-Up System) onto solid support plates allowing the low loader to simply drive away from beneath the raised uppercarriage. Subsequently the uppercarriage unloads the side frames, counterweights and boom sections using either its A-frame or boom foot, depending on the type of crawler crane. Thanks to the sophisticated design the assembly of the side frames and the carbody counterweight is much easier using the self-assembly system than using an auxiliary crane. It is possible to carry out all work concerning assembly and change of equipment without an auxiliary crane. In addition, hydraulically activated pins, quick connections and an auxiliary winch for reeving of the hoist rope both facilitate and accelerate the assembly process. All boom configurations offered by Liebherr can be erected by the cranes themselves. All exactly dimensioned rigging material provided is a prerequisite to make this process and the remaining assembly so efficient.









# Economical operation





The Liebherr diesel engine has been specially designed for heavy duty applications. It is extremely reliable, durable and easy to service. The efficient cooling system allows problem-free operation even under severe environmental conditions. The electronic control and monitoring system checks all machine data. Since engine electronics and crane control are optimally matched, the diesel engine is directly interlinked with the regulation of the hydraulic system. This makes the crane more economical and easier to operate for the driver. The extensive diagnostic system recognizes and localizes possible errors at an early stage. The high-output power pack provides high travelling power and single line pull combined with high rope speeds – thus guaranteeing exceptional performance. All movements can be executed simultaneously.

The crane winches are maintenance-free. The other components of Liebherr crawler cranes are equally customer friendly, for example, the lifetime lubricated undercarriage components that significantly reduce maintenance requirements.



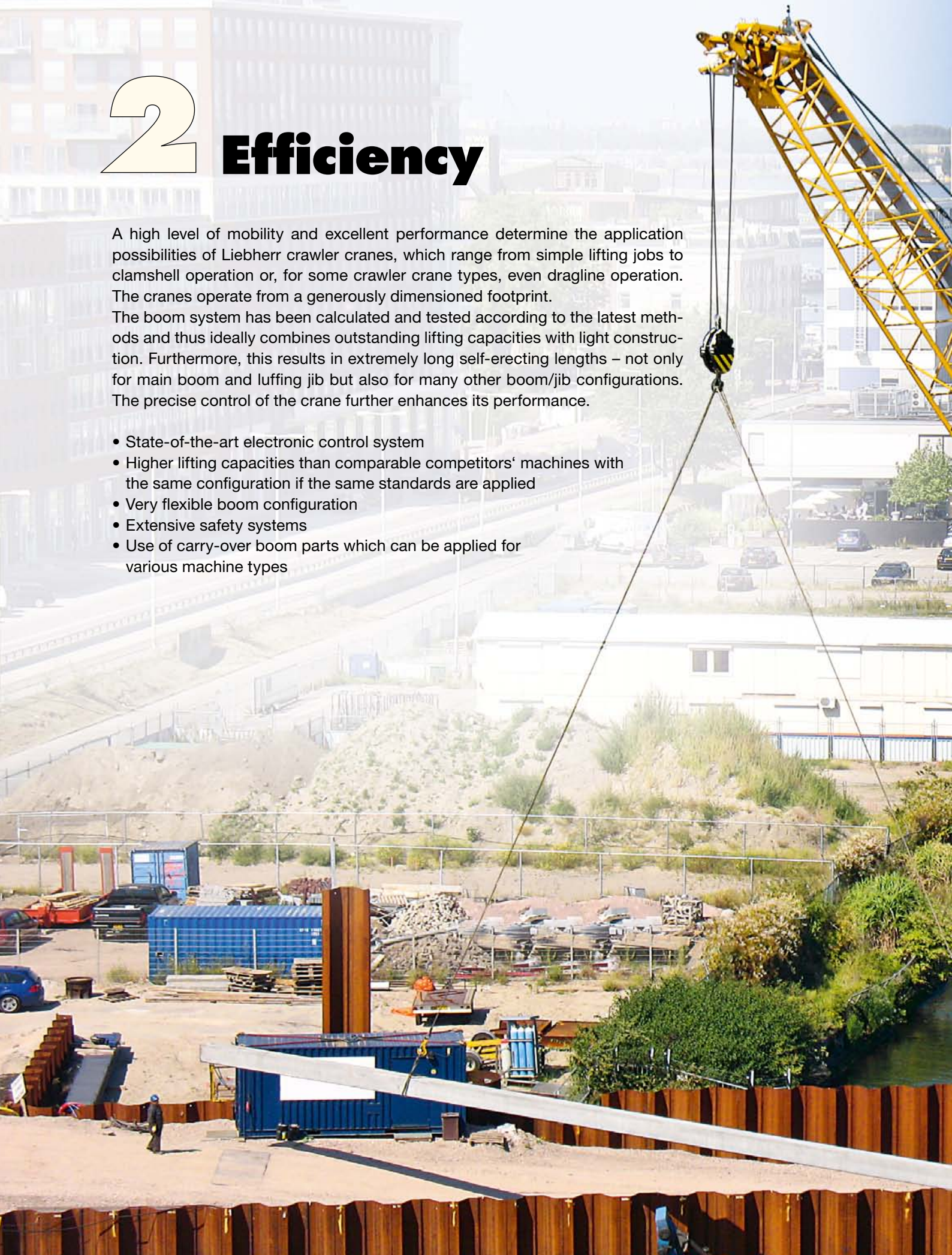


# 2 Efficiency

A high level of mobility and excellent performance determine the application possibilities of Liebherr crawler cranes, which range from simple lifting jobs to clamshell operation or, for some crawler crane types, even dragline operation. The cranes operate from a generously dimensioned footprint.

The boom system has been calculated and tested according to the latest methods and thus ideally combines outstanding lifting capacities with light construction. Furthermore, this results in extremely long self-erecting lengths – not only for main boom and luffing jib but also for many other boom/jib configurations. The precise control of the crane further enhances its performance.

- State-of-the-art electronic control system
- Higher lifting capacities than comparable competitors' machines with the same configuration if the same standards are applied
- Very flexible boom configuration
- Extensive safety systems
- Use of carry-over boom parts which can be applied for various machine types









# Control system

For many years, the heart of the hydraulic crawler cranes has been the Liebherr Litronic control system, which has been developed and manufactured in-house. It includes all control and monitoring functions. The system is designed to withstand extreme environmental conditions and heavy duty construction tasks and has proved itself in these situations.

Due to the integration of the load moment limitation in the control system some additional components, which otherwise would have been necessary, are no longer required. The boom configuration can be pre-selected quickly and easily on the touchscreen in the operator's cab. The system allows every equipment configuration to be operated without changing the software. Moreover, the excellent computing power provides quick supervision of the crane's monitoring functions. For movements performed simultaneously the operator does not notice the power-output distribution and can operate the crane easily and without any restrictions. At the same time the lifting capacity is calculated and monitored during operation in case of changing boom angles.

All information necessary for the on-going operation of the machine is clearly displayed on the monitor in the operator's cab. Warning signals and irregularities, for example filter clogging, are immediately displayed as they occur. The storage of such incidents allows problems to be identified and taken care of at an early stage in order to prevent further damage.













# Flexible boom system with Derrick option and narrow variable track width

Only a very flexible, efficient and expandable boom system is able to fulfil the various requirements on site. The booms of Liebherr crawler cranes are characterized by their large dimensions. Thus, excellent lifting capacities can be achieved not only during heavy lifts with the main boom but also when working with the luffing jib.

For crane fleets it is a considerable advantage if the same boom system can be used for various crane types. Liebherr crawler cranes offer the following boom configurations:

- Main boom
- High-reach boom for great heights
- Auxiliary jib
- Fixed jib
- Luffing jib
- Midfall option offering the possibility to work with a second hook over a sheave mounted in the luffing jib
- Derrick option with suspended counterweight or wheeled counterweight carriage (for LR 1280 and LR 1300)

Type	Main boom						L-boom high reach without Derrick operation								Fixed jib			Luffing jib						Windmill jib		Auxiliary jib	Midfall					Derrick
	1311	2017	2018	2320	2220	2821	1311 1008	2017 1309	2018 1309	2018 1713	2320 1916	2220 1916	2821 2316	0806	1008	1713	1008	1309	1713	1916	2316	0906	1507			1309	1713	1916	2316			
LR 1100	●	●					●							●			●	●						●	●	●						
LR 1130		●						●						●				●						●	●	●						
LR 1160			●						●	●				●	●			●	●					●	●	●	●					
LR 1200				●							●			●	●				●	●				●	●			●				
LR 1280					●							●		●	●				●	●				●	●			●		●		
LR 1300						●							●		●	●				●	●	●	●	●	●	●				●	●	





# 3 Operating comfort and safety

Upon entering the operator's cab it is apparent that everything has been done to facilitate the handling of the machine for the operator. This can be contributed to the spacious design of the cabin, the adjustable seat, air conditioning, bright interior and exterior illumination as well as numerous other details.

An unobstructed view is an elementary prerequisite for precise and safe operation; therefore, the all-round glazing in the cab ensures excellent visibility of the entire working area. The view upward, which is of special importance, is facilitated through the standard cabin tilting system, which is continuously variable up to 20 degrees.

All operating elements are clearly and ergonomically arranged and all crane movements are precisely controlled by two joysticks and two foot pedals. As an option, double-T-levers are available for the right-hand side, which allow the main boom and the luffing jib to be operated simultaneously.

For Liebherr, safety is of utmost importance. The new safety rail, which allows access along the whole boom on a safety rope without interruption at the boom joints, is mounted on both sides along an antislip catwalk. All crane types are available with railings on the uppercarriage, with catwalks and safety rails for the fall arresting device.









# Easy and efficient handling

Ease of operation and handling is not only important in the operator's cab but concerns the whole machine. Safe and amply dimensioned ladders and catwalks ease access to all important parts of the crane. An example for rational handling is the practical wire bracket on the hoist rope. It allows easy connection of the hoist rope to the fixed point. Time-saving quick connections, the jack-up system, the fastening system of the mid-point suspension as well as hydraulic activation of the pins with remote control for easy assembly are further important features enabling fast and efficient work.









# 4 **Reliable service**

Permanent readiness of the crawler cranes for operation is a major prerequisite for a smooth and efficient application on the jobsite. Periods of standstill are enormously expensive and have to be reduced to a minimum. Liebherr service is always available wherever you need it. A tight network of service stations with qualified contacts and well-trained Liebherr service personnel guarantees quick assistance at any time and any location throughout the world. The numerous locations guarantee the availability of spare parts. A short response time to customer requirements through global presence has always been of utmost importance to Liebherr-Werk Nenzing GmbH and to its numerous subsidiaries. For qualified service of the cranes as well as comprehensive training of operating and maintenance personnel, state-of-the-art repair and training centres are available in the parent company itself as well as at other locations.









# LiDAT\* keeps you fully informed about your machines - at all times

LiDAT is a custom-made telematics and machine park management system for Liebherr machines and the machines of other manufacturers. Based on state-of-the-art data transmission technology, LiDAT provides information on the location and operation of your machines, enabling their efficient management, optimal operation scheduling and remote supervision.

Information, such as a machine leaving a predefined zone, fuel consumption, service intervals or notifications of specific operating parameters, can also be accessed. Moreover, organisational structures with service partners as well as rentals can be illustrated in the LiDAT web browser. This knowledge about the machine's application form a basis of information and offer new possibilities for rent calculations. In addition, the authorization concept in the LiDAT web browser allows for a differentiated data access.



\* available in selected countries



## **LiDAT\* functions**

### **Machine data recording**

- Automatic recording of machine data
- Long-distance data transmission via GSM/GPRS, W-LAN or via data carriers

### **Machine data analysis**

- Predefined reports on machine use, warnings and operating parameters
- Generating of reports via the LiDAT web browser and export as PDF, MHTML and in CSV format

### **Fleet and machine park management**

- Operation scheduling irrespective of the manufacturer
- Efficient machine operation scheduling and construction site planning with freely definable work areas and machine groups
- Analysis and logging of machine utilisation efficiency
- Restrictions of use through predefined work areas and working hours
- Data basis for optimised fleet management (e.g. reinvestment decision support)

### **Service**

- Online notification of critical operating conditions
- Storing of important machine data
- Maintenance schedules coordinated with availability of machines
- Automatic service interval reminders
- Efficient service engineer planning due to fast, direct access to each machine

### **LiDAT features**

The various LiDAT functions are included in the basic packages LiDAT Standard and LiDAT Plus. On the basis of LiDAT Plus several additional packages are available.

### **LiDAT additional package Teleservice**

Permanent readiness for operation of Liebherr units is a major prerequisite for a smooth and efficient application on the jobsite. Using the LiDAT additional package Teleservice a Liebherr service engineer can log directly on the machine and rectify possible faults during malfunction. Teleservice allows trouble-shooting without having to travel. Thus, delays and downtime can be avoided and service costs kept to a minimum.

### **LiDAT additional package Safety Package**

Using the LiDAT additional package Safety Package overloads, machine configuration, signals from sensors relevant for the load moment limitation and further extensive information about the life cycle of a machine can be illustrated for Liebherr crawler cranes, both duty cycle and lift version, in the LiDAT web browser. This additional package gives an overview of all safety-relevant information at a glance.



# Liebherr crawler cranes through





# hout the world



Liebherr crawler cranes are applied on jobsites around the globe. The growing number of application possibilities increases the attractiveness of the products and proves Liebherr's competence in this field. With the LR series, Liebherr offers a well-graduated range of lattice-boom cranes on crawlers for special lifting applications.

In the machine class with lifting capacities up to 300 t the focus lies on low transport weight, rapid self-assembly, optimum lifting capacities in the entire working area as well as comprehensive operating information.

For larger crawler cranes with lifting capacities exceeding 300 t Liebherr also offers a wide variety of multi-functional boom systems. Thanks to innovative solutions, these crawler cranes still provide a high level of mobility even when lifting extreme loads.



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