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Offshore cranes

Liebherr BOS series

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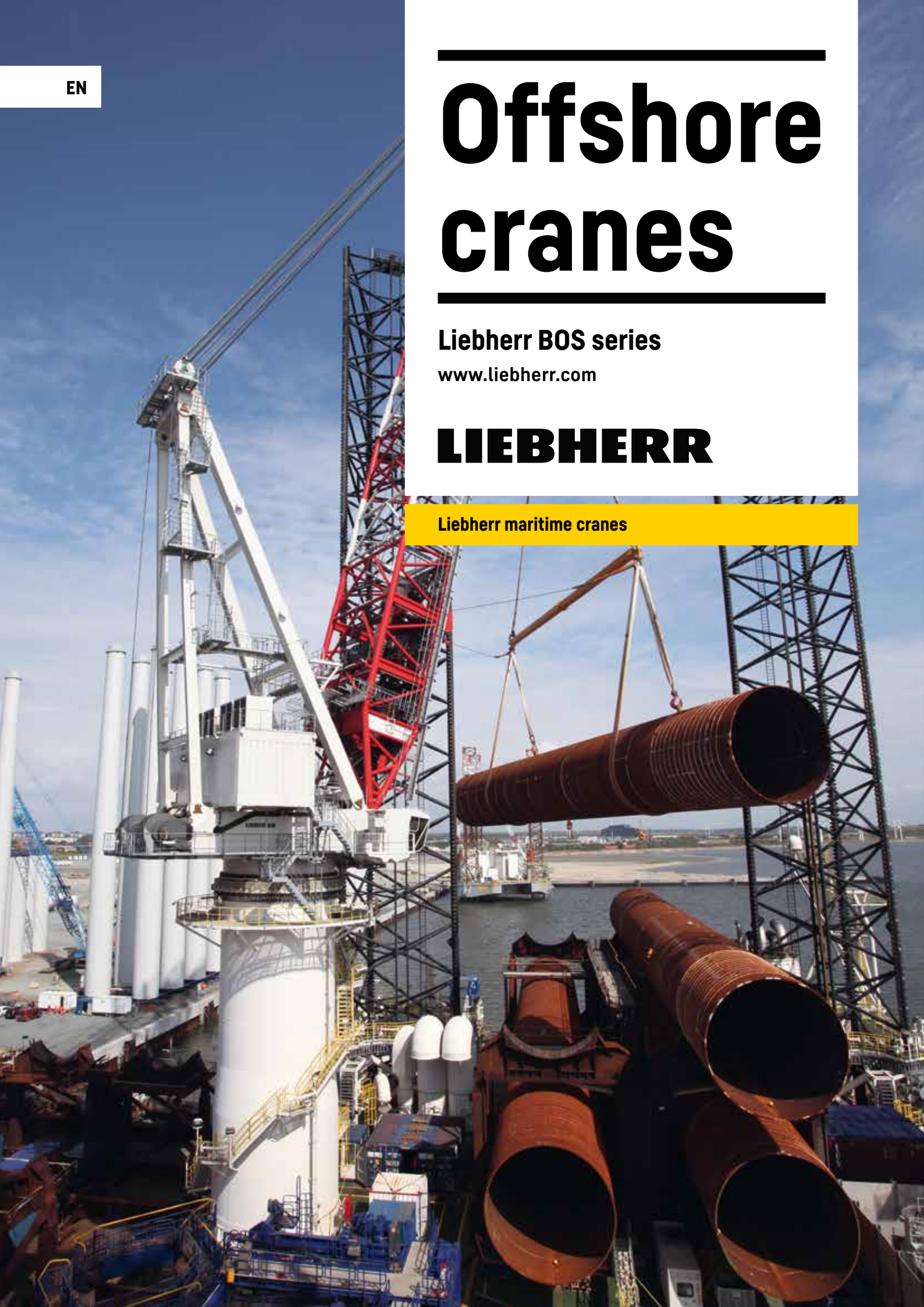
LIEBHERR

Liebherr maritime cranes



Board offshore crane series

Through many years of experience and technology strictly orientated towards customer requirements, a range of products has been created which sets new standards in innovation, quality and reliability. Together with customer feedback from more than 1,000 cranes in the field our offshore cranes are a benchmark for today's offshore industry.

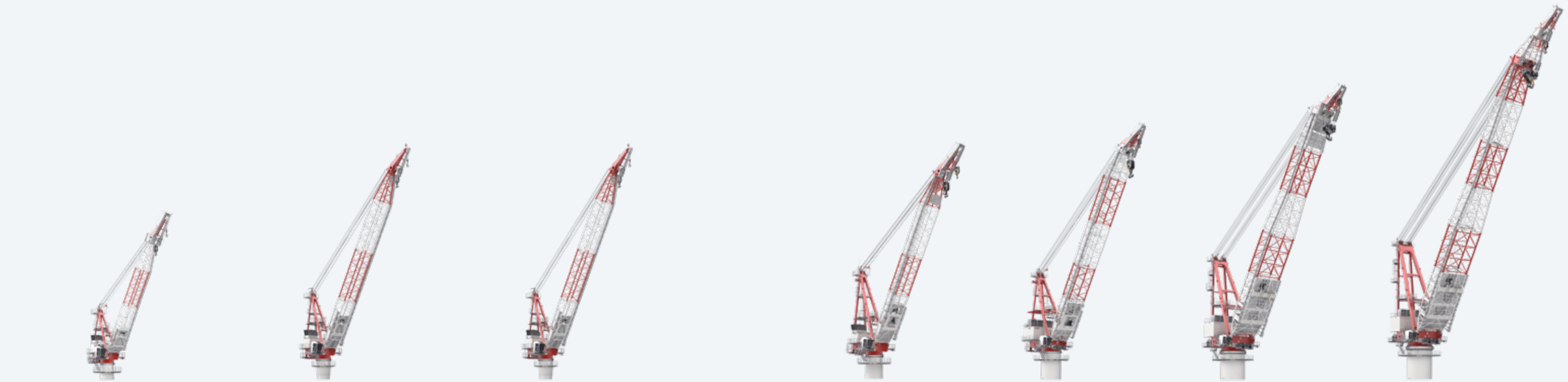
Being an offshore crane of the 3rd generation, the Liebherr BOS crane stands for the highest manufacturing standards and modern, innovative offshore crane technology. This makes the BOS the most successful product in the offshore crane division and a leader in its class.

The board offshore crane series (BOS) has a compact and function-orientated design as well as Liebherr's in-house developed Litronic® control system. The BOS is a conventional slew bearing crane with a rope luffing mechanism and an open A-frame design. As an option the BOS crane can be upgraded and certified for man riding and for personnel rescue operations.

The board offshore crane is available in various sizes and different lifting capacities ranging from 25 t up to 1,200 t. The boom length can be specified and extended to more than 100 m for some models.

Product range

The BOS series is marked by flexibility with regards to the field of application. The compact sized lattice boom allows higher length. Utmost stability will be provided by the open A-frame design.



BOS 2600

Boom length from
30 m to 60 m
Max. capacity
75 t

BOS 4200

Boom length from
33 m to 72 m
Max. capacity
100 t

BOS 6000

Boom length from
36 m to 72 m
Max. capacity
150 t

BOS 7500

Boom length from
36 m to 84 m
Max. capacity
300 t

BOS 14000

Boom length from
39 m to 102 m
Max. capacity
600 t

BOS 35000

Boom length from
51 m to 102 m
Max. capacity
1,000 t

BOS 45000

Boom length from
51 m to 102 m
Max. capacity
1,200 t

Areas of application

The BOS cranes are suitable for any kind of offshore installation, either floating or bottom supported, as they provide all appropriate safety and safeguarding systems and features.

General purpose

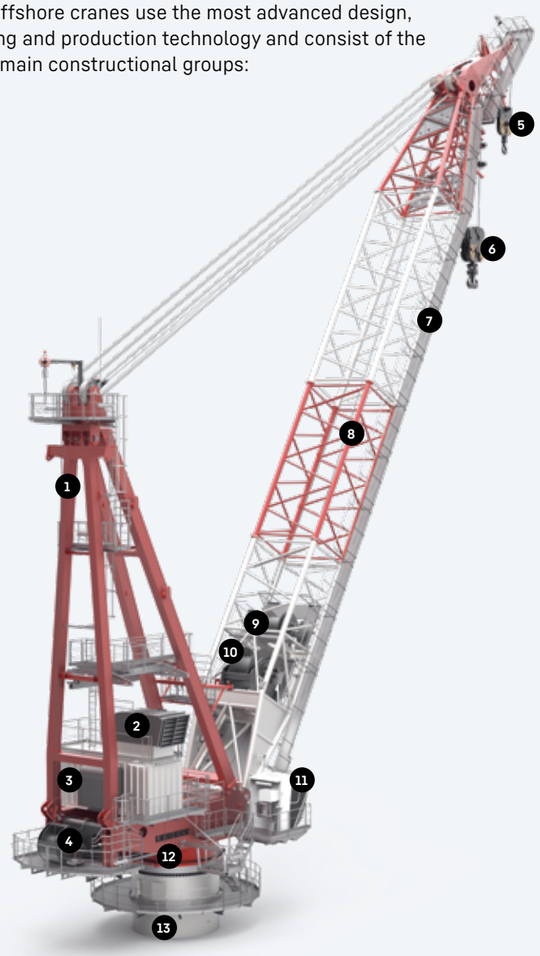
Liebherr board offshore cranes mounted on a bottom-supported or floating offshore installation can be used for maintenance work as well as assembly, repair and supply of oil and gas extraction systems. Typical duties include load and cargo handling to and from supply vessels, barges or semisubmersibles as well as the support of oil drilling and production activities.

Heavy lift

For heavy lift operations board offshore cranes are installed on barges, semi-submersibles or other vessels and platforms. They are typically used in construction, decommissioning and salvage operations in a marine environment with safe working loads up to 1,200 metric tonnes.

Proven design

Liebherr offshore cranes use the most advanced design, engineering and production technology and consist of the following main constructional groups:



1 **Open A-frame:**
Service platforms for maintenance

2 **Cooler:** Integrated hydraulic oil cooler

3 **Machinery house:**
Provides comfortable space for maintenance.

4 **Luffing winches:**
Maintenance-friendly and easy accessible

5 **Auxiliary hoist**

6 **Main hoist**

7 **Walkway:**
Provides easy access to maintenance areas

8 **Boom:**
Designed as primary steelwork with a lattice framework

9 **Auxiliary hoist winch**

10 **Main hoist winch:**
Compact winch with an optimum power-to-weight ratio

11 **Operator's cabin:**
Three different sizes available

12 **Slewing platform**

13 **Base column:**
Customized design according to project specifications

Slewing gantry

The slewing gantry is the base element of the crane, with the cabin, the machinery compartment, the luffing winch and the slewing gears attached to it.

A-frame

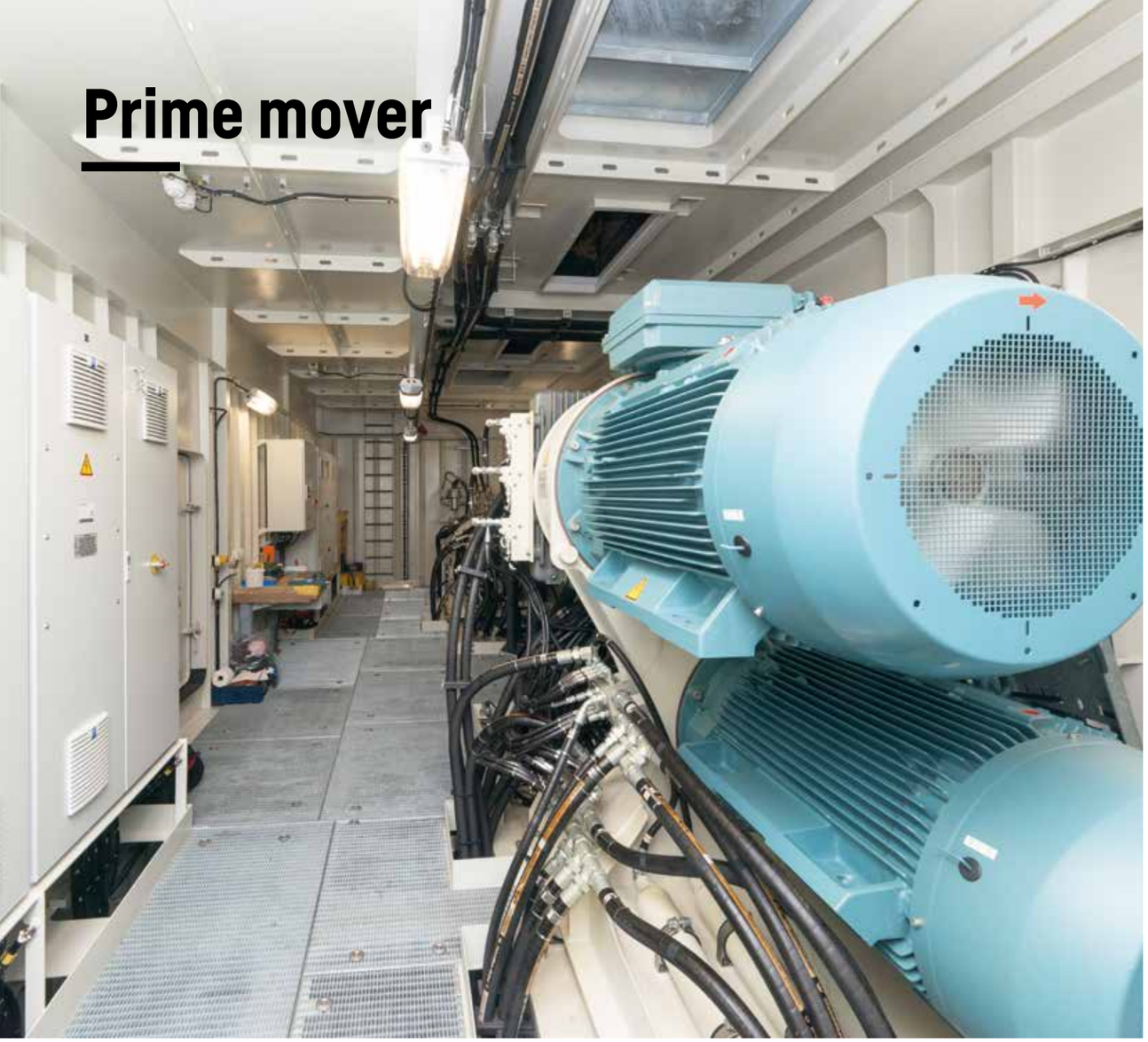
The A-frame is a weight-bearing element that serves the rope guidance via several sheaves. Its design enables efficient power transmission. For maintenance work several platforms are provided at the A-frame.

Machinery house

The machinery house contains the engine and is protected against bad weather conditions. To meet the project requirements the crane design offers the customers either a diesel-hydraulic or an electric-hydraulic drive. Cooling is achieved via hydraulically driven fans.

Comfortable space for maintenance work is provided inside the machinery compartment. This ensures both easy access to the crane components and increases efficiency. Also situated in the machinery house are the electrical switch compartments, containing the in-house designed Liebherr Litronic® crane control system.

Prime mover



The crane design offers the customer a choice of diesel-hydraulic or electric-hydraulic drive to best meet project requirements.

Electric motors

The electric motor is an electric squirrel cage induction motor. The power rating is adjusted to the project specific requirements. Each electric motor is provided with standstill heating and thermal protection.

Diesel engine

The range of Liebherr Diesel engines offers power ratings in line with the customers technical specification. As standard starting system, an electric version will be provided.

Boom

The boom is a lattice framework construction with the boom tip being a shell structure which accommodates the luffing and main hoist sheaves. A boom extension and auxiliary hoist are available as an optional extra. To achieve the required working outreach, the standard boom pivot sections and standard boom heads can be combined with variable intermediate sections. Luffing and hoisting sheaves on the boom head are lubricated from a centralised greasing point located next to the boom head which is accessible from the boom walkway. A hook garage is available for the main and auxiliary hoist.

Boom pivot bearing

Maintenance-free, capsuled spherical bearings ensure optimal transmission of force and maximal lifetime expectation.

Cabin

The operator's control desk is fully equipped with all controls and indicators as required for safe and reliable crane operation. The design and layout of the cabin is based on the need for visibility, comfort and operability. It provides a comfortable, low noise environment, essential for ensuring uninterrupted concentration for the driver when operating the crane. Vibrations are reduced through swing equalisers. The window sections are of tinted anti-glare toughened safety glass mounted in an innovative glass frame providing a clear view of the operational area and the handled loads.

Control Meets Comfort

- Optimal position near boom
- 70 % glass proportion (safety glass)
- Unrestricted and reliable view for the operator (270° horizontal and 180° vertical view angle)
- Integrated Litronic® touchscreen (display with all relevant information)
- Closed-circuit video system on the jib head with coloured monitor in the cabin (available as an optional item)
- Heating, ventilation and air conditioning unit
- Window wiper and washing system
- Sound insulation to 65 dB(A)
- Vibration isolation

Retrofit packages

With a wide spectrum of optional retrofit packages Liebherr is in a position to adapt its standard products to meet with both individual customer requirements as well as external conditions in the area of operation. The dynamic range of optional components and installations is continuously enhanced and extended.

Optional upgrades:

- Air-conditioning
- Automatic slew bearing greasing
- Auxiliary hoist
- Boom rest
- LiCAS: Liebherr Collision Alert System
- Additional floodlights
- Hook garage
- Load recorder
- Man-riding
- PTT radio system
- Radio remote control
- Hazardous area package
- Different cabin sizes
- Vertical line finder
- LiDAT remote troubleshooting and analysis / diagnosis tool
- CCTV camera system for main and auxiliary hoist
- Emergency power pack system
- Stainless steel package
- Arctic temperature package down to -50°C
- RotaBolt® for slewing bearing bolts
- RotaBolt® Vision for boom section bolts

Hazardous areas

Liebherr provides cranes for applications in hazardous areas. The board offshore cranes can be partly or fully designed for explosive working areas. With regards to the ignition sources the main components such as cabin or engine can be modified with a hazardous area rating.

Due to this rating Liebherr provides protection for all kind of explosive zones and decreases the likelihood of an explosive atmosphere. Herewith a high level of safety for operations in the area of oil and gas is ensured.

Green technology at a glance

Ecological issues have always been high on the agenda for Liebherr. The implementation of economy software, biodegradable oils and special noise insulation throughout its offshore crane range are just a few examples of Liebherr's ecological awareness.

Conventional diesel engines

For decades Liebherr has been developing and manufacturing robust combustion engines for diverse applications. All engine series for maritime cranes meet final emission requirements in compliance with current regulations.

100 % recyclable components

Corporate sustainability is firmly anchored in our business. All structural components used for our maritime cranes are recyclable.

Operating liquids

Upon request, all Liebherr offshore cranes can be run on bio-diesel to comply with local regulations and the transition to alternative fuels in customer equipment fleets. Liebherr offers biodegradable oil especially developed for the Liebherr product line. In combination with spectrographic oil analysis techniques, oil lifetime is extended thus providing components such as pumps and motors with even longer lifetimes.

Eco-control

On request, Liebherr offers a special power management feature for diesel engine driven cranes. This "Eco-Control" renders savings in fuel consumption of up to 25 % depending on the crane application and therefore results in reduction of noise exposure and environmental contaminants.

Liebherr Litronic® control system

This software, developed in-house by Liebherr, automatically covers all crane movements and load cycles and therefore actively supports the crane driver in controlling the crane. Thanks to the real-time monitoring of important machine parameters the crane driver is constantly informed in detail about the actual operation of the crane.

Litronic®control
- Stepless load curve through automatic load moment control
- Improved loading speeds through intelligent crane control
- Quick troubleshooting through detailed error codes – either on crane monitor or via remote service
- Sycratronic® – Automatic Tandem Control
- LiCAS: Liebherr Collision Alert System

Customer service

Based on many years of experience Liebherr provides effective assistance and support to its customers and will continue to do so in the future. The continuous improvement and expansion of the service network is part of Liebherr's commitment to offer the best possible support to customers worldwide.

Testing
Offshore cranes go through an extensive testing programme. Prior to delivery all electrical and hydraulic installations undergo detailed examination. After assembly at the shipyard Liebherr service engineers conduct final adjustments of limit switches and prove the crane's functions through to an overload test.

Assembly
Crane parts are transported in maximum sized pieces and assembled and commissioned by a team of experienced engineers. In addition to training at Liebherr facilities prior to erection Liebherr offers comprehensive on-site training covering all technical aspects of the crane, during and after installation.

Training
Liebherr offers a range of flexible, high quality training solutions on-site to fulfil specific customer training needs. Thereby, the main focus lies on creating a sustainable awareness for efficient and safe crane operations. In addition, it has always been Liebherr's philosophy to train customers' engineers in all aspects of crane maintenance, repair and operation. Where necessary, customer personnel are then able to ensure that crane downtime is reduced to a minimum.

Technical service & maintenance
A team of more than 600 experienced, multi-skilled and factory-trained service engineers are based in more than 50 service centres around the globe. They are available ad hoc or on a contractual basis. The continuous expansion of our worldwide sales and service network is part of Liebherr's commitment to offer the maritime industry the best possible support.

Upgrades & retrofits
It might be required to upgrade cranes due to changes in the installation layout, changes in rules and regulations, operational requirements or just to extend the service life of an older crane. In consideration of new conditions Liebherr offers retrofits of existing drive systems and structural inspections.

Spare parts
Every operational hour is vital if cranes are to function effectively. Liebherr original spare parts (OEM) and service staff are at our customers' disposal 24/7. Availability of components over the whole service life of the crane is guaranteed. Liebherr also recommends a steady supply of critical spare parts on-site. In combination with Liebherr training on technical specifics,this allows for minimal downtime of cranes.

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