

Liebherr Maritime Cranes

# Green Technology at a Glance



**LIEBHERR**

# Green solutions for enhanced efficiency



## The development of green technology and products is a matter of particular concern for Liebherr.

As the cargo handling industry is evolving, so are the needs for efficient equipment and increased handling performance. In addition, no manufacturer can reject the demand for sustainable, environmentally sensitive operation and the call for low-emission cargo handling cranes.

## Sustainability right from the start



### **100% recyclable components:**

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

### **Noise protection:**

Two Liebherr mobile harbour cranes of the latest generation work more quietly than one single crane of the older generation. That equals a power level reduction of 3.6 dB(A).

### **Liebherr biodegradable oil:**

Developed for its own product lines, oil of this kind does not pose any threat to the environment and ensures clean recycling. Reduced operating costs and reduced fuel consumption are additional benefits.

**We are committed to protecting the environment**

## Suitable power for every installation



### **Conventional diesel engines:**

For decades Liebherr has been developing and manufacturing robust combustion engines for diverse applications. All engine series for maritime cranes meet EU Stage IV and EPA Tier 4 final emission requirements.

### **Hybrid drive system:**

The Liebherr Pactronic® hybrid drive system allows for a considerable downsizing of the installed engine power. A power pack consisting of a 750kW diesel engine + Pactronic® achieves the identical hoisting speeds compared to a power pack consisting of 2x 725kW diesel engines. Less maintenance, less fuel consumption and less emissions are the result.

### **Full electric cranes:**

Full electric Liebherr RTGs are already available. RTGs can be factory designed for electric operation or an E-RTG solution can be retro fitted. More full electric cranes within the Liebherr maritime product range will follow soon.

**Zero exhaust emissions for the port of the future**

## Automation software for highest efficiency



### **Intelligent grabbing:**

The highly technological cranes from Liebherr make an important contribution towards the eco-friendliness of the maritime industry. This algorithm-based system detects the properties of bulk commodities and optimises the grab filling rates. Less cycles for the same turnover result in considerable energy savings.

### **Path finder / sway-free load:**

Ongoing calculations anticipate the path of the load. Any pendulum movements are balanced out even before they develop. No compensation movements initialised by the operator are required. Consequently, cycle times are reduced and energy is saved.

### **Synchronised lifting:**

One system, two cranes and only one crane operator. This system combines two cranes into one functional unit. Any unnecessary crane movements are impossible. Such precision saves time and energy.

### **Active heave compensation**

The AHC system evaluates current wave movements that affect the crane and compensates them proactively and fully automatically by moving the winch. The AHC contributes to safety, efficiency and energy savings.

**Our technology enables low-emission cargo handling**

# The Liebherr Group of Companies



## Wide Product Range

The Liebherr Group is one of the largest construction equipment manufacturers in the world. Liebherr's high-value products and services enjoy a high reputation in many other fields. The wide range includes domestic appliances, aerospace and transportation systems, machine tools and maritime cranes.

## Exceptional Customer Benefit

Every product line provides a complete range of models in many different versions. With both their technical excellence and acknowledged quality, Liebherr products offer a maximum of customer benefits in practical applications.

## State-of-the-art Technology

To provide consistent, top quality products, Liebherr attaches great importance to each product area, its components and core technologies. Important modules and components are developed and manufactured in-house, for instance the entire drive and control technology for construction equipment.

## Worldwide and Independent

Hans Liebherr founded the Liebherr family company in 1949. Since that time, the enterprise has steadily grown to a group of more than 130 companies with about 42,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

[www.liebherr.com](http://www.liebherr.com)