

A large Liebherr LHM 580 C port crane is positioned on the deck of a ship. The crane is yellow and white, with the Liebherr logo visible on its boom and base. It is a multi-axle crawler crane. The background shows a vast ocean under a dramatic sky with scattered clouds, illuminated by the warm light of a setting or rising sun. The horizon line is visible in the distance.

Next Generation of Port Cranes, Hybrid and Full Electric

September 2024

LIEBHERR

Maritime Cranes

Factsheet: Group overview (2023)



1949

Founded by Hans Liebherr
in Kirchdorf an der Iller,
Germany

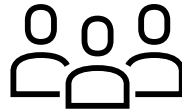


Parent company
Liebherr-International AG
based in Bulle, Switzerland

**Liebherr is a
family-run
technology
company**

13

Product segments



53,659

Employees

40

Production sites



14,042

Turnover in € mio

>150

Companies

01 - Liebherr Group

A 100% independent family business



From left to right: Jan Liebherr, Stéfanie Wohlfarth, Sophie Albrecht, Philipp Liebherr, Patricia RUF, Johanna Platt, Isolde Liebherr and Willi Liebherr

Maritime Products

By Liebherr























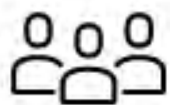
Production network

Facts and figures



€ 1.67 bn

Turnover (2023)



5,527

Employees (2023)



49

Companies worldwide









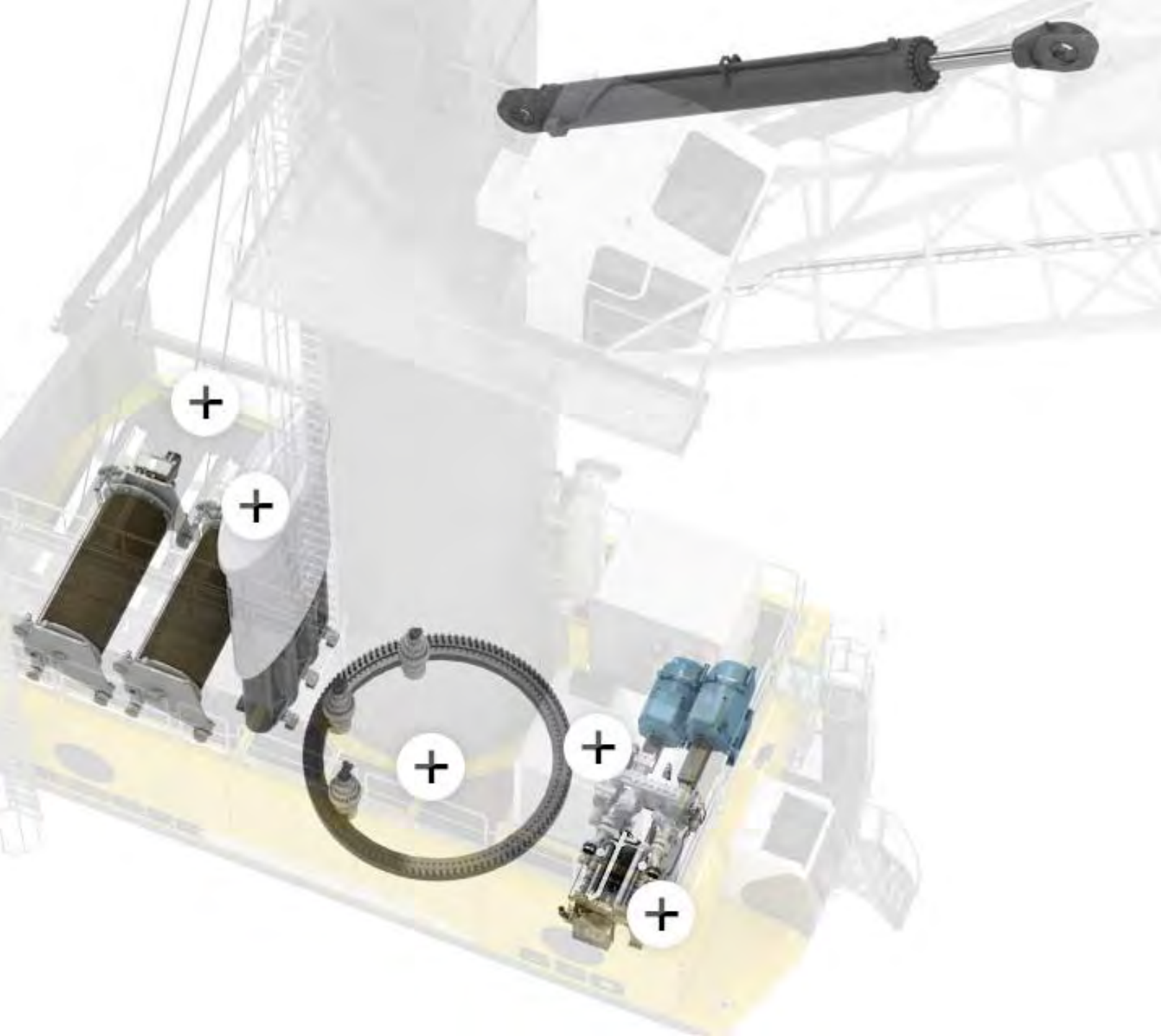
Mobile Harbour Cranes

- Mobility : travelling on tires or on rail
- Versatility : containers, bulk, general cargo
- Originally powered by diesels engine

Next Generation of Port Cranes, Hybrid and Full Electric

01

Electro – Hydraulic Drive



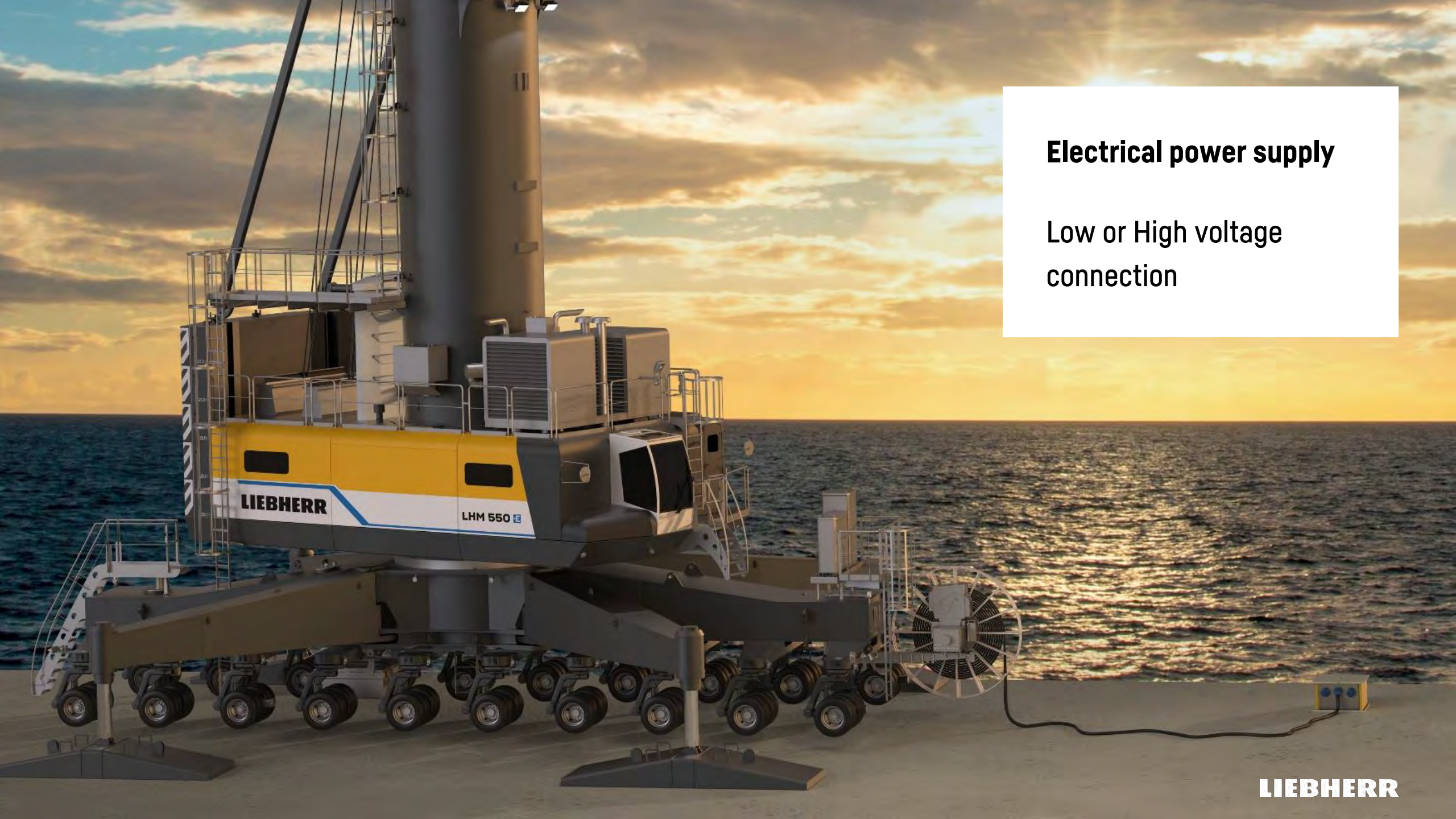
Electro – Hydraulic drive concept

- Prime mover : electric motor
- Connected to a splitted gearbox
- Pumps and hydraulic motors
- Hoisting, slewing, travelling

Electro – Hydraulic

- For emission free operations
- Liebherr mobile harbour cranes are able to operate emission free for 25 years
- When an on-shore power supply is available
- From low to high voltage with a cable drum

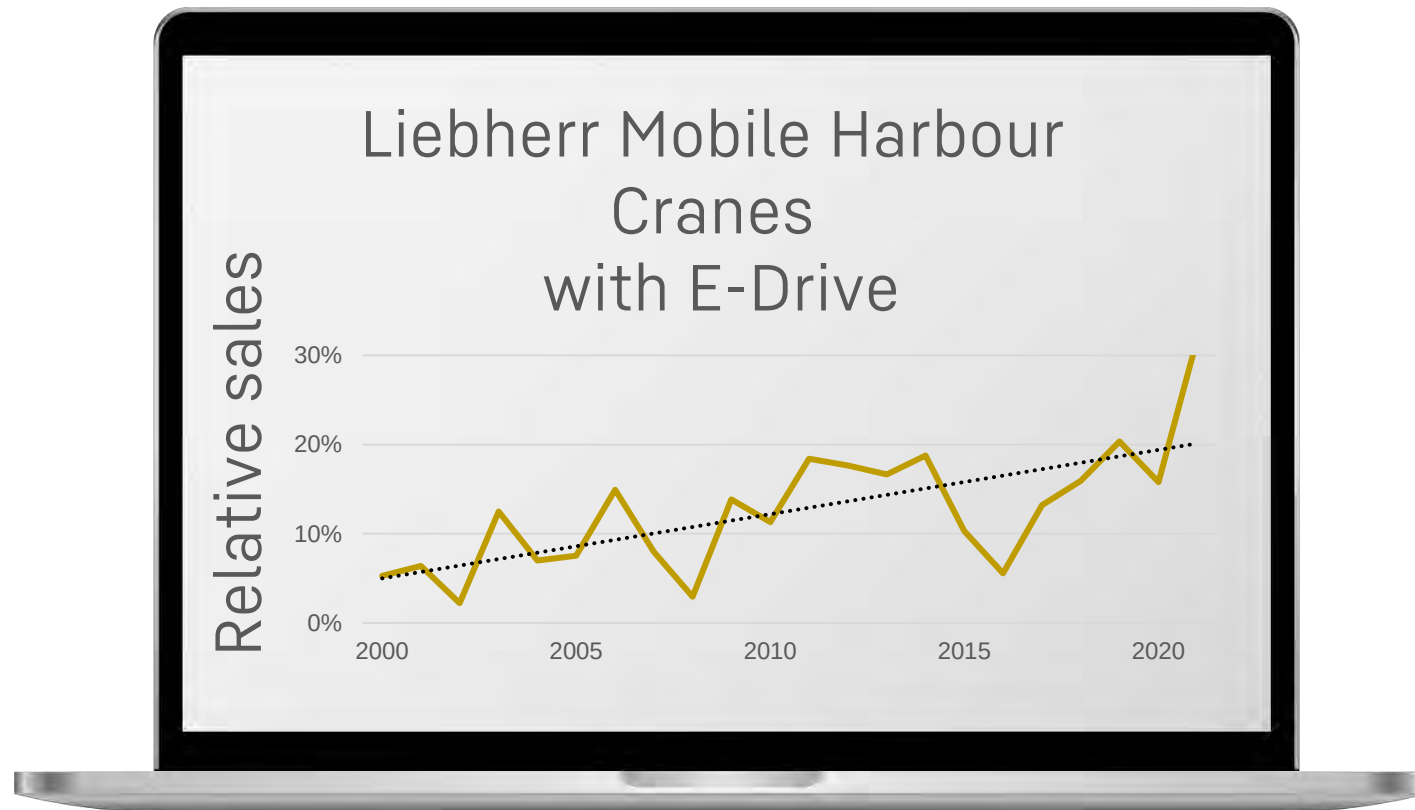




Electrical power supply

Low or High voltage
connection

E-Drive sales figures



**In 2023: 35 % of mobile
harbour cranes
delivered are e-driven.**

02

Synthetic fuel



Synthetic fuel HVO 100

- Hydrotreated Vegetable Oil
- Made of 100% renewable raw materials
- Premium quality fuel with a chemical structure almost identical to regular diesel
- 90% less CO₂ emission
- Port of Södertälje (Sweden) runs the first Liebherr mobile harbour crane with HVO 100

03

PACTRONIC: Hybrid drive system



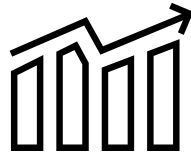
Pactronic® 2.0

- The Liebherr Pactronic is a power-booster
- Power by accumulator and electronics
- Contribute to crane operation efficiency

Hybrid technology

Pactronic 2.0

BOOST MODE

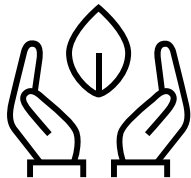


Increased hoisting power (+100%)

Higher turnover with efficiency

Handling performance (+30%)

GREEN MODE



Reduced energy consumption

Reduced CO2 emissions



05

Battery for travelling mode



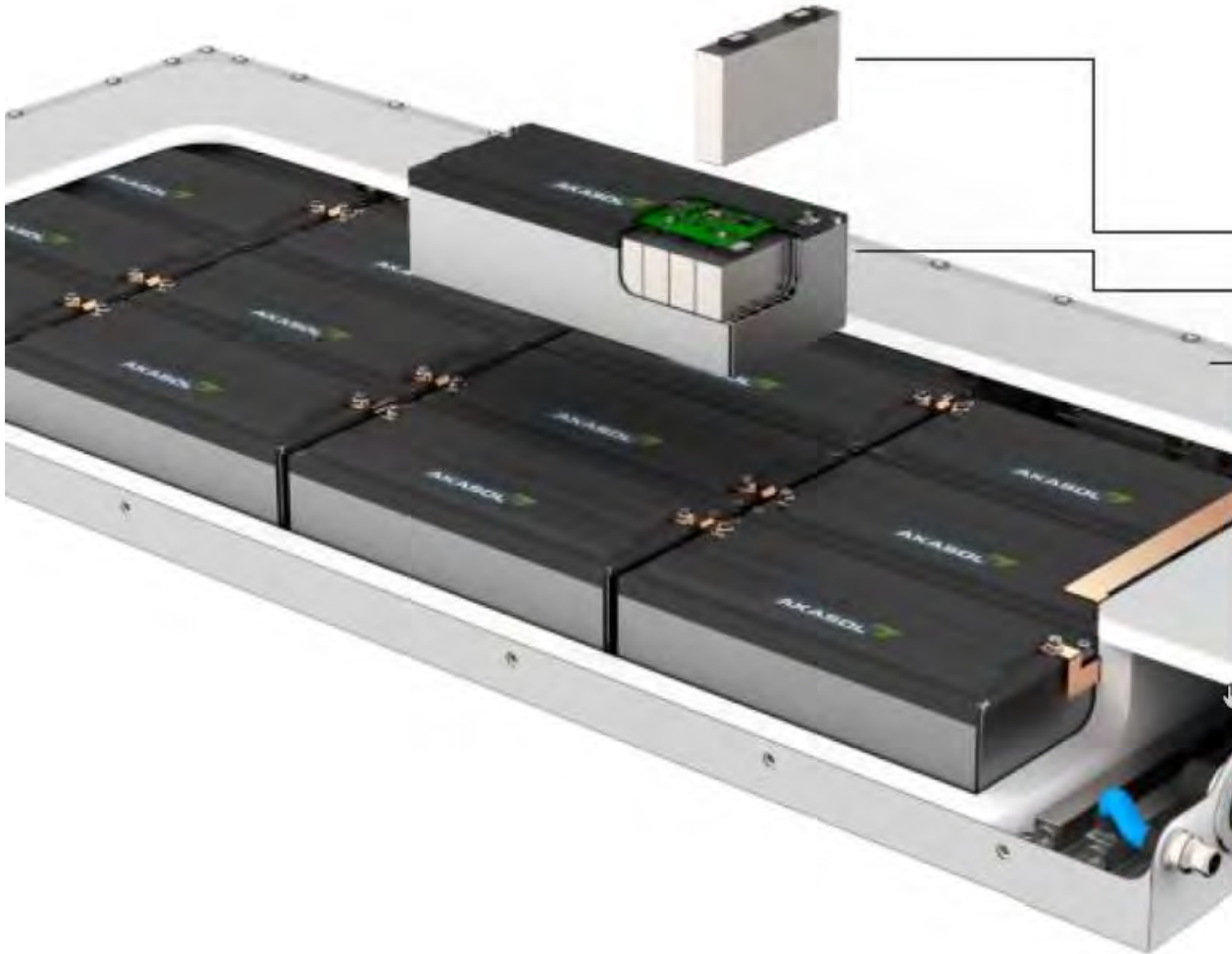


Unplugged LHM

- 264 kWh battery capacity
- Up to 2 km travelling distance
- Fully recharged battery 10-12h
- 10 years battery lifetime
- Emergency operation possible
- Retrofit possible on older LHM

The new crane

Zero emission LHM traveling by battery



LHM Battery

Batteries by Akasol

Made in Germany

12 cells are included in one module

One battery unit consists of 15 modules

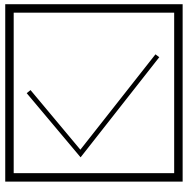
One battery unit has 33kWh capacity

8 battery units used in LHM
→ 264 kWh (1.440 cells)

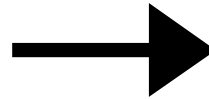
The new crane

Zero emission LHM traveling by battery

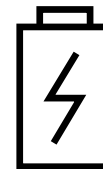
Emission free crane travelling via battery



Emergency operation possible



Up to 2 km travelling distance



10 years battery life time

06

Fully electric crane





LPS 420 E

First 100% electrical driven port crane in the Liebherr Mobile Harbour Crane product range

All crane movements electrically driven:

- Luffing
- Hoisting
- Slewing
- Driving

**Thank
you.**



LIEBHERR