

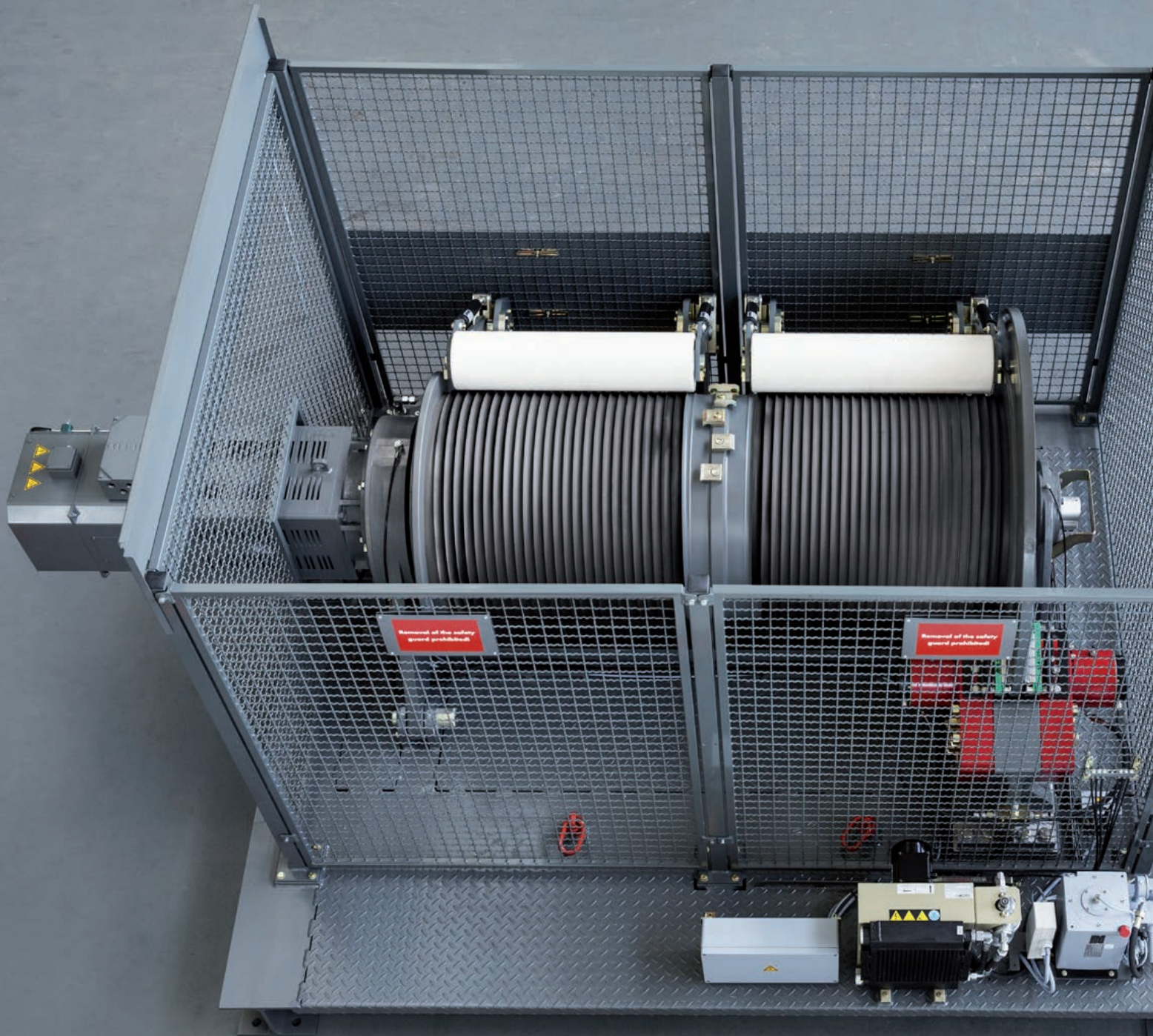
From a Single Source, Customized and Flexible
Winch Systems by Liebherr



LIEBHERR

Winch Systems by Liebherr

Liebherr has been producing all the relevant components needed for lifting systems for many years and is now putting complete winch systems on market. The components are perfectly coordinated in the way they work. The results are impressive system solutions which can be integrated in a variety of applications.



Safe and Flexible

Everything from a Single Source

Depending on requirements, the system can be expanded with individual components from the wide product range, including the complete drivetrain. All components of the winch systems are developed and produced in house. These pre-conditions allow us to flexibly adapt new winches to different needs without long development times. The winch systems are always designed according to the same principle. The basis is formed by the rope pull force, the lifting speed and the load spectrum which specify the required power output and rope diameter.

Simple Assembly

Winch systems by Liebherr score above all in their short assembly times. Individual components such as motor, brake and gearbox can be supplied pre-assembled, eliminating the need for time-consuming individual assembly on site. The switchgear can be installed with an easy “connect & use”-principle.

Modular System

Liebherr offers customized system solutions for lifting applications based on standard components, characterised by scalability and simple assembly – plug & play.



Gearboxes

The gearbox is selected from the Liebherr planetary plug-in gearbox (PEG) product catalogue. The gearbox size is determined by a variety of factors, for example the required torque, the drive unit group or the number of load cycles over the service life of the winch.

Electric Motor

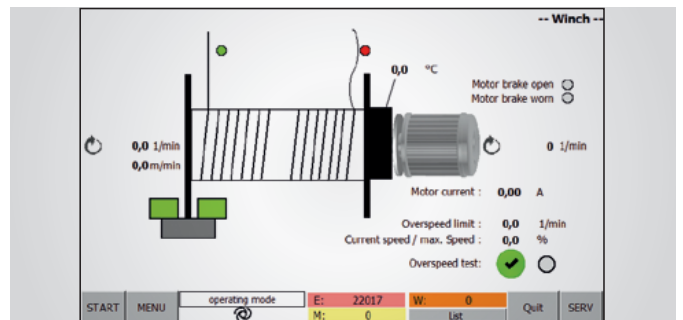
Winches are powered by compact, air-cooled asynchronous squirrel cage motors. These are available in the power range 7.5 kW to 650 kW and are designed for use under the harshest operating conditions.

Switchgear and Control System

The switchgear and the complete control system are designed by Liebherr according to EN13849. The range of products includes frequency converters from its own development, which are characterised through the option of an active power regeneration. An energy store on the basis of a double-layer capacitor increases significantly the economic efficiency of applications with high load cycles. The portfolio is rounded off by an innovative control system, which ensures that the operation of the respective system is effective and very safe.

Safety

An integrated slack rope detection system, a secondary brake and various sensors ensure the safety of the winch system. The appropriate monitoring program developed by Liebherr is shown on the display of the control cabinet and can be transferred to the higher-order process management system and the customer via a bus system.



Modular System and Safety Features

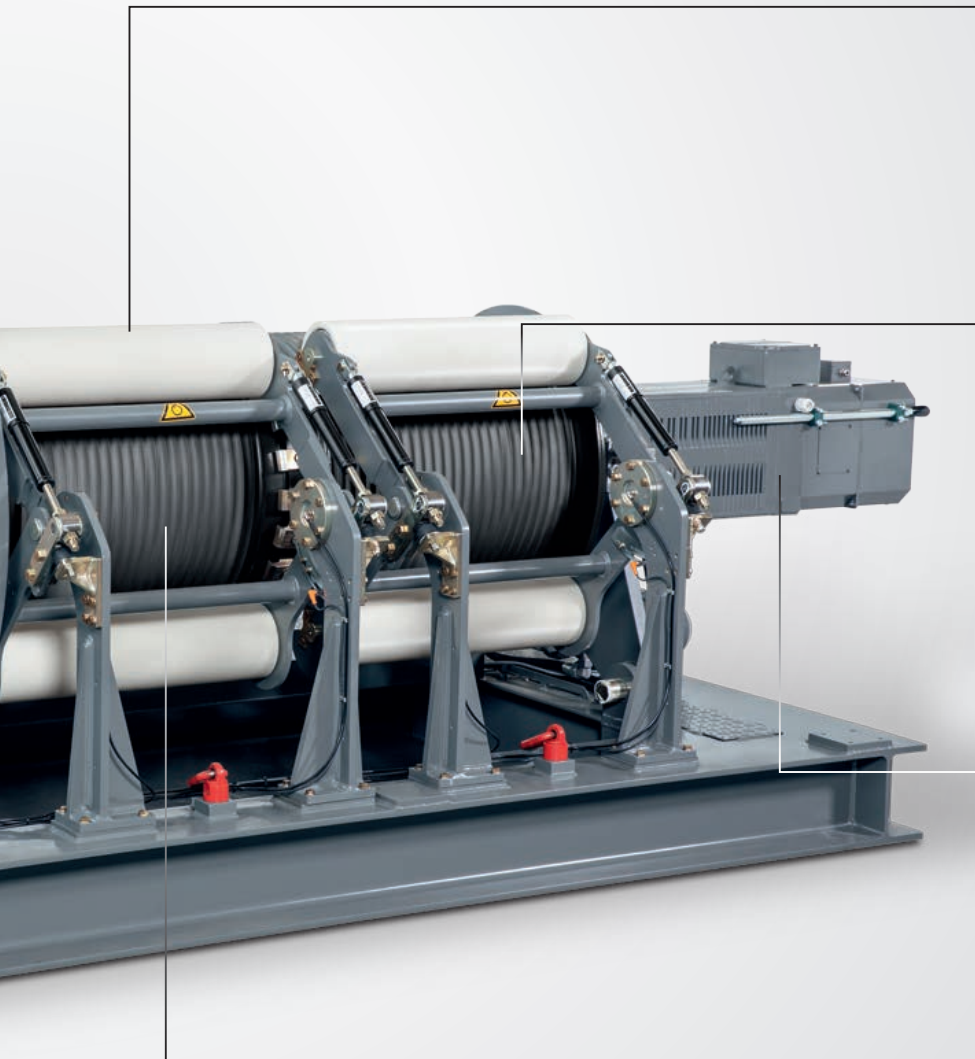
Control Cabinet and Control System

- Ready to connect
- Control system as per EN13849
- Proven PLC control system
- Automatic process data recording and system monitoring
- User-friendly visualisation
- Compact design

Drive Control and Regulation

- Frequency converters developed and produced in house
- Recovery unit (active front end)
- Facility for connecting an energy reservoir to cover power peaks





Secondary Brake

- Second safety brake with “fail-safe closed” function to protect the electric-mechanical drivetrain

Slack Rope Detection

- Monitors the rope on the rope drum
- Activates the rope winch safety shutoff if slack rope is detected

Planetary Plug-in Gearboxes

- Standard sizes from PEG 250 to PEG 1100
- Max. dynamic torque up to approx. 1,000,000 Nm
- Drive optionally by electric or hydraulic motor
- Customer-specific configuration of gearbox size

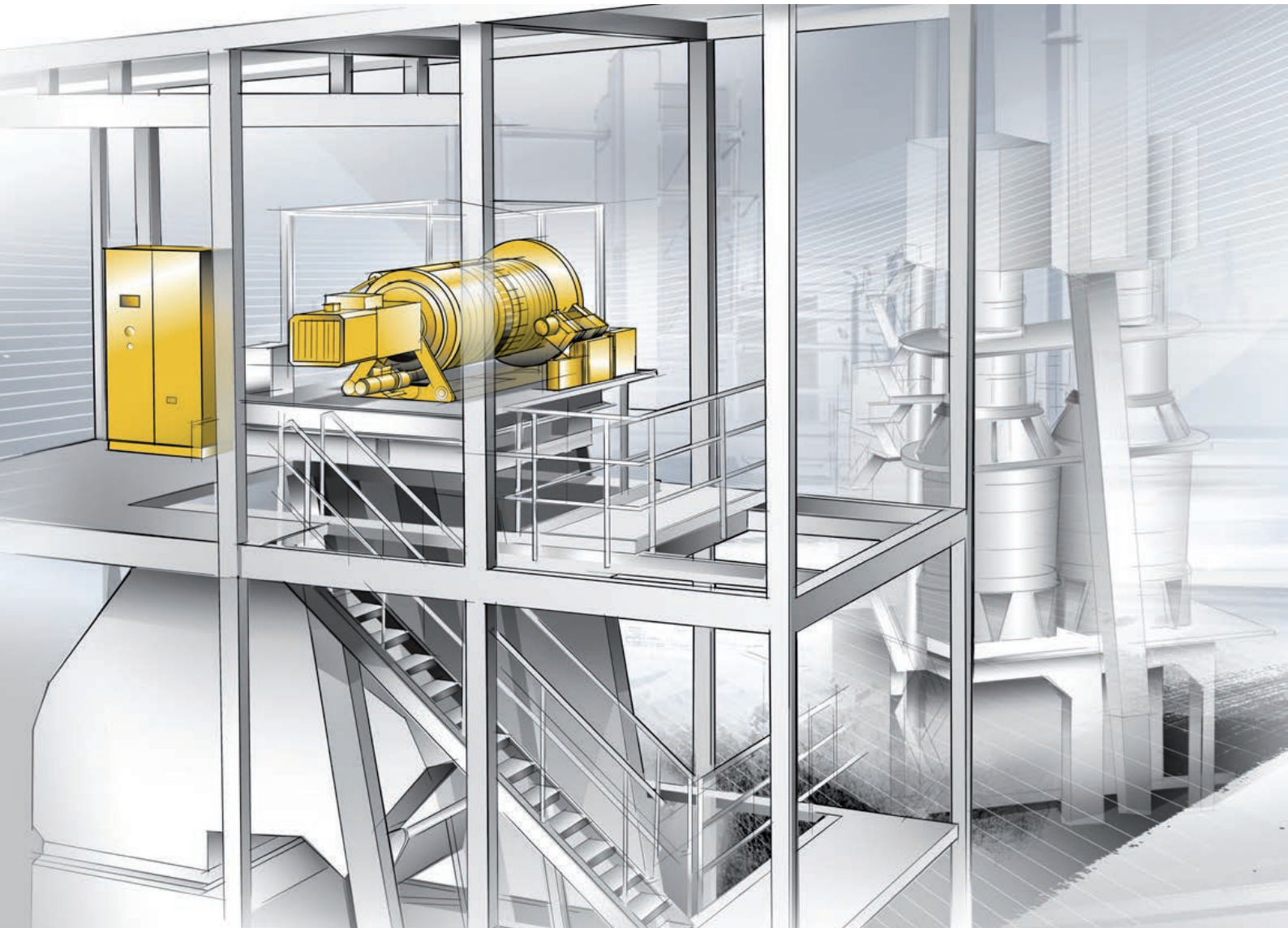
Electric Motor

- Power output: 7.5 to 650 kW at 40° C
 - Torque: 45 to 4,200 Nm
 - Voltage and frequency: 380 to 690 V, 50 or 60 Hz
- Special design on request

Rope Drum

- Normal DIN grooving – single-layer coil
- Special grooving – multi-layer coil

Examples of use



**Hoists for Machinery
and Plant Engineering**

Winch systems by Liebherr are configured and monitored according to the customer application on the basis of our standard components. They can be used for many different tasks in lifting and conveyor technology applications. Examples of applications include tower cranes, civil engineering and drilling rigs, industrial and indoor cranes. In the field of mechanical and systems engineering, stokers and hoists for materials handling can be equipped with Liebherr winch systems, as can systems used for the vertical transport of materials in the mining and raw materials industries.

Hoists for Machinery and Plant Engineering

Reliability despite constant load and high dirt exposure, guarantee of operating safety and high handling capacity are just a few of the requirements that have to be fulfilled by hoists in mechanical and systems engineering. Winch systems by Liebherr, developed and produced for lime kiln stokers, for example, guarantee this without compromise and can be positioned at the top, in the middle or at the bottom, depending on accessibility and the space available.

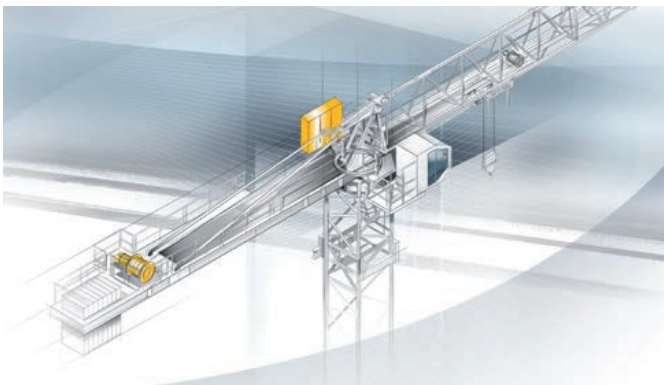
Mobile Cranes, Construction Cranes and Hoists

The machines are exposed frequent load changes, and this constitutes a particular challenge in construction applications. Dust, dirt, water and cold demand robust and reliable components. Fast and exact positioning of the load is the essential prerequisite for achieving high handling capacities. Winch systems by Liebherr provide this safely and reliably.

Harbour, Ship and Offshore Equipment

Winch systems by Liebherr impress as reliable solutions not only in harbour and coastal areas but also under extreme operating and environmental conditions on the high seas. One example of an application are ship-to-shore container cranes, on which the winch systems provide for the precise positioning of the derrick boom.

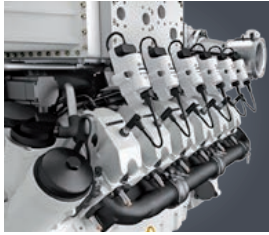
Mobile Cranes, Construction Cranes and Hoists



Harbour, Ship and Offshore Equipment



Liebherr Components



Gas engines



Diesel engines



Fuel injection systems



Axial piston hydraulics



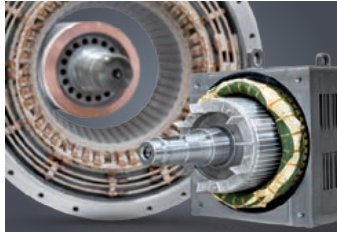
Hydraulic cylinders



Large diameter bearings



Gearboxes and winches



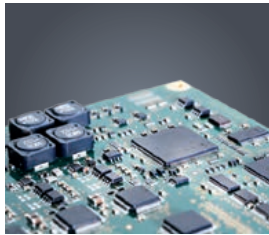
Electric machines



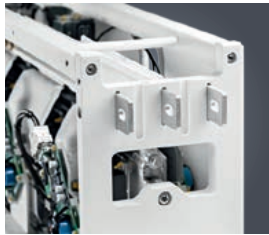
Remanufacturing



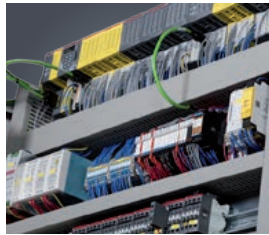
Human machine interfaces



Control electronics



Power electronics



Switchgear



Software

From A to Z, the components monitoring of the Liebherr Group offers a broad spectrum of solutions in the area of mechanical, hydraulic, electric and electronic drive system and control technology. The efficient components and systems are produced at a total of ten production sites around the world to the highest standards of quality. Central contact persons for all product lines are available

to customers outside the Liebherr Group at Liebherr-Components AG and the regional sales and distribution branches.

Liebherr is your partner for joint success: from the product idea to development, manufacture and commissioning right through to series production and remanufacturing.

www.liebherr.com

Liebherr-Components AG

Postfach 222, CH-5415 Nussbaumen/AG

+41 56 296 43 00, Fax +41 56 296 43 01

www.liebherr.com, E-Mail: info.cos@liebherr.com