

Purely Electrical Portal Crane

- Liebherr launches first purely electrical port crane
- Electric motor engines with precise and continuous drive characteristics
- Higher bulk turnover than comparable electrical driven cranes in the market

Rostock (Germany), April 2018 – The new LPS 420 E is the latest extension of the Liebherr mobile harbour crane product range. The newly designed machine is a purely electric driven portal crane. All crane movements like luffing, hoisting, slewing and travelling are done by electric motors.

As the LPS 420 E is a member of the LHM series, it is also characterised by high modularity. Therefore, it is a universal all-rounder and a key asset for handling every type of cargo, from containers to bulk, general cargo and heavy lifts up to 124 t. The forward-looking machine is designed for ports and terminals with an electrical infrastructure. Equipped with two winches, each with a powerful 190 kW electric motor, the LPS 420 E provides a maximum load capacity of up to 124 tonnes. Therefore, the portal crane can be perfectly used for heavy break bulk as well as project and general cargo.

Bulk Handling

The LPS 420 E raises the bar in terms of electrical driven bulk handling performance. With a turnover of up to 1,200 tonnes per hour, the new Liebherr electric crane exceeds the average turnover of comparable electric driven cranes in the market. With a maximum outreach of up to 48 metres, ships with a size of up to Panamax class can be served. This makes the crane the ideal electrical driven solution for bulk handling – local emission-free.

The LPS 420 E impresses with some decisive technical advantages that will please every customer. The main components of the E-drive are liquid cooled and the heat is dissipated by heat exchangers. The fully closed liquid cooling system in combination with the heat exchanger are installed on top of the slewing platform. According to this, no overpressure unit is necessary to prevent dust coming inside the machinery house, which is a big benefit for cranes working in a dusty environment.

Container Handling

Productivity is a decisive factor in modern container handling. The LPS 420 E is an ideal solution for terminals where every container counts. With up to 30 cycles per hour, the LPS 420 E is the perfect solution when it comes to container handling performance. Ship sizes up to post-Panamax class are ideally servable for the LPS 420 E.

The operator of the new LPS 420 E can rely on very dynamic electric motors. Furthermore, the low moment of inertia ensures a fast response of the motor for precise drive characteristics. Due to the high motor speed spread no gear shifting between normal and heavy load is required. This allows for uninterrupted power transmission from maximum load to maximum speed. Another well welcome side effect is that the noise emission of the planetary gear box is low.

Latest Technology

The LPS 420 E is especially optimised for terminals with a power supply ranging from 380 V to 460 V. Thanks to the Liebherr active-front-end frequency converter deviations in the voltage supply can be compensated easily for safe and stable operation. Due to the critical conditions, like limited space and harsh environmental conditions, a liquid-cooled and highly efficient multi-drive frequency converter system was implemented. The frequency converters are Liebherr built components, which have proven themselves in Liebherr ship-to-shore gantry cranes and material handlers. As an additional benefit, Liebherr energy storage units can be used to reduce the peak-load in the crane main power supply and to take advantage of regenerative energy within the system. The compact unit ensures a high power storage capacity, which enables the accumulation and supply of 200 kW of power within 15 seconds.

Caption

liebherr-lps-420e-pure-electric-portal-slewing-crane.jpg

Liebherr launches first purely electrical port crane

liebherr-lps-420e-pure-electric-portal-slewing-crane-2.jpg

The newly designed machine is a purely electric driven portal crane

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