



Company News

ZHD Stevedores orders first all-electric Liebherr CBG 500 E Transshipment Crane

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Rostock, Germany –

The all-electric Liebherr CBG 500 E Transshipment Crane recently ordered by ZHD Stevedores combines state-of-the-art drive technologies with Liebherr's in-house developed crane control system "Master V." Another highlight is the energy recovery system LiCaTronic, which makes best possible utilisation of the available energy. The crane supports a lot of tailor-made features that have been developed in close cooperation with ZHD to best suit to the demands of the operation fields to serve.

A Crane created through close Partnership



The crane will be painted in ZHD Stevedores' corporate colours of blue, yellow and red. (Pictures: ©Liebherr)

At the time of contact between ZHD and Liebherr during the earliest project phases in 2021, the prototype of the CBG 500 E was still in development phase. Based on shared core values and an interest in improving maritime products, ZHD has worked closely with Liebherr on this project to incorporate its many years of experience in transshipment and specific requirements for the machine into the process. As a result, additional features were added to the crane, such as the external comfort access to the cabin, the optional enlargement of the cabin to 10 m³ and an optimised boom design.

The prototype of the all-electric CBG 500 E will remain on the test rig at Liebherr's factory in Rostock until Q3 2023. Thereafter the crane will be installed on ZHD's refurbished barge "Ahoy 50."

In the future, the crane will be used for bulk handling in sheltered waters of the Netherlands. Thanks to the crane's extended outreach and application-specific features, direct transshipment, i.e., loading and unloading of barges and ships without additional loading equipment, will be possible.

New Interior and Exterior, process-adapted Design and Features

The new all-electric crane CBG 500 E offers a handling performance of up to 2,000 tonnes per hour and a maximum outreach of 50 metres. The specially designed lattice boom makes it particularly rigid and light, which further improves the turnover performance and at the same time reduces energy requirements. Resulting in a lifting capacity of up to 105 tonnes in hook operation and a maximum grab ability of up to 90 tonnes. The extension of the cabin and the high positioning ensure that the crane operator has an optimal viewing angle on all processes. With the crane's focus on dry bulk operation, where it will load and unload barges and ships, this configuration is particularly welcomed by ZHD. According to the requirements of ZHD, the CBG 500 E will be optimized for the configuration of 50 tons safe working load at maximum outreach to cover the operational needs.

"Our collaboration with Liebherr over the past two years to develop and construct an all-electric crane for our transshipment operations has exceeded our expectations," notes Yves Bornet, Creator / Manager of the Project and Partner in ZHD. "We were able to test-drive early prototypes and incorporate our own

industry experience that ended up defining practical options and benefits that are now part of the final product. Our investments in infrastructure and new products are based on current and emerging market needs. We want to meet competitive loading rates, but also do so in an environmentally- and operator-friendly manner. Our collaboration with Liebherr and the resulting creation of the CBG 500 E on our pontoon Ahoy 50, help us to achieve this.”

Crane fitted for Future, emerging Market Trends

The all-electric drives inside the crane in combination with the supercapacitors turn the rope luffing CBG 500 E into a unique handling solution in the market. The supercapacitors used as standard in Liebherr’s own LiCaTronic energy recovery system support the increasing demands regarding energy efficiency. With evenly distributed slewing gears, optimum performance and steady power transmission are thereby achieved during dynamic crane movements. This helps the operator maximize turnover during cycles with smoother movements.

More stringent environmental regulations affect an increasing number of ports and maritime operators. ZHD has adopted an early preference for electric options. Compared to non-electric alternatives, the crane does not need hydraulic oil within the drive system. Power consumption is also reduced, since there is no hydraulic circuit that would require continuous empowering of the main drives. The constellation of advanced inverter technology, power storage and application-specific power management leads to a potent drive system with simultaneous reduction of required energy. The CBG 500 E is thus a heavy-duty transshipment crane that operates emission-free and environmentally friendly.

Due to the future-oriented approach of ZHD, the “Ahoy 50” floating crane will be able to operate either with shore power supply or with onboard power supply when connection to the terminal is not available. The onboard electricity will be generated by newly installed Stage V gensets, conforming the latest emission standards in the business.

Digitalisation is also becoming increasingly prevalent in new market technologies. With the crane’s new software architecture, future demands can be accommodated. The crane operator is supported operationally by the new, integrated “Master V” crane control system. These components form the basis for integrating future assistance and automation systems into the crane in the long term, such as Liebherr’s own LiMain Remote Maintenance.

End of construction of the crane is scheduled for October 2023 and is currently foreseen to commence operation in the Netherlands around December

2023/January 2024.