

Press release

# Liebherr slewing bearings ensure self-alignment of floating wind turbines

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- Liebherr’s components product segment manufactures slewing bearings for floating wind turbines of Ming Yang Smart Energy
- Roller bearings function as a mooring-system for the self-alignment of the wind turbine “Nezy<sup>2</sup>”

**The Liebherr components product segment is part of a revolutionary project by Ming Yang Smart Energy: The Chinese manufacturer of wind turbines and provider of integrated solutions for clean energy has produced the prototype of a floating wind turbine. And Liebherr’s slewing bearings take care of their self-alignment.**

Nussbaumen (Switzerland), February 16, 2023 – The wind blows strongest on the high seas. To use this natural resource even more efficiently, the Chinese manufacturer of wind turbines, Ming Yang, is moving forward with “Nezy<sup>2</sup>”. This is a 16.6 MW twin floating offshore wind platform, consisting of two 8.3 MW wind turbines. Their V-shaped downwind rotors have a diameter of 180 metres each. The rotors are mounted on a floating, self-aligning structure, which consists of an anchor buoy, mooring bearing and a steel structure (floating foundation). Due to a downwind configuration, also known as a lee runner, the wind can be captured from behind to assist the self-alliance of the turbines. The combination of the lee runner, the anchor buoy and the mooring bearing enables the self-alignment itself. The structures are anchored to the seabed by steel cables. An underwater cable transmits the generated electricity to the coast then. This technology opens up the possibility of erecting offshore wind turbines in regions with deeper waters.

The floating structure is as reliable as its land-based counterpart: To ensure the self-alignment of these turbines, the Liebherr slewing bearings function as a mooring-system. For this purpose, a bearing with a diameter of four metres is installed as a connecting element between the anchor buoy and the float below the sea surface. Because the slewing bearing has to withstand high pressure and corrosive environmental conditions, some components are made of stainless steel or welded on with stainless steel. In addition, the bearing has two sensors that can detect the unlikely event of water ingress – for example, when seals wear out – at two measuring points. One is located in the first lower chamber - the second in the second upper chamber of the floating turbine. In this way, Liebherr’s unique smart bearing lubrication monitoring comes into play and shows, whether it is necessary to intervene. In case of maintenance or repair, the float with the turbines can be separated from the anchor buoy and towed to a harbour. Thus, by providing

such a mooring system, Liebherr does not only contribute to the efficient use of wind as a resource on the high seas, but also to easy maintenance of floating wind turbines.

## About the Liebherr-Components

In this segment, the Liebherr Group specialises in the development, design, manufacturing of high-performance components in the field of mechanical, hydraulic and electric drive and control technology. Liebherr-Component Technologies AG, based in Bulle (Switzerland), coordinates all activities in the components product segment.

The extensive product range includes combustion engines, injection systems, engine control units, axial piston pumps and motors, hydraulic cylinders, slewing bearings, gearboxes and winches, switchgear, electronic and power electronics components, and software. The high-quality components are used in cranes and earthmoving machinery, in the mining industry, maritime applications, wind turbines, automotive engineering or in aviation and transport technology. Synergy effects in s other product segments of the Liebherr Group are used to drive continuous technological development.

## About the Liebherr Group

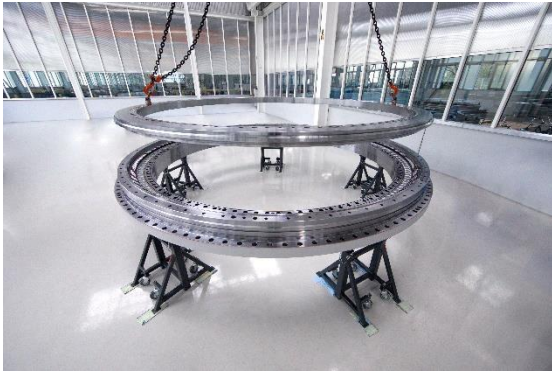
The Liebherr Group is a family-run technology company with a highly diversified product portfolio. The company is one of the largest construction equipment manufacturers in the world. It also provides high quality and user-oriented products and services in a wide range of other areas. The Liebherr Group includes over 140 companies across all continents. In 2021, it employed more than 49,000 staff and achieved combined revenues of over 11.6 billion euros. Liebherr was founded in Kirchdorf an der Iller in Southern Germany in 1949. Since then, the employees have been pursuing the goal of achieving continuous technological innovation, and bringing industry-leading solutions to its customers.

## Images



liebherr-mooring-bearing-preassembled-for-floating-wind-turbines.jpg

Mooring bearings with a diameter of four metres ensure self-alignment of floating wind turbines.



liebherr-assembly-of-mooring-bearing.jpg

The assembly of the triple-row roller bearing takes place in Biberach an der Riß (Germany).

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