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Liebherr's Powerboom debuts in Bremerhaven for Mammoet

The vessel had been towed to Bremerhaven in order for the four jack-up legs to be installed. The job was the first time the LR 13000 had been equipped with the PowerBoom. This meant the double lattice mast boom was extended to a length of 48m. The function is designed to give the crane greater stability and increase the load capacity by about 50% compared to

Mammoet has used the 3000t Liebherr LR 13000 crawler crane on the installation of legs of the 940t 87m long Aeolus jack-up vessel. The parallel boom of the LR 13000, referred to as the PowerBoom, was used for the first time on the job in Bremerhaven, Germany.

the standard boom, out to a reach of about 35m.

The work on the jack-up vessel started with what the manufacturer described as the most technically challenging lift. The first leg

had to be installed through the structure of the heavy-load crane on the "Aeolus". Together with a floating crane, Matador 3, the LR 13000 lifted the steel tube off its transport barge, aligned

it vertically and transferred it all the way across. With its 65t hook block and fastening equipment the crawler crane was lifting a gross load of more than 1000t at a reach of 23m.

Using large pulley blocks, the pipe was turned into the correct position whilst being lowered. Mammoet had a hydraulic fastening system developed especially for this order. Once the stilts had been installed, the "spud cans" were fitted; these huge feet were intended to allow the working vessel to stand securely on the seabed later on. These elements weighed 180t and were lowered onto the base of the dock basin before the ship was positioned over them. Industrial divers then secured the feet to the bottom ends of the pipes using fastening equipment pulled upwards by the crawler crane through the jack-up legs.



A drone's eye view

Many of the photos on this page were taken using a hexacopter, by photographer Jens Hadel. Here, Hadel explains how he works

The photos are taken with a 2,4ghz radio remote controlled multicopter with six rotors, also known as a hexacopter. This flying machine was hand built out of parts that are freely available in specialist shops. Most parts are made of carbon to reduce

the weight, because in Germany the allowed maximum flight weight is 5kg.

At the heart of the hexacopter is a flight computer with GPS. This control unit keeps the hexacopter in a static position, when the flight operator isn't actively operating the remote control. When the connection between remote control and hexacopter get lost, the copter automatically returns to its starting point.

Under the electronics are two parallel-coupled 8,000mah lithium

ion batteries. The flight time is 10-14 minutes, depending on wind speed. In the middle of the landing legs is a microcomputer stabilised camera frame with a GoPro Hero+3 high-resolution mini-camera. The camera frame is very fast balancing, so that even videos can be made without any shaking. For controlling the picture or video the copter has a video transmission system with an 8in monitor on top of the remote control.

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