

Press release

Greater lifting capacity with higher wind tolerance

- Liebherr LG 1750 with SX3 lattice boom system erects 170 metre wind turbines
- Partial boom width extension delivers tolerance to higher wind speeds
- Significant increase in lifting capacity of around 20 percent

More powerful and stable in the wind – that is a rough summary of the main benefits that Liebherr has delivered for its customers in the form of its innovative SX2 and SX3 boom systems for crawler and lattice boom cranes. The reinforced booms are particularly helpful for wind power crane operations. The SX3 version delivers a major increase in lifting capacity of 20 percent and significantly higher wind tolerance compared to the conventional SX version. A new Liebherr LG 1750 crane, which was fitted with the SX3 version, operating at a wind farm in February benefited from these features. The lattice boom mobile crane operated by Dutch crane contractor M. Verschoor B.V. erected two Vestas turbines in the north-east of Germany with hob heights of 170 metres.

Ehingen (Donau), (Germany) 26 April 2021 – The Dutch crane contractor owned by Maarten Verschoor has significantly extended its crane fleet’s performance upwards by buying a Liebherr LG 1750. The mobile lattice boom crane was supplied with the SX3 boom system which was required for its first job at a wind farm to erect new wind turbine type with extremely heavy tower components. “The first four tower sections each weighed 120 tonnes, which, when combined with the hook block, meant a load case of around 123 tonnes. With a radius of 35 metres, that meant that we use the full lifting capacity of the crane for this job”, explains Johan Bezemer, crane operator and part of the four-strong Dutch team at the site close to the German-Polish border. “This crane with its SX3 boom enables us to increase our capacities, so that we can also erect these very large turbines”, says Bezemer proudly about the new addition to the fleet. “Its 165 metre main boom and 12 metre jib gives us a lifting capacity of 127 tonnes. That is really enormous.”

Boom reinforcement makes working in higher wind speeds possible

With this boom system, on which the lower section of the lattice boom has been extended to a width of six metres, however, Liebherr is not just reacting to the ongoing increase in the weights of components and hoist heights for erecting wind turbines. The 28 or 42 metre boom reinforcement (which is also fully compatible with the Liebherr LR 1750/2 crawler crane) delivers significantly greater rigidity in the boom design and therefore results in less crane downtime due to wind. “The earlier systems used on the LG 1750 were calculated on the basis of a maximum wind speed of nine metres per second”, says Jens Könneker, Product Manager for Crawler Cranes at Liebherr in Ehingen. “The SX system now allows work to continue in wind speeds of up to ten, or in some cases even 11.2 metres per second.” This is not just a major benefit for cranes working in wind farms, but is certainly a big plus for them.

Higher wind tolerance saves three working days

On the snowy site where the new Verschoor crane undertook its first job, around 100 kilometres north-east of Berlin, the wind gauge at the top of the boom often provided the answer to the question of whether work was possible on any given day. Bezemer counts up the number of times when the greater wind tolerance of the SX3 boom system meant that the Dutch team could continue to work with their crane: “I think we managed to save around three working days.”

After all the tower segments had been assembled, the lattice jib had to be extended to 15 metres using an intermediate section so that the crane could provide the hoist height required for the other components, including the 100 tonne gondola. The team from Verschoor required just two hours to modify the jib. The time required to lower the massive lattice boom was definitely reduced to a minimum as the LG 1750 was also fitted with the “VarioTray” detachable ballast pallet. The 415 tonnes of suspended ballast were actually only required to raise or lower the gigantic boom. The centre section of the counterweight, which can be detached from the remainder using bolts and remains on the derrick boom, was all that was required for the actual hoisting work. “That saved us an enormous amount of time and effort”, says Bezemer. “We can get straight on with the job without having to first stack or remove all the ballast.”

Most powerful crane in the fleet

After spending several weeks in Germany, the team from Verschoor returned to the Netherlands with their LG 1750. Since then, the crane has been working full-time on erecting wind turbines in the north of the kingdom using its SX2 boom.

The new crane is now the most powerful machine in Verschoor's fleet. "We will probably only use the LG 1750 for wind power jobs", says Erik Hans van de Kop, the company's Managing Director. The company has a total of 70 cranes and 115 employees divided between its headquarters in Sassenheim (between Amsterdam and Den Haag) and a branch office in Almere. In addition to crane work, Verschoor also provides heavy haulage services and is active in the used crane and crane component business.

About Liebherr-Werk Ehingen GmbH

Liebherr-Werk Ehingen GmbH is a leading manufacturer of mobile and crawler cranes. Its range of mobile cranes extends from 2-axle 35 tonne cranes to heavy duty cranes with a lifting capacity of 1200 tonnes and a 9-axle chassis. Its lattice boom cranes on mobile or crawler crane chassis deliver lifting capacities of up to 3000 tonnes. With universal boom systems and extensive additional equipment, they can be seen in action on construction sites throughout the world. The Ehingen site has a workforce of 3,500. Extensive, global service guarantees the high availability of Liebherr mobile and crawler cranes. In 2019, the Liebherr plant in Ehingen recorded a turnover of 2.1 billion euros.

About the Liebherr Group

The Liebherr Group is a family-run technology company with a widely diversified product range. The company is one of the largest manufacturers of construction machines in the world, but also supplies technically advanced, user-focused products and services in many other sectors. The group currently comprises more than 140 companies based in every continent of the world, has a workforce of over 48,000 and recorded a consolidated total turnover of more than 11.7 billion euros in 2019. Since it was founded in 1949 in Kirchdorf an der Iller in southern Germany, Liebherr's aim has been to win customers by supplying high quality solutions and to contribute to technological progress.

Photographs:



liebherr-lg-1750-sx3-verschoor-motive01.jpg

Sheer power – the LG 1750 had to manage a gross load of 112 tonnes to hoist the gondola. The SX3 boom system increases lifting capacity by around 20 percent.



liebherr-lg-1750-sx3-verschoor-motive02.jpg

Practical – the VarioTray detachable ballast system minimises the times required for adding and removing suspended ballast. The full counterweight is only required to lower and raise the 180 metre lattice boom.



liebherr-lg-1750-sx3-verschoor-motive03.jpg

Enormous tubes – the heaviest of the bottom tower sections weighed an impressive 120 tonnes. The LG 1750 had to hoist it using a radius of 35 metres.

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