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Investing in the future of wind power

The „finishing touch“ for slewing bearings at thyssenkrupp rothe erde



Robust and precise: The new, sixth Dörries CONTUMAT features a rothe erde slewing bearing too, ensuring smooth, even running with extremely heavy components.

Lippstadt/Germany

Many manufacturers in the wind power industry rely on customised drive technology from the Ostwestfalen-Lippe region. More specifically, they rely on thyssenkrupp rothe erde's slewing bearings, which this long-standing Starrag customer machines on Dörries CONTUMAT vertical lathes. As wind turbines are being manufactured in ever-larger sizes, the drive specialists have now taken delivery of a new Dörries CONTUMAT VC 6000/500.



Dr.-Ing. Mattias Töpfke, Production Manager Series 2: *"We supply blade, tower and rotor bearings for wind turbines up to six metres in diameter".*



Dipl.-Ing. Jürgen Lange, Head of Plant Maintenance and Planning: *"In the final technical bonus-malus evaluation, Starrag has predominantly emerged as the right partner for final processing."*

Just a few kilometres from the wind farms in the Sauerland region, thyssenkrupp rothe erde Germany GmbH produces slewing bearings on 350 machine tools at a factory in Lippstadt. thyssenkrupp rothe erde now have around 25 Starrag machine tools in use, some of which they acquired as far back as 1980: These machine tools play an important role in what is probably Europe's largest pool of machines in the rolling bearing industry.

Demanding production with a high level of vertical integration

The bearings for wind turbines are now finished using six Dörries CONTUMAT vertical lathes and grinding machines. *"We supply blade, tower and rotor bearings for wind turbines up to six metres in diameter",*

explained Dr.-Ing. Mattias Töpfke, Production Manager at thyssenkrupp rothe erde. The bearings are produced with a high level of vertical integration. Dipl.-Ing. Jürgen Lange, Head of Plant Maintenance and Planning, provided details: *"We take care of all the machining, the thermal processing, the casing treatment and the assembly."*

No. 6 can handle a load of 100 tonnes

Lippstadt currently produces bearings for offshore windfarms that use wind turbines with an output of 8–11 MW each; however, the industry is already planning systems with an output of 15 MW. This constant increase in performance is also having an effect on the diameters of the bearings: For this reason, thyssenkrupp rothe erde

has invested in a new Dörries CONTUMAT VC 6000/500 that can process payloads of up to 100 t for components with a maximum diameter of six metres and a height of one metre. Two powerful, water-cooled 89-kW drives move the rotary table at a torque of 461,900 Nm and a speed of 75 rpm.

As well as being used in wind turbines, a rothe erde® slewing bearing plays a major role in the new Dörries CONTUMAT: The bearing facilitates the smooth, even running necessary to produce high-quality products, even with extremely heavy components. The turning, drilling and milling movements are carried out by the right supporting pole. For grinding, a 60-kW spindle is used in the left supporting pole, which operates at speeds ranging from 1,500 to 3,500 rpm.

Satisfied long-standing customers: Based on positive experience of production manager, Dr Töpfke, and Head of Plant Planning, Dr Lange, (right), thyssenkrupp rothe erde ordered a Dörries CONTUMAT VC 6000/500.



Optimising grinding cycles requires teamwork

The ultimate quality of a bearing is determined by the finishing. Starrag can offer an advantage here as the manufacturer: They supply both the hardware and the software. Starrag and thyssenkrupp rothe erde have worked together over the decades to develop and continuously optimise the grinding cycles.

But how does Starrag's claim of **Engineering precisely what you value** meet the demands of a long-standing customer like thyssenkrupp rothe erde when it comes to finishing? According to Dr-Ing. Mattias Töpfke, *"The great benefit is the programming and the ease of operation. We have been able to build up shared expertise about processes such as grinding finishing in recent years, upon which we are happy to rely"*.

Targeting XXL drives: Using the new Dörries CONTUMAT VC 6000/500, slewing bearings with a diameter of up to six metres and a height of one metre can also be machined.





Major challenge: Wind turbines have to withstand all weather conditions for decades without failure, which is why gigantic slewing bearings with a long lifetime of 20 to 25 years are in demand here.

Company profile Starrag High-precision machine tools for greater productivity

Starrag Group is a global technology leader in manufacturing high-precision machine tools for milling, turning, boring and grinding workpieces of metallic, composite and ceramic materials. Principle customers are internationally active companies in the Aerospace, Energy, Transportation and Industrial sectors (Industrial Components, Luxury Goods, Med Tech). In addition to its portfolio of machine tools, Starrag Group provides integrated technology and maintenance services that significantly enhance customer quality and productivity.

The umbrella brand Starrag unites the product ranges Berthiez, Bumotec, Dörries, Droop+Rein, Ecospeed, Heckert, Scharmann, SIP, Starrag, TTL and WMW. Headquartered in Rorschach/Switzerland, the Starrag Group operates manufacturing plants in Switzerland, Germany, France, the UK and India and has established a network of sales and services subsidiaries in the most important customer countries.

The shares of Starrag Group Holding AG are listed on the SIX Swiss Exchange.

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