

# ENGINEERED SOLUTIONS FOR THE WIND INDUSTRY

## TIMKEN'S SOLUTIONS HELP ENHANCE PERFORMANCE, EXTEND EQUIPMENT LIFE AND LOWER OPERATIONAL COSTS

The need for larger, more powerful and more efficient wind turbines is greater than ever. As the energy industry demands more out of your operations, you need a technical partner and supplier that will help you rise to the challenge – The Timken Company.

We strengthen those who engineer, build, operate and service wind turbines. We are uniquely positioned as a leading source for wind bearing technical expertise and breakthrough innovation.

## MOVING WIND ENERGY FORWARD

Timken solutions can help you extend the life cycles of your turbines, improve performance, reduce operational costs and improve your operations.

For more than a decade, we've worked with original equipment manufacturers to understand the problems occurring in the field. And we designed our products to take those challenges head on. The result? A powerful portfolio of products that perform consistently, reliably and for the long haul – including bearings for mainshafts and gearboxes, for which we are one of the leading manufacturers.

## GAIN SOLUTIONS THAT CAN HELP:

### Extend equipment life.

With Timken, your wind turbines will operate reliably. Features like wear-resistant (DLC) coatings help extend product life and reduce downtime, while innovative designs help extend equipment life.

### Enhance performance.

Choosing Timken means you are investing in products that are specially designed to overcome frequent and critical application issues.

### Reduce operational and maintenance costs.

A product that performs means less downtime. Compared to the cost of a standard bearing, our upgraded solutions can help deliver considerable, long-term savings in maintenance costs.

### Solve problems.

You have challenges. We have solutions. Problem-solving is second nature for our team. We mobilize quickly to address your challenges, providing on-site troubleshooting, technical assistance and training.

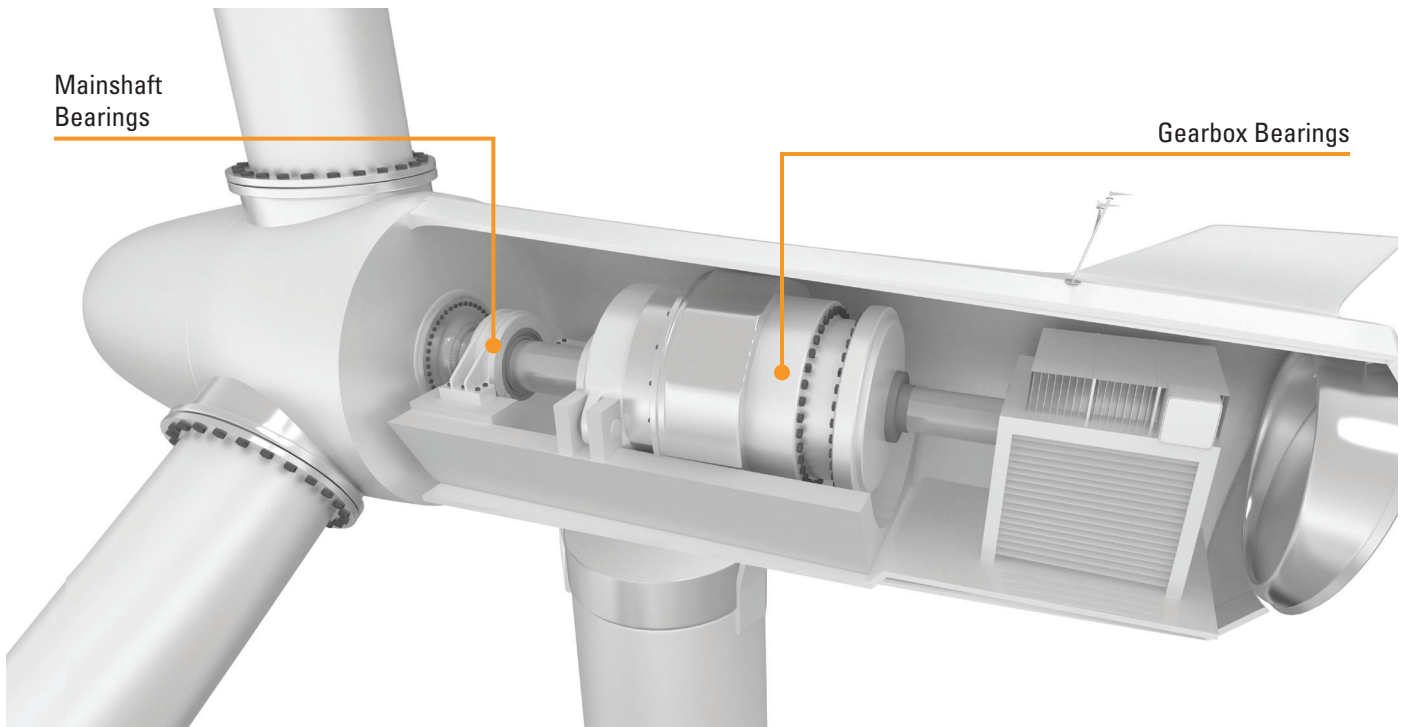
### Make things easier.

Gain access to local Timken engineering support – wherever you're located. We have teams of wind energy bearing engineers in China, Europe and the Americas.

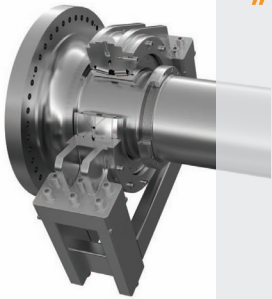
## TIMKEN ADVANTAGES

- » **Innovation.** We develop new products and technologies that transform the way turbines are designed – helping extend their life cycles.
- » **Technical support.** We are the go-to source for a variety of highly engineered solutions and deliver unparalleled technical support at each stage of the design process. We take a total-system approach for specifying the right product for each application. Using our industry know-how and expertise – and proprietary tools like our SYBER bearing performance software – we evaluate and transform customer-provided application inputs into customized solutions.
- » **Superior products and services.** Our products meet or exceed original equipment manufacturer quality requirements. They also meet our own rigorous quality standards and adhere to our stringent quality and manufacturing processes. We have traceability through our quality and production systems that record product serial numbers and batch records, including material source and metallurgy.

## SOLUTIONS FOR WIND TURBINE MAINSHAFT AND GEARBOX

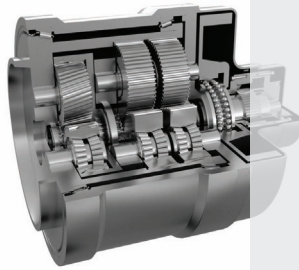


### YOUR ANSWER TO IMPROVED WIND TURBINE PERFORMANCE



#### » Mainshaft bearings:

- Enhanced spherical roller bearings with diamond-like coating.
- Case-carburized tapered roller bearings.



#### » Gearbox bearings (available with tapered or cylindrical roller bearings):

- Stronger carrier support bearings.
- Innovative, integrated case carburized planetary gear assemblies.
- Case-carburized high-speed and high-speed-intermediate bearings.
- Black oxide to mitigate adhesive wear.

## FOCUS ON THE FUTURE

### AS THE INDUSTRY ADVANCES, SO DO WE.

We continue to develop innovative turbine bearing designs that are proven to extend bearing life and significantly reduce wear. While bearings remain at our core, we repeatedly broaden our offerings through acquisition, adding complementary products and services that diversify our portfolio and bring even more value to your operations.

# TIMKEN

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets bearings, gear drives, automated lubrication systems, belts, brakes, clutches, chain, couplings, linear motion products and related power transmission rebuild and repair services.

**Stronger. By Design.**

[www.timken.com](http://www.timken.com)