WIND ENERGY BEARINGS
MAIN ROTOR SHAFT
Wind turbine technology continues to pursue increased equipment efficiency, higher reliability and longer service. Innovative bearing designs from NTN are instrumental in these improvements and in extending the use of wind technology for a cleaner future.

Experience
As an OEM supplier to multiple turbine and turbine component manufacturers, NTN is no newcomer to the wind industry. Our experience in mature wind markets allows us to apply expert Engineering, Production and Marketing practices to projects at any stage of design.

Unlimited Design Options & Customization
NTN’s world-class technical support and vast product range offer a virtually infinite level of customization to suit the needs of any design. Our expertise in Spherical, Cylindrical and Multi-Row Tapered Roller Bearings help ensure optimal turbine performance.

Worldwide Manufacturing
Affirming its commitment to supporting the wind industry, NTN has five plants capable of producing large-bore bearings for main shaft applications. Including local, American manufacturing, NTN’s investments into wind turbine bearing capacity ensure its abilities to consistently service a rapidly growing industry.

Features & Benefits
- Extensive OE experience and service history
- Lower heat generation and improved torque stability increases life
- Endless design options to optimize turbine performance
- Local US manufacturing in Macomb, Illinois
- Ultra-large bearing production capabilities
- Specialized quality inspection with individual bearing serial numbering
- Designed to follow GL Guidelines

Contact your local NTN Representative for more information.
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**Spherical**
Commonly used in pairs at the rotor and generator side of the main shaft, NTN’s asymmetrical roller design pushes the rollers into the center inner rib. This allows for quieter, smoother running bearings with low heat generation and ultimately longer life.

![Spherical Bearing](image)

**Cylindrical**
NTN’s cylindrical roller bearings maintain excellent temperature stability by minimizing roller skew under the variable load and speed conditions present in wind turbine applications. New materials and improved heat treatments increase bearing service life. Available in many cage configurations including steel, brass, resin and full-complement.

![Cylindrical Bearing](image)

**Multi-Row Taper**
For turbine designs that do not use two main rotor bearings, or direct drive turbines, the rotor load is borne by the gearbox bearing alone. In this configuration, double and triple row tapered roller bearings provide the radial and axial loading characteristics needed.

![Multi-Row Tapered Bearing](image)