

Materiality

Realize a sustainable society using natural energy

Contribute to spread of wind turbine and hydrogen society

In order to realize a carbon neutral society, natural energy generated using wind and solar power to generate electricity and hydrogen energy that does not emit CO₂ at combustion, are attracting attention as next generation clean energy.

In the field of wind power generation, there is a growing demand for developing higher durability and reliability of components than ever before, especially in offshore wind power generation, due to the increasing size of power generation equipment and the lack of easy maintenance. In the hydrogen-related field, there is also a need to extend the service life of rolling bearings and plastic products used in hydrogen stations and other hydrogen-related infrastructure.

We will contribute to the realization of a sustainable society through product development and business initiatives.

Wind power

Wind power generation projects are expanding to achieve a carbon-neutral society. Especially in recent years, offshore wind turbines have been installed in sea areas with stable wind directions. Offshore wind turbines are larger than their onshore counterparts, and their components must be highly durable and reliable. In order to meet the needs, we are marketing “left-right rows asymmetrical spherical roller bearings” with a DLC (diamond-like carbon) film on the roller surface, which has excellent wear resistance, thereby enhancing the reliability of rolling bearings.

Furthermore, in order to improve the operation rate of wind power generation, we provide wind power generation operators with a service that distributes operational status using “Wind Doctor™,” a Condition Monitoring System (CMS) for wind turbines. In 2022, we entered into a business alliance with Hokutaku Co., Ltd. (hereinafter referred to as “Hokutaku”), expanding the maintenance business for wind power generation equipment. If any abnormal trends are observed, we will distribute information to wind power generation operators that have installed our CMS and suggest the need for maintenance. After that, upon request, we will inspect the wind power generation equipment jointly with Hokutaku, identify any abnormal parts and arrange for repair bearings in a single operation. Power generation companies have received this well for our ability to provide a full range of services from abnormality detection, inspection and repair.

For offshore wind turbines, which are expected to be expanded in the future, improving the accuracy of condition monitoring and performing appropriate maintenance based on accurate data analysis will become even more critical. As a manufacturer that can provide products and services on a one-stop basis, we will contribute to expanding the wind power generation equipment market.



Wind Doctor™



Asymmetrical spherical roller bearing

Hydrogen

Hydrogen is attracting attention as a next-generation energy source, and technological development is being actively pursued globally in all aspects of its utilization, including production, transport, storage and use. We are developing the application of products used in high-pressure hydrogen compressors for hydrogen stations, which are indispensable for the widespread use of fuel cell vehicles (FCVs). Mechanical parts used in hydrogen-related equipment are used in special environments such as hydrogen exposure and high pressure, requiring higher reliability and durability.

We have developed new steel material with many hard, fine metal compounds dispersed on the bearing raceway, combining them with a newly developed special heat treatment technology to develop a hydrogen embrittlement-resistant bearing that has more than three times a longer life compared to our standard bearing against premature failure of bearings caused by hydrogen and started sample prototyping and delivery. In addition, resin products developed using our composite material technology have been adopted as sealing components for hydrogen environments. To further enhance the functionality of these products, we are also working on development in collaboration with industry and academia.



Hydrogen embrittlement resistant bearing

Please refer to our website for details on “Contribute to carbon-free society.”
<https://www.ntnglobal.com/en/csr/idea/carbon-free.html>