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BEARINGS

Bearing is a component that supports a shaft, and is used to guide the rotational movement of the shaft and to bear the load transmitted from the shaft to the frame. Bearings are widely used in the machinery industry. They are widely used as supporting parts and basic parts. They are supporting elements for rotating shafts or moving parts of various machinery. They are also supporting elements that rely on the rolling of the rolling body to rotate the host. They are called mechanical Joints. Bearings are divided into rolling bearings and plain bearings.

Angular contact bearings: Rolling bearings with a nominal contact angle between the ball and the ferrule greater than 0° and less than 90° . Can bear radial load and axial load at the same time. Can work at higher speeds. The larger the contact angle, the higher the axial load capacity. High-precision and high-speed bearings usually adopt a contact angle of 15 degrees. Under axial force, the contact angle will increase. Single-row angular contact ball bearings can only bear axial loads in one direction, and they will cause additional axial forces when bearing radial loads. And can only limit the axial displacement of the shaft or housing in one direction. If it is installed in pairs, the outer rings of a pair of bearings are opposite, that is, the wide end face is opposite to the wide end face, and the narrow end face is opposite to the narrow end face. This prevents additional axial forces and limits the shaft or housing to axial clearance in both directions.

Outer spherical bearings: Radial rolling bearings with outer spherical surfaces and wide inner rings with locking elements. Mainly for simple enclosures.

Linear motion bearings: Rolling bearings in which two raceways have relatively linear motion in the rolling direction.

Ball bearing: The rolling element is a ball bearing.

Deep groove ball bearings: Each ring has a radial groove ball bearing with a continuous groove raceway with a cross section of approximately one-third of the perimeter of the ball, suitable for precision instruments, low noise motors, automobiles, motorcycles and general machinery Etc., is the most widely used type of bearing in the machinery industry. Simple structure, easy to use and maintain. It is mainly used to bear radial load and can also bear certain axial load. When the radial clearance of the bearing is increased, it has the performance of an angular contact ball bearing and can bear a large axial load. This type of bearing has a small friction coefficient, high limiting speed, and a wide range of sizes and forms. Solid and durable, versatile and low noise operation, can run at high speed and easy to install. Single-row deep groove ball bearings have a sealed design that eliminates the need for relubrication and maintenance. Single row with ball notch and double row ball bearings, suitable for heavy load conditions.

Thrust ball bearing: The rolling element is a ball thrust rolling bearing.

Roller bearing: The rolling element is a rolling bearing of a roller.

Cylindrical roller bearing: The rolling element is a centripetal rolling bearing of cylindrical roller, which is a separate bearing, which is very convenient to install and disassemble. Cylindrical roller bearings are divided into single, double and four rows. Cylindrical roller bearings can be divided into single-row, double-row and multi-row cylindrical roller bearings according to the number of rows of bearing-mounted rolling elements. Among them, the single-row cylindrical roller bearing with a cage is used more often. In addition, there are other structures such as single-row or double-row full complement cylindrical roller bearings. Single-row cylindrical roller bearings are divided into N-type, NU-type, NJ-type, NF-type and NUP-type according to the different ring flanges. Cylindrical roller bearings have a large radial load capacity. Depending on the structure of the ring flange, it can also bear certain unidirectional or bidirectional axial loads. NN and NNU double-row cylindrical roller bearings are compact in structure, strong in rigidity, large in load-bearing capacity, and small in deformation after loading. They are mostly used to support the spindle of machine tools. FC, FCD, FCDP four-row cylindrical roller bearings can withstand large radial loads, and are mostly used in heavy machinery such as rolling mills. Cylindrical roller bearings are mainly used in motors, machine tools, petroleum, rolling mill handling machinery and various industrial machinery.

Tapered roller bearings: The rolling elements are radial bearings with tapered rollers.

Needle roller bearings: The rolling elements are radial roller bearings with needle rollers.

Spherical roller bearings: The rolling elements are self-aligning centripetal rolling bearings with convex spherical or concave rollers. Bearings with convex spherical rollers have a spherical raceway on the outer ring; bearings with concave rollers have a spherical raceway on the inner ring.

Thrust roller bearing: The rolling element is a thrust rolling bearing of a roller.

Thrust cylindrical roller bearings: The rolling elements are thrust roller bearings of cylindrical rollers.

Thrust Tapered Roller Bearing: The rolling elements are thrust rolling bearings with tapered rollers.

Thrust needle bearing: The rolling element is a thrust rolling bearing of a needle.

Thrust spherical roller bearings: The rolling elements are self-aligning thrust rolling bearings with convex spherical or concave rollers. The raceway of a bearing race with a convex spherical roller is spherical, and the raceway of a bearing race with a concave spherical roller is spherical.

Bearing with seat: A component combined with a radial bearing and a seat. There is a base plate for mounting screws on the support surface parallel to the bearing axis.

Spherical bearing: The sliding contact surface is spherical, which is mainly used for spherical sliding bearings with swing motion, tilt motion and rotary motion.

Combined bearing: A set of rolling bearings composed of two or more bearing structures in the same set of bearings. Such as needle roller and thrust cylindrical roller combined bearings, needle roller and thrust ball combined bearings, needle roller and angular contact ball combined bearings, etc.

Other bearings: Rolling bearings of structures other than the above.

Sliding bearings: Sliding bearings have no rolling elements regardless of the inner and outer rings. They are generally made of wear-resistant materials. Commonly used for low-speed, heavy-duty, relubrication and maintenance difficult mechanical rotating parts.

Rolling mill bearings: Rolling mill bearings are generally only used to withstand radial loads. Compared with deep groove ball bearings of the same size, they have a larger radial load capacity and the limiting speed is close to deep groove ball bearings. The processing requirements of the housing hole are high, allowing the inclination of the inner ring axis and the outer ring axis to be small (2° - 4°). If the two axis tilt exceeds the limit, the contact between the roller and the raceway of the ring will deteriorate. It seriously affects the load capacity of the bearing and reduces the service life of the bearing. Therefore, if this type of bearing needs to be installed in the host component that bears the axial load, it can only be used under the premise that other types of bearings are used at the same time to bear the axial load.

Worldwide Top Brand Bearings

SKF Bearings

SKF Group is the world's leading supplier of rolling bearing and seal products, customer solutions and services. The group's main strengths include technical support, equipment maintenance services, equipment condition monitoring, and technical training. In the fields of linear motion products, high-precision bearings, machine tool spindles and corresponding services, the position of the SKF Group is also increasing. In the field of bearing steel manufacturing, SKF bearings are recognized as leading enterprises. The business of Swedish SKF bearings is divided into three major departments: the Ministry of Industry, the Ministry of Automotive and the Ministry of Service. Each business unit serves the global market, with a focus on customers and industries relevant to its business. SKF imported bearings have more than 100 manufacturing companies located in various parts of the world. Zh

FAG Bearings

Germany FAG Bearing Group was founded in 1883 and is the world's first bearing manufacturer. There are currently 18,000 employees worldwide and annual sales exceed 6 billion Euros. FAG bearings have always stood at the forefront of the world's bearing field. The models currently produced by the company have covered various industries, and are even more outstanding in railway, steel, paper, cement, mining and other fields. Nevertheless, the company still invests a lot of research and development funds every year for the development of new products and the improvement of mature products, because the world is constantly moving forward, market demand and customer requirements are always epoch-making.

INA Bearings

German INA Bearing Company, a subsidiary of Schaeffler Group, was founded in 1946 and is headquartered in Nuremberg, Germany. Since its establishment, the German INA Bearing Company has been committed to product innovation to meet customer needs and provide high-quality guarantees, making it the world's leading supplier of rolling bearings and a recognized partner of car manufacturers.

NSK Bearings

NSK Bearing Company was established in 1916. It is the first domestic manufacturer to design and produce bearings. For decades, NSK Bearings has developed numerous new types of bearings to meet the needs of users around the world, and has made great contributions to industrial development and technological progress. At the same time, NSK Bearings, with its technical advantages in precision machining, has continuously developed high-end, precision, and sharp products such as automotive parts and precision mechanical components, and has actively carried out diversified operations in areas such as electronics applications. At present, NSK Bearing has established a sales network in more than 20 countries and regions around the world, and has more than 30 factories. NSK Bearing is committed to exporting advanced production technology and management experience to China, where the economy continues to develop at a high speed, and gradually establish and improve a three-dimensional integrated business system with production as the core, technology as the guide and marketing information as the auxiliary. NSK Bearing will accelerate this system Localization process, so as to provide more direct and comprehensive services for the majority of users in China, and make due contributions to China's industrial modernization.

KOYO Bearings

KOYO Bearing (Koyo Seiko Co., Ltd.) was founded in 1921, is a Japanese company that manufactures R & D-type comprehensive functions and has 6,557 employees. Koyo Seiko Co., Ltd. is one of the four major bearing production groups in Japan. It has the world's top production and control equipment, and has eight countries including Tokyo, Nara, Inada, Toyohashi, Takamatsu, Tokushima, and Kameyama in Japan. The main production plant (all passed ISO9001 certification), overseas production bases and research institutions in Europe, Asia, North and South America.

NTN Bearings

NTN is one of the world's comprehensive precision machinery manufacturers. NTN Bearing Company was established in Japan in 1918 and is headquartered in Nishi-ku, Osaka. There are 11 manufacturing plants, 25 sales offices and 3 research institutes in Japan; abroad It has 20 wholly-owned production plants, 2 research institutes and 48 business offices. Each department of NTN bearing production, sales and technology unremittingly explores and deepens its own professional field, and at the same time organically combines with each other. How to minimize friction coefficient and improve energy efficiency? NTN bearing technology achieves nanometer-level precision in the nanometer unit size. This precision, which was purely expected in the past, is now used in various fields of industrial sectors such as orbiting satellites, aviation, railways and automobiles, papermaking equipment, office equipment and food machinery.

NACHI Bearings

NACHI Bearing Fujitsu Co., Ltd. has a business philosophy of "contributing to the development of the manufacturing industry" and has three major machinery manufacturing businesses, including machine tools, functional parts, and materials. After 75 years of development, it has continuously combined various core technologies to promote research and development. At present, the company's main products are cutting tools, machine tools, bearings, hydraulic equipment, robots for automatic production, special steel, ultra-precision machinery for the IT industry and its environmental systems.

Bearing Maintenance

In order to make full use of the bearing and maintain its proper performance for a long period of time, regular maintenance (regular inspection) must be properly done. Through proper periodic inspections, early detection of failures and prevention of accidents are important to improve productivity and economy.

1. Cleaning

When removing the bearing for inspection, make a record of its appearance by photography or other methods. Also, check the amount of remaining lubricant and sample the lubricant before cleaning the bearing.

a. The bearing is cleaned by rough washing and fine washing, and a metal grid can be placed on the bottom of the container.

b. For rough washing, remove grease or stickies with a brush in oil. If the bearing is turned in oil at this time, take care to prevent damage to the rolling surface due to foreign matter.

c. During fine washing, slowly rotate the bearing in oil, it must be done carefully.

Generally, the cleaning agent used is a neutral non-aqueous diesel oil or kerosene. If necessary, a mild alkaline solution may be used. No matter what kind of cleaning agent is used, always filter to keep it clean. Immediately after cleaning, apply antirust oil or antirust grease to the bearings.

2. Inspection and judgment

In order to judge whether the removed bearing can be reused, it is important to check its dimensional accuracy, rotation accuracy, internal clearance, and mating surfaces, raceway surfaces, cages and seals. The inspection results can be judged by those who use conventional bearings or proficient bearings. Judgement standards differ according to mechanical properties and importance, and inspection intervals. If the following damage occurs, the bearing must not be reused and must be replaced.