Double row fully loaded cylindrical roller bearing without inner ring

Compared with tapered roller bearings and spherical roller bearings with the same radial dimension, the inner ring double row full-filled cylindrical roller bearings have the advantages of compact structure, small load deformation and can not bear axial load.

Double row full-filled cylindrical roller bearing structure is suitable for low or low speed rotation, can withstand radial impact load. Its structure has the following characteristics:

(l) The outer ring wall of the bearing is thicker, generally 3-3.5 times thicker than that of the inner ring. When the bearing is subjected to a greater impact load, bending deformation of the outer ring is prevented.

(2) The separating structure of bearing outer ring without middle edge and inner ring without edge is convenient for loading, unloading and grinding, and the length of roller is also increased.

(3) double row full loaded cylindrical roller makes the bearing rated dynamic load and running stability remarkably improved.

(4) There are oil holes and oil grooves in the inner ring of the bearing. Lubricating oil can be injected into the central oil hole of the journal and into the bearing through the oil holes and oil grooves in the inner ring.

(5) bearing outer ring has teeth, and can install dust cover. Avoid impurities such as water, dust and oxide skin entering the bearings.

The structural parameters of the bearing can be designed according to the design standard according to the working condition of the bearing. For double row fully loaded roller bearings, the total clearance of the circle and the axial clearance of the double row roller should be ensured. The total circumferential clearance refers to the difference between the center line of the first roller and the last roller and the roller diameter when a row of rollers is full and the clearance between adjacent rollers is eliminated. The axial clearance refers to the axial displacement of the double row roller on the raceway of the outer race of the bearing. The two values are the main parameters of the double row fully loaded roller bearings and relate to the performance of the bearings. In order to ensure the smooth running of bearings, the radial clearance value is generally between 0.05~0.08mm. The circumferential total clearance of the two rollers should be consistent and the value should be between 0.60~0.90mm. S values are too large or too small to be changed by adjusting the inner and outer raceway diameters and roller diameters. The axial clearance between roller and axial clearance is generally between 0.05~0.10mm. If the value is too large or too small, it will affect the normal rolling of the roller in the raceway, especially the friction and wear between the end face of the roller and the outer raceway and the roller. In order to reduce this friction, the point contact can be achieved by improving the design of the end face of the roller and the guide face of the edge retainer, and the lubricating oil film can be easily formed. This lubrication can also be reduced by the way of

ring lubrication.

Bearing is subjected to large impact load during operation and is suitable for making carburized steel. After carburizing and heat treatment, the carburized bearing steel has higher contact fatigue strength and no crack will occur under impact load. The deviation and slip of the roller can be reduced and the ultimate speed of the bearing can be increased by taking measures from the aspects of structure design and application.