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Crossed Bearing

In recent years, crossed bearing is a new type structure which can replace radial bearing and thrust roller bearing. With the appearance of crossed bearing, only one set of this kind of bearing can replace the design which must be matched by thrust roller bearing and radial bearing. They have been widely used.

Our company has developed and produced various series of crossed bearings. The structure and material characteristics of crossed roller bearings are summarized as follows:

1. According to the **characteristics of structure**, the crossed bearing can be divided into the following types:

Separated outer ring with inner ring rotating:

THK RB series crossed bearing, IKO CRB/CRBC series crossed bearing, NSK NRXT series crossed bearing, THK RA series crossed bearing, IKO CRBS series crossed bearing, INA SX series crossed bearing;

Separated inner ring with outer ring rotating:

THK RE series crossed bearing, IKO XV series crossed bearing, with mounting hole on outer ring.

Integrated type, outer ring/ inner rotating:

THK RU series crossed bearing, IKO CRBF/CRBH series crossed bearing;

2. According to **different type of rolling elements**, crossed bearing can be divided into the following types:

Crossed cylindrical roller bearing: the rollers of crossed cylindrical roller bearing is cylindrical roller, which is arranged vertically in V-shaped raceway with 90 degrees to each other, and the rollers are separated by spacing blocks. This structure is convenient for single bearing to support axial load, radial load, overturning moment and other loads, which same as radial roller bearing used combined with thrust roller bearing at the same time. It is applicable to the joint or rotating part of industrial robots, the rotating worktable of machining center, the rotating part of manipulator, the precision rotating worktable, medical equipment, measuring instruments and other occasions.

Crossed tapered roller bearing: the crossed tapered roller bearing is a variant of crossed cylindrical roller bearing. The tapered roller is arranged horizontally. Each roller is perpendicular to the adjacent roller. The intersection point of the extension line of the rolling surface should be located in the rotation line of the bearing. The crossed tapered roller bearing can be divided into XR series crossed tapered roller bearing and JXR crossed tapered roller bearing. Crossed tapered roller bearing can be widely used in high speed vertical lathe, high precision worktable, vertical supporting machine, grinding machine spindle, etc.

3. According to **different materials**, the crossed bearing can be divided into the following types:

Surface quenching or intermediate frequency quenching: the material is 42CrMo, 5CrMnMo, 40CrMnMo, 50Mn or 65 # steel, and the first two kinds of materials have better quenching performance. The forging pieces with surface quenching need to be treated by quenching and tempering, and the hardness reach to HB 229 ~ 270. The material of the crossed roller slewing bearing is generally surface hardened. It has three structures: with teeth on the inner diameter, with teeth on the outer diameter and without teeth. The mounting holes in the bearings are also different. The crossed roller slewing bearing is mainly composed of inner ring, outer ring, single row of cross placed rollers, cage (or spacing blocks), sealings and other parts. The length and diameter ratio of the cylindrical roller is less than 1. The roller has slight sliding when it moves. The main series are XA series and XSA series crossed roller slewing bearings with external teeth, X series and XSI series crossed roller slewing bearings with internal teeth, XU series and XSU series crossed roller slewing bearings without teeth.

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Hardening: the material is GCr15SiMn, which is mainly used in machinery with small impact load. The bearing material used in the crossed bearing is full hardening, which is especially suitable for applications requiring higher rigidity and high running accuracy. For example, industrial robot, precision rotary table, direct drive motor, precision reducer, medical equipment, aerospace, radar communication, optical equipment, printing and dyeing machinery, IC manufacturing machine, industrial automation equipment, etc. There are RB/RE/RU/CRBC/CRBH/SX standard series crossed roller bearings.

Welcome to contact us and visit our factory!

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