
Robotic Bearing



As one of the key components of industrial robots, industrial robot bearings are most suitable for joints or rotating parts of industrial robots, rotary tables for machining centers, manipulators, precision rotating tables, medical instruments, measuring instruments, and IC production decoration, etc. It mainly includes two types of bearings for industrial robots, one is a thin-walled bearing with equal section, and the other is a crossed cylindrical roller bearing. In addition, there are special crossed roller bearings for the harmonic reducer, linear bearing, and joint bearing, etc, but mainly it is the first two types bearings. Industrial robot bearing features: capable to withstand axial, radial, overturning and other comprehensive loads; thin-walled bearings; high rotating positioning

accuracy, etc. Bearings that meet above design can be used in industrial robot arms, swivel joints, and chassis.

1. Crossed Roller Bearings:



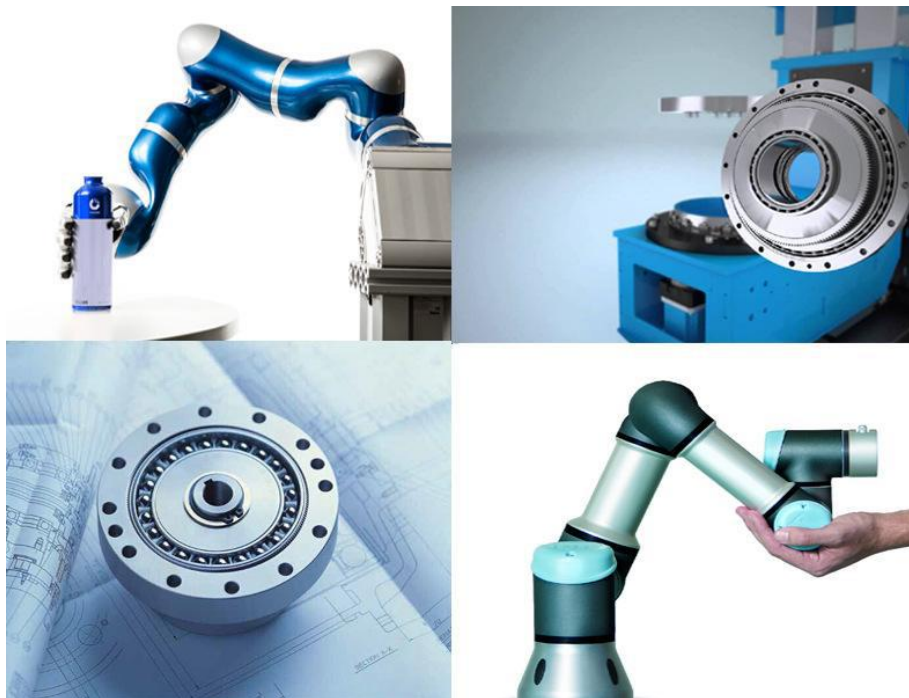
The characteristics of the crossed roller bearing: the crossed roller bearing is that the cylindrical rollers or the tapered rollers are arranged perpendicularly to each other through the spacer block on the 90-degree V-shaped groove rolling surface, so it can withstand the load from radial direction, axial or multi-directions. The sizes of the inner and outer rings is miniaturized, and the extremely thin form is a small size close to the limit, and has high rigidity, and the precision can reach to Calss P5, P4, and P2. Therefore, it is suitable for the joints and rotating positions of industrial robots.

2. Bearings for Harmonic Reducers of Industrial Robots:



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This type bearing is a high-precision bearing specially designed for harmonic reducer. It is generally used as a crossed roller bearing. According to its different use, it is divided into CSF/CSG series (with inner ring integrated and



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outer ring separated), SHF/SHG series (with both inner ring and outer ring are integrated.), and the series of inner ring and harmonic wheel is integrated. This structure allows a single bearing to withstand axial loads, radial loads and overturning moments in all directions. The bearings have high stiffness, rotational accuracy and composite load carrying capacity. They are also compact and self-contained with mounting holes for easy installation by customers, suitable for a variety of different types of harmonic reducers.

3. Thin Section Bearings:





The equal-section thin-walled bearing is composed of 7 types of open series and 5 types of sealed series. There are 3 types of open series: radial contact (type C), angular contact (type A) and 4 point contact type (type X).

Advantages of thin-walled equal-section bearings are: Thin-walled bearings achieve extremely thin bearing sections, and also achieve miniaturization and weight reduction of products. The diversity of products extends the range of applications.

Thin section bearing products characteristics: in order to obtain low friction torque, high rigidity and good rotation accuracy of the bearing, a steel ball with a small outer diameter is used. The thin section bearing 6700 series and 6800 series are available in various dust cover forms, flanged versions, stainless steel forms, and wide format.



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Main applications of thin section bearings: stepper motors, medical instruments, office equipment, testing instruments, speed reducers, shifting devices, robots, optical, imaging equipment, rotary encoders.

Equal section thin-walled bearings, also known as thin section bearings, are highly accurate, very quiet and have a high load carrying capacity. Thin section bearings can be deep groove ball bearings, four-point contact bearings, angular contact ball bearings, and thin-walled bearings are mostly square in cross section. In these series, even with larger shaft diameters and bearing bores, the cross section remains the same. These bearings are therefore referred to as equal sections. It is this feature that distinguishes thin-walled bearings in the standard ISO series from conventional bearings. Therefore, a larger cross section can be selected and a larger load carry capacity can be used without having to change the shaft diameter. Thin-walled bearings can be designed to be extremely light and require very little space.

Tedin Bearing Co.,Ltd is providing above 3 types special bearings for robots. For the crossed roller bearings, we can also provide products with stainless steels (9Cr18), which could meet the requirements for food packaging machines, and some positions extremely from rusty. Welcome to contact us for more information.



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