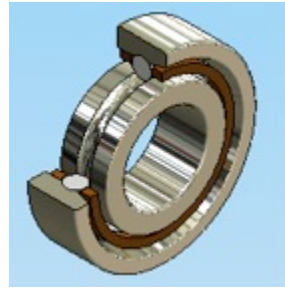


Angular Contact Ball Bearings



General

Normally used in applications where precise location of components is required, Angular Contact Ball Bearings, due to their internal design, can withstand high radial-axial loads and reach high speeds while maintaining high running accuracy, high rigidity, low noise, and low vibration levels. They are asymmetrical for manufacturing reasons and can withstand only unidirectional axial loads with a single bearing. Angular contact bearings are usually mounted in a group of two or more opposed preloaded units to accommodate bi-directional axial loads.

At least one land is relieved on either the outer or inner rings to allow for assembly. In high speed applications, opposing lands on both rings are relieved in order to allow assembly of the maximized ball complement. The inner and outer raceways and balls are typically made of chrome steel. Where operating conditions are severe, bearings may have ceramic balls creating a hybrid bearing. Both shields and seals are available for use in environments that can contaminate the bearings. The contact angles that are standard for angular contact ball bearings are 15° and 25°. The larger the contact angle, the higher the axial loading the bearing can withstand. Other contact angles or configurations of bearings are available on special request; please contact AST engineering for more information.

Nomenclature

Many angular contact bearing manufacturers have three or more dimensional series to accommodate higher speeds or higher loads than “standard.” In particular, the most common series names are:

- **ISO 18 Series** - highest speed, lowest load bearings
- **ISO 19 Series** - second highest speed, with the second lowest load bearings
- **ISO 10 Series** - highest load, second lowest speed bearings
- **ISO 02 Series** - highest load, lowest speed bearings

AST offers angular contact ball bearings in all of these series. In addition, high speed variants are available for each Series. The following summarizes AST's angular contact bearing series:

718xx series – ISO 18 Bearings

719xx series – ISO 19 Bearings

H719xx series– ISO 19 High Speed Bearings

70xx series – ISO 10 Bearings

H70xx – ISO 10 High Speed Bearings

B70xx – ISO 10 High Load Bearings

72xx – ISO 02 Bearings

Each bearing part number consists of the first group designating the bearing series, followed by the second group of numbers designating the bore diameter using two digits.

The bore size designations are as follows:

00=10mm, **01**=12mm, **02**=15mm, **03**=17mm, **>03**=BBx5 (example: 2208, 08x5=40mm bore)

Following the bearing series and bore size designations there are a number of suffixes that can be added to designate many different configurations. Below is a list of suffixes that can be used to identify

- **C** = 15° contact angle
- **AC** = 25° contact angle
- **-2RS** = Double Sealed
- **-ZZ** = Double Shielded
- **HQ1** = Ceramic balls
- **P5** = ISO Class 5 Tolerance
- **P4** = ISO Class 4 Tolerance, better than ISO Class 5
- **P2** = ISO Class 3 Tolerance, better than ISO Class 4
- **DB** = Back to Back Duplex Ground
- **DF** = Face to Face Duplex Ground
- **DT** = Tandem Duplex Ground
- **G** = Universal Duplex Ground
- **A** = Light Preload
- **B** = Medium Preload
- **C** = Heavy Preload

Other bearings configurations are also available. Please contact AST Engineering for further information.