

Balls: Balls in non-precision bearings are manufactured from hardened steel. These balls are then loaded into the raceway utilizing a full compliment of “loose” balls. Precision balls are made of hardened chrome alloy steel and separated in the raceway with a ball retainer or cage. This “cage” separates the balls, which greatly minimizes the noise and contact friction between adjacent balls. This also permits higher operating speeds.

Bearing Seals and Shields: Precision bearings are produced with seals or shields.

Seals: Seals are normally made of rubber and can be a “Contact Seal (2RS)” or “Non-Contact Seal (LLB)”. Both types of seals are generally in contact with the outer raceway, however, the **Contact Seal (2RS)** will also come into contact with the inner race of the bearing. Therefore, while offering a higher degree of contamination resistance versus a shielded bearing, this seal will also cause increased frictional torque.

The **Non-Contact Seal (LLB)** consists of a synthetic rubber bonded onto a steel backing ring, which is fastened to the outer race for positive sealing. Both sides of the seal edge are provided with corrugations to create an alternating series of wide and narrow gaps along the inner ring V-groove seal surface. This causes a complete labyrinth effect. The frictional torque on this bearing is low, it can be safely used in dusty environments, and is excellent for powered applications.

Non-Contact Shields (ZZ) are metallic shields press fit into the outer ring to keep foreign objects from getting into the bearing. This is a general purpose, prelubricated bearing with low frictional torque, and is widely used in both gravity and powered applications.

Labyrinth Seal: A series of intricate passageways manufactured into the plastic bearing housing designed to prevent foreign materials and contaminants from getting into the balls and raceways.

Service Life: The life of a bearing is dependent on numerous factors; load, speed, temperature, humidity, airborne contaminants, bearing materials, and lubricants. Load duration and shock loading also affect service life. Precision bearings are affected differently than commercial bearings and each factor should be considered when selecting a bearing or bearing unit. In applications where chemicals are a factor, the proper selection of engineered plastics and bearing material is critical.

