

## 1 Structure and Features

FYH Ball Bearing Units are manufactured to exacting standards comprising of grease sealed deep groove ball bearings and housings in various forms.

Self-aligning units allow for easy installation and are supplied with grease fittings in order to facilitate quick and convenient re-lubrication.

### 1.1 Structure

FYH Ball Bearing Units are constructed of high carbon chromium bearing steel and have precision honed raceways and riveted steel cages (Fig. 1.1).

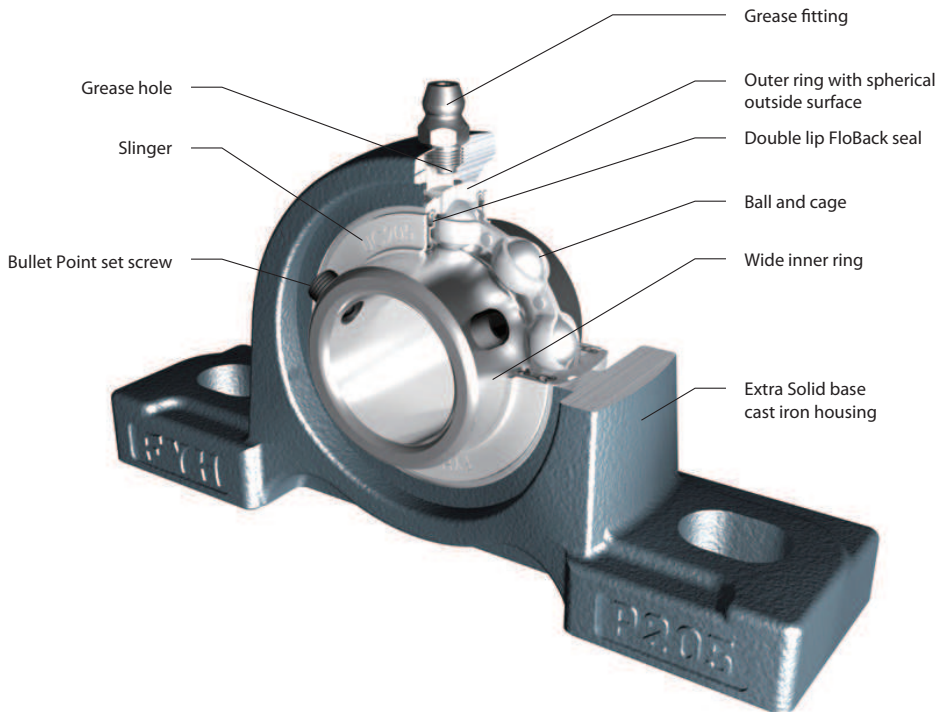


Fig. 1.1 Structure of ball bearing units (representative example)

### 1.2 Features

FYH Ball Bearing Units have many features and are available in various models. A wide selection of mounted units is offered to fit virtually any application.

#### 1 Supreme load capacity and accuracy

FYH Ball Bearing Units feature an internal structure identical to single row deep groove ball bearings and can bear significant radial load, as well as a great deal of axial load in both directions. The hardened steel balls exhibit a high degree of "roundness" and the races are highly polished to accommodate a smooth ride at a wide range of speeds.

#### 2 Rational self-aligning mechanism and optimal fit

FYH Ball Bearing Units have the special ability to self-align inside the housing because of the spherical shape of the outer diameter of the bearing insert and the concave shape of the inner diameter of the housing into which it fits.

This design allows the bearing unit to self-adjust for shaft deviation and reduce abnormal bearing load. Therefore, the original rated life of the bearing can be guaranteed. Since the spherical outside surface of the bearing is precision ground and the spherical bore of the housing is machined by a boring machine with great accuracy, optimal fitting of the bearing and the housing can be obtained, as well as superior aligning performance. The allowable aligning angle of standard ball bearing units is 3°, while units with covers is 1°.

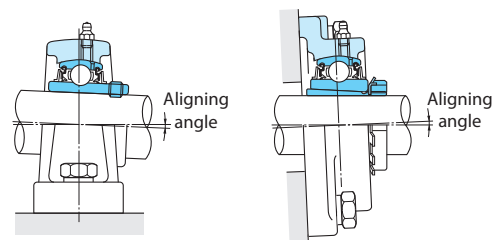


Fig. 1.2 Allowable aligning angle of ball bearing units

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### 3 Superior sealing performance

FYH Ball Bearing Units efficiently prevent grease from leaking out of the interior of the bearing, and perform extremely well at keeping contaminants, such as dust and water, from entering. This is achieved by installing the seal to the outer ring of the bearing and installing the slinger to the inner ring of the bearing.

The FloBack seal to be used in the standard FYH Bearing units will contribute to the long life of the bearing. It consists of a double-lip seal which is stamped into place in the outer ring of the bearing to reduce the possibility of being pushed out from over-lubrication. The first seal makes contact with the inside of the slinger which provides the first line of defense against contamination. The next seal makes contact with the inner ring to provide another level of contamination resistance. An additional level of protection exists in the extra non-contact inward facing lip which allows grease to flow back towards the balls and raceways during operation thereby improving lubrication performance and extending bearing life.

Allowable rotating speed is the same as the previous seal design while providing more than four times better protection.

### 4 Simple lubrication

FYH Ball Bearing Units are tapped to accept a grease fitting which is also supplied with every mounted unit. Bearings are pre-lubricated at the factory and do not require additional grease upon installation. When operating in excessively moist, dusty, or hot environments, it is recommended that grease be supplied at regular intervals. If appropriately maintained, the rated life of the bearing can be extended.

FYH Lithium Bearing Grease to be sealed in early bearing grease use are manufactured to accommodate a wide range of operating conditions.

FYH Lithium Bearing Grease can be mixed with of former FYH Bearing grease as it will improve performance, corrosion resistance, loading capability, and promote longer bearing life.

The grease fittings that are supplied with FYH mounted units include 1/4-28 for smaller units and 1/8 PT for larger units. Additional styles are available upon request. FYH Lithium Bearing Grease is also available in automatic lubricators.



Fig. 1.3 Sealing mechanism of ball bearing units



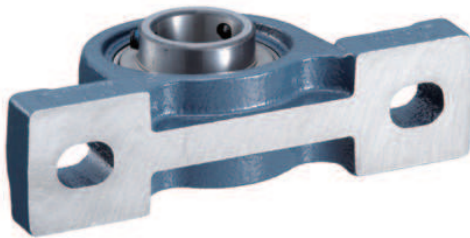


### 5 Highly rigid and rugged cast iron housings

FYH Ball Bearing Unit housings are designed so that they are optimized for reduction of deformation due to centralization of stress and load. Only the best material is selected to be cast by a highly advanced technique or press working technique, depending on the housing. Since any abnormal load on the bearing is eliminated by the housing, the life of the bearing can be extended. A Granular material baking finish coating (powder coating) helps resist corrosion and protect the surface of the housing for an extended period of time.

FYH original solid base pillow block housings seat better and produce a more stable mounting configuration that significantly reduces vibration.

The support ribs have been eliminated to make more room for mounting bolts and washers, yet these housings are more than 30% stronger than before while also reducing housing weight. The new housing downward destruction strength means that the inserts break before the housings.



### 6 Simple installation and handling

FYH Ball Bearing Units interchange with many different models and can be bolted to machinery without any modification. The exact amount of clearance is allowed between the bore and the shaft to allow a perfect fit. Therefore, FYH Ball Bearing Units do not require any additional lubrication or seal installation. As a result, handling and downtime can be drastically reduced. Four different locking mechanisms are available:

- (1) Set Screw
- (2) Eccentric Locking Collar
- (3) Tapered Adapter
- (4) Concentric Collar

Mounting the bearing to the shaft can be executed easily and securely by adopting any of these methods.

### 7 Series and models

FYH Ball Bearing Units are available in various series and models. Reliability of machinery or equipment, used together with these units, can be improved by selecting and using units optimal for the application and operating conditions.



- High / Low Temperature Series



- Corrosion Resistant Series

Stainless Units  
Plastic Units  
Nickel plated Units



- Air Handling Series

S3 & S5 Bearing Units  
NU-LOC Units



- Dust Resistant Units

Triple lip seal inserts  
Felt seal inserts



- Dirt Resistant Units

Tight Triple lip seal inserts  
Units with Covers

- Tougher casting Series  
Ductile iron housing

- Compact and lightweight Series  
Small die cast Units  
Lightweight casting Units  
Stamped Units