

HI-SUN MECHANICAL & ELECTRIC (USA) CO., LTD.

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Mounted Ball Bearing Units



- Hi-Sun Mechanical & Electric (USA) Co. Ltd. is a supplier of high quality bearings and components from ISO 9001 certified manufacturing facilities. Our mounted bearing products are widely used for power transmission, agricultural machinery, bulk material handling, and food processing applications across a wide variety of industries.

Based in Renton, Washington, our professional sales staff and support team are committed to delivering the highest of standards of customer service and support. In addition to our deep stock of inventory, Hi-Sun offers custom value added solutions based on the specific requirements of our OEM and distribution customers at competitive price levels.



- HI-SUN offers mounted ball bearing units widely used in agriculture, food, construction, mining, engineering, chemical, conveying machinery, etc. HI-SUN offers custom value added solutions are available according to customers' specific requirements.

Our Bearing Styles include:

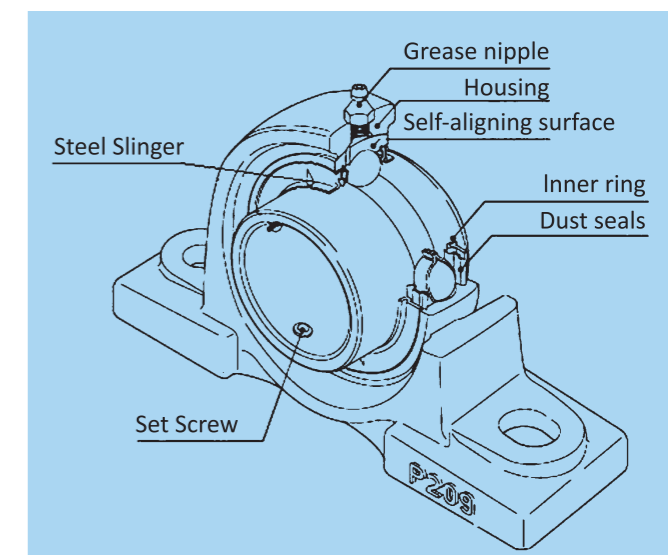
- Dual set screw locking with wide and narrow inner rings in spherical and cylindrical outer rings.
- Eccentric locking collar with wide and narrow inner rings in spherical and cylindrical outer rings.
- Concentric locking collar with wide and narrow inner rings in spherical and cylindrical outer rings.
- UK Adapter locking.

Our Housing Styles include:

- Pillow-Blocks in high grade cast iron, high strength ductile iron, stamped steel, polymer and stainless steel.
- 2, 3 and 4 bolt flanges in high grade cast iron, high strength ductile iron, stamped steel, polymer and stainless steel.
- Hanger units, take-up units, cartridge and other specialty use designs.
- Rubber insulators.

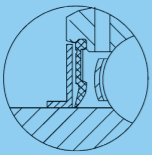
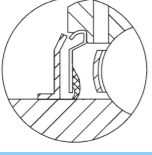
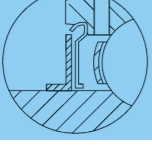
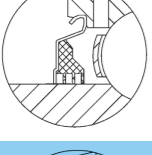
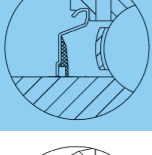
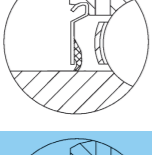
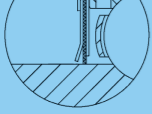
HI-SUN Mounted Ball Bearings

- Variety of alternative seal design
- Grade 10 precision balls
- High strength riveted, Carbon steel retainers (Nylon Retainers are also available)
- Precision ground and super finished raceways
- Four kinds Optional lock methods
- Housing materials:
 - High strength gray iron
 - Ductile iron
 - Stainless steel (AISI 304 Stainless Steel)
 - Thermoplastic
 - Zinc alloy
 - Carbon steel



Seal design


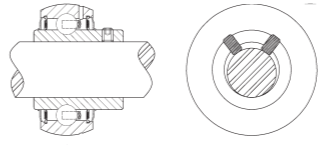

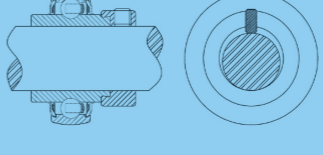

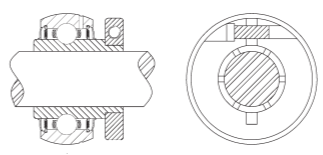
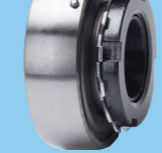
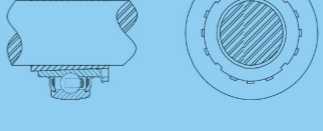
HI-SUN offers a variety of seal designs according to the end user's unique application and design requirements.

Sealing structure	Description
 <p>SL-seal</p>	The inside is an NBR rubber sealed ring. It contains a metal cover which is fixed on the inner ring. The metal cover protects the inner rubber sealed ring from external mechanical damage.
 <p>R-seal</p>	This design enhances dustproofing based on the SL seal design. It can be applied to most general applications and working environments.
 <p>ZZ-seal</p>	The double seal of inner and outer layers are made of a metal plate. This design is most commonly used for high temperature applications.
 <p>L3-seal</p>	This design provides superior dustproofing capabilities. It is ideal for low-speed applications operating in the harshest environments.
 <p>KRR-seal</p>	This design provides the bearing with more space to keep grease which significantly reduces maintenance terms.
 <p>RST-seal</p>	This design is made of a single metal plate which is pasted by NBR rubber on the inside surface, and fixed on the outer ring. The metal plate protects the rubber from premature damage.
 <p>P-seal</p>	This design features inner and outer double frames made of carbon steel and interior NBR rubber, providing better intensity which prevents damaged seals during grease filling.

In addition, we enhance frame intensity and the structure intensity of seals to greatly improve dustproofing performance of our seals.

Shaft Locking Methods

HI-SUN provides four standard methods to lock mounted ball bearings to the shaft. Depending on application requirements, one method may yield a better operating result than another. HI-SUN has ability to deliver high quality solutions for any application.

Bearing Type	Locking Method	Description
		Set screw locking is one of the most popular and least expensive methods. Simple to install, this method has two set screws to tighten the bearing to the shaft. The clearance fit of the bearing on the shaft makes installation simple and quick. This method is typically used for low to medium speed applications. Periodic tightening of the set screws is required.
		The bearing inner ring has an eccentric groove and a mating groove is machined into the collar. Commonly a drift pin and hammer are used to tighten the collar against the mating eccentric of the inner ring, locking the bearing to the shaft. Generally the locking collar is tightened with the direction of shaft rotation. For reversing loads, it is best to use another locking method as torque reversals could loosen the collar.
		The concentric locking method is a clearance fit of the inner ring of the bearing to the shaft. It is easy to install and will not loosen after proper initial tightening. As the cap screw in the split locking collar is tightened, the collar compresses the spline zone of the inner ring to grip or squeeze the shaft. Loosening the concentric collar will loosen the unit and removal is easy.
		The adapter locking method provides the most concentric locking fit of all locking methods as it simulates the direct mounting of the bearing to the shaft. The adapter mounting allows the highest speed with the least amount of residual vibration.

Please contact us with requests for specific solutions.

Insert Bearings

Material

HI-SUN uses the highest quality steel approved by world famous bearing manufacturers.

As per the customer's application and design requirements, HI-SUN can offer products in chrome steel (ASTM 52100) / stainless steel (AISI440C).

Table 1

Material		Analysis (%)						
		C	Si	Mn	Cr	Mo	P	S
GB/T	GCr15	0.95-1.05	0.15-0.35	0.25-0.45	1.40-1.65	≤0.08	≤0.025	≤0.025
DIN	100Cr6	0.95-1.05	0.15-0.35	0.25-0.45	1.40-1.65		≤0.030	≤0.025
ASTM	52100	0.98-1.10	0.15-0.35	0.25-0.45	1.30-1.60	≤0.10	≤0.025	≤0.025
JIS	SUJ2	0.95-1.10	0.15-0.35	≤0.50	1.30-1.60		≤0.025	≤0.025

Table 2

Material		Analysis (%)						
		C	Si	Mn	Cr	Mo	P	S
AISI	440C	0.95-1.20	≤1.00	≤1.00	16.0-18.0	≤0.75	≤0.04	≤0.03
GB/T	9Cr18	0.90-1.00	≤0.80	≤0.80	17.0-19.0	≤0.75	≤0.035	≤0.030

Coating

HI-SUN offers quality coating options to prevent corrosion (zinc or chrome coating, which meets the EU RoHS environmental protection requirements.) The products are tested regularly by SGS etc. professional testing organizations.

Different solutions available according to different application requirements.

Vibration/noise level

HI-SUN insert bearings have been inspected by precision manufacturing and strict control system. The products in motor level are available.

Please contact us for specific application requirements.

Lubrication

HI-SUN's bearings are filled with 2# Lithium grease during production. The grease has superior waterproof, antirust, antioxidant and lubricating properties. It can be used in high/low temperature with good stability and long life.

Physical and chemical characteristics are listed below:

Working temperature: -4°F~ +248°F

Testing items	Typical Data	Test Methods
	2	
Worked Cone Penetration 0.1mm	281	ASTM D217
Dropping Point. °F	392	ASTM D565
Oxidation Bomb (99.100h.785kPa) pressure drop. kPa	30	ASTM D942
Solid Foreign Matters.entres/cm2		JIS K2220.5.9
10 um	200	
25 um	100	
75 um	0	
125 um	0	
Low Temperature(-4°F) N.m		ASTM D1748
Starting torque	0.21	
Running torque	0.03	
Corrosion Prevention (126 °F,48h),grade	1	ASTM D1743

Operating Temperature

HI-SUN bearings perform at an optional level below the temperature of +248°F. Grease life reduction has to be taken into account when the bearings continue operating at a temperature above158°F. The lowest operating temperature should not be lower than -14°F.

HI-SUN also provides bearings for applications in high temperature environments with maximum temperature up to 662°F. the bearings suffix identification is: S3.

For example: UC 205 C4 S3.

Please contact HI-SUN for more details about higher or lower temperature application.

Housing :

Hi-sun offers housings in many materials as below:

1.Cast iron(HT200)

Cast in high strength gray iron, standard cast housings are among the most rigidly designed and heaviest available in the industry. If housing requires mild to intermediate corrosion protection, zinc coating is most appropriate. Chrome coating and nickel coating are also available.



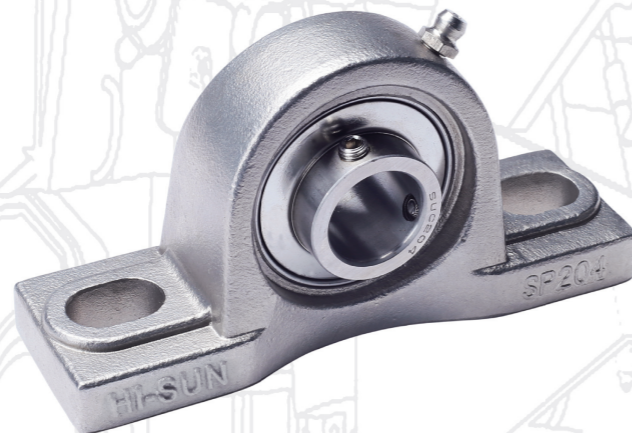
2.Ductile iron

HI-SUN ductile iron is an excellent alternative. Ductile iron is approximately 2.0 times stronger (tensile) than gray iron and also offers the benefit of reduced flex memory. Some HI-SUN standard housing styles are available from stock in ductile iron. When extra strength is needed in extremely rugged applications, all can be made upon request. When the housing requires mild to intermediate corrosion protection, housings surface painting zinc-coating, chrome-coating and nickel-coating are available.



3.Stainless steel housings (AISI 304 Stainless Steel)

Stainless steel housings are generally the most effective solutions for highly corrosive applications. They do not experience the same flaking, cracking, deformation or discoloration issues associated with other corrosion resistant housing materials. They are virtually unaffected by scrapes and can easily handle significant radial loads, reducing residual contaminants. Stainless housings are made with extremely smooth surfaces and have solid bases and backs. Many styles are also available with end caps.



4.Thermoplastic Housing:

HI-SUN thermoplastic housings are off-white in color and made from glass reinforced PBT resin. Along with excellent chemical resistance, this high performance grade plastic offers very favorable mechanical, thermal and electrical properties. Also, compared with other types of plastics, thermoplastic is very resistant to moisture absorption. Recommended operating temperature range is -10°F to 210°
HI-SUN thermoplastic housings are made with extremely smooth surfaces and have solid bases and backs. All sleeves, bushings and grease fittings used in our thermoplastic units are made from AISI 300 series stainless steel.

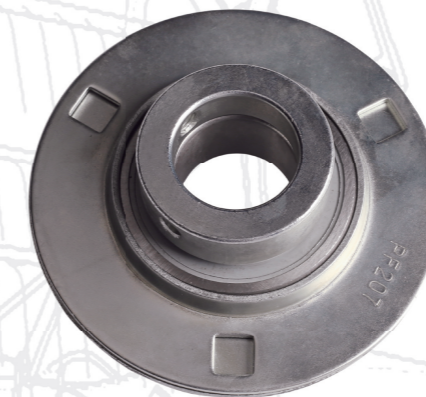
5. Zinc alloy Housing

HI-SUN can also provide zinc alloy housing which has not only a significant cost advantage compared with stainless steel bearing, but also a higher toughness, lower proportion and wider application.



6. Carbon steel stamped Housing

HI-SUN's stamped housings are stamped by high quality low-carbon steel plate and the galvanized surface can protect the housing. HI-SUN's stamped housings are widely used in agricultural machinery, metallurgy, environmental protection and other industries.



End Caps

For additional protection from contamination or for increased personnel safety, HI-SUN provides many stainless and thermoplastic housings, which are available with plastic end caps.



Agriculture



Chemical Industry



Fitness Equipment



Industrial Conveyor belts



Textile



Mining

● HI-SUN mounted bearing units are designed to meet the specific requirements of these demanding applications.

Food and Beverage

