

TIMKEN
Where You Turn

Agriculture



Agriculture Leadership

Agriculture customers turn to Timken for products and services that are designed for high performance, extended equipment life and enhanced productivity. Whether you need components that operate reliably in challenging environments or related products and services that help you get the most out of these components, Timken is the right source. We apply a century of research, engineering, manufacturing and service know-how to every application. Timken is Where You Turn for unparalleled value and innovation.

Because of our performance advantages, large agriculture OEMs turn to Timken for products and support. This same OEM quality is in our aftermarket products. It's why you'll find us at work in most every agriculture application:

- Field preparation and conditioning
- Planting
- Harvesting
- Processing
- Conveyors

Timken engineers are committed to understanding your processes to solve unique application problems. We work with you to optimize bearing performance in standard products. This spirit of collaboration also is used to develop customized bearing solutions.

Results include innovations like housed units and pillow blocks with better locking devices. Wide inner rings, eccentric locking collars and Timken's own Shaft Guarding Technology™ provide a tighter, more controlled fit with less risk of shaft damage. Tests prove the superior holding power and significantly reduced shaft damage inherent to Shaft Guarding Technology.

Features and Benefits of Timken® Fafnir® Housed Units

FEATURE	BENEFIT
Grease fitting offset	Minimized risk of accidental and side impact, while maintaining accessibility for single-point lubricators.
Fafnir curl	Mechanical attachment of seal is secure, resisting "pop-out" during re-lube and inhibiting spinning of the seal in the outer ring seal groove.
Grade 10 balls	Quiet and smoother-running bearings resulting from higher specification steel and improved roundness.
Buna-N seal material	Buna-N rubber has cotton fiber, embedded to wick oil, which enhances lubrication and improves sealing integrity.
6/6 nylon heat stabilized retainer	Excellent misalignment capability. Resists size changes and moisture trapping. Non-corrosive and self-lubricating, as well as resistant to abrasion, wear and most solvents.
Super-finished raceways	Even surfaces reduce friction, leading to cooler, quieter running and longer life.
Hardened and ground seal land	Seal protected from inner ring abrasion, resulting in less wear (longer life) and prolonged seal integrity.
Powder coat finish	Chipping, scratching and subsequent exposure to parent metal is reduced, helping to prevent corrosion.
Special quality steel	Fewer carbides, inclusions and voids result in reduced risk of stress risers that can cause premature fatigue.
Double-filtered polyurea grease	Particles that can cause noise in application are removed. Improved lubrication cleanliness also leads to superior performance at higher speeds.
Housing tolerances	Better grease purge throughout the bearing due to reduced risk of grease purge at outer diameter.

Agriculture Challenges. Timken Solutions.

Agriculture Challenge: *Ensuring peak performance, safety and longevity of equipment.*

Timken Solution: At Timken, we integrate bearings, lubrication, seals, repair services, maintenance practices, gears, condition monitoring and training to address a wide variety of customer needs. Our quality components are designed to be long-lasting and not damage other parts.

Agriculture Challenge: *Maintaining adequate lubrication.*

Timken Solution: Timken premium industrial grease helps protect against rust, corrosion and wear. Designed for bearings that operate at higher-than-average temperatures and shock loading, it is ideal for on- and off-road applications, wheel bearings, axles, ball joints, U-joints, power takeoffs, bushings, trucks and other vehicles. It operates in temperatures up to 300° F (149° C), lasts longer and helps absorb water better.

Agriculture Challenge: *Withstanding harsh, unpredictable environments.*

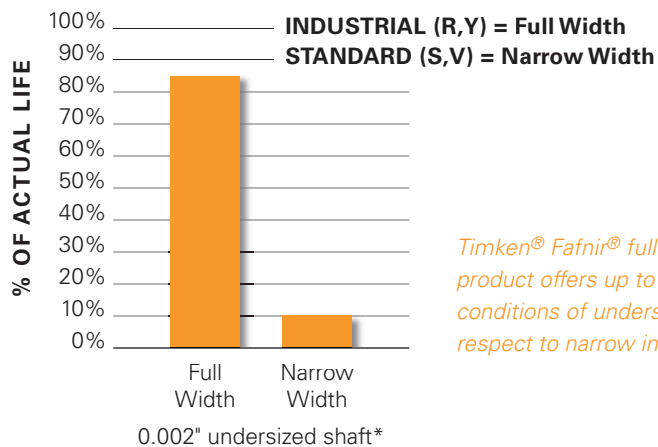
Timken Solution: Timken seals help keep contaminants out and lubrication in – reducing downtime and keeping equipment running smoothly.



Timken is always on the cutting edge of new technology, giving you a competitive advantage with high-performance products that often exceed OEM specifications in demanding applications.

Timken products and services are designed to help you run more efficiently, and help plant maintenance personnel **avoid unplanned downtime** and reduce maintenance costs. It starts with reliable, application-specific bearings, continues with greases and seals that get the most out of these bearings and condition monitoring equipment that help increase uptime. You also can depend on us for product training or to manage aspects of your maintenance operations.

Timken® Fafnir® Wide Inner Ring Bearing Life



Timken® Fafnir® full width inner ring product offers up to 8 times life in conditions of undersized shafting with respect to narrow inner ring product.



Wide Inner Ring and Housed Units

Housed units include pillow blocks, flanged cartridges, cylindrical cartridges and take-up units. The standard housing material is cast iron. Fafnir TDC® coated bearing inserts with nickel-plated or polymer Survivor® housings resist corrosion in difficult operating environments.

■ Wide inner ring

Wide inner ring ball bearings are commonly supplied as inserts in housed units for greater ease of mounting. The inner ring locking device attaches to the shaft, while bolt holes in the housing simplify assembly to machine frames. The self-aligning features further facilitate installation.

■ Multiple seal design

Timken® Fafnir® T-series housed units feature a one-piece, triple-lip seal that incorporates a highly effective seal design molded to an exterior shroud cap. The shroud cap protects the seal from abrasive materials and its triple-lip design helps reduce the entry of contaminants and moisture into the bearing. The seal lands are hardened and ground for longer life.

■ Robust block

This product provides shaft support for radial, thrust and combination loads to help reduce friction in a wide variety of applications. The product's rugged design is its biggest advantage. The robust block operates in more-demanding applications and challenging environments than standard housed units..

■ Eccentric locking collar

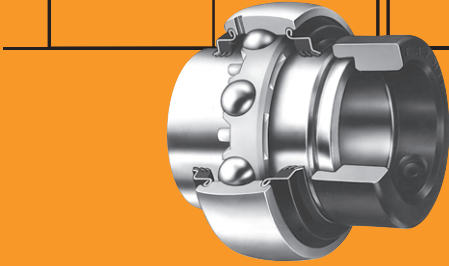
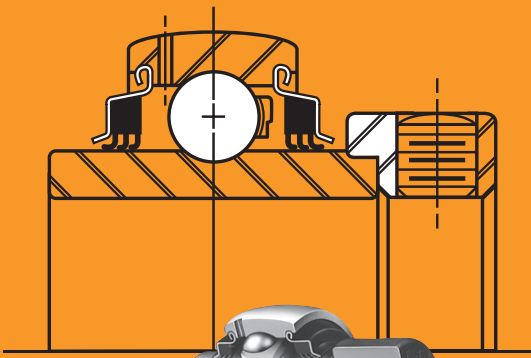
The Timken-originated eccentric self-locking collar eliminates the need for locknuts, washers, shoulders, sleeves, and adapters. The locking collar has a counterbored recess that is made purposely eccentric to the bore. When the collar is engaged to the inner ring, it grips the shaft tightly with a positive binding action that increases with use. No adjustments of any kind are necessary.

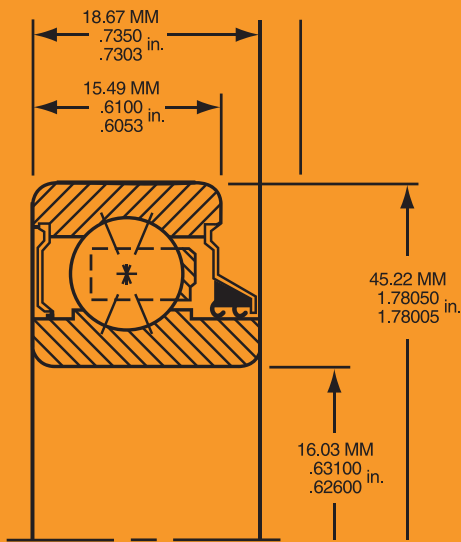
■ Flange units

Ball bearing flanged units have similar features to pillow blocks, but can be mounted by bolts through the housing flange. Timken® flanged units come in multiple bolt hole combinations.

■ Shaft Guarding Technology

Timken has introduced one of the easiest-to-install housed units available. It features a conventional setscrew, but provides shaft protection, prolongs the life of the shaft, and is faster and easier to install and remove. Where traditional setscrew products rely on the setscrews to dig into the shaft to maintain grip, Timken's Shaft Guarding Technology transfers the pressure of the setscrews through a stainless steel, hardened band. This minimizes the problems encountered from relative motion typically associated with setscrew product. Shaft Guarding Technology exceeds all known gripping application requirements, maintains dimensional integrity and reduces fretting corrosion.



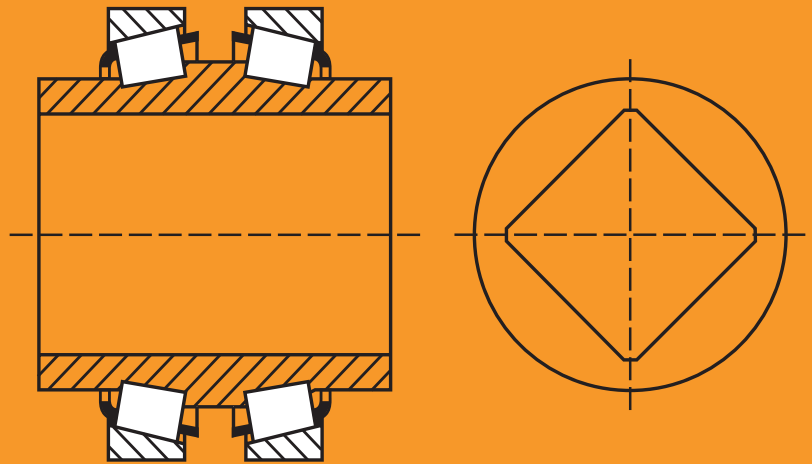


Timken® Fafnir® Radial Ball Bearings

Radial ball bearings use a versatile design that permits relatively high-speed operation under a range of load conditions. The bearings consist of an inner and outer ring with a cage containing a complement of precision balls. Available in inch and metric sizes. All bearings are manufactured to ABEC 7P tolerances. Standard radial play is .0002/.0008". Other ranges are available upon request. Shields, seals, flange, and extended inner rings are all available within the standard specifications. Bearings will be lubed with a protective coating of MIL-PRF-6085 oil. Other lubrications also available.

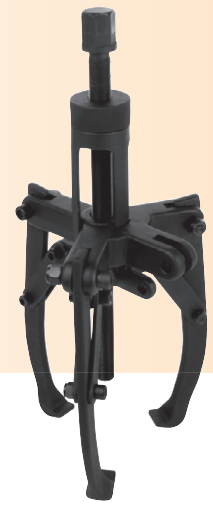
Timken® Tapered Roller Bearings

Tapered roller bearings consist of four interdependent components: the cone, or inner ring; the cup, or outer ring; the tapered rollers, or rolling elements; and the cage, or roller retainer. The taper angles allow the bearing to handle a combination of radial and thrust loads. The steeper the cup angle, the greater the ability of the bearing to handle thrust loads.



Mechanical Pullers

Timken has a wide range of mechanical pulling systems with capacities from two to 30 tons. They are excellent for the removal of many kinds of shaft-fitted parts.



Impact Tools

Proper mounting is essential to ensure long bearing life. Timken's impact fitting tool set features impact-resistant plastic collets, which help avoid metal-to-metal contact and the resulting damage that can occur. They are designed to permit safe, precise and quick mounting of bearings, bushings, sealing rings, cam wheels and pulleys.



Heaters

Induction heating is a superior, fast and controlled heating method. Timken induction heaters can be used for gear wheels, bushings, bearings, couplings and other components. Proper mounting lengthens the lifespan of your equipment.



Friction Management Solutions™

For more than 100 years, customers have
Our comprehensive friction management

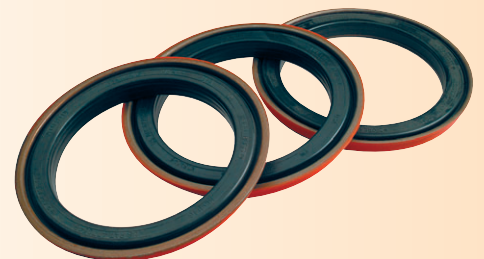


Bearing Tester

Timken's bearing tester is a portable, pocket-sized condition monitoring instrument. It is reliable, affordable and easy to use. The compact and lightweight design make the bearing tester a convenient tool for assessing the health and lubrication condition of ball- and roller-type bearings in many industrial environments.

Industrial Seals

Timken's line of seals offers a leading combination of quality, technology and coverage. These seals are developed using innovative material and process solutions to help protect machinery, prevent contamination and minimize plant downtime.





Learn From The Leader

From mounting and advanced setting techniques to maintenance and damage analysis, Timken training seminars can provide practical hands-on knowledge and a comprehensive understanding of good maintenance practices.

G-Power and M-Power Single-point and C-Power Centralized Multi-point Lubricators

Timken G-Power and M-Power single-point lubricators deliver periodic grease or oil to bearings, chains, guideways and other industrial equipment components. C-Power multi-point lubricators are a centralized lubrication system capable of delivering grease to up to six lubrication points. A full line of accessories offer easy installation and a host of mounting options for hard-to-reach locations.



turned to Timken for solutions. During that time, our knowledge has grown beyond bearings. and power transmission solutions are the reason that customers around the world turn to Timken.



Timken Ball Bearing Pillow Block Grease

- NLGI No. 2 polyurea-thickened grease
- Outstanding long-life, moderately high-temperature lubrication of ball bearings
- Maintains mechanical shear stability
- Helps provide corrosion resistance, even in the presence of salt water
- Features low-noise characteristics and excellent pumpability
- Operating temperatures from -40° F to 325° F (-40° C to 163° C)



Timken Premium All Purpose Industrial Grease

- NLGI No. 2 extreme pressure, lithium-complex thickened grease
- Helps protect against rust and corrosion
- Excellent protection against wear
- Operating temperature range of -40° F to 300° F (-40° C to 149° C)
- Applications: Ideal for industrial bearings operating at higher-than-average temperatures and/or subjected to shock loading, as well as heavy-duty on- and off-road applications, wheel bearings, axles, ball joints, U-joints, power takeoffs, king pins, bushings, trucks, buses and automobiles

Timken Multi-Use Lithium Grease

- Lithium soap thickened grease
- Operating temperatures from -30° F to 250° F (-34.4° C to 121.1° C)
- Used in a variety of applications where extreme pressure is not required
- This grease is available in two NLGI grades: Part #GR236-NLGI No. 1 and Part #GR237-NLGI No. 2



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Bearings • Steel •
Precision Components • Lubrication •
Seals • Remanufacture and Repair •
Industrial Services

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