

Timken is your resource for quick, cost-effective sealing solutions.
To learn more about how Timken can enhance your line of seals,
call Timken in the U.S. at 1.877.4.TIMKEN and in Canada at
1.800.565.4927 for English and 1.800.565.0438 for French-Canadian.
Visit us on the Web at www.timken.com/industrialseals

TIMKEN



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TIMKEN

National® Industrial Seals

TIMKEN®



National®
INDUSTRIAL SEAL

Timken

*offers an extensive line of sealing solutions for original equipment manufacturers and the aftermarket. Our line of National® industrial seals is made from **innovative materials** and process solutions that **enhance life** and performance in many industrial applications. This line of industrial seals adds value to the company's portfolio of friction management solutions. The seals are backed by the company's experienced technical support and distribution networks, giving **distributors** a single source for a wide range of bearings and **value-added extras** to help keep equipment running optimally.*

Industrial Seals

Quality Products, Durable Performance

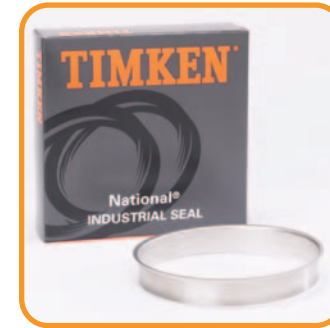
Timken's line of National industrial seals offers a leading combination of quality, technology and coverage. These seals are developed using innovative material and process solutions to help protect machinery, prevent contamination and minimize plant downtime.



Oil and Grease Seals supplied by Timken close the spaces between stationary and moving components in mechanical equipment and help prevent lubricant from escaping. Equipment components rely on oil and grease seals to prevent abrasives, corrosive moisture and other harmful contaminants from entering the mechanics of the machine, particularly in severe environments. Oil and grease seals feature precision sealing designs matched to many original equipment or aftermarket applications and help to ensure consistent and reliable performance.



V-Seals™ are a simple and versatile elastomeric “face-type” seal produced in Nitrile or Viton®. The elasticity of this seal design eases installation, permits a broader range of shaft sizes and allows them to be used on eccentric and misaligned shafts. Timken's line of V-Seals can be the primary sealing element in an application, a contaminant excluder or a back-up seal.



Wear Sleeves are precision components that press-fit onto a shaft, which may deter damage to shafts and spindles. Timken's line of wear sleeves are designed for ambient-temperature assembly and are available in various sizes and finishes. These sleeves provide a protective seal running surface and reduce the need for complex and expensive shaft matching, repair or replacement.

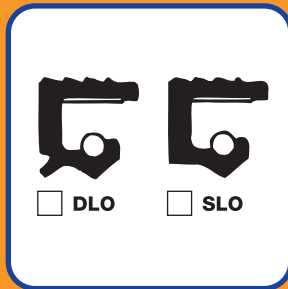


O-Ring Seal Kits provided by Timken are made from a high-quality Nitrile rubber or a high-temperature fluoroelastomer. These seal kits are available in inch and metric sizes. Timken provides three assortments – OK-311, OK-312 and OK-411. The MD-999 O-Ring identification gauge measures and identifies O-Ring sizes.



Installation Tools help to properly install seals and prevent unnecessary downtime. Timken's line of RD-2000 Seal Drivers helps install seals quickly and easily without damage, allowing for smooth equipment operation without premature seal leakage. The RD-2001 Bearing Race and Seal Driver easily installs bearings and seals without damaging the bearing race or housing.





Redi-Seals® – Custom Sealing Solutions Overnight

Timken offers sealing solutions that are custom made overnight. Timken’s line of Redi-Seals® help to minimize downtime since they are available within 24 hours if required. Redi-Seals are thoroughly tested, approved and are available in the right quantity – even a single seal.

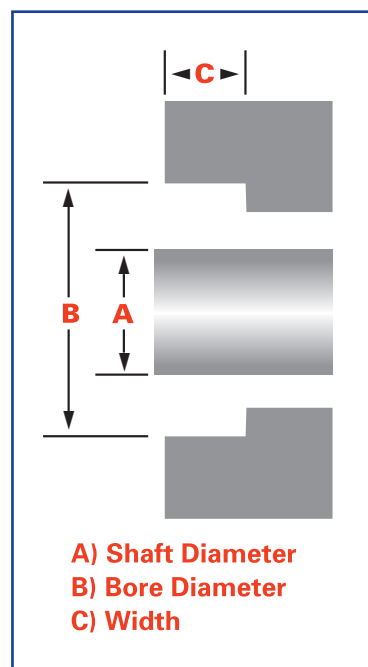
Through an innovative manufacturing process, Timken is able to provide Redi-Seals without long lead times and offer manufacturers and distributors a more flexible and efficient way to do business. Timken offers 11 types of Redi-Seals that are custom made to fit your design, size, application, material and special feature specifications.

Timken’s line of Redi-Seals are unique, high-quality sealing devices that require specific information before manufacturing. When ordering, you will need to specify the following:

- Seal design or type
- Size – ranging from 21mm (0.827") shaft to 330mm (13") housing bore
- Metric or inch size
- Seal applications – industrial, agricultural or vehicular
- Seal material – Nitrile or Viton
- Special features, including split seals

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Redi-Sleeves® Offer Quick Repair Options

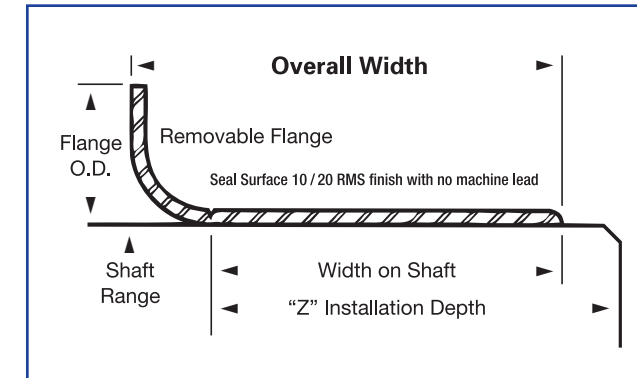
Redi-Sleeves® offered by Timken are precision stainless steel wear sleeves, designed to be pressed onto a shaft to provide an enhanced sealing surface. Redi-Sleeves are fast, inexpensive repair options for grooved or worn shafts.

How Redi-Sleeves Work

Redi-Sleeves are pressed onto a shaft where indications of seal wear, such as tracks or grooves, have developed. The shaft now has a smooth sealing surface. Selecting the proper size Redi-Sleeve is key to making sure your equipment is up and running faster. To select the correct size, measure the shaft diameter where the sleeve will be positioned – ahead of the wear path.

Timken’s line of Redi-Sleeves feature a strong, durable stainless-steel construction that helps provide a corrosion-free sealing surface that may surpass most original shaft specifications. Redi-Sleeves have an ultra-thin construction of 0.25mm (0.1")

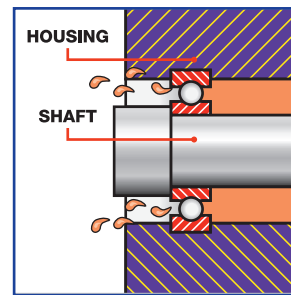
that allows the original seal size to be used with minimal additional lip loading. The surface of the sleeve is ground to 0.25 – 0.50 Micrometer Ra (10 – 20 Microinch Ra) finish without lead and is available for shafts from 12.7 – 203mm (0.5 – 8") in diameter.



Zero Duplication™ Program

Keep lubricants and other critical fluids in, water and other contaminants out.

By consolidating your inventory into one systematic collection of premium-quality seals, the Zero Duplication™ program offered by Timken provides comprehensive coverage while minimizing the number of replacement seals you carry in inventory.

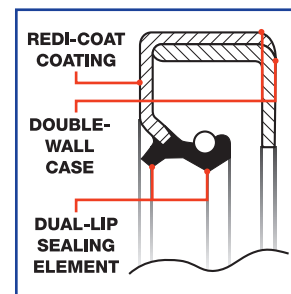


A seal keeps contaminants out and lubricants in to protect and extend bearing life.

Zero Duplication is an effective way to do more with less. This program features a special selection of oil seals that are designed to meet the requirements of applications with shaft diameters up to 12" or 300mm - with zero duplication of comparable seals.

Improve Coverage and Reduce Inventory

Each Zero Duplication seal offered by Timken replaces several similar seals, providing comprehensive application coverage with less inventory. This line of seals incorporates the most effective performance features in a range of common sizes. They are engineered to fit and perform well within many industries.



Typical Zero Duplication seal design.

Design Features*

Spring-loaded, dual-lip sealing element. Uses two sealing lips, one spring loaded tightly against the shaft to retain lubricants, the other functioning as a contaminant excluder.

Double-wall case. Reduces deformation to the case during installation and forms a secure, stable base for optimum sealing-element performance.

Exclusive Redi-Coat® coating. Seals minor bore defects to help ensure a tight, leak-proof seal.

Optional fluoroelastomer sealing element (available in selected part numbers in addition to standard Nitrile seals). Provides high-temperature capabilities, good compatibility with a wide range of fluids and long life.

*Seal designs may vary. Not all features are used in all Zero Duplication seals.

MORE EFFICIENT, MORE PROFITABLE SEAL INVENTORY MANAGEMENT

Trust Zero Duplication Seals for Optimal Performance

Typically, a seal is replaced by an identical seal. Zero Duplication seals, however, offer performance equal and often superior to original seals. Even if the width, case design or sealing elements differ, Zero Duplication seals can provide optimal performance.

The Zero Duplication program offers tangible advantages for your customers:

- Faster, more responsive customer service
- Optimal seals for a wide range of applications
- The right seals in stock

Three Zero Duplication stocking plans have been developed to maximize coverage:

- **Gold** (up to 6"/160mm shaft sizes) – seals used in heavy industry (pulp and paper mills, ore processing, mining operations)
- **Silver** (up to 4"/100mm shaft sizes) – seals used in general industry (including heavy-duty, high-horsepower motors)
- **Bronze** (up to 2.5"/60mm shaft sizes) – seals used in light-duty service (including motion-control equipment, conveying operations)

We can also develop a customized Zero Duplication assortment based on an analysis of your present inventory.

Determining Zero Duplication Coverage

Zero Duplication seals are available to fit shafts from 0.250" to 12" in diameter and bore sizes from 0.499" to 14". Metric Zero Duplication seals are available to fit shafts from 7mm to 300mm in diameter and bore sizes from 16mm to 340mm.

Any part number listed in the Timken industrial seal catalog that is in bold-face type is a Zero Duplication seal.

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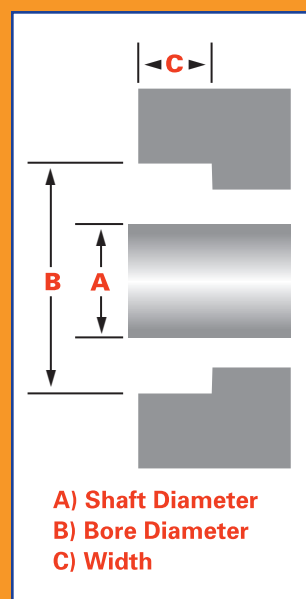
Advantages of the Zero Duplication program:

- Faster, more responsive service
- Simple, easy replacement seal selection
- Simplified ordering process
- Reduced acquisition costs
- Reduced storage costs and requirements
- Elimination of obsolete seals

27576 - 29840		
Competitor Number	National Size & Type	Zero Duplication or Recommended Industrial
29292	416654	416654
29292	475012	416654
29300	416654	416654
29305	47665N	416654
29310	416654	416654
29316	416654	416654
29317	416654	416654
29317	475012	416654
29322	475012	416654
29360	475012	416654
29370	416654	416654
29371	416654	416654
29375	416654	416654

Zero Duplication part numbers are listed in bold-face type.

SEAL SPECIFICATION CHECKLIST



Before you call to order industrial seals from Timken, follow the steps below.

1. Measure your current application to the nearest 0.001" or 0.05mm.

- Shaft Diameter _____
- Bore Diameter _____
- Width _____

2. Note any important application environment details.

- Temperature Range _____
- Lubricant _____
- Other _____

3. Note any important application details.

- Shaft Speed _____
- Other _____

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CAUTION: Redi-Seals are not recommended for the following applications:

- Rear-wheel bearing seals on rear-wheel drive vehicles
- Stub-shaft seals on front-wheel-drive vehicles
- Automatic transmission front pump seals
- Power steering pump seals
- Any nuclear applications
- Any aircraft/aviation/aerospace applications

The right bearings. The right seals. The right source.

Timken's line of National industrial seals offer maintenance teams a way to protect machinery, prevent contamination and reduce plant downtime. Our seals are made from innovative materials and process solutions that enhance life and performance of many industrial applications. We offer an extensive cost-effective inventory solution through the Zero Duplication program. These seals feature Redi-Coat®, an excellent bore sealant that fills nicks and scratches in poorly finished bores. Our Redi-Seal program supplies distributors and their customers with a 24-hour emergency seal option and helps to minimize downtime. Timken's line of industrial seals are backed by the company's experienced technical support and distribution networks, giving customers a single source for a wide range of bearings and value-added extras to keep equipment running optimally.

Friction Management Solutions

Industrial customers turn to Timken to provide comprehensive friction management solutions. Extending beyond bearings, these solutions include related parts and accessories, expert sales and service support, integrated logistics and a host of other programs to help keep your systems running efficiently. We help customers analyze performance and recommend solutions that make sense for their unique operating systems and conditions.

Timken's line of industrial seals is one element of Timken's total product offering. Industrial seals enhance Timken's friction management solutions offering by providing customers with additional ways to help improve performance and life of components within industrial applications.



First, sell the bearing. Then ask:

How do you monitor the health of your bearing? Discuss StatusCheck™, handheld devices or Timken Reliability Services.

How do you plan to lubricate the bearing? Discuss the advantages and benefits of using Timken lubricants.

Do you need a simplified method of lubricating bearings? Promote the benefits of Timken G-Power and M-Power single-point lubricators.

Do you plan to protect machinery from contamination? Discuss the advantages of Timken's line of industrial seals.