RBI BEARING
Bearings + Technology + Solutions

ARMOR
BEARING TECHNOLOGY & PROTECTION

REDUCE DOWNTIME & OPERATION COSTS WITH ARMOR BEARING TECHNOLOGY & PROTECTION.

BY RBI BEARING // 1-800-708-2128
www.rbibearing.com

Reduce bearing failures with ARMOR BEARING TECHNOLOGY & PROTECTION.

Bearing failure accounts for a large majority of industrial mechanical failures.

RBI Bearing now offers new technologies & protection to reduce bearing failure and extend the bearing life, which means less downtime and reduced repair costs.

ARMOR Nano Technology – Bearing Treatment

ARMOR Permanent Lubrication – Bearing Treatment

ARMOR Coated Protection – Bearing Protection

ARMOR BEARING TECHNOLOGY & PROTECTION BENEFITS

ARMOR Nano Technology

- Reduces friction when both pieces of the metal are treated
- Significantly extends the bearing's life
- Reduces friction, heat and downtime
- Does not alter the dimensional tolerances of the bearing
- Increases efficiency & production
- Scientific validation by nationally recognized laboratories
- Saves time and operation costs

ARMOR Permanent Lubrication

- Polymer solid lubricant
- Provides constant & consistent lubrication
- Helps block debris & reduce foreign contamination
- Significantly extend the bearing's life
- Reduces equipment maintenance costs
- Does not drip out of the bearing & contaminate the environment
- Does not alter the dimensional tolerances of the bearing
- Saves time & operation costs

ARMOR Coated Protection *(an Enviropeel Technology)*

- 2 options for bearing protection, Bearing Shield & Thermoplastic spray application
- Preventing contamination ingress & corrosion
- Shields the bearing against harsh environments
- Constant release of built-in inhibiting oils coats all surfaces allows shaft to rotate
- Increasing bearing lifetime by up to 500%
- Dramatically reducing shutdowns & the need for maintenance
- Saves time and operation costs

Call 1-800-708-2128 to arrange a test with

ARMOR BEARING TECHNOLOGY & PROTECTION.

Don't let bearing failure cause you expensive downtime.

ARMOR Bearing Treatments

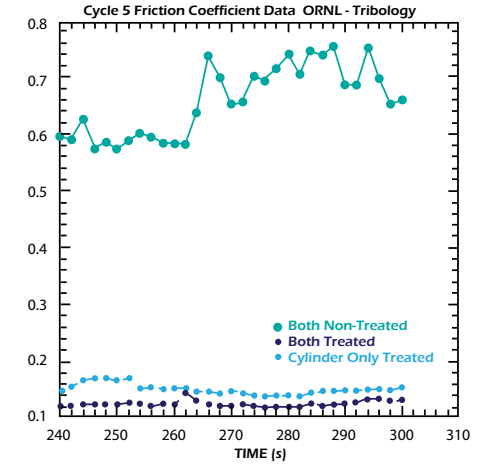
ARMOR Nano Technology

This unique treatment is proven to reduce friction and greatly extend bearing life.

Unlike other friction reducing products, *this is not a coating*. It is a procedure that fuses calcium molecules into the molecular fabric of the metal. Challenging environments involving heat, pressure, or friction activate the calcium causing the particles to elongate and form a protective barrier that reduces friction and lubrication requirements while substantially increasing the lifespan of the bearing - *reducing downtime and operating costs*. This isotropic nanotechnology treatment was shown by Oak Ridge National Laboratories to reduce friction when both pieces of metal are treated.

BENEFITS:

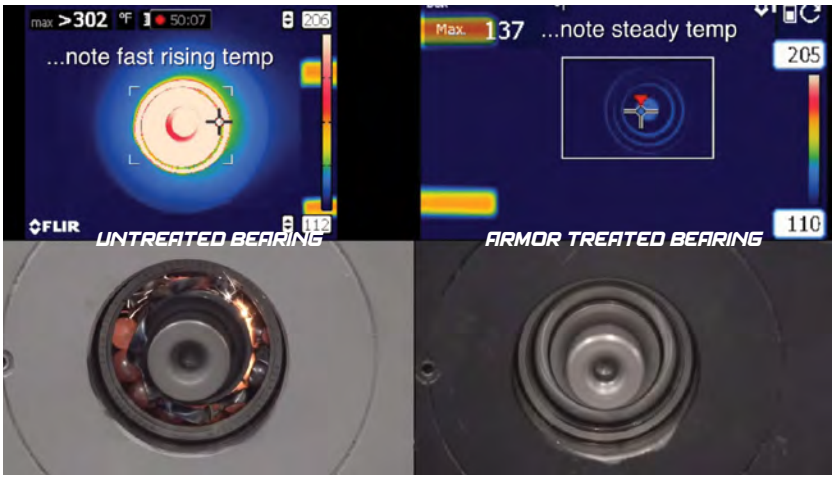
- Reduces metal to metal friction when both piece of the metal are treated
- ARMOR is a permanent treatment in the metal
- Fuses calcium molecules into the molecular fabric of the metal
- Heat & pressure cause the nanoparticles to elongate forming a protective shield
- Operates in temperatures up to 900°
- Significantly extend the bearing's life
- Does not alter the dimensional tolerances of the bearing
- Increases efficiency & production
- Saves time and operation costs



Comparison of friction vs time behavior of three conditions under the last cycle of a variable load friction test. (DOE Proposal No. NFE-12-04150, 2012)

INDUSTRIES:

- Primary Metals
- Steel Mills
- Forestry Industry
- Mining
- Drilling
- Oil & Gas
- Commercial Food Processing Equipment
- Construction Equipment
- Transmissions
- Gear boxes



ARMOR TEST:

- Two identical bearings stripped of all lube, one treated with ARMOR technology
- Both ran under 400 lb. loads
- Both ran at a constant 3,600 RPM
- More than 100 hours of testing
- Untreated bearing failed at the 49 minute mark & estimated temperature of >900°
- ARMOR treated bearing was like new & the highest recorded temperature was 140°

ARMOR Permanent Lubrication

Helps block debris, reduce foreign contamination and significantly extending bearing life.

This solid lubricant with an oil-filled porous structure fills the space between the rolling elements and races in a bearing, providing constant and consistent lubrication. There is no need for additional lubrication during the life of an ARMOR filled bearing.

Because it is a solid, ARMOR Permanent Lubrication can help block debris and reduce foreign contamination of the bearing. Reducing the incursion of debris into the bearing can significantly extend the bearing's life. The solid structure of ARMOR also improves equipment maintenance, as it will not drip out of the bearing and contaminate the environment. Filling bearings with ARMOR solid lubricants does not alter the dimensional tolerances of the bearing. ARMOR solid lubricant simply fills the spaces between the rolling elements and the cage.

BENEFITS:

- Polymer Solid lubricant
- Provides constant & consistent lubrication
- Helps block debris & reduce foreign contamination
- Operates in temperatures up to 350°
- Significantly extend the bearing's life
- Reduces equipment maintenance costs
- Does not drip out of the bearing & contaminate the environment
- Does not alter the dimensional tolerances of the bearing
- Saves time & operation costs

INDUSTRIES:

- Primary Metals
- Steel Mills
- Forestry Industry
- Mining
- Drilling
- Oil & Gas
- Agriculture
- Automotive
- Commercial Food Processing Equipment
- Construction Equipment
- Transmissions
- Gear boxes

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ARMOR Bearing Protection

ARMOR Coated Protection

An enviropeel technology, is a reliable solution to premature bearing failure and prolongs bearing lifetimes by up to 500%, dramatically reducing shutdowns and the need for maintenance.

Armor Coated Protection offers you 2 options to protect your bearings. A UV-resistant thermoplastic polymer bearing shield that, you, the end user installs on site or a spray application of the thermoplastic material applied on site by a trained technician. ARMOR Coated Protection will immediately prevent contamination ingress and stop corrosion in the bearing housing and bolts as well as reducing the need for purging grease. The inhibiting oil allows the shaft to rotate freely within the coating which prevents the build-up and entry of debris and moisture into the bearing, providing unrivalled protection. The slow-release inhibiting oil prevents corrosion in the bearing casing and fixing bolts as well as lubricating the rotating shaft.

BENEFITS:

- Preventing contamination ingress & corrosion
- Shields the bearing against harsh environments
- Constant release of built-in inhibiting oils coats all surfaces allows shaft to rotate
- Operates in temperatures up to 180°
- Dramatically reducing shutdowns & the need for maintenance
- Saves time & operation costs

INDUSTRIES:

- Corrosive environments
- Mining
- Aggregate
- Agricultural
- Salt handling
- Salt water applications
- Oil and natural gas
- Wastewater treatment

ARMOR BEARING SHIELD

Armor's Bearing Shield is an innovative way to quickly get bearing protection on site with no special equipment or waiting time. Each bearing shield is custom made to fit your bearing type with a zipper closure for easy application. The shields have a hard-wearing outer coating and an inner core of the Enviropeel technology to ensure full bearing protection.

ARMOR BEARING SHIELDS ARE SIMPLE TO USE:

- Ensure bearing is free from debris
- Apply thin film of corrosion inhibiting oil on surface of bearing and shaft prior to installation
- Fit shield to bearing, using zip and velcro strap to secure in place, ends can be cut and trimmed to suit bearing installation
- Once in position, the zips and edges are sealed using supplied sealant application kit – ensure zip and edges remain clean
- Mix sealant components, pouring catalyst into resin and stir vigorously for 60 seconds
- Apply sealant evenly to zipper surface and to any edges or areas of potential ingress, for example around velcro strap
- Allow minimum of 1 hour for sealant to cure before operation

ARMOR SPRAY APPLICATION

The spray application process uses a specially-designed application unit to apply the thermoplastic material. The units melt the material into a liquid which can then be sprayed on to the target substrate. The thermoplastic material is solid at normal temperatures and once applied it cools rapidly to form a tough, perfectly fitting second skin that protects the entire bearing, inside and out. The material fully encapsulates but does not bond to the substrate, so it can also be sprayed directly on to and around the bearing shaft.

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The University of Akron – College of Engineering
Testing of nano technology treated and un treated AISI S2100 steel bearings

"The nano technology treated bearings outperformed the untreated bearings significantly in the micro-pitting, and nano technology treated bearings were able to achieve more than 34% more cycles to failure than untreated bearings in the scuffing tests. In my opinion, nano technology could provide a significant benefit to the performance of rolling element bearings in many applications. Based upon our test results, it looks like you have something of value to rolling element bearings in nano technology. Congratulations."

Gary L. Doll PH.D., F-ASM, F-STLE
Timken Professor of Surface Engineering

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