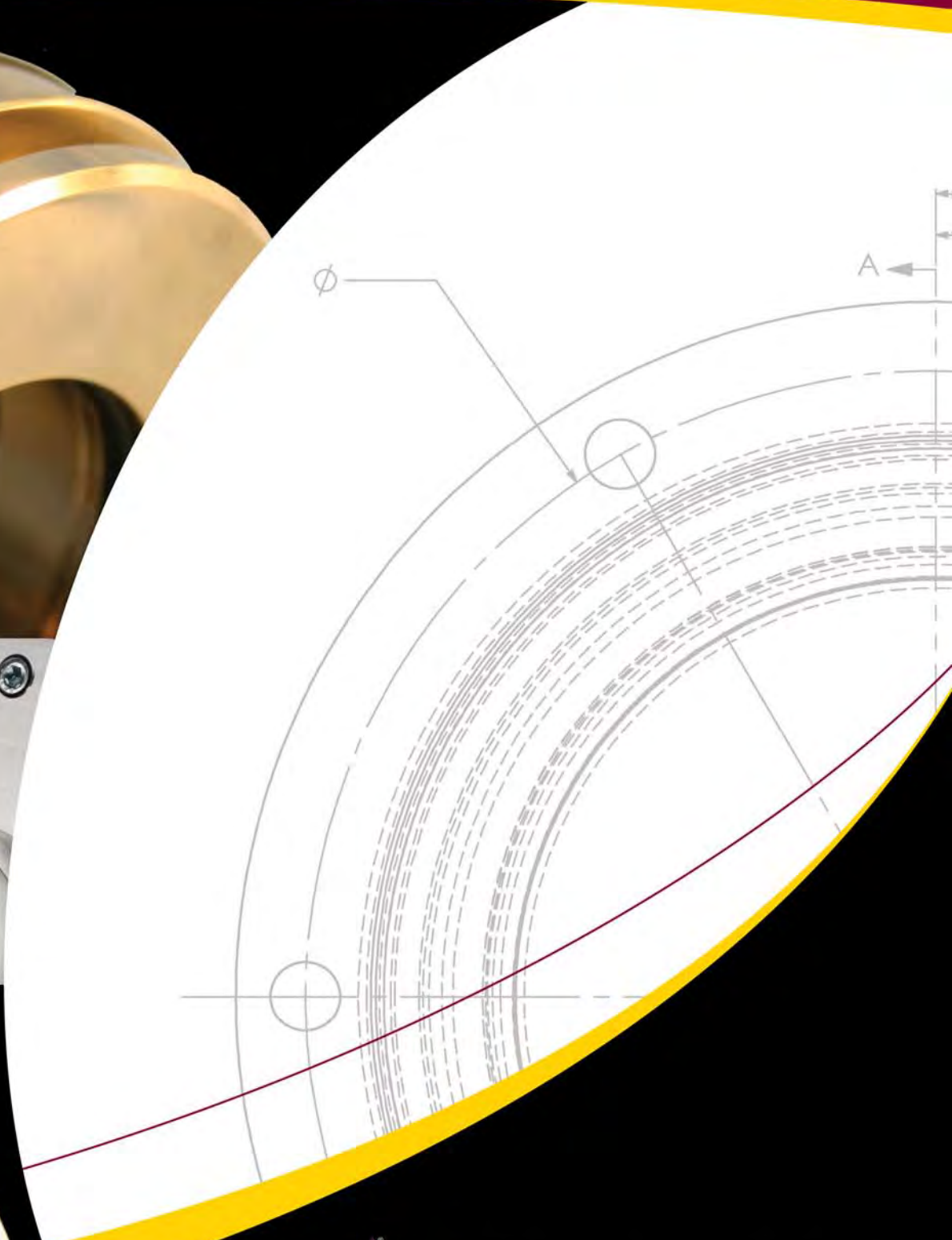


# Custom Engineered System and Bearing Protection



**INPRO/SEAL<sup>®</sup>**

A DOVER COMPANY

# Increase the Reliability of Your Rotating Equipment



Inpro/Seal® has been providing permanent bearing protection for rotating equipment for over 30 years.

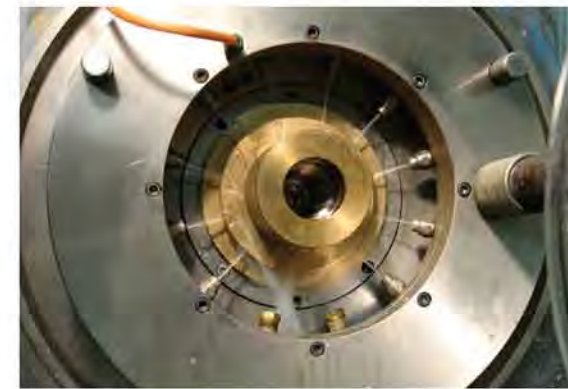
Since inventing the original bearing isolator in 1977, Inpro/Seal® has upheld our commitment to deliver innovative sealing solutions and superior customer service; the right technology, right when you need it. Headquartered in Rock Island, Illinois, USA, Inpro/Seal maintains a global sales network to provide responsive, localized support to our customers worldwide.

You'll find our distinct product line installed on a variety of rotating equipment in the oil and gas, chemical, mining, pulp and paper, power generation, and general processing industries. Our technology increases the reliability of your applications and provides real cost savings by improving the mean time between repair (MTBR). Inpro/Seal system and bearing protection products offer a permanent solution to many of the costly maintenance problems that disrupt normal production.

All Inpro/Seal products are custom engineered to fit your exact requirements and optimized for performance in your specific application. Our outstanding customer service and streamlined production process allow for same day shipments on most products, including new designs. All of our products are manufactured according to quality standards certified to ISO 9001:2000.

For more than 30 years, Inpro/Seal has combined extensive application experience and field testing with a robust development process to create a superior solution for our customers. As part of Waukesha Bearings Corporation, an operating company of Dover (NYSE:DOV), we are committed to market leadership, ongoing investment in technology and a strong sense of partnership with our customers.

**Inpro/Seal® is a world leader in the design and manufacture of permanent bearing protection and complete shaft seals for rotating equipment.**



Inpro/Seal® products are tested in our state-of-the-art research and development laboratory on-site in Rock Island, IL, USA. *(left)* A proprietary test stand measures an isolator's ability to seal out liquid contaminant from all angles.





An Inpro/Seal® VBXX-D Bearing Isolator cutaway.

## Bearing Isolator

As the inventor of the original bearing isolator, Inpro/Seal® continues to be a leading provider of permanent reliability solutions for rotating equipment. Bearing failures lead to expensive downtime and lost production. The Inpro/Seal Bearing Isolator can more than double the lifetime of your rotating equipment with a single solution.

The Inpro/Seal Bearing Isolator is a two part dynamic seal consisting of a stator, most commonly press-fit into the bearing housing, and a rotor attached to the shaft. The rotor and stator form a non-contacting compound labyrinth seal with no wearing parts. Using patented design features, bearing lubricant is captured in the inner portion of the labyrinth and flows back to the bearing housing; outside contamination attempting to enter the bearing housing is captured in the outer labyrinth paths and expelled through a port in the rotor by centrifugal force and gravity. Simply put, the two components interact to keep contamination out of the bearing enclosure and lubrication in.

The Inpro/Seal Bearing Isolator is a unique barrier for contamination ingress and lubrication retention for bearings installed in pumps, motors, gearboxes, pillow blocks, steam turbines, sleeve-bearing motors, paper machine rolls, and many other types of rotating equipment.

No matter the size or complexity of your application, Inpro/Seal can design an isolator to fit your specifications. All Inpro/Seal Bearing Isolators come with a performance guarantee. Designs can be split for ease of installation and shipped same-day.



The Inpro/Seal® Current Diverter Ring™ (CDR)™ utilizes conductive carbon filaments to safely divert stray shaft currents away from the bearings to ground.

## Current Diverter Ring™

Due to an increased emphasis on energy efficiency, Variable Frequency Drives (VFD's) are being more broadly used in industrial motor applications. Electric motors controlled by VFD's can create stray currents that run along the shaft and discharge through the bearings, causing fusion craters, pitting, frosting and fluting, and leading to premature bearing failure. If these currents are not properly grounded, the result can be expensive damage and unexpected outages.

The Inpro/Seal® Current Diverter Ring™ (CDR)™ is the latest development in shaft current mitigation technology. The CDR uses conductive carbon filaments to safely divert stray shaft currents away from the bearings. The Inpro/Seal solution maximizes equipment reliability, reduces costly maintenance and minimizes unscheduled downtime.

The Inpro/Seal custom engineered CDR can be designed for press-in, clip-on or flange-mounted installation; split designs are also available.



The Inpro/Seal® Air Mizer® is a complete shaft seal that utilizes a positive purge on the shaft to seal against contamination and product loss.

## Air Mizer®

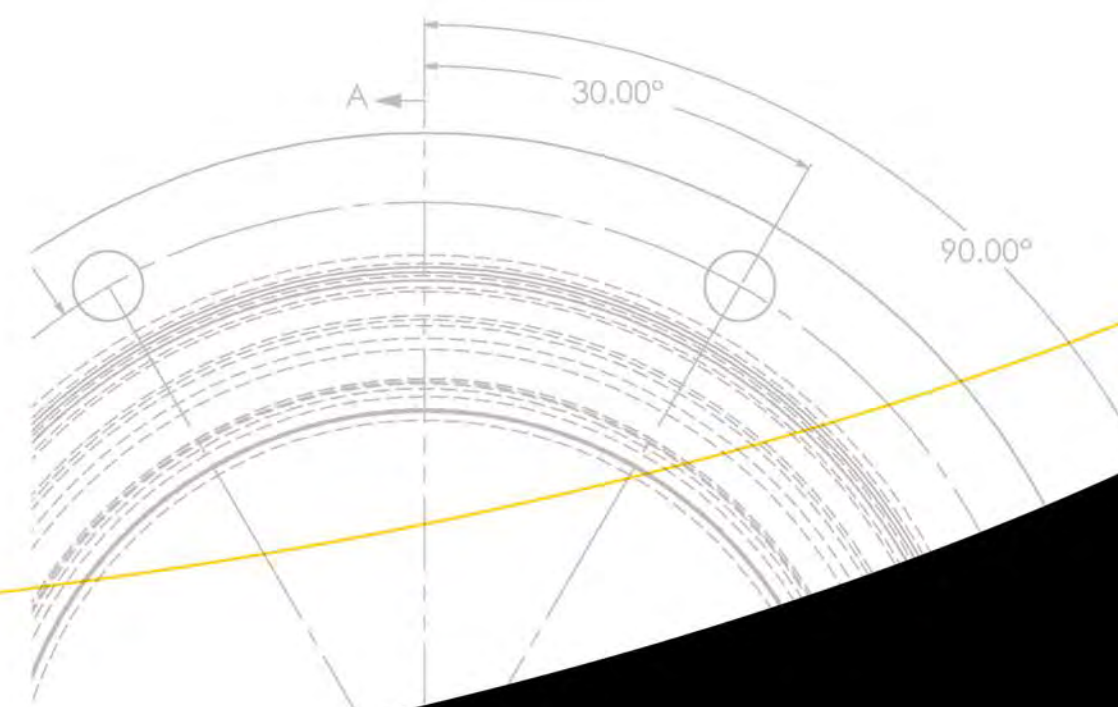
The Inpro/Seal® Air Mizer® is a complete shaft seal designed to use small amounts of air, gas or water pressure to create a positive purge along the shaft. This unique technology forms a barrier to keep contaminants out of the vessel and prevent product from escaping to atmosphere.

Product loss leads to higher production costs, increased maintenance, downtime and environmental concerns. The Inpro/Seal Air Mizer can be custom engineered to provide an effective shaft seal in a variety of challenging applications, including agitators, mixers, blenders, powder conveyors, pulpers and other product-handling equipment. Shaft movement and misalignment have challenged traditional sealing methods in these slow-speed, low-pressure applications; only the Inpro/Seal Air Mizer can fully articulate to accommodate shaft deflection, run-out, axial displacement and misalignment.

By utilizing a positive purge as the sealing medium, the Air Mizer eliminates wearing contact surfaces. The Inpro/Seal Air Mizer will permanently seal for the lifetime of your equipment without the hassle of rebuild kits.



The stainless steel Air Mizer® (left), with food grade components, satisfies all FDA sealing requirements.



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