Duramax Industrial is your exclusive source for true Cutless® brand bearings.

We can engineer our Industrial Bearings for use in all rotating shaft equipment where approved liquids can be used as the lubricant.

Duramax Industrial Capabilities:
- Can reline used bearing shells, reducing replacement costs
- Rubber compounds engineered to match application requirements
- Custom shell materials for specific corrosion and temperature applications
- Able to meet tight industrial ID/OD tolerances
- State-of-the-art manufacturing and inspection assures consistent quality and bearing concentricity
- Dedicated engineering staff to assist when specifying a bearing for a new application or retrofitting an existing application

Cutless® Engineered Design.

The Cutless® fully molded design and the elastomeric properties of rubber dramatically reduce the problems caused by harmful abrasives.

The “water-wedge” effect. Cutless® Industrial Bearings are engineered to create the optimum “water-wedge” effect. This means the rotating shaft and the rubber bearing surface are completely separated by a film of the lubricating media during operation through the formation of a hydrodynamic pocket. A minimum journal surface speed of approximately 3.2 ft/sec is required to establish a fully hydrodynamic film of lubricant.

Abraives are flushed away. When abrasives are present, our resilient rubber elastomer lining “gives”, and the abrasives roll into straight, longitudinal grooves and are then flushed away - thereby reducing the chance for scoring of the shaft.
Cutless® Industrial Water-Lubricated Bearings:
- Efficiently dissipate heat
- Flush away abrasives with minimal damage to bearing or shaft
- Easily withstand low & high speeds
- Can carry high shaft loads with minimum deflection
- Significantly reduce friction and wear
- Have low coefficient of friction
- Reduce vibration and noise
- Have excellent bearing concentricity
- Resist common oil, grease and chemicals
- Are easy to install
- Are non-polluting, environmentally-friendly

TYPES OF CUTLESS® INDUSTRIAL BEARINGS.

Sleeve and Flange Bearings.
Cutless® Industrial Bearings are manufactured using high quality, corrosion resistant Naval brass shells and non-metallic composite shells as standard. Custom shells can be manufactured in a variety of materials such as: stainless, carbon steel, Monel®, aluminum, titanium, and various composites and plastics.

Custom rubber elastomer linings engineered for any application. Whatever type of fluid or working condition - from abrasive dirty or sandy water to caustic chemicals like chlorine, sulfuric acid and high temperature oils - we can custom engineer a pump bearing to fit your specific need.

Demountable Rubber Stave Bearings.
Cutless® Industrial Bearings are available in a demountable stave configuration for shaft diameters from 3 to 35 inch shaft diameters. These provide a unique advantage - bearings can be replaced without shaft removal.

A sleeve or flanged Cutless® bearing with undamaged and undistorted shell can be returned to Duramax and relined. After we inspect the bearing, the old rubber lining is removed from the bearing shell and new rubber is molded, vulcanized and bonded to the bearing shell. The restored bearing is equal in its operation to a new bearing.

We offer many industrial rubber compounds that are specially engineered for performance and long life in industrial pumping applications. Our Duramax® Industrial engineers can compound a rubber elastomer to meet the performance requirements of your application.

Superior rubber-to-metal shell bond. The unique techniques developed by Duramax® Industrial insure the strength of the rubber-to-metal or rubber-to-composite bond.

Meet tight tolerances. You can trust Cutless® brand bearings because they are custom machined to meet exact specifications. They are available in solid or split design, depending on your specific requirements.

CUTLESS® INDUSTRIAL BEARINGS APPLICATIONS.

Used as OEM Parts by the World’s Leading Pump Manufacturers.
For over 40 years the world’s most reputable pump manufacturers have used Cutless® Industrial bearings made by Duramax® Industrial as original equipment in their products.

Our bearings are used in: Hydroelectric plants, nuclear power plants, utilities, mining operations, off-shore drilling operations, manufacturing plants, sewage and water treatment plants, and agricultural operations.

Specific Applications Include:
- Vertical turbine pumps
- Guide bearings in hydroelectric turbine applications
- Aerators
- Classifiers
- Vertical sump pumps
- Irrigation
- Mining operations
- Custom pumps
- Vertical bowl pumps

Other Applications for Cutless® Industrial Rubber Bearings.
Cutless® Industrial Rubber Bearings can be used in any application where lubricating water or similar fluid is available.
- Dredging and other horizontal pumps including those handling sand, cement slurry and other abrasives.
- Cutterhead suction dredges.
- Drainage pumps.
- Industrial processing equipment including agitators, washers, water treatment, sewage treatment, elevator boot pulleys, thickeners and classifiers.

For more information about Cutless® brand bearings or to talk personally with one of Duramax® Industrial engineers, contact:
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A Division of Duramax Marine®
DMX® is a proprietary bearing material that gives you all the hydrodynamic advantages of vulcanized rubber along with abrasion resistant characteristics found in a high-strength advanced polymer without increased shaft wear.

The Ultimate Vertical Pump & Hydroelectric Main Shaft Guide Bearing Material.

Through Innovative research and development, this tough bearing material was developed by Duramax® Industrial, the leader in water-lubricated bearing technology for over 40 years.

This technically advanced, rubber-based polymer, has been tested by an independent lab and operates with near-zero bearing and shaft wear*. Our exclusive “water-wedge” design separates the shaft and bearing surface completely with a film of water, providing unmatched 0.14 coefficient of friction at breakaway and friction coefficients down to .0036 during operation. And, harmful abrasives are no problem because of its "giving" elastomeric properties. DMX® is not subject to hydrolysis or hysteretic failure - unlike other bearing materials.

Successful operation under heavy load.

Traditional water lubricated bearings operate with a length to diameter ratio of 4:1 with a maximum of 40 npsi. DMX® can be used in a 1:1 L/D configuration and a maximum operating load of 240 npsi, which means a smaller housing and reduced cost.

The Difference Is Our Technically Advanced Use Of Rubber.

Unlike solid polymer bearing materials, water-lubricated DMX® is an elastomer alloy and contains vulcanized rubber. Vulcanized rubber also helps maintain the bearing’s elasticity and allows for the formation of the unique plasto-elasto-hydrodynamic pocket - which provides unmatched low friction operation.

DMX® Best In TSW™ (Total System Wear).

DMX® has an extremely low breakaway coefficient of friction which reduces premature wear and misalignment caused by vibration, easily handles high levels of abrasives, and results in near-zero TSW. Duramax Industrial utilizes its state-of-the-art laboratory and testing facility to measure both shaft and sleeve wear*. The result - a longer service life for both the bearing material and the shaft.

*Independent test results confirmed by BMT Defense Services Ltd.

DMX® Advanced Rubber-based Polymer Staves are locked in place in the housing by a patented rubber stave system. When the rubber staves are compressed by the compression head, they expand outward locking the adjacent DMX® stave bearings in place.
TSW™ The Key To Proper Bearing Selection.

While some competitive bearings systems claim to be long-wearing, they may only be talking about half of the tribological story. If that is the case, you are only given half of the performance results required to make your bearing selection. Duramax Industrial recommends comparing both bearing and shaft wear - which combined gives you TSW™ - to help determine your bearing selection.

DMX® is a unique and proprietary bearing material brought to you by Duramax Industrial. With Duramax, you’ll benefit not just from our innovative bearing technology, but from our product availability and technical support, as well. Our engineers are always ready with the support you need, when you need it.

So, trust DMX®. It’s the ultimate bearing material for all of your rotational shaft equipment.

Benefits Of Using DMX® Elastomeric Bearing Systems.

- Operates with near-zero shaft/sleeve wear.
  With our exclusive “water wedge” design, a rotating shaft and the bearing surface are completely separated by a film of water during operation.

- Dry-run capable up to 10 minutes in event of water shut down.
  DMX® performs well under operating conditions with little to no lubrication. Contact Duramax for engineering specifications for dry-run applications.

- Can be used in a 1:1 or less L/D configuration.
  This means less material, a smaller housing and less weight. This advantage also allows for easier installation and replacement of the bearing. And, DMX® can operate in a variety of conditions and under various bearing loads. DMX® was successfully tested at 40 to 240 npsi.

- Performs very well in abrasive environments.

- Has a low coefficient of friction from 0.14 at breakaway to an unmatched 0.0036 at all shaft speeds.

- Runs extremely well at low shaft speeds - without noise or vibration.

- Can be retrofitted into existing stave or sleeve and flange bearing systems.

- Is environmentally-friendly.

- Can be custom-fabricated to fit most shaft diameters.

DMX® CONFIGURATIONS

DMX® Industrial is available in two standard configurations:

- Molded Sleeve or Flange bearing
- Stave configuration
  - Dovetail Stave
  - Locking Stave System (as shown on front)

Duramax Engineers can design a DMX® bearing to fit all types of rotational shaft equipment.

We can also re-line your existing sleeve and flange bearings with this rubber-based polymer.

Contact Duramax Industrial about your specific application.

DMX® used in sleeve configuration