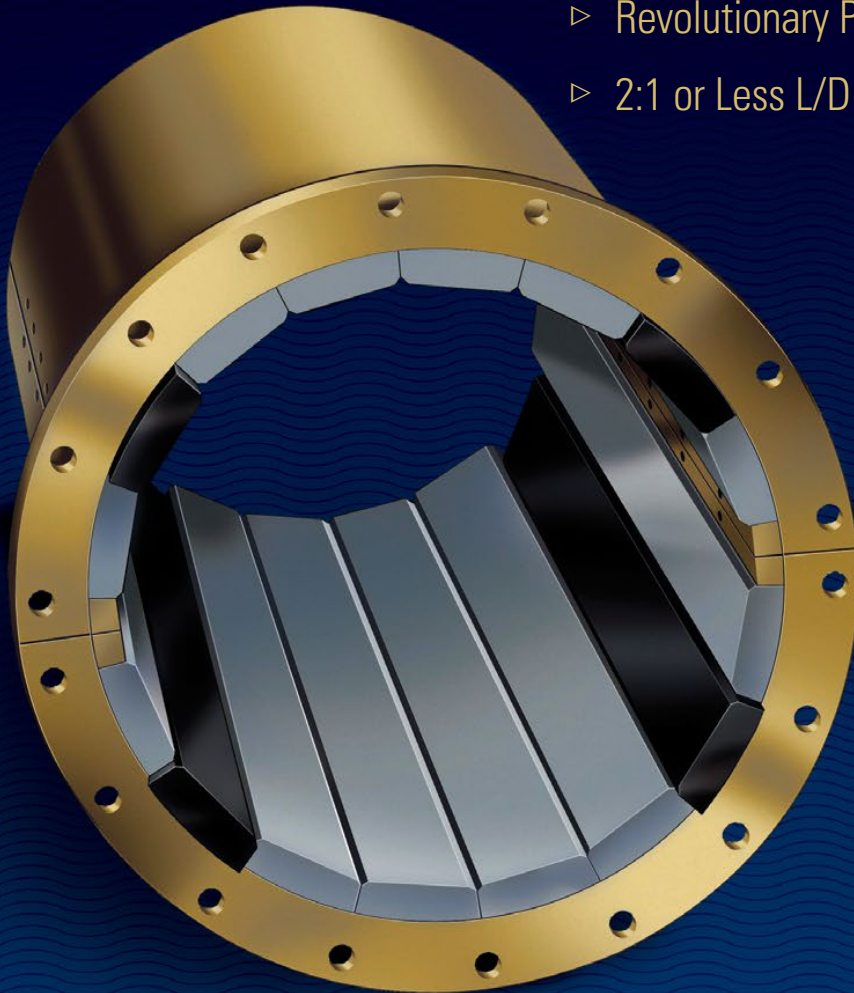


DURAMAX[®]

DMX[®] Locking Stave System

- ▷ Revolutionary Polymer Alloy
- ▷ 2:1 or Less L/D Configuration



BUREAU
VERITAS



PRODUCT INFORMATION AND SELECTION GUIDE

Duramax Marine[®] is an ISO 9001:2015 Certified Company

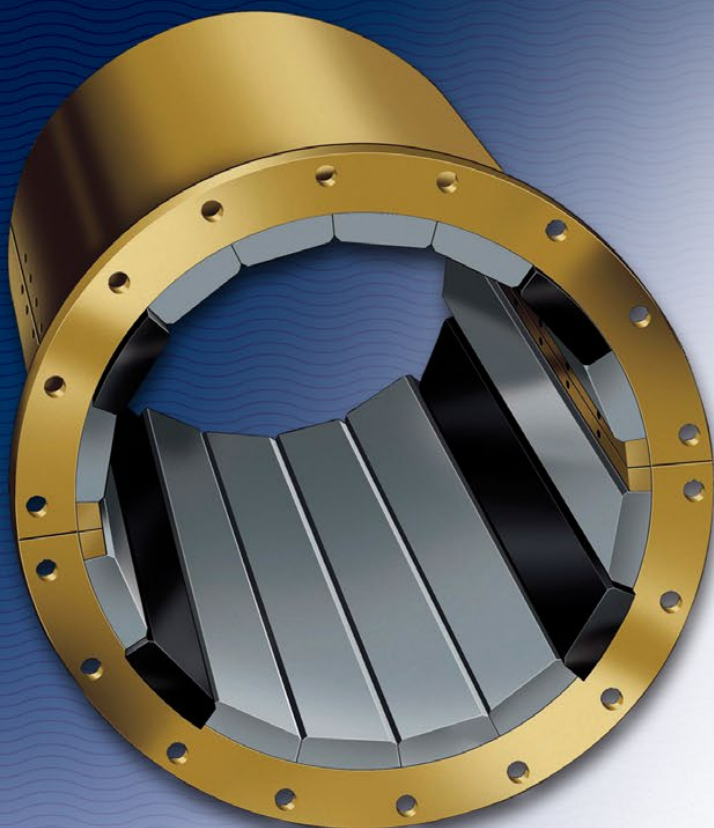
DURAMAX MARINE[®]



DMX®. The Ultimate Bearing Material in Abrasive

When you need a tough, durable, water-lubricated propulsion bearing that can easily handle the rigors of harsh, abrasive-laden environments and result in near-zero shaft and sleeve wear, use DMX® - the revolutionary polymer alloy in a locking stave configuration. DMX is a unique, proprietary bearing material brought to you by Duramax Marine®, the leader in water-lubricated bearing technology for over 40 years.

So, trust DMX to work best in abrasive waters and to greatly reduce total bearing system wear. It's the ultimate bearing material.



Independent Laboratory Testing Confirms:

DMX Performs Extremely Well in Abrasive Conditions.

After extensive testing in abrasive-laden waters by BMT Defence Services Ltd. for the United Kingdom Ministry of Defence, the following conclusions about DMX were reached.

Can be used in a 2:1 or less L/D configuration.

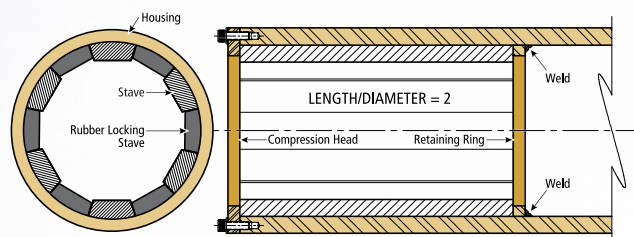
This means less material, a smaller housing and less weight. Duramax was tested successfully at 40 to 240 npsi.

DMX operates with near-zero shaft/sleeve wear.

There was negligible shaft journal and bearing wear. In fact, the shaft surface finish in general improved on the vessel itself.

Grit has minimal effect on DMX.

No matter where you operate - from inland waters to the open sea - DMX has been proven to effectively handle abrasive materials. It's ideal for workboats, tugs, dredgers as well as ocean-going vessels.



Other Benefits of Using DMX Polymer Alloy Bearings.

Can be retrofitted into existing bearing systems.

Environmentally-friendly.

Water-lubricated DMX can replace oil-lubricated babbitt bearings in many applications.

Dry Run capable in event of water shut down.

DMX performs well under operating conditions with little to no lubrication. Contact Duramax Marine for dry run applications.

Eliminates the need for a bearing shell.

This mounting stave system is mounted directly inside of stern tube or strut.

Reduces installation time - and costs.

Staves can be removed and replaced without removing the shaft.

Negligible swell in seawater.

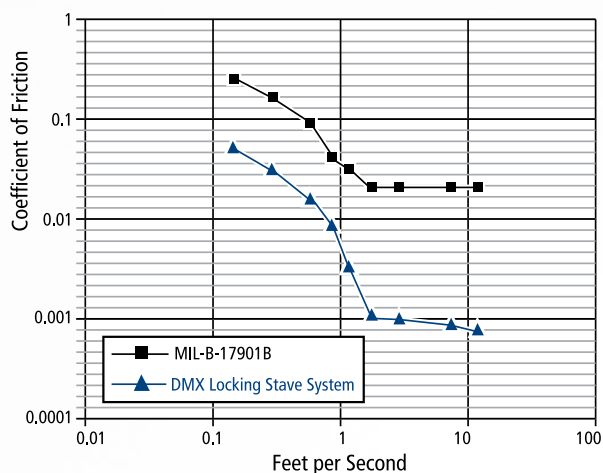


Laden Environments.

Tests confirm DMX performs far better than U.S. military specification, MIL-B-17901 B (SH) requirements.

Results confirm DMX Polymer Alloy :

- Has a low coefficient of friction at both breakaway and throughout the full operating range of shaft speeds.
- Runs extremely well at low shaft speeds without noise, vibration or stick-slip.
- Performs exceptionally well through multiple shaft reversals with very little noise.
- Allows engine to operate more efficiently and conserve fuel.



DMX is Ideal for Dredging Operations.



Because DMX performs extremely well in harsh, abrasive-laden environments, it is perfect for dredgers. It works great for propeller shafts and withstands the rigors associated with cuttinghead shafts - making it the ultimate dredger bearing material.

Near zero shaft journal and bearing wear.

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

Slip-stick entirely absent.

Low coefficient of friction improves fuel efficiency.

2:1 or less L/D Ratio Configuration.

For more information, or to order DMX, contact your nearest Duramax Marine® representative at 440-834-5400. Or visit our website: www.DuramaxMarine.com.

Operation and Maintenance of Bearing.

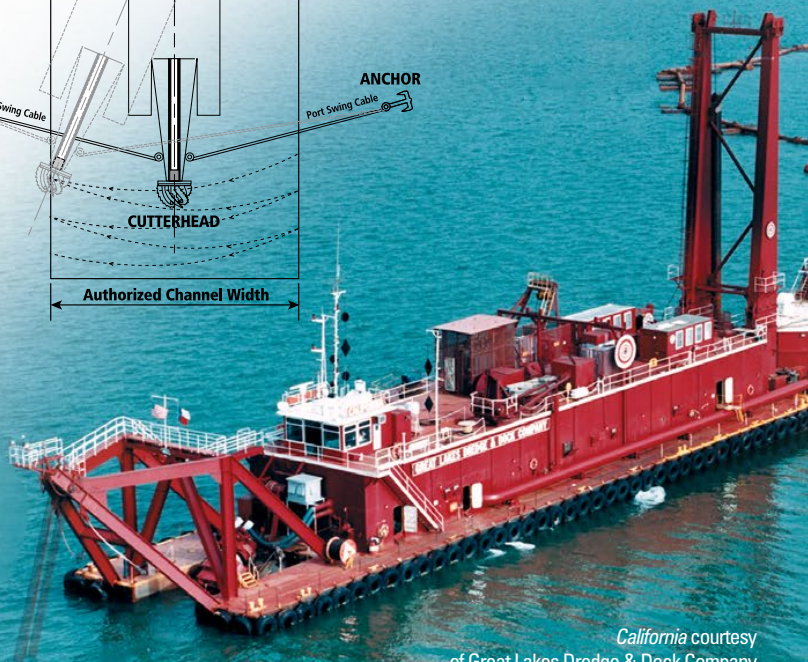
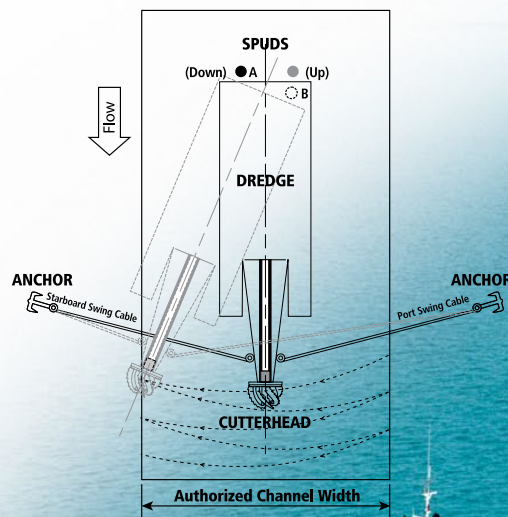
Optional Cleaning: Hydrolancing.

For the past couple of years, the United States Navy has been successfully using hydrolancing to clean the staves of organic sea growth. The practice was started in order to increase the life of the bearing. When a vessel is in long-term lay-up, sea growth can occur in the small gap between the shaft and the bearing surface. If the shaft is turned with this sea growth on it, the particles can cause damage to the bearing surface. This premature wear can severely limit the life of the bearing.

To combat this, the US Navy employs its diver teams and uses a hydrolance to clean the running surface of their bearings.

A hydrolance is a modified pressure washer wand that is highly flexible and attaches to a pressure washer on shore. The flexible whip allows the divers to insert the nozzle into the open ends of the bearings. The divers will fish the flexible wand through the water grooves and work the tip over the internals of the bearing. The hydrolance helps to flush out the sea growth. It also helps to dislodge any calcification that has started to grow on the shaft. The dive teams should be careful not to use too fine a stream. To narrow a water jet from the nozzle could cut into the rubber and damage the running surface. User discretion should be used to minimize risk to the bearing surface.

Operation of Cutterhead Dredge (viewed from above)



California courtesy
of Great Lakes Dredge & Dock Company

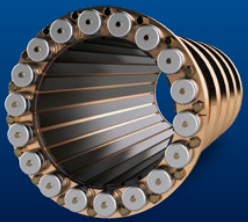
INNOVATION.
EXPERIENCE.
RESULTS.

Duramax Marine® is committed to providing excellence in every product we manufacture. Our Johnson Cutless® marine and industrial bearings, heat exchangers, impact protection systems and sealing systems are known worldwide for their engineered quality and dependable performance. Please contact the factory for information on any of the following Duramax Marine® products:



JOHNSON CUTLESS® WATER-LUBRICATED BEARING SYSTEMS

Johnson Cutless® Sleeve and Flanged Bearings



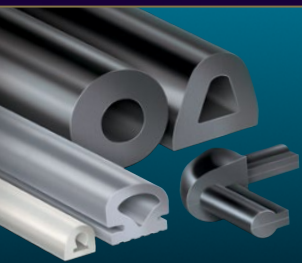
DURAMAX® ADVANCED WATER-LUBRICATED BEARING SYSTEMS

Johnson® Demountable Stave Bearings
ROMOR® I Stave Bearings and Segmental Housings
ROMOR® C- Partial Arc Bearings
DMX® Polymer Alloy Bearings
DuraBlue® Bearings, Rudder & Pintle Bushings, Thrust Washers, and Wear Pads
Industrial Pump Bearing Systems



DURAMAX® HEAT EXCHANGE SYSTEMS

DuraCooler® Keel Coolers
Duramax® Demountable Keel Coolers
Duramax® BoxCoolers



DURAMAX® IMPACT PROTECTION SYSTEMS

Johnson® Commercial Dock Bumpers, Fenders & Tow Knees
LINERITE® Composite Batterboard Systems



DURAMAX® SHAFT SEALING SYSTEMS

DryMax® Shaft Seal
Duramax® Mechanical Shaft Seal
Johnson® Heavy-Duty Air Seal Stuffing Boxes
Duramax® Ultra-X® High Performance Compression Packing

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