

MRP Series

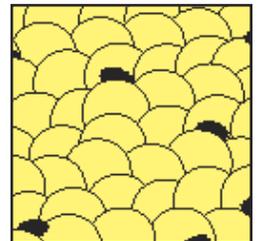


Development

Many OEM design engineers specify a bearing design that may well have life cycle capabilities ten times over what their most strenuous applications require. With that in mind, Daemar's Fiber-Lube™ MRP bearing will perform more in line with the actual needs of today's innovative machine design. Our traditional composite bearing materials, such as the Fiber Wound Series, have less than 0.005" wear at over 1.6 million cycles. That type of wear curve can be unnecessary for 70% of most applications. These issues come together to allow Daemar to supply a bearing better matched to customers' needs, at a better price.

Product Description

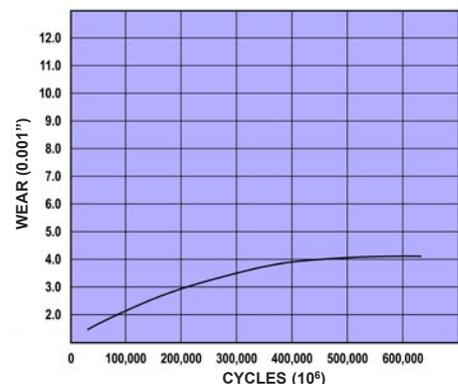
Using the next generation of Teflon® only recently available to the bearing industry, Daemar is able to supply a composite bearing with the high tenacity PTFE mono-filaments as the primary anti-friction component in the ID of the bearing. The wear liner still incorporates small woven pockets to ensure a high degree of embeddability into the bearing surface, as well as ensuring that a high content of PTFE is pushed to the surface in the most efficient fashion possible. This allows for a quick transfer of PTFE from the bearing ID to the mating surface.



Test Conditions

Bearing: 1.5" Bore x 0.75" Wide
Wear Surface: 4140 Steel
5-8 Microinch Ra 50-55 Rc
Test Conditions: 22,500 lbs
Radial Load (22,000 lbs)
50 Degree Oscillation Angle
50 Cycles Per Minute

MRP WEAR ANALYSIS



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Fiber-Lube™ MRP bearings are designed to minimize wear; however, the bearing wear is effected by the general operating conditions, such as speed, sliding distance and load. With intermittent rotation or oscillation, radial wear should be negligible over thousands of hours. Hard chrome plating gives excellent wear performance and protects the shaft from corrosion. Softer coatings such as cadmium or zinc are not recommended.

Mechanical & Physical Properties

The Fiber-Lube™ MRP bearing can withstand static loads of approximately **50,000 PSI and 35,000 PSI** under dynamic loading. At these loading levels, minimum distortion will occur. For dry running applications, the maximum speed is approximately 150 surface feet per minute.

This bearing's operating temperature range is **±320°F**. Maximum continuous operational surface temperature for the standard formulation is 320°F, depending upon load characteristics. The bearing has been heat stabilized at these temperatures, so that little dimensional change will occur in the bearing during operation. In a free state, the coefficient of expansion of the MRP bearing is approximately 7×10^{-6} in/in/°F, similar to the coefficient of expansion for steel, and actually less than some metals.

Ultimate Compression Strength (PSI)	50,000
Unit Load Limit (PSI)	35,000
Temperature Range (Standard Formulation)	±320°F
Coefficient of Thermal Expansion (in/in/°F)	7x10⁻⁶
Thermal Conductivity (BTU • in/(hr • Ft² • °F)	1.4-1.7
Coefficient of Friction (Static/Dynamic Range)02-.25
Water Absorption (ASTM D570, 24 hours)	<0.5%
Specific Gravity (g/cc)	2.01
Maximum Velocity (SFM)	150

Applications

Fiber-Lube™ MRP bearings are the bearing of choice in highly loaded bearing joints where a life cycle of over 500,000 cycles is desired. Testing has shown this bearing has wear under 0.006" after 1.6 million cycles. Applications include material handling equipment, high duty cranes, earth-moving equipment, construction equipment, agriculture equipment and food processing systems.

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