

Rexnord Duralon Filament Bearings





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For more than 40 years, Rexnord® Duralon® Filament Bearings have been in industries including agri-farm, cement & aggregates, construction, food & beverage, forest products, material handling, mining, fluid power, marine, recreational vehicles, and water management. Our bearings minimize frictional loss and support loads while maintaining shaft position in applications such as agricultural machinery, construction equipment, energy processing equipment, food & beverage processing equipment, forest product processing equipment, hydraulic and pneumatic cylinders, lift systems, material handling machinery, mining equipment, recreational vehicle clutches, sailboats, stern drives, and water management valves and actuators. Customers depend on Rexnord Duralon Filament Bearings to reduce maintenance costs and downtime, increase productivity, provide customized configurations, and more, no matter the application.

Choose Rexnord Duralon Filament Bearings for:

- **Application and design technical expertise** — trusted engineering expertise to support and guide you in solving application challenges. Conduct product application testing at the Rexnord Innovation Center, our in-house testing facility, to ensure the performance of the design exceeds your demanding requirements.
- **Industry-leading delivery time** — standard and custom products have a lead time of three weeks, and small quantity orders have a lead time of five business days.
- **Lightweight solutions** — reduce maintenance costs while providing 77 percent less weight than steel bearings and 30 percent less weight than aluminum bearings. Offer easier handling and overall reduced equipment weight for an extra-long life in demanding applications, such as in water and other liquid contaminants.
- **Multiple configurations and custom designs** — for your specific needs, our experienced engineers offer multiple configuration options and customized designs with dimensionally tight tolerances to optimize performance and extend bearing life in critical applications. In fact, we currently have 16 active patents and more than 4,200 special designs that our engineering team has developed.
- **Rugged performance** — self-lubricated designs maintain peak performance throughout the product life, minimizing maintenance costs and improving productivity.
- **Unique composition** — the unique, non-metallic design combination of Teflon®* fiber, fiberglass and resin offer a corrosion-, moisture-, seizure-, chemical- and fretting-resistant product. Provides reduced downtime and improved productivity.

Standard technical data

Construction

- Woven Teflon* and polyester fiber self-lubricating liner supported by a filament-wound continuous fiberglass and epoxy resin matrix

Load capacity

- Typical dynamic loading: 4,000 to 30,000 psi (28 to 207 MPa)
- Ultimate strength: 77,000 psi (531 MPa) for 1/8-inch (3.18 millimeters) wall section

Product availability

- Standard and customized designs available in imperial and metric dimensions

Temperature

- Continuous: Cryogenic to 325 degrees Fahrenheit (F) (163 C)
- Intermittent: to 400 F (204 C)
- A special resin system is available for continuous use up to 450 F (232 C), intermittent use to 500 F (260 C)

Coefficient of friction

- Static and dynamic coefficients: .16 to .05

Size range

- 1/8- to 26-inch (3.18 to 660.40 millimeters) inside diameters

*Teflon® is a registered trademark of E.I. DuPont DeNemours and Co.

Configurations for your application

Rexnord Duralon Filament Bearings are available in seven configurations, including straight sleeve, hex and square bore, annular, linear, flanged, thrust washers, and special designs. Each configuration has unique features ideal for specific applications.

Straight sleeve

- Found in oscillatory (pivoting), linear sliding, slow-speed full rotation applications, including recreational vehicle clutches, construction equipment, water management butterfly valves and hydraulic cylinders
- Self-lubricating plain sleeve bearings with a woven Teflon* fabric liner in the bore that provides lubrication (the liner is also an option on the bearing outer diameter)
- Offered in a thin or heavy wall configuration
- Bore sizes range from 1/8- to 26-inch (3.18 to 660.40 millimeters) inside diameters with custom designs available
- Also referred to as journal, straight, sleeve or plain bearings, as well as bushings



Applications



Recreational vehicle clutches



Construction equipment



Water management butterfly valves

Hex and square bore

- Found in agricultural and wood processing equipment applications
- Multiple non round bore configurations that can replace costlier splines, steel-on-steel, and roller slip assemblies
- Bore sizes range from 1/4- to 1 1/2-inches (6.35 to 38.10 millimeters) across I.D. flats with custom designs available
- Capable of transmitting torque through a drive line while allowing linear motion of the shaft to occur in the bore



Hex configurations

Applications



Agricultural processing equipment



Wood processing equipment



Square bore configurations

Annular

- Found in food and beverage processing machinery, scissor lift tables, hydraulic cylinder rod ends and marine applications
- Designed to reduce the need for maintenance while allowing multiple degrees of freedom of shaft movement
- Bore sizes range from 1/2- to 6-inch (12.70 to 152.40 millimeters) inside diameters with custom designs available
- Composite and metallic component hybrid designs
- Wear element is shaped to match the spherical race surface of the ball, providing wear surface and misalignment
- Self-lubricating quality of the fabric liner eliminates the need for lubrication
- United States Department of Agriculture-approved for applications where the bearing is not in direct contact with food and resistant to severe washdowns and chemicals



Applications



Beverage bottle capping equipment



Scissor lift tables



Oil rig platforms

Linear

- Found in food packaging machinery and in factory-automated production lines
- Designed to replace traditional ball bushing linear bearings
- Bore sizes range from 1/4- to 4-inch (6.35 to 101.60 millimeters) inside diameters with custom sizes available
- No lubrication required
- Round bore and open configurations, can be grooved for snap rings
- The use of expensive hardened steel shafting may not be necessary, allowing the use of standard stainless steel shafting in corrosive environments
- Electrical insulating properties stop electrical current that flows through metal bearings, preventing premature bearing failure



Applications



Injection molding equipment



Factory-automated production lines

Flanged

- Found in hydraulic and pneumatic cylinders, and food packaging equipment
- Used as a spacer where there is thrust or separation between two moving parts
- Bore sizes range from 1/4- to 2 1/2-inch (6.35 to 63.50 millimeters) inside diameters with custom sizes available
- Simplifies installation and assembly by eliminating two-piece journal and thrust washer configurations
- Optional features include a Teflon* fabric liner on the flanged face for dynamic loading and an unlined flanged for retention purposes



Applications



Pneumatic cylinders



Food packaging equipment

Thrust washers

- Found in pivoting, hinge point, and other applications where there are long periods of time between operation, such as valve stems
- The high-compressive strength and dynamic capacity allow the product to complement straight sleeve configuration bearings by supporting axial loads
- Constructed by bonding the woven Teflon* fiber fabric line to one or both faces of a washer; washer substrate can be made of stainless steel, low-carbon steel, aluminum or non metallic-like filament-wound composite material
- Standard washers are made with G-10 substrate material, an electrical insulator that prevents electrolytic or galvanic action between the material and the housing or the shaft
- No lubrication required
- Corrosion- and fretting-resistant
- Shaft sizes range from 1/4 to 2 inches (6.35 to 50.80 millimeters) with custom sizes available



Applications



Sailboats and stern drives



Water management butterfly valves

Special designs

- All standard bearing configurations can be altered to meet inner and outer diameter specifications
- Our filament winding process allows us to make a variety of unique configurations to meet your application needs
- Examples of special designs made for customers' specific needs include a maintenance-free bearing configuration that withstands heat, moisture and wear, and a water pump application that needed to run dry for a limited length of time without failing



With more than 40 years of combined engineering expertise, 16 patents and more than 4,200 specialty designs, we provide custom solutions and manufacture bearing configurations to unique applications. The photo above shows just one of many tests that is performed at the Rexnord Innovation Center, our in-house development facility, to ensure the performance of the design exceeds your demanding requirements.

What our customers are saying

Customer testimonials on Rexnord Duralon Filament Bearings.

"The bearings have a slot that fits in a holder, so they can be inverted if they wear unevenly because of the load. We put the bearings in the hottest and toughest applications, and they passed with flying colors. The continued success with the bearings is likely to become a best practice that will be shared across our company to other departments and plants."

— Maintenance Supervisor from a major food processor

"What I like about Rexnord is that I don't have to worry about your bearings. They always ship on time and we have never had a quality issue. That makes it easy for me."

— Purchasing Manager from a water management company

Case Studies

Power plant application — eliminating corrosion and seizing common with standard ball bearings

In a power plant, standard ball bearing units were exposed to temperature changes, periods of dry and moist conditions, and airborne contamination. These conditions, along with infrequent opening and closing of the dampers caused the standard ball bearings to corrode and seize to the shafts, prohibiting proper damper operation. This required plant workers to bang on the equipment with a hammer to free up the operation, creating a safety issue for the workers.

The standard ball bearing units were replaced with Rexnord Duralon Filament Bearings in the power plant dampers, eliminating any servicing needs. Our bearings eliminated the corrosion and seizing problems on these dampers while allowing for a direct interchange from standard ball bearing units.



Food processing application — maintenance-free solutions to withstand heat, moisture and wear

A customer needed to replace its roller conveyor bearings that support Rexnord 5997 MatTop® Chain on its conveyor cooler lines where the temperature of products, such as salsa and sauces, are reduced prior to labeling and packaging. Each line is between 90 and 100 feet (27.43 and 30.50 meters) long, usually operating around the clock. The operating environment includes heat and moisture with hot water spray up to 200 F (93 C) as well as a temperature reduction to 100 F (38 C), and a washdown solution that includes chlorine. The original roller conveyor bearings were wood-based resin-impregnated bearings that needed to be kept wet to provide lubrication. This resulted in short bearing life for the customer. The customer went on to try other solutions, such as synthetic bearings, to increase the bearing life with no success — the bearings failed in six months.

The customer turned to Rexnord Duralon Filament Bearings because of the durable material that can withstand heat, moisture and wear. Additionally, the bearings do not require lubrication, washdowns, adjustment, alignment or maintenance. The company wanted to test the bearings first, putting them through the hottest and toughest applications. Eight months later, there was no wear at all. At that point, they decided to replace the remaining 1,150 bearings with the Rexnord Duralon Filament Bearings. For more information on this case study, download the total cost of ownership document (TCO4-010) at www.rexnord.com/documentation



To learn more about Rexnord Duralon Filament Bearings and how they can support you in your application, go to www.rexnord.com, where you'll find product information, and more.

317-273-5781 (Rexnord Bearing Technical Support team)

All other inquiries: 866-REXNORD/866-739-6673 (toll-free within the U.S.)
or 414-643-2366 (Outside the U.S.)



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www.rexnord.com

Why Choose Rexnord?

When it comes to providing highly engineered products that improve productivity and efficiency for industrial applications worldwide, Rexnord is the most reliable in the industry. Commitment to customer satisfaction and superior value extend across every business function.

Delivering Lowest Total Cost of Ownership

The highest quality products are designed to help prevent equipment downtime and increase productivity and dependable operation.

Valuable Expertise

An extensive product offering is accompanied by global sales specialists, customer service and maintenance support teams, available anytime.

Solutions to Enhance Ease of Doing Business

Commitment to operational excellence ensures the right products at the right place at the right time.

REXNORD

Rexnord Company Overview

Rexnord is a growth-oriented, multi-platform industrial company with leading market shares and highly trusted brands that serve a diverse array of global end markets.

Process & Motion Control

The Rexnord Process & Motion Control platform designs, manufactures, markets and services specified, highly engineered mechanical components used within complex systems where our customers' reliability requirements and the cost of failure or downtime are extremely high.

Water Management

The Rexnord Water Management platform designs, procures, manufactures and markets products that provide and enhance water quality, safety, flow control and conservation.