Garlock

GUARDIAN®

Bearing Isolator protection to ensure bearing life

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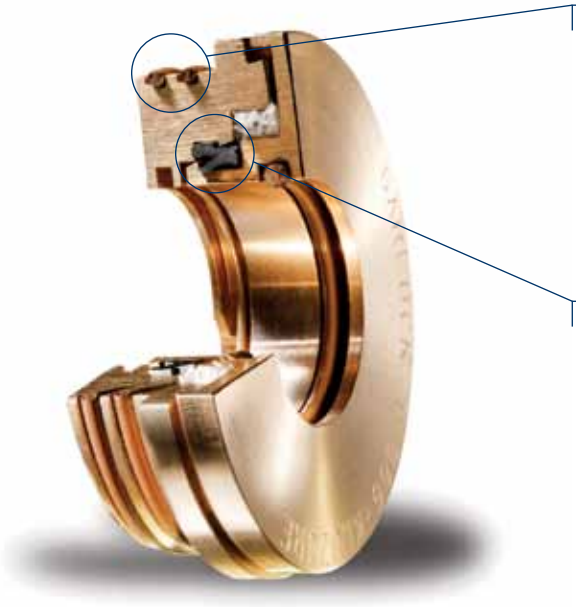
GUARDIAN® Bearing Isolators offer exceptional bearing protection for pumps, motors and bearing supportetd industrial equipment under the harshest conditions. The engineered labyrinth design excludes liquid and solid contamination while retaining bearing lubrication.



Garlock Patented Cam-Lock Design

The patented Cam-Lock design of the GUARDIAN® provides excellent bore retention while allowing easy installation by hand, without the need for an arbor press. The interference fit of other designs require special tools for installation and may generate bronze shavings and result in bore scoring.

Garlock Patented Unitizing Ring

GUARDIAN® Bearing Isolators employ the patented Unitizing Ring to eliminate metal-to-metal contact between the rotor and stator. O-ring based designs lack axial reinforcement and allow bronze components to contact. Rotation and misalignment between the rotor and stator during normal operation cause O-rings to shred. O-ring designs result in self generated debris entering the bearing housing which can damage expensive bearings.

Benefits

Lifetime bearing protection increases mean time between failure (MTBF)

» GUARDIAN® Bearing Isolators are safe for bearings

» Consistent sealing performance

» Extend bearing life

Faster mean time to repair (MTTR) during rebuilds

» Eliminate repairs for shaft grooving

» Eliminate repairs for seal housings

» Reduce time to install

Use 97% - 99% less energy vs. contact lip seals

Compliant with safety and industry manufacturing standards

Technology to support Value & Benefits

Non-wearing components provide lifetime bearing protection

» Garlock's patented Unitizing Ring eliminates metal to metal contact between stator and rotor

» Engineered labyrinth designs exclude contamination while retaining bearing lubrication, to IP 66 ratings

» Non-wearing components means seal properties are not degraded over time vs. contact seals that wear

Split GUARDIAN® designs offer even faster MTTR

» Stationary O-ring contact between shaft and rotor does not groove the shaft

» Stationary O-ring contact will not damage the seal housing

» Garlock's patented Cam-Lock system allows the GUARDIAN® to be installed without an arbor press

Non-contact engineered labyrinth design reduces shaft drag

Industry Standards

» Surpasses IEEE 841-2001 Standards

» IP 65-66 rating per NEMA MG 1-2003, see GUARDIAN® configuration table

» API 610 compliant bronze construction (standard), 316 SS construction available upon request

GUARDIAN®: Bearing Isolator protection to ensure bearing life

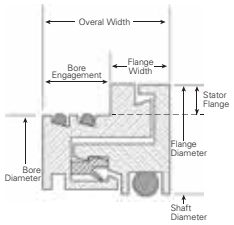
Material — Filled PTFE Unitizing Ring and fluorelastomer O-rings are standard. Please inquire about special O-rings.

Temperature — -22°F to 400°F (-30°C to 204°C), limited by fluorelastomer O-rings.

Pressure — Design pressure differential across the seal is 0 psi.

Cross Section — Minimum cross section (C/S) of 0,375" (9,53 mm) unless otherwise stated, C/S = (Bore Diameter - Shaft Diameter) / 2

Reference Dimensions



GUARDIAN® Configurations	Description	IP Rating	Surface Speed	Axial Motion	Misalignment & Runout	Shaft Diameter Ranges	Overall Width (Flange Width / Bore Engagement)	Stator Flange (SF) = Flange Diameter - Bore ID (CS Range : SF)
Standard Flanged 	**Construction Material** 29602: Bronze 29604: 316 SS **Drainports** 1 inboard 1 outboard	IP 66	12,000 fpm 60.9 m/s	±0.025" ±0.64 mm	±0.020" ±0.51 mm	0.625" to 10.500" 15.9 mm to 266.7 mm	0.700" (0.325" / -.375") 17.8 mm (8.3 mm / 9.5 mm)	(≤0.625") : 0.347" (>0.625") : 0.125" (≤15.9 mm) : 8.8 mm (>15.9 mm) : 3.2 mm
Small Cross Section 	**Construction Material** 29607: Bronze 29606: 316 SS **Drainports** 1 inboard 1 outboard	IP 65	12,000 fpm 60.9 m/s	±0.015" ±0.38 mm	±0.010" ±0.25 mm	0.625" to 5.500" 15.9 mm to 139.7 mm	0.625" (0.375" / -.250") 15.9 mm (9.5 mm / 6.4 mm)	(≤0.375") : 0.285" (>0.375") : 0.125" (≤9.5 mm) : 7.2 mm (>9.5 mm) : 3.2 mm
Narrow Width 	**Construction Material** 29609: Bronze 29611: 316 SS **Drainports** 0 inboard 0 outboard	IP 65	12,000 fpm 60.9 m/s	±0.015" ±0.38 mm	±0.010" ±0.25 mm	0.625" to 4.000" 15.9 mm to 101.6 mm	0.375" (0.000" / -.375") 9.5 mm (0.0 mm / 9.5 mm)	N/A
Flangeless 	**Construction Material** 29619: Bronze 29612: 316 SS **Drainports** 1 inboard 0 outboard	IP 65	12,000 fpm 60.9 m/s	±0.025" ±0.64 mm	±0.020" ±0.51 mm	0.625" to 10.500" 15.9 mm to 266.7 mm	0.625" (0.000" / -.625") 15.9 mm (0 mm / 15.9 mm)	N/A
Split Pillow Block Standard & Custom 	**Construction Material** 29616: Bronze 29617: 316 SS **Drainports** 1 inboard 1 outboard	IP 66	12,000 fpm 60.9 m/s	±0.025" ±0.64 mm	±0.020" ±0.51 mm	0.625" to 10.500" 15.9 mm to 266.7 mm	Various (0.500" / Various) Various (12.7 mm / Various)	(≤0.625") : 0.347" (>0.625") : 0.125" (≤15.9 mm) : 8.8 mm (>15.9 mm) : 3.2 mm
Vertical Design** 	**Construction Material** 29620: Bronze 29622: 316 SS **Drainports** 0 inboard 0 outboard	IP 66	12,000 fpm 60.9 m/s	±0.025" ±0.64 mm	±0.020" ±0.51 mm	0.625" to 10.500" 15.9 mm to 266.7 mm	0.700" (0.325" / -.375") 17.8 mm (8.3 mm / 9.5 mm)	(≤0.625") : 0.347" (>0.625") : 0.125" (≤15.9 mm) : 8.8 mm (>15.9 mm) : 3.2 mm
Step Shaft Custom Design 	**Construction Material** 29697: Bronze **Drainports** 1 inboard 1 outboard	IP 65	12,000 fpm 60.9 m/s	±0.025" ±0.64 mm	±0.020" ±0.51 mm	0.625" to 10.500" 15.9 mm to 266.7 mm	Various	Various
Surface Mounted 	**Construction Material** 29603: Bronze **Drainports** Various	IP 66	12,000 fpm 60.9 m/s	±0.025" ±0.64 mm	±0.020" ±0.51 mm	0.625" to 10.500" 15.9 mm to 266.7 mm	0.595" (0.959" / 0.000") 15.1 mm (15.1 mm / 0.0 mm)	Various

Note:
Properties/applications shown throughout this brochure are typical. Your specific application should not be undertaken without independent study and evaluation for suitability. For specific application recommendations consult Garlock. Failure to select the proper sealing products could result in property damage and/or serious personal injury. Performance data published in this brochure has been developed from field testing, customer field reports and/or in-house testing. While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications subject to change without notice. This edition cancels all previous issues. Subject to change without notice GARLOCK is a registered trademark for packings, seals, gaskets, and other products of Garlock.
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