

GUARDIAN™

Garlock KLOZURE®

Bearing Isolator protection to ensure bearing life



GUARDIAN™

Garlock KLOZURE® Bearing Isolators

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

VALUE & BENEFITS

Lifetime bearing protection increases mean time between failure (MTBF)

- » GUARDIAN bearing isolators are safe for bearings
- » Extend bearing life
- » Consistent sealing performance

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

AVAILABILITY

- » Global Application Engineering Support
- » Typical 3 day lead time
- » Same Day and Next Day service upon request, www.garlock.com | 1.866.KLOZURE

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 56 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 55-56 rating per NEMA MG 1-2003, see GUARDIAN configuration table
- » API 610 compliant bronze construction (standard), 316 SS construction available upon request

GUARDIAN TECHNOLOGY EXPLAINED

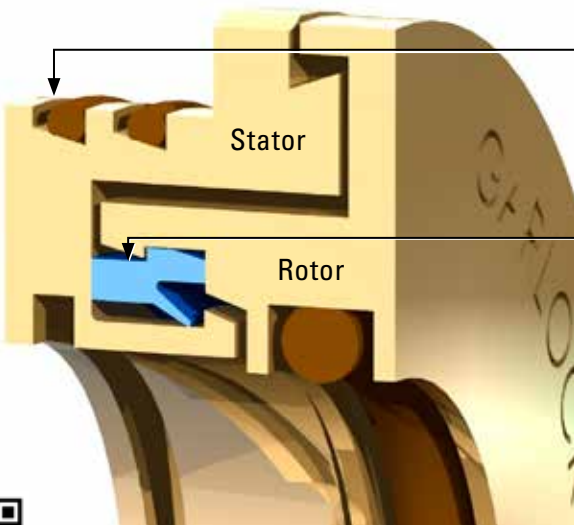
Garlock Patented Cam-Lock Design

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.

Simple O-ring 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.



GUARDIAN™ - Bearing Isolators

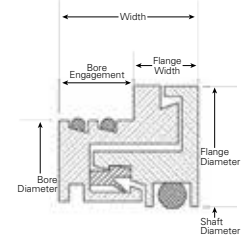
Material: Filled PTFE unitizing ring and fluoroelastomer O-rings are standard. Please inquire about special O-rings.

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

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

Cross Section: Minimum cross section (C/S) of 0.375" unless otherwise stated, $C/S = (Bore\ Diameter - Shaft\ Diameter) / 2$

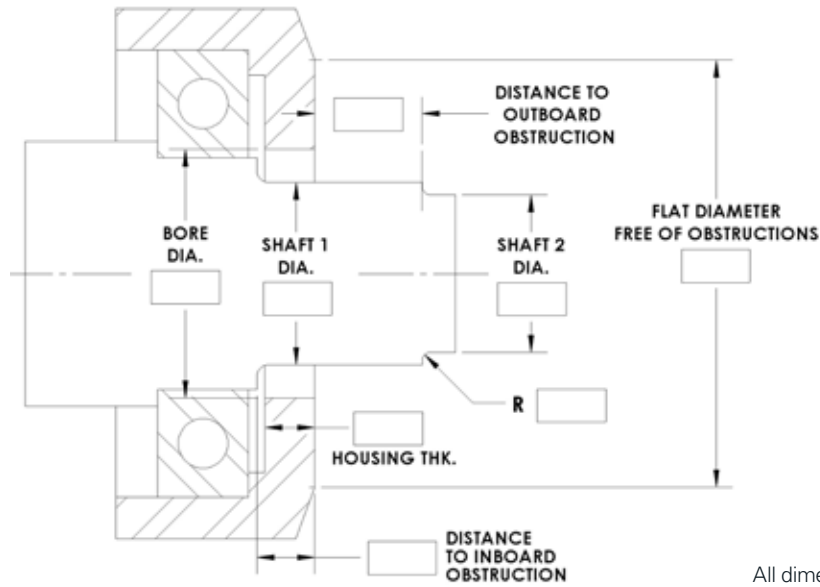
Reference Dimensions



GUARDIAN Configurations	Description	IP Rating	Surface Speed	Axial Motion	Misalignment & Runout	Shaft Diameter Ranges	Overall Width (Flange Width / Bore Engagement)	Flange Diameter = Bore ID + Stator Flange (SF) (CS Range : SF)
	Construction Material: 29602: Bronze 29604: 316 SS Drainports: 1 inboard 1 outboard	IP 56	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" / -0.375") 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
	Construction Material: 29607: Bronze 29606: 316 SS Drainports: 1 inboard 1 outboard	IP 55	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" / -0.250") 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
	Construction Material: 29609: Bronze 29611: 316 SS Drainports: 0 inboard 0 outboard	IP 55	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" / -0.375") 9.5 mm (0.0 mm / 9.5 mm)	N/A
	Construction Material: 29619: Bronze 29612: 316 SS Drainports: 1 inboard 0 outboard	IP 55	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" / -0.625") 15.9 mm (0 mm / 15.9 mm)	N/A
	Construction Material: 29616: Bronze 29617: 316 SS Drainports: 1 inboard 1 outboard	IP 56	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
	Construction Material: 29620: Bronze 29622: 316 SS Drainports: 0 inboard 0 outboard	IP 56	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" / -0.375") 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
	Construction Material: 29697: Bronze Drainports: 1 inboard 1 outboard	IP 55	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
	Construction Material: 29603: Bronze Drainports: Various	IP 56	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



GARLOCK KLOZURE GUARDIAN™ APPLICATION DATASHEET



All dimensions supplied to 3 decimal places.

Contact Information: Name: _____ Phone Number: _____
 Email: _____

Equipment Type: Pump Motor Other: _____
 Manufacturer: _____
 Model Number: _____

Previous Seal Design: Oil Seal Bearing Isolator Other: _____
 Seal Manufacturer: _____ Quantity Required: _____
 Seal Part Number: _____

Seal Design: Solid Split
 Mounting Method: Cam-Lock O-ring System Epoxy Mount Bolting Flange
 Construction Material: Bronze 316 SS
 Seal Purpose: Contamination Exclusion Lubricant Retention Shaft Grounding

Application Conditions

Speed: _____ RPM fpm mps
 Temperature: _____ °F °C
 Pressure: _____ PSI bar
 TIR (total indicated runout): _____ in mm
 Axial Movement: _____ in mm
 Shaft Orientation: Horizontal Vertical Top Vertical Bottom
 Lubrication Method: Grease Oil Sump Air-Oil Oil Mist
 Media Fill Level: Below Shaft Mid Shaft Submerged Shaft
 Media Manufacturer: _____
 Media Product Name: _____

Notes: _____

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