



**Klozure[®] Radial Lip Seals and Bearing
Isolator Technical Manual**

Garlock
SEALING TECHNOLOGIES[®]

an EnPro Industries company

INTRODUCTION

Klozure® is the leading manufacturer of bearing protection devices for the heavy duty industrial market. Our broad product line includes radial lip seals, non-contact labyrinth bearing isolators, and mechanical seals.

Klozure® is a global company with installations worldwide, solving demanding applications big and small. We believe the best way to service the end user is through our strategic alliances with distribution partners. Our distribution partners are, ultimately, the quickest

way to constantly introduce new and innovative products at higher levels of performance and quality - products that will last longer and reduce overall maintenance costs.

With every Klozure® Seal, you can depend on receiving the backing of every Klozure® team member and their “can do” attitude, high-quality workmanship, and outstanding pride in a job done right. No matter what your difficult application may be, you can rest assured that Klozure® has a solution!

TECHNICAL MANUAL - HOW TO USE

The Klozure® Technical Manual is designed to facilitate product selection and to give you the most complete and relevant technical information you can find.

Our product information is organized by product type, with sections for Large Bore, Small Bore, Split, Excluder, External and Specialty type oil seals, as well as our extensive Bearing Isolator family of non-contact seals.

The General Engineering section is designed to offer technical guidance for equipment size and tolerances as well as operational parameters...all the information that will help specify the most effective technology for your application. This section also includes installation instructions with detailed diagrams along with information on troubleshooting and failure analysis...all to help the user install the Klozure® product and solve any potential problems.

GENERAL SEAL SELECTION

Single Lip Seals are ideal for the majority of sealing applications. These general purpose seals are available in a wide range of stock sizes.

Split KLOZURE® Oil Seals are designed for easy installation on large shafts without costly equipment teardown for seal replacement.

Dual Lip Oil Seals are recommended for applications requiring the protection from ingress and egress of material, the exclusion of abrasive or foreign materials, and difficult or unusual sealing challenges.

Bonded Oil Seals are used in applications where low cost and minimum performance are the primary considerations.

Special Purpose Oil Seals are recommended for high speed applications, reciprocating service, spherical bearings, tapered roller bearings and/or high pressure applications.

GUARDIAN™, MICRO-TEC II®, ISO-GARD® and EQUALIZER® Bearing Isolators provide superior bearing protection where outstanding contaminant exclusion and ultra long life are desired.

The technical manual contains the most concise, current sealing information to make seal selection easy and accurate, providing reference to applications, shaft speeds, operating temperatures and shaft size. This information permits you to select any Klozure® seal for long-lasting, trouble-free service. For online selection, visit: www.klozure.com

For non-standard applications, please complete an online application data sheet, or contact Klozure® for engineering assistance.

KLOZURE WARRANTY

All merchandise ordered shall be sold subject to SELLER'S standard warranty, viz: SELLER warrants that any product of its manufacture, which upon examination is found by a SELLER'S representative to be defective either in workmanship or material whereby it is not suitable under proper usage and service for the purpose for which designed, will be, at SELLER'S option, repaired or replaced free of charge including transportation charges but not cost of installation providing that SELLER receives written claim specifying the defect within one year after SELLER ships the product. ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING ANY WARRANTY

OF MERCHANTABILITY ARE HEREBY DISCLAIMED. The foregoing expresses all of SELLER'S obligations and liabilities with respect to the quality of items furnished by it and it shall under no circumstances be liable for consequential damages.


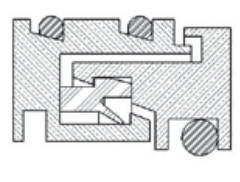
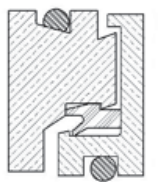


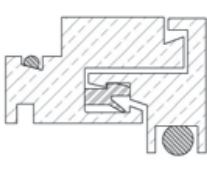
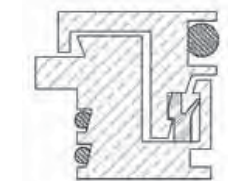
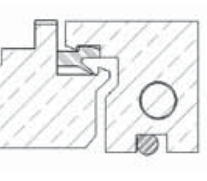
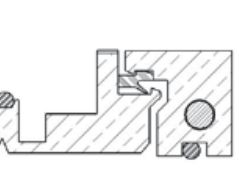


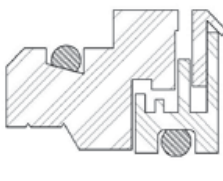
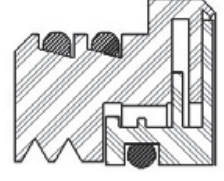
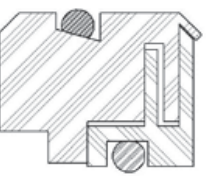
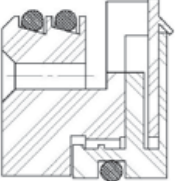


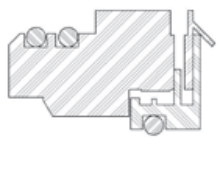

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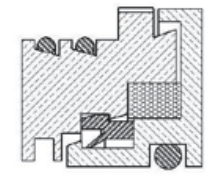
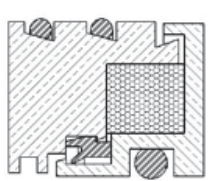
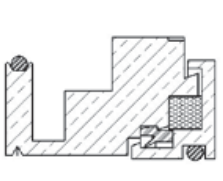

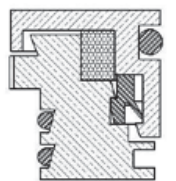
TABLE OF CONTENTS


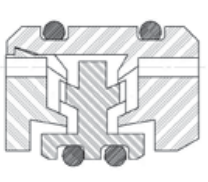
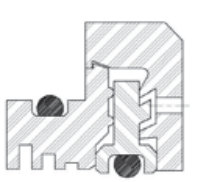
Technology Overview	1
Engineering Data	2
Installation of Oil Seals & Bearing Isolators	8
Seal & Material Selection Guides	12
Oil Seal Configurations.....	13
Oil Seal Products	14
Bearing Isolator Configurations	23
Bearing Isolator Products.....	25
Glossary	29
Appendix A – Product Identification.....	31
Appendix B – Obsolete Oil Seal Model Number to Part Number Conversions	40
Appendix C – Chemical Compatibility.....	45
Appendix D – Damage Analysis.....	51
Appendix E – Application Data Sheets.....	55
Appendix F – Surface Speed Chart.....	57

TYPICAL SEAL CONFIGURATIONS **Bearing Isolators**

GUARDIAN™	GUARDIAN™ 	GUARDIAN™ Flangeless 	GUARDIAN™ Narrow Width 	GUARDIAN™ Small C-S 	GUARDIAN™ SPB 
	GUARDIAN™ Step Shaft 	GUARDIAN™ Vertical 	GUARDIAN™ Split 	GUARDIAN™ Split SPB 	

ISO-GARD®	ISO-GARD® 	ISO-GARD® Dual O-Ring 	ISO-GARD® Flangeless 	ISO-GARD® Grease Purge 	ISO-GARD® Small C-S 
	ISO-GARD® SPB 	ISO-GARD® Step Shaft 	ISO-GARD® Vertical 		

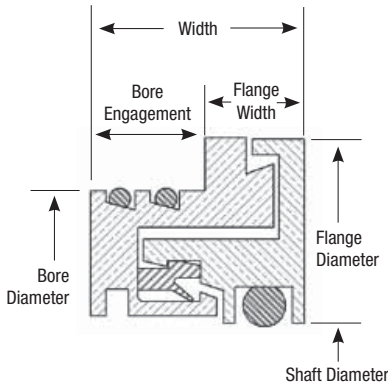
MICRO-TEC® II	MICRO-TEC® II 	MICRO-TEC® II Flangeless 	MICRO-TEC® II SPB 	MICRO-TEC® II Small C-S 	MICRO-TEC® II Vertical 

EQUALIZER®	EQUALIZER® 	EQUALIZER® Flangeless 	EQUALIZER® Small C-S 

C-S = Cross Section
SPB = Split Pillow Block

Bearing Isolators TYPICAL SEAL CONFIGURATIONS

Reference Dimensions



Typical Seal Configurations & Sizes

	Code Prefix	Description	Material	Width	Flange Width	Bore Engagement
GUARDIAN™	29602	Flanged	Bronze	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29604	Flanged	316 Stainless Steel	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29606	Small Cross Section	316 Stainless Steel	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)
	29607	Small Cross Section	Bronze	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)
	29608	Small Cross Section, Short Flange	Bronze	0.625 (15.9 mm)	0.250 (6.4 mm)	0.375 (9.5 mm)
	29609	Narrow Width Flangeless	Bronze	0.375 (9.5 mm)	N/A	0.375 (9.5 mm)
	29610	Small Flanged	Bronze	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29611	Narrow Width Flangeless	316 Stainless Steel	0.375 (9.5 mm)	N/A	0.375 (9.5 mm)
	29612	Flangeless	316 Stainless Steel	0.625 (15.9 mm)	N/A	0.625 (15.9 mm)
	29616	Split Pillow Block	Bronze	Various*	0.500 (12.7 mm)*	Various*
	29617	Split Pillow Block	316 Stainless Steel	Various*	0.500 (12.7 mm)*	Various*
	29619	Flangeless	Bronze	0.625 (15.9 mm)	N/A	0.625 (15.9 mm)
	29620	Vertical	Bronze	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29621	Vertical - Small Cross Section	Bronze	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)
29622	Vertical	316 Stainless Steel	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)	
29623	Vertical - Small Cross Section	316 Stainless Steel	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)	

	Code Prefix	Description	Material	Width	Flange Width	Bore Engagement
Split GUARDIAN™	29702	Flanged	Bronze	1.150 (29.2 mm)	0.775 (19.7 mm)	0.375 (9.5 mm)
	29716	Split Pillow Block	Bronze	Various*	0.775 (19.7 mm)*	Various*

	Code Prefix	Description	Material	Width	Flange Width	Bore Engagement
MICRO-TEC® II	29102	Flanged	Bronze	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29104	Small Cross Section	316 Stainless Steel	0.625 (15.9 mm)	0.375 (8.3 mm)	0.250 (6.4 mm)
	29106	Flanged	316 Stainless Steel	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29107	Small Cross Section	Bronze	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)
	29112	Flangeless	316 Stainless Steel	0.625 (15.9 mm)	N/A	0.625 (15.9 mm)
	29116	Split Pillow Block	Bronze	Various*	0.500 (12.7 mm)*	Various*
	29117	Split Pillow Block	316 Stainless Steel	Various*	0.500 (12.7 mm)*	Various*
	29119	Flangeless	Bronze	0.625 (15.9 mm)	N/A	0.625 (15.9 mm)
	29120	Vertical	Bronze	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29121	Vertical - Small Cross Section	Bronze	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)
	29122	Vertical	316 Stainless Steel	0.700 (17.8 mm)	0.325 (8.3 mm)	0.375 (9.5 mm)
	29123	Vertical - Small Cross Section	316 Stainless Steel	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)








	Code Prefix	Description	Material	Width	Flange Width	Bore Engagement
ISO-GARD®	29500	Flanged 2 O.D. O-Rings	Glass Filled PTFE	0.750 (19.1 mm)	0.250 (6.4 mm)	0.500 (12.7 mm)
	29502	Flanged	Glass Filled PTFE	0.750 (19.1 mm)	0.375 (9.5 mm)	0.375 (9.5 mm)
	29507	Small Cross Section	Glass Filled PTFE	0.625 (15.9 mm)	0.375 (9.5 mm)	0.250 (6.4 mm)
	29516	Split Pillow Block	Glass Filled PTFE	Various*	0.500 (12.7 mm)*	Various*
	29518	Grease Purgeable	Glass Filled PTFE	0.820 (20.8 mm)	0.320 (8.1 mm)	0.500 (12.7 mm)
	29519	Flangeless	Glass Filled PTFE	0.640 (16.3 mm)	N/A	0.640 (16.3 mm)
	29520	Vertical	Glass Filled PTFE	0.760 (19.3 mm)	0.385 (9.8 mm)	0.375 (9.5 mm)
	29521	Vertical - Two O.D. O-Rings	Glass Filled PTFE	0.885 (22.5 mm)	0.385 (9.8 mm)	0.500 (12.7 mm)

	Code Prefix	Description	Material	Width	Flange Width	Bore Engagement
Equalizer®	24801	Flangeless	Graphite Filled PTFE	0.625 (15.9 mm)	N/A	0.625 (15.9 mm)
	24802	Flanged	Graphite Filled PTFE	0.625 (15.9 mm)	0.250 (6.4 mm)	0.375 (9.5 mm)
	24807	Small Cross Section	Graphite Filled PTFE	0.690 (17.5 mm)	0.375 (9.5 mm)	0.315 (8.0 mm)

NOTE:

- Flange width is a reference dimension depending on installation and misalignment at application

* Pillow Block Dependant



GUARDIAN™ Model Number	Features	Materials	IP Rating	Temp*	Shaft Diameter in. (mm)**	Surface Speed	Axial Motion in. (mm)	Misalign. & Runout in. (mm)	Pressure
Flanged 29602, 29604 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	IP 56	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	12,000 f/m (60.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient
Small Cross Section 29606, 29607, 29608 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Fits in c/s as small as 0.188" (4.76mm) 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 5.500 (22.2 to 139.7)	12,000 f/m (60.9 m/s)	±0.015 (0.38)	±0.010 (0.25)	Ambient
Flangeless Narrow Width 29609, 29611 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Flangeless design fits in spaces as narrow as 0.375" (9.53mm) 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 4.000 (22.2 to 139.7)	12,000 f/m (60.9 m/s)	±0.015 (0.38)	±0.010 (0.25)	Ambient
Flangeless 29612, 29619 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Does not extend past face of housing 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	12,000 f/m (60.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient
Split Pillow Block 29616, 29617*** 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Standard and custom design for split pillow blocks 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	IP 56	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	12,000 fpm (60.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient
Step Shaft 29697 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Custom designed for individual step shaft applications 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	(N/A)	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	12,000 fpm (60.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient
Vertical 29620, 29621, 29622, 29623 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Fits in c/s as small as 0.188 in. (4.76mm) Vertical design for top applications only 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	29620 IP 56 29621 IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	12,000 fpm (60.9 m/s)	Std: ±0.025 (0.64) Small C/S: ±0.015 (0.38)	Std: ±0.020 (0.51) Small C/S: ±0.010 (0.25)	Ambient

* Temperature rating based on standard fluoroelastomer o-rings

** For larger or smaller shaft diameters, please contact Klozure®.

*** Solid seal for split pillow block application




Bearing Isolators PRODUCT INFORMATION

Split GUARDIAN™ Model Number	Features	Materials	IP Rating	Temp*	Shaft Diameter in. (mm)**	Surface Speed	Axial Motion in. (mm)	Misalign. & Runout in. (mm)	Pressure
Flanged 29702 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Split design allows for installation without disassembly of equipment 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	4,500 f/m (22.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient
Split Pillow Block 29716*** 	<ul style="list-style-type: none"> Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Standard and custom design for split pillow blocks Split design allows for installation without disassembly of equipment 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Filled PTFE unitizing ring Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	4,500 f/m (22.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient

* Temperature rating based on standard fluoroelastomer o-rings



** For larger or smaller shaft diameters, please contact Klozure®.

*** Split seal for split pillow block application.

MICRO-TEC® II Model Number	Features	Materials	IP Rating	Temp*	Shaft Diameter in. (mm)**	Surface Speed	Axial Motion in. (mm)	Misalign. & Runout in. (mm)	Pressure
Flanged 29102, 29106 	<ul style="list-style-type: none"> Unique microcellular technology Protects against severely dusty environments Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Silicone foam Filled PTFE Unitizing Ring Fluoroelastomer O-rings standard 	IP 56	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient
Small Cross Section 29104, 29107 	<ul style="list-style-type: none"> Unique microcellular technology Protects against severely dusty environments Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Fits in c/s as small as 0.188" (4.76mm) 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Silicone foam Filled PTFE Unitizing Ring Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.010 (0.25)	Ambient
Flangeless 29112, 29119 	<ul style="list-style-type: none"> Unique microcellular technology Protects against severely dusty environments Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Does not extend past face of housing 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Silicone foam Filled PTFE Unitizing Ring Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient

* Temperature rating based on standard fluoroelastomer o-rings






** For larger or smaller shaft diameters, please contact Klozure®.

MICRO-TEC® II Model Number	Features	Materials	IP Rating	Temp*	Shaft Diameter in. (mm)**	Surface Speed	Axial Motion in. (mm)	Misalign. & Runout in. (mm)	Pressure
Split Pillow Block 29116, 29117*** 	<ul style="list-style-type: none"> Unique microcellular technology Protects against severely dusty environments Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Standard and custom design for split pillow blocks 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Silicone foam Filled PTFE Unfitizing Ring Fluoroelastomer O-rings standard 	IP 56	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.025 (0.64)	±0.020 (0.51)	Ambient
Vertical 29120, 29121, 29122, 29123 	<ul style="list-style-type: none"> Unique microcellular technology Protects against severely dusty environments Meets NEMA MG 1-2003 Surpasses IEEE 841-2001 test standards Conforms to API 610 (Bronze only) No arbor press required for installation No internal metal-to-metal contact Standard and custom design for split pillow blocks 	<ul style="list-style-type: none"> Bronze or 316 stainless steel construction Silicone foam Filled PTFE Unfitizing Ring Fluoroelastomer O-rings standard 	Std: IP 56 Small c/s: IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	Std: ±0.025 (0.64) Small c/s: ±0.015 (0.38)	Std: ±0.020 (0.51) Small c/s: ±0.010 (0.25)	Ambient



* Temperature rating based on standard fluoroelastomer o-rings

** For larger or smaller shaft diameters, please contact Klozure®.

*** Split seal for split pillow block application.




ISO-GARD® Model Number	Features	Materials	IP Rating	Temp*	Shaft Diameter in. (mm)**	Surface Speed	Axial Motion in. (mm)	Misalign. & Runout in. (mm)	Pressure
Flanged 29500, 29502 	<ul style="list-style-type: none"> Filled PTFE construction Excellent chemical resistance Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards No arbor press required for installation 	<ul style="list-style-type: none"> FDA compliant blue glass filled PTFE Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.020 (0.51)	Ambient
Small Cross Section 29507 	<ul style="list-style-type: none"> Filled PTFE construction Excellent chemical resistance Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards No arbor press required for installation Fits in c/s as small as 0.188" (4.76mm) 	<ul style="list-style-type: none"> FDA compliant blue glass filled PTFE Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.020 (0.51)	Ambient
Flangeless 29519 	<ul style="list-style-type: none"> Filled PTFE construction Excellent chemical resistance Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards No arbor press required for installation Does not extend past face of housing 	<ul style="list-style-type: none"> FDA compliant blue glass filled PTFE Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.020 (0.51)	Ambient
Grease Purgeable 29518 	<ul style="list-style-type: none"> Filled PTFE construction Excellent chemical resistance Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards No arbor press required for installation Relief in seal allows regreasing with no disassembly of equipment 	<ul style="list-style-type: none"> FDA compliant blue glass filled PTFE Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.020 (0.51)	5 psi
Split Pillow Block 29516 	<ul style="list-style-type: none"> Filled PTFE construction Excellent chemical resistance Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards No arbor press required for installation Standard and custom design for split pillow blocks 	<ul style="list-style-type: none"> FDA compliant blue glass filled PTFE Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.020 (0.51)	Ambient

Bearing Isolators PRODUCT INFORMATION

ISO-GARD® Model Number	Features	Materials	IP Rating	Temp	Shaft Diameter in. (mm)**	Surface Speed	Axial Motion in. (mm)	Misalign. & Runout in. (mm)	Pressure
Step Shaft 29597 	<ul style="list-style-type: none"> Filled PTFE construction Excellent chemical resistance Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards No arbor press required for installation Custom designed for individual stepshaft applications 	<ul style="list-style-type: none"> FDA compliant blue glass filled PTFE Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.020 (0.51)	Ambient
Vertical 29520, 29521 	<ul style="list-style-type: none"> Filled PTFE construction Excellent chemical resistance Meets NEMA MG 1-2003 Meets IEEE 841-2001 test standards No arbor press required for installation Style 29521 offers two O.D. O-Rings for increased retention in the bore Vertical design for top applications only 	<ul style="list-style-type: none"> FDA compliant blue glass filled PTFE Fluoroelastomer O-rings standard 	IP 55	-22°F (-30°C) to 400°F (204°C)	0.875 to 11.000 (22.2 to 279.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.020 (0.51)	Ambient

* Temperature rating based on standard fluoroelastomer o-rings

** For larger or smaller shaft diameters, please contact Klozure®.

EQUALIZER® Model Number	Features	Materials	IP Rating	Temp	Shaft Diameter in. (mm)**	Surface Speed	Axial Motion in. (mm)	Misalign. & Runout in. @ f/m (mm@m/s)	Pressure
Flanged 24802 	<ul style="list-style-type: none"> Excellent chemical resistance Multi-position capability No arbor press required for installation Unique pumping/fanning action 	<ul style="list-style-type: none"> Graphite-filled PTFE Fluoroelastomer O-rings standard 	(N/A)	-22°F (-30°C) to 400°F (204°C)	0.875 to 6.000 (22.2 to 152.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.015 (0.38)	Ambient
Small Cross Section 24807 	<ul style="list-style-type: none"> Excellent chemical resistance Multi-position capability No arbor press required for installation Unique pumping/fanning action Designed to fit small c/s with no equipment modification 	<ul style="list-style-type: none"> Graphite-filled PTFE Fluoroelastomer O-rings standard 	(N/A)	-22°F (-30°C) to 400°F (204°C)	0.875 to 10.500 (22.2 to 266.7)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.015 (0.38)	Ambient
Flangeless 24801 	<ul style="list-style-type: none"> Excellent chemical resistance Multi-position capability No arbor press required for installation Unique pumping/fanning action Does not extend past face of housing 	<ul style="list-style-type: none"> Graphite-filled PTFE Fluoroelastomer O-rings standard 	(N/A)	-22°F (-30°C) to 400°F (204°C)	0.875 to 6.000 (22.2 to 152.4)	4,500 f/m (22.9 m/s)	±0.015 (0.38)	±0.015 (0.38)	Ambient

* Temperature rating based on standard fluoroelastomer o-rings

** For larger or smaller shaft diameters, please contact Klozure®.