

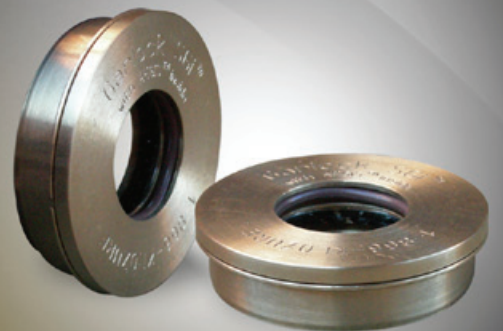


Shaft Grounded  
Bearing Isolator

BOLD  
NEW WORLD



THE NEXT REVOLUTION IN  
BEARING ISOLATOR TECHNOLOGY



**Garlock**  
SEALING TECHNOLOGIES®

an EnPro Industries company



## Have your bearings been damaged by electrical discharges?

When electric induction motors are driven by variable frequency drives (VFD), damaging electrical voltages are induced onto the motor shaft and will discharge through the motor's bearings causing premature bearing failure. Shaft voltages are present the moment the drive is turned on. Damage to the bearings and the lubrication can occur long before there is a catastrophic failure. By the time you hear the audible noise caused by the fluting damage in the bearing, it is already too late! It is important to protect the motor's bearings from ingress and electrical damage right from the start to avoid failures, costly down time, or complete replacement.

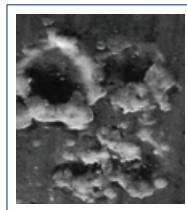
## How can you tell if the bearings are damaged?

Damaging voltages can be detected early with shaft voltage measurements for any motor operated by a VFD. Vibration analysis is another method to detect and monitor electrical bearing damage. A good indicator of a fluted bearing close to catastrophic failure is to simply listen to the system. Bearing deterioration can be heard as a loud audible noise!



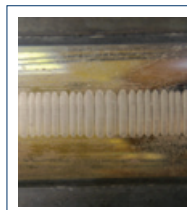
Lubrication deterioration

Bearing protection is not just about ensuring the lubrication stays clean and retained, but also ensuring the quality of the lubricant is maintained. Continuous electrical arcing in the motor bearings will often rapidly deteriorate the quality of the lubrication and cause bearing race damage. When an arc occurs, the lubrication is super heated and causes lubrication break-down. The grease will often have a burnt/black appearance instead of the normal "clean" color. Deterioration of the grease will also result in a greatly shortened bearing life.



EDM pitting and micro craters in rolling elements

Electrical Discharge Machining (EDM) is an electrical arc that is created when the shaft voltage overcomes the dielectric of the oil film between the rolling element and the bearing race. The electrical current arcs through the oil and grease and melts the steel race wall creating a pit in the surface between 5 to 10 micron diameter. These pits are visible to the eye in the form of a light colored track on the bearing race. Over time the micro craters can result in fluted bearing races.



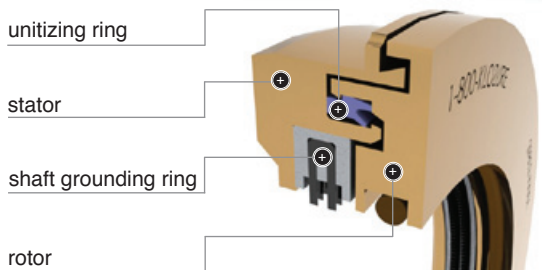
Bearing Fluting

Bearing fluting is an accelerated "wash-board" wear pattern in the bearing race as a result of continued EDM pitting. As the rolling element travels over already damaged areas, more damage occurs. High system vibration and noise are often the result of bearing fluting which will result in costly system failure.



## Garlock SGi – The ultimate protection for your bearings

What happens when you merge the world's best bearing isolator technology, the GUARDIAN™, with the industry leader in shaft current mitigation technology, AEGIS™? You have the birth of the Garlock SGi...the Garlock Shaft Grounded Isolator! The GUARDIAN has proven time and time again to be the absolute best bronze bearing isolator on the market for ingress and egress protection, no questions. Similar to the GUARDIAN, AEGIS Shaft Grounding Ring has proven to be the only maintenance-free and long term reliable shaft voltage mitigation technology. When you merge these great technologies into one product, the result is truly remarkable and something no other can offer...a maintenance-free bearing isolator ensuring the highest level of ingress and egress protection with the added protection of shaft grounding!



<b>Construction:</b> Bronze with Fluroelastomer O-rings
<b>Size range:</b> 0.875" to 6.000" shaft diameter
<b>Speed:</b> 0 to 12,000 f/m
<b>Axial Motion:</b> 0 to 0.010"
<b>Shaft-to-Bore Misalignment:</b> 0 to 0.015"
<b>Protection:</b> to IP56
<b>Temperature:</b> -22°F to 300°F
<b>Shaft Grounding:</b> AEGIS™ Shaft Grounding Ring

### Here, for you, our customer.

The Garlock family of companies encompasses worldwide locations which solve demanding applications large and small. We engineer and manufacture not only revolutionary bearing isolators, but also oil seals, mechanical seals, braided packing, metallic and non-metallic gaskets, hydraulic seals and expansion joints. With every Garlock seal, you can depend on receiving the backing of every 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 be rest assured that the Garlock family of companies has the solution. This is our promise, and that is why so many industry leaders rely on us.



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To learn more about how to protect your bearings or other sources of electrical damage, visit [www.garlock.com](http://www.garlock.com) and download our whitepaper.

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