



Protecting VFD-Driven Motors from Bearing Damage

June 2011
Electro Static Technology

Motor Service and Repair Shops: Your Best Source for AEGIS™ Selection and Installation



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Adding AEGIS™ Bearing Protection Rings to Your Motor

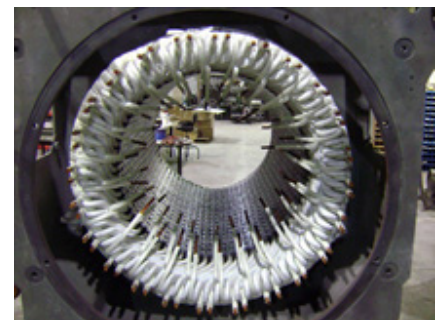
All inverter-driven motors are vulnerable to bearing currents that can cause catastrophic motor failure. Variable frequency drives (VFDs) can cause shaft voltages of sufficient amplitude to break down the lubrication film in motor bearings, resulting in pitting of the bearing race and possible fluting damage.

Motor service and repair shops worldwide have been installing AEGIS™ Bearing Protection Rings for their customers for years now. Often these shops are the best resource for AEGIS™ installations and can be of vital assistance in recommending not only the correct ring for the motor, but how and where to best install it. Their unique capabilities include:

- Installing AEGIS™ Rings in large motors with insulation on the non-drive end of the motor for circulating currents
- Machining brackets for AEGIS™ installed inside the motor
- Manufacturing special brackets for external installation
- Field installing AEGIS™ Rings at customer sites

If a motor is worth repairing, then it is also worth protecting. For motors that need to be repaired, installing the AEGIS™ Ring inside the motor is often the best solution and the method used by major motor manufacturers like GE and Baldor.

For more information, [click here](#).

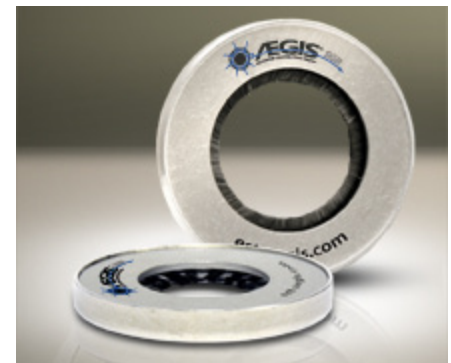


SGR vs. iPRO: Protecting Your Motor Requires Selection of the Proper AEGIS™ Ring

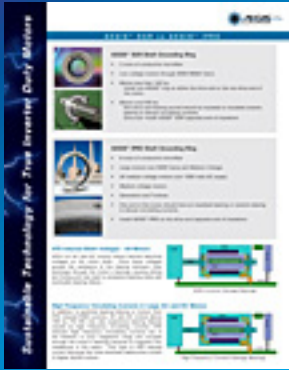
The AEGIS™ Bearing Protection Ring comes in two basic styles — the AEGIS™ SGR and the AEGIS™ iPRO. And although both protect motor bearings against electrical current damage, they are designed for different applications.

AEGIS™ SGR:

With 2 rows of conductive microfibers, the AEGIS™ SGR is designed for use on low-voltage motors (through 5000 NEMA frame).



AEGIS™ SGR



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It is available in 2 versions — a solid ring and a split ring. The solid ring can be mounted directly to a motor's faceplate using small brackets and screws, or conductive epoxy. A universal mounting kit (U-Kit) simplifies mounting of a solid ring to virtually any NEMA or IEC frame motor. The kit may be installed with conductive epoxy or screw-on mounting.

Best Practices:

For motors of 100 HP or less, AEGIS™ recommends installing one SGR on either the drive or the non-drive end. For motors of more than 100 HP, AEGIS™ recommends installing an SGR on the drive end and insulating the non-drive end bearing journal or using insulated ceramic bearings to disrupt the flow of circulating currents.

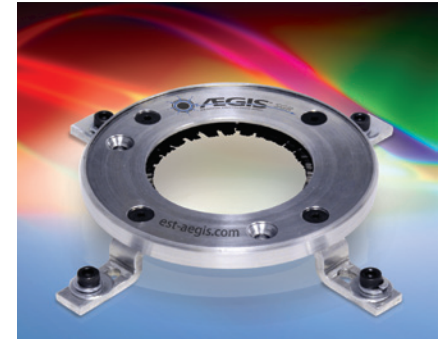
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AEGIS™ iPRO:

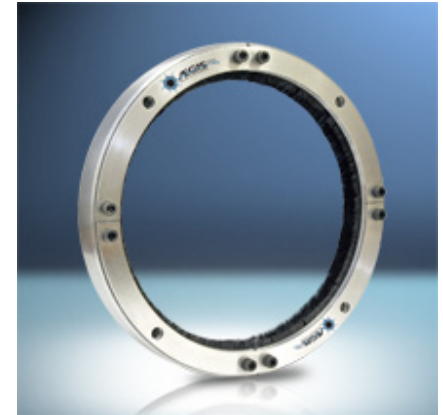
Ideal for medium voltage motors, turbines and other generators, the AEGIS™ iPRO, with its 6 rows of conductive microfibers, is designed for large, low-voltage motors (over 5000 frame) as well as medium-voltage motors (especially those with greater than 1000 volts AC supply).

AEGIS™ recommends installing the iPRO on the drive end of the motor and insulating the bearing or using ceramic bearings on the non-drive end to disrupt circulating currents.

For more information, [click here](#).



Universal Mounting Kit (U-Kit)



AEGIS™ iPRO



[Download Garlock SGi™ Brochure](#)

Severe-Duty Applications: Garlock SGi Seal Combines AEGIS™ Bearing Protection Ring with Garlock Bearing Isolator

For motors in harsh environments like paper mills, steel mills, pulverizers, food processing plants, or other washdown applications, the Garlock SGi provides exceptional bearing protection. The new Garlock SGi combines the electrical bearing protection of the AEGIS™ Ring with the contamination protection of an IP56 bearing seal in a single compact unit. It can be quickly and easily installed without opening up the motor and therefore has no effect on the manufacturer's warranty.

For more information about protecting motors in harsh environments or washdown applications,

For more information, [click here](#).



Use Garlock SGi Bearing Isolator for working motors that require electrical bearing protection and mechanical bearing isolation.

AEGIS™ SVP Shaft Voltage Probe
Conductive Microfiber Probe for use with Fluke 199C ScopeMeter

Measuring VFD Induced Shaft Voltages
In an industrial facility, electric shaft voltages are the first step in the process of motor failure. High voltage shaft voltages can cause motor failure. The AEGIS™ SVP Shaft Voltage Probe is designed to measure shaft voltages on motor shafts. The AEGIS™ SVP probe is made of a special conductive microfiber material. The AEGIS™ SVP probe is made of a special conductive microfiber material. The AEGIS™ SVP probe is made of a special conductive microfiber material.

For more inquiries:
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Fax: 1-207-998-5140
www.est-aegis.com

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AEGIS™ Ring Featured in AHR Expo Video

In a video produced by HPAC ENGINEERING at the 2011 AHR Expo, AEGIS™ Marketing and Sales Manager Adam Willwerth demonstrates the installation of an AEGIS™ Split Ring with Conductive Epoxy.

Using a Fluke 199C ScopeMeter and a special SVP probe (with a conductive microfiber tip), Willwerth illustrates the scale of damaging voltages induced on a VFD-controlled motor shaft. He then demonstrates how quick and easy it is to install an AEGIS™ Ring (using conductive epoxy) to protect the motor's bearings from damage by these currents. Once the ring is installed, Willwerth demonstrates its effectiveness in channeling damaging currents away from bearings, safely to ground.

To view the video, [click here](#).

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AEGIS™ at the 2011 EASA Show: Another Resounding Success

Visitors to the AEGIS™ booth at EASA 2011 were able to see firsthand how voltages induced on the shafts of VFD-controlled motors can destroy bearings and kill motors.

Through live demonstrations, they also saw how AEGIS™ Shaft Grounding Rings protect motors from these harmful currents by channeling them away from bearings, safely to ground.

If you were unable to visit the show, but would like to see how AEGIS™ Rings can extend the lives of your motors and improve the reliability of your systems, we invite you to watch a video on the AEGIS™ homepage.

To view the video, [click here](#).

