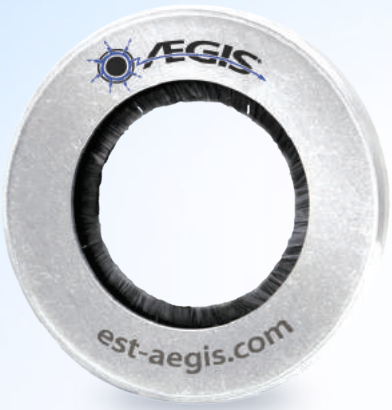
Only AEGIS® Shaft Grounding Rings Provide Both Contact and Noncontact Grounding

AEGIS®

Bearing Protection Rings…

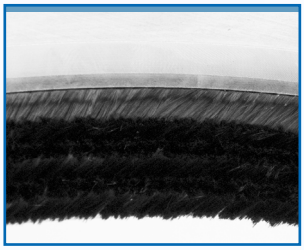


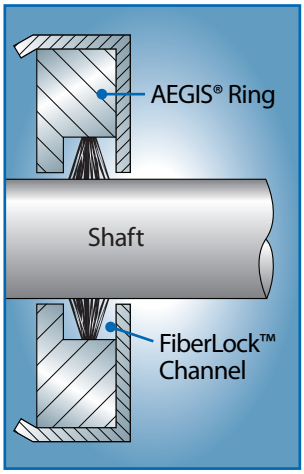
Revolutionary AEGIS® Nanogap Technology

- *Unique contact/non-contact design*
- *360 degrees circumferential coductive microfiber ring*
- *Multiple row design - greatest reliability*
- *Ensures unmatched shaft grounding and performance*

Ensures Unmatched Grounding With or Without Mechanical Contact

The AEGIS® Bearing Protection Ring's patented Nanogap Technology ensures effective electrical contact even when physical contact is broken. Only AEGIS® Nanogap Technology provides both maintenance-free contact and noncontact bearing protection for the normal service life of the motor's bearings as well as the most reliable operation of any shaft grounding technology.





Proprietary Conductive Microfibers Last for the Service Life of the Motor

The AEGIS® Bearing Protection Ring's unique design features hundreds of thousands to millions of specially engineered conductive microfibers that encircle the motor shaft. With so many electrical transfer points the ring provides continuous electrical contact, whether its fibers are physically touching the shaft or not. This patented "nanogap" technology enables both contact and noncontact shaft grounding — 100% of the time.

Specially Designed Microfibers Flex Without Breaking

Designed with specific mechanical and electrical characteristics that minimize wear and maintain conductivity, AEGIS® microfibers will last for the life of the motor. Based on wear of less than 0.001" [0.025mm] during 10,000 hours of testing, proven to withstand over 200,000 hours of continuous operation.

Wear-to-Fit™ Design

Through our patented design, AEGIS® conductive microfibers are a wear-to-fit design which ensures that the fibers don't "wear out" during the bearing's life They exhibit minimal wear with the ability to flex without breaking. During the life of the ring the minimal wear characteristics ensure that the fibers only wear to the exact diameter of the motor's shaft and no further, maintaining the nanogap contact which allows the AEGIS® Shaft Grounding Rings to continue to operate effectively and protect the motor's bearings. In testing, they were proven to withstand 2 million direction reversals (to 1800 RPM) with no fiber fatigue or breakage.

Patented FiberLock™ Channel Secures and Protects Fibers

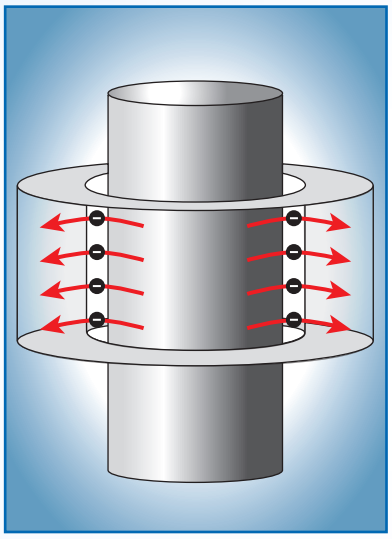
AEGIS's patented, protective FiberLock™ channel locks the ring's conductive microfibers securely in place around the motor shaft, allowing them to flex without breaking. The channel also helps protect the fibers from excessive dirt, oil, grease, and other contaminants.

In severe duty environments install the AEGIS® Rings inside the motors or add a protective O-ring or V-slinger against the AEGIS® Ring's face (see page 33). For large motors or medium voltage motors specify the AEGIS® PROSLR (page 23) which incorporates an O-ring barrier built into the shaft grounding ring to protect against dirt or debris.

Provide Both Contact and Noncontact Grounding

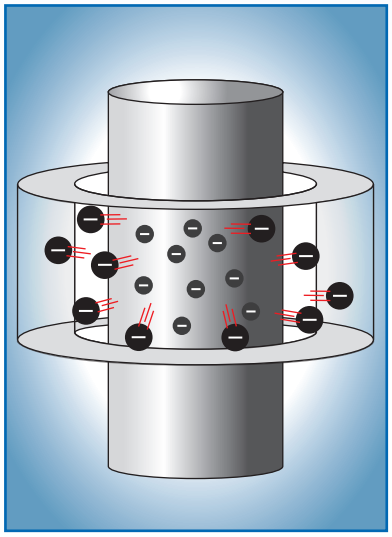
With or Without Shaft Contact

Tunneling of Electrons



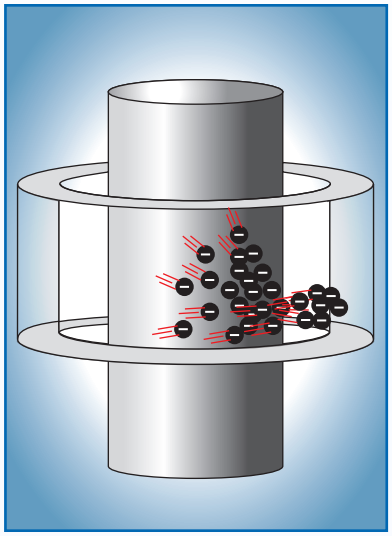
This mechanism is based on the ability of electrons to "tunnel" across an insulating barrier, and works for gaps smaller than 2 nm.

Field Emissions of Electrons



Field emission is a form of quantum tunneling whereby electrons move through a barrier in the presence of a high electric field. It provides grounding across gaps of 2 nm to 5 µm. The electric field from the shaft voltages creates the conditions for the AEGIS® ring fibers to take advantage of field emission electron transfer from the shaft.

Townsend Avalanche of Gaseous Ions



This process results from the cascading effect of secondary electrons released by collisions and the impact ionization of gas ions accelerating across gaps greater than 5 µm. This ionization creates negative and positive ions which neutralize the shaft voltage.

AEGIS® Bearing Protection Ring vs. Contact-Only Brush

The chart to the right compares the design and performance characteristics of AEGIS® Rings to those of conventional and discrete-point grounding brushes that work only through contact with the motor shaft. Due to its patented design and proprietary conductive microfibers, the AEGIS® Ring maintains electrical contact with the motor shaft even if mechanical contact is broken. No other shaft grounding brush provides such exceptional bearing protection.

	AEGIS® Ring	Contact-Only Brush
Continuous circumferential ring design	Yes	No
Contact and Noncontact electrical shaft grounding	Yes	No
Protective fiber channel	Yes	No
Ultra-low wear fibers / wear-to-fit fiber design	Yes	No
Maintenance-free	Yes	No
Effective in presence of dust, dirt, oil, and grease	Yes	No

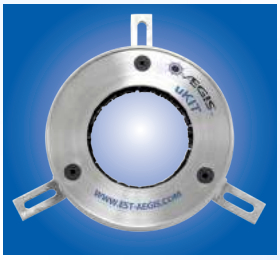
Bearing Protection Rings for virtually any application

Solid Ring

For installation on new or uncoupled motors with flat end bells or face plates.

Split Ring

For field retrofits on in-service or coupled motors with flat end bells or face plates.

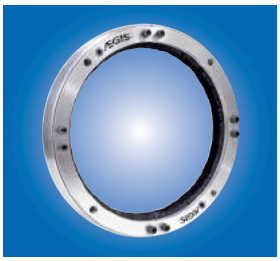


Solid uKIT

For installation on new or uncoupled motors with irregularly shaped face plates or motors with end bell protrusions.

Split uKIT

For field retrofits on in-service or coupled motors with irregularly shaped face plates or motors with end bell protrusions.



PRO Series

For medium-voltage motors or high-current applications

Form 951-1 3/16

Electro Static Technology™
An ITW Company

207-998-5140
sales@est-aegis.com
www.est-aegis.com