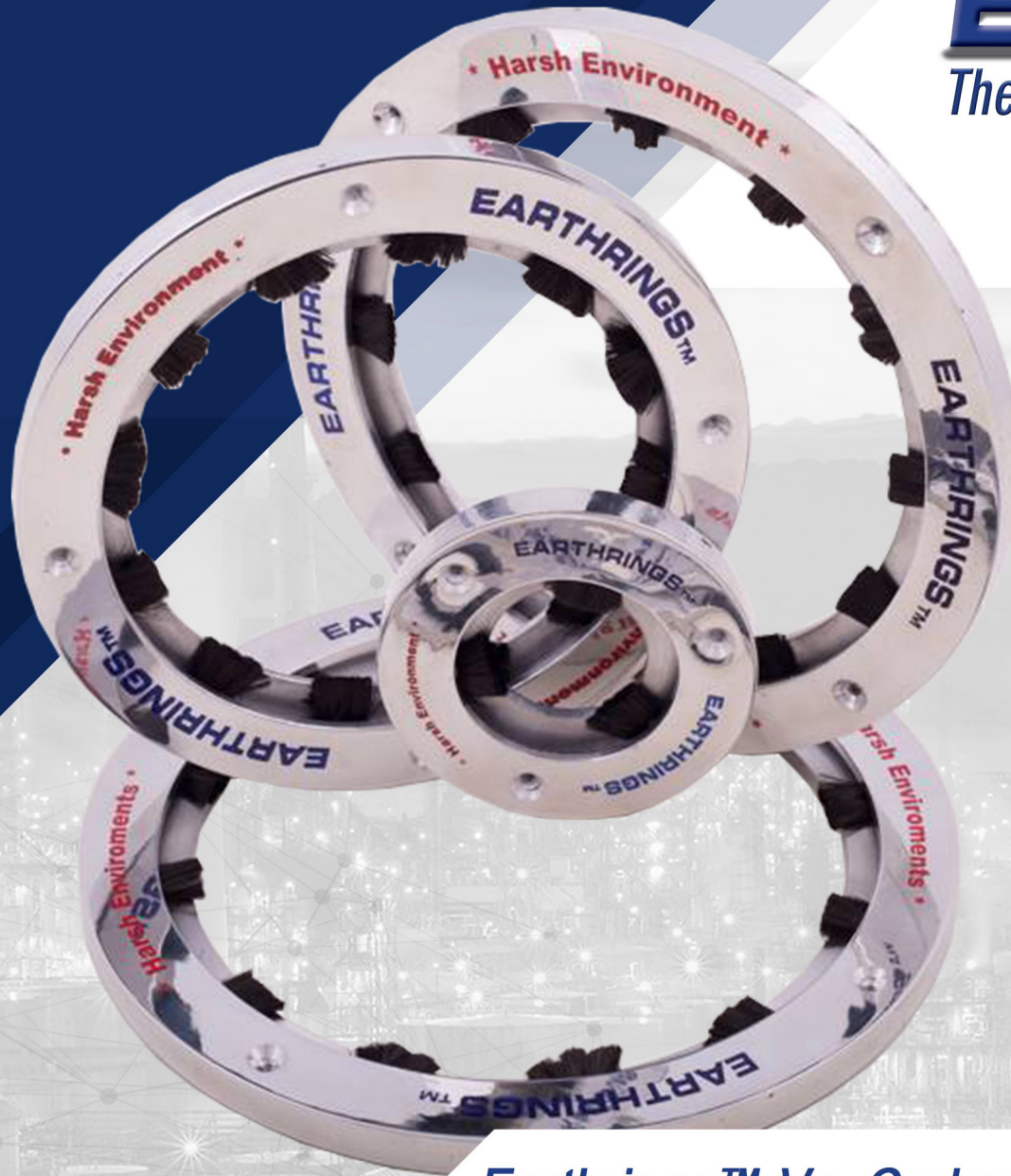
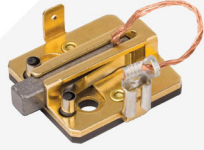


EATHRINGS™

The Longest Lasting Shaft Grounding Solution



Earthrings™ Vs. Carbon Block Brushes

	Micro Fiber Brushes 	Spring Loaded Carbon Block Brush 
Wear	Virtually no friction or wear, lasts for service life of equipment (no friction to shaft).	Wears out due to friction
Shaft Grounding Effectiveness	Continuous discharge - no degradation over time.	Decreases after a few weeks due to coating buildup on shaft. Must be cleaned to restore contact.
Safe For Use In Hazardous (Ex) Environments	Certified and safe for applications in hazardous environment: Zone 1 & 2, and Zones 21 & 22.	Unsafe in hazardous environments. Not certified.
Surface Rate	Surface speed and revolutions per minute do not affect the performance or wear, tested at 20,000 r/min and high surface rate applications of 60 m/s.	Higher surface speed and revolutions per minute results in faster wear and replacements, r/min limitation, less effective at higher r/min.
Create Dust	No measurable dust collected or wear observed (less than 0.025mm) in 10,000 hours. (Creates no carbon dust)	Carbon block wear on shaft creates dust particles based on surface rate of shaft. (Creates carbon dust that can damage the bearings)
Life	Lasts for service life of equipment - nothing to wear out, estimated life is greater than 200,000 hours.	Depends on material but may last for as little as 3 - 5 months.
Replacement	Never needs to be replaced.	Replacement needed frequently (requires equipment shutdown).
Motor / Equipment Shutdown Lost Production	Never	Periodic for maintenance or replacement needed.
Periodic Shaft Maintenance	Never	Periodic maintenance needed to clean/remove oxidation/coatings/contamination shaft.
Brush Maintenance	Never	Periodic maintenance needed to clean/remove coatings/contamination brush contact surface.
Works If Oil / Grease Gets On Shaft	Yes, due to microfibers design the fibers penetrate and cut through oil and grease therefore making it far more effective than carbon blocks, plus have thousands of points of contact for more reliable performance in contamination areas. It is not porous so does not hold or absorb contaminants.	No, does not penetrate oil and grease and may trap contaminants under the carbon block, plus contaminants and oil are easily absorbed by the carbon block as it is very porous.
High Frequency VSD Currents	Micro fiber is optimized for high frequency current discharges produced by VSD dv/dt pulse width modulation (PWM) switching.	Not as effective for high frequencies.
Complex To Install	Simple screw-on brackets - mounts direct to end shield. Self-centers for easy alignment, slim design minimizes shaft length requirement.	Complex bracket installation and alignment, may require machining for bracket installation.
Performance Guarantee	Guarantee certificate supplied - Bearings on motors guaranteed not to fail from bearing fluting caused by electrical bearing discharges	None
Load On Shaft	No load on shaft - micro fibers "lightly" touch shaft surface.	Spring load on shaft, causes drag.
Effective Conductive Surface Contact	Three to four times greater, hundreds of thousands of micro fibers surround shaft.	Only 15-30% contact on slipping surface.

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