



Carbon Technology

Carbon fiber systems  
for the protection of  
bearings –  
universal and reliable



## Carbon fiber systems for the protection of bearings – universal and reliable

Anyone who uses electrical motors systems for production or logistics purposes and is responsible for their maintenance is familiar with the problem - electrostatic charges and high switching frequencies from the engine controls cause stray shaft currents that sooner or later find their way through the bearings of the machine.

This results in excessive current densities, which cause localized melting of the metal surface. The surface becomes damaged and premature bearing failure inevitably leads to costly production downtime.

In fact, the engines themselves, as well as transmission components, can also be damaged quickly by these high-frequency currents and require unplanned repairs.

Schunk Carbon Technology has bundled its extensive experience in electrical engineering and the manufacture of graphite and coated carbon fibers and now offers a reliable solution for the discharge of stray currents.

A bundle made of thousands of coated, unidirectional single fibers make contact with the surface of the shaft or other rotating parts of the motors. The good conductivity ensures reliable transmission of the current to defined earthing points and thus protects the bearings from damage caused by micro-arcs (electric discharge machining, EDM)



▲ Heavy duty versions for industrial and traction applications



Various product configurations can be used depending on the installation conditions and environmental parameters. For example, the "Industrial Protection System" (IPS), with a corrosion-free contact made of graphite and bracket components made of plastic, is suitable for high ambient temperatures as well as operation in aggressive environments. Application-specific special designs are also possible.

- ▣ Universally applicable bearing protection system for DC and AC applications up to the ultra-high frequency range.
- ▣ One system for different shaft diameters means no more expensive individual solutions.
- ▣ The narrow design enables use even in compact installation conditions.
- ▣ Expensive coatings of the bearing surfaces are no longer necessary. Due to their special treatment, the carbon fibers feature high resistance to wear and abrasion. This makes them suitable for areas with increased purity requirements.

One size fits all – Compact protection of bearings IPS