

Motor Bearing Damage in HVAC Systems

shaft grounding systems, inc.

Bearings in HVAC systems can be damaged by electrical currents that pass through the bearings. These currents can be associated with the use of variable frequency drives (VFDs).

Figure 1



This damage can now be easily and economically prevented by proper application of shaft grounding. Reliable and maintainable patented SGS™ shaft grounding systems are available for a wide range of applications, including HVAC, on either end of motor.

Figure 1 shows an inner ball bearing race from a motor showing characteristic fluting pattern caused by capacitive discharge. In some applications, another type of pattern that is smoother and frosted in appearance may be seen (Figure 2).

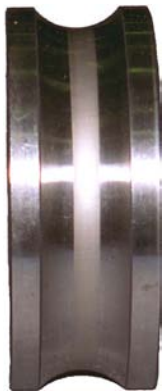


Figure 2

Figure 3 shows a CR series patented shaft grounding system normally available for next day shipping. Here it is shown mounted on a typical TEFC AC motor. The sealed CR system has been proven in use to prevent electrical bearing damage and to run for 10 years (80,000+hrs) without adjustment or maintenance. Installation is done with hand held tools in the field without uncoupling the motor.



Figure 3

These can be easily mounted in the field on either end of AC or DC totally enclosed, drip proof or other types of motors. Normal CR series maintenance would be very infrequent replacement of the brush that can be done while the motor is in operation.