SGS® CR Series Shaft Grounding System

Generally, these systems can run continously with no attention for as long as ten years (1800 rpm motors) before maintenance is needed while eliminating electrical bearing damage for the entire wear life of the brush. This maintenance can be completed on the run. These kits can be installed in the field with hand held tools without dismounting or uncoupling the motor.

The SGS® CR series system is designed to mount on the end of a shaft such as the opposite drive end (ODE) of single shafted horizontal and vertical motors of all frame types (NEMA & IEC) that have solid shafts such as those used on fans or pumps that do not have ODE accessories such as encoders. This requires a suitable flat surface on the ODE of the motor and no existing hole in the ODE motor shaft to permit the use of the standard 1/4 inch UNC or 3/8 inch UNC rotor attachment bolt. If a hole exists, then the diameter and thread of the hole must be specified so the correct machined mounting arrangement can be supplied. Curved mounting surfaces can be accommodated with custom adaptation.

These kits fit motors with a hole in the ODE fan cover/endbell surface less than 1.0” diameter for motors below NEMA 182T, less than 2.0” diameter for motors between 182T- 256T and less than 3.25” diameter for motors 284T and above. If a hole is not present in the fan cover or endbell, then a hole will need to be drilled in accoradance with the above measurements. If the fan cover cannot accept 8 x 32 body mounting bolts, then an adpation using a grounding body backing support is required. In this case, a grounding strap will also be provided to ensure electrical continuity back to the motor frame. This simple adaptation is particularly common with IEC motors.

The distance from the ODE end of the motor shaft to the outside surface of the motor is between 0.0 in. and less than 2 inches for motors below 365T and up to 6” for motors 404T and above. If distance is greater than 6”, then custom shaft extensions can be provided. Rain guards may require longer shaft extensions.

The unit requires minimum 4” of axial clearance at the ODE end of the motor. We suggest approximately 7” of clearance from the ODE end of the motor be allowed for easy access for infrequent maintenance.

Installation requires access to remove the ODE endbell or fan cover and to drill and tap the ODE of the motor shaft, fan cover or endbell. This can be done in the field with hand held tools. The SGS® alignment tool is designed to reduce installation time and ensure proper alignment of the SGS® rotor and body.

The SGS® patented CR series shaft grounding system is designed to control shaft-to-frame capacitive discharge through bearings by providing a single low impedance pathway from the shaft to the frame. *These systems are not rated explosion proof*. If eddy currents are present, which is unlikely except in AC motors with 100 or more horsepower at 1200rpm or less **OR** on motors 200hp or greater regardless of rpm and no motor bearing is insulated, then two shaft grounding systems should be installed to pass the eddy current around both motor bearings while also controlling the capacitive discharge. If the ODE motor bearing is insulated to control eddy current, then one shaft grounding system can be used at the DE (i.e., SR series split ring) non-insulated bearing to control the shaft-to-frame capacitive discharge. If two insulated bearings are used, then a DE shaft grounding system should be used to control for potential eddy currents. A single insulated bearing will not control capacitive discharge through the non-insulated bearings. Please call to discuss applications when both eddy currents and capacitive discharge are believed to be present.

SGS® patented shaft grounding systems are available worldwide and for most applications.

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