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Shaft Grounding Kit Instructions

M190-M193B & M285

INACTIVE DESIGNS
 Contact Help Desk

DESCRIPTION

These shaft grounding kits are designed to be installed with M190-M193B and M285 encoders and are intended for the reduction of motor bearing problems caused by shaft currents. For other Avtron encoders, shaft grounding options are available factory installed for the reduction of pulse generator bearing problems caused by motor shaft currents.

Under certain operating conditions, a motor shaft can be subjected to shaft currents that seek the lowest resistance path to ground. If this path is through bearings it can result in shortened bearing life. The shaft grounding option is intended to provide a lower resistance path to divert shaft currents away from bearings.

The shaft grounding kit consists of a gasket sealed brush holder, a silver graphite brush, a shaft extender, a wire lug and stainless steel mounting hardware. The wire lug is intended to provide a lower resistance ground connection than relying on mounting hardware.

KIT APPLICATION				
TYPE	MOTOR FRAME	SHAFT SIZE	KIT PART NO.	
			M190-M193B	M285
1	CD180-320AT	1.1250/1.1245	A24379	A24387
1	CD360AT	2.1250/2.1245	A24381	A24388
1	CD400AT	2.3750/2.3745	A24382	A24389
1	CD500AT	2.8750/2.8745	A24386	A24390
1	CD4000-8000	—————	A24392	A24392
2	CD505 CD4000-8000	—————	—————	A29489

INSTALLATION (See figure 1)

- Using a solvent remove all oil, grease and dirt from the threaded hole in center of the motor shaft end or rotor.
- Install the encoder rotor onto the motor shaft per the encoder instructions provided separately.

General Electric CD500AT frame motors EXCEPTION:

Because of the close fit between the threads of the extender shaft and the bore in the rotor, it will be necessary to position the extender shaft through the rotor bore and thread it into the motor shaft concurrent with locating the rotor on the shaft. Apply retaining compound (Loctite grade 242, included) to the extender shaft threads before tightening. Tighten using a 13/16" wrench. Do not use a flat or lock washer under the extender shaft as this will adversely affect the relative position of the end of the extender shaft and the grounding brush.

- Install the rotor retaining hardware per the encoder instructions.

General Electric CD180 - 320AT frame motor EXCEPTION:

Do not install the recommended 3/8-16 x 1.5 bolt with spring lock as recommended. Retain the rotor with the extender shaft threaded into the motor shaft. Apply retaining compound (Loctite grade 242, included) to the extender shaft threads before tightening. Tighten using a 13/16" wrench. Do not use a flat or lock washer under the extender shaft as this will adversely affect the relative position of the end of the extender shaft and the grounding brush.

- CD360-400AT frame motors: Thread the extender shaft through the rotor into the center of the motor shaft. CD4000-8000 Type 1: Thread the extender shaft into the center of the rotor. Apply retaining compound (Loctite grade 242, included) to the extender shaft threads before tightening. Tighten using a 13/16" wrench. Do not use a flat or lock washer under the extender shaft as this will adversely affect the relative position of the end of the extender shaft and the grounding brush. For CD505 and CD4000-8000 Type 2: (P/N A29489) Follow separate instructions and diagram.

- Assemble the encoder stator housing to the motor per the encoder Instructions.
- Remove the encoder cover plate but save the mounting hardware.
- Mount the brush holder to the cover plate provided in the kit using the stainless steel #8-32 x 1.5 long bolt, flat washer, lock washer and hex nut.
- Mount the cover plate assembly from step 7 to the encoder stator housing using the hardware from step 6.
- Assemble the brush, screw cap, pipe plug, and wire lug to the brush holder.
- A ground wire (6 to 14 AWG) must be connected to the wire lug attached to the side of the brush holder. The ground wire should be connected to a good earth ground, typically the motor frame.
- Refer to the outline drawing figure 1 for required clearances.

MAINTENANCE

WARNING

All maintenance procedures listed below must be performed by qualified personnel, and with the motor turned OFF to prevent possible injury or death of maintenance personnel.

Inspection

A new brush is 5/8" long. The brush should be replaced after it has worn 3/8" maximum (see Figure 2 - Shaft Grounding Kit Assembly). The brush should be inspected after 1 year to determine the wear rate for each installation. Replace brush if it is worn to a length of 1/4".

Cleaning

The brush holder cavity should be cleaned every time the brush is removed for inspection. Refer to Figure 2 - Shaft Grounding Kit Assembly, and clean as follows:

1. Remove the cap screw and brush.
2. Remove pipe plug from the bottom of the brush holder.

WARNING

Use safety goggles when using compressed air to prevent possible eye injuries.

3. Use dry compressed air applied through the brush opening to blow out any worn brush material residue through the bottom of the brush holder. An optional method is to suction the brush residue using a vacuum cleaner.

PART NO.	QTY.	DESCRIPTION
410523	1	Brush
410522	1	Cap Screw, Brush Holder
433289	1	Pipe Plug
C23866	1	Brush Holder
367013	1	Terminal Lug
B26207	1	Shaft, M190-M193B CD360-400 motor
A24366	1	Shaft, M190-M193B CD180-320 motor
B26203	1	Shaft, M190-M193B CD500 motor
B26204-6	1	Shafts, M285 CD180-380; CD360-400; CD500
B26202	1	Type 1 Shaft, M190-M193B and M285 for CD4000-8000
A29485	1	Type 2 Shaft used in A29489 with M285 on CD505 and CD4000-CD5000

FIGURE 1 – Shaft Grounding Kit Outline Drawing

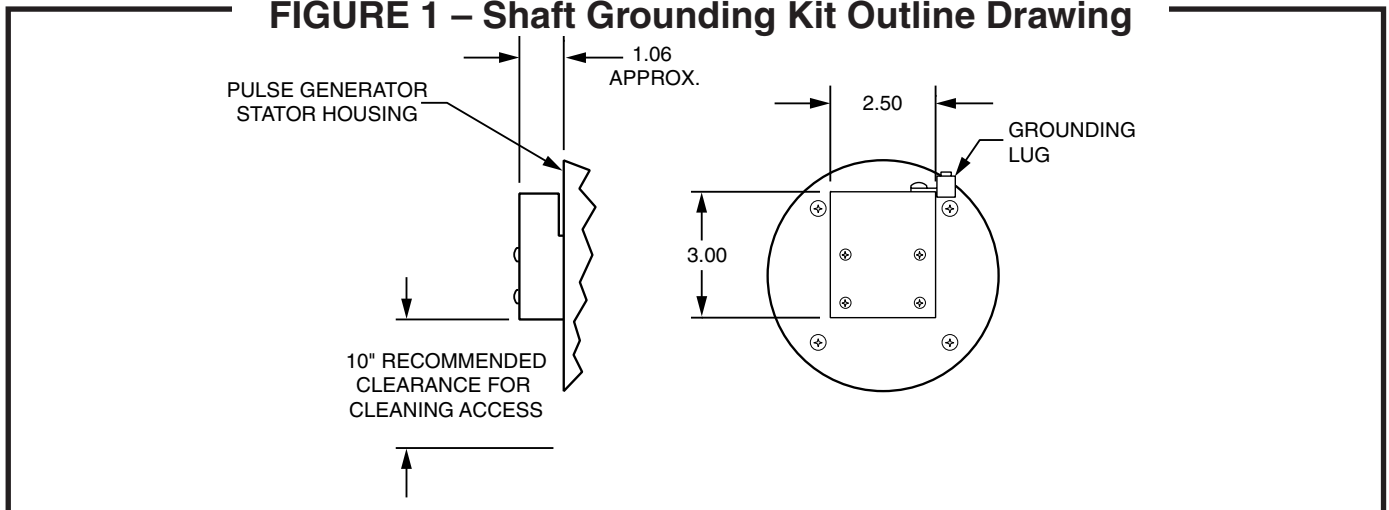


FIGURE 2 – Shaft Grounding Kit Assembly

