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## SHAFT GROUNDING KIT INSTRUCTIONS for **AV850**

### DESCRIPTION

These shaft grounding kits are designed to be installed with AV850 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 encoder and motor 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. Use the wire lug with a ground wire to provide a low resistance ground connection.

- 6a. For rotor style "G," the brush holder is preassembled.
- 6b. For grounding kits purchased separately:
  - I. Assemble brush holder and gasket to coverplate and attach to stator housing using hardware supplied.
  - II. Assemble remainder of shaft grounding kit. (Refer to Figures 1 and 2.)

**FOR ADDING BRUSH GROUNDING KITS TO AV850 SERIES ENCODERS WHEN USED WITH GE MOTORS: CD360AT, CD400AT, CD500AT, CD505, CD680, CD6000, CD4300 THRU CD4700, CD5400, CD6400, CD6500, CD7500, CD7600, CD8500, CD8600**

- 1. Install stator adapter, shaft adapter, and rotor following AV850 instructions.
- 2. Apply threadlocker (Item 17) to socket head cap screw & install extender shaft (Item 1), as shown in Figure 3.
- 3. Assemble encoder stator housing to stator adapter per encoder instructions. Remove and discard standard coverplate, if present.
- 4a. For rotor style "G," the brush holder is preassembled.
- 4b. For grounding kits purchased separately:
  - I. Assemble brush holder and gasket (Items 2 and 3) to coverplate and attach to stator housing using hardware supplied.
  - II. Assemble remainder of shaft grounding kit. (Refer to Figures 1 and 3.)

KIT APPLICATION		
MOTOR FRAME	SHAFT SIZE	KIT PART NO.
		AV850
CD180-320AT	1.1250/1.1245	A34396
CD360AT	2.1250/2.1245	A34397
CD400AT	2.3750/2.3745	A34397
CD500AT	2.8750/2.8745	A34397
CD505	_____	A34397
CD680	_____	A34397
CD4000-8000	_____	A34397

### WARNING

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

### INSTRUCTIONS

**FOR ADDING BRUSH GROUNDING KITS TO AV850 SERIES ENCODERS WHEN USED WITH GE MOTORS: CD180AT, CD210AT, CD320AT**

- 1. Remove all oil, grease, and dirt from the threaded hole in the center of the motor shaft.
- 2. Install the motor shaft adapter and rotor per AV850 instructions with the following exception: Do NOT apply loctite to the standard mounting screw.
- 3. Remove standard mounting screw, apply threadlocker to extender shaft (Item 1) threads, and install as shown in Figure 2.
- 4. Verify rotor runout is still acceptable.
- 5. Assemble encoder stator housing to motor per encoder instructions. Remove and discard standard coverplate, if present.

### MAINTENANCE

#### 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:

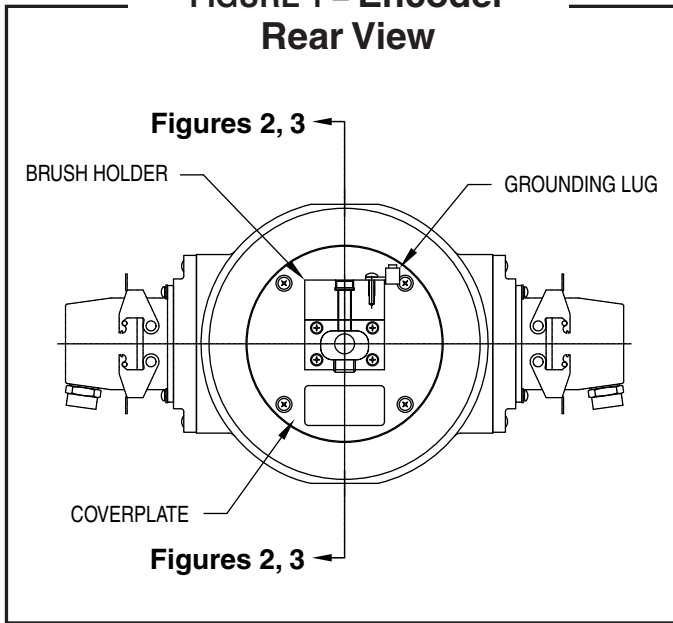
- 1. Remove the cap screw and brush.
- 2. Remove pipe plug from the bottom of the brush holder.

### WARNING

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

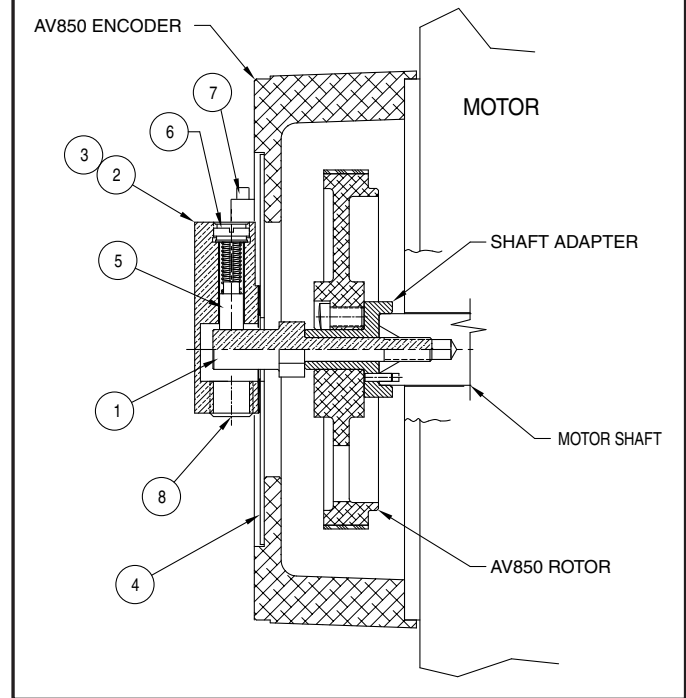
- 3. Use dry compressed air applied through the brush opening to blow out any worn brush material residue through the bottom of the brush holder. An optional method is to suction the brush residue using a vacuum cleaner.

**FIGURE 1 – Encoder Rear View**



**FIGURE 2 Shaft Grounding Kit Assembly Side View**

for CD180AT, CD210AT, CD320AT

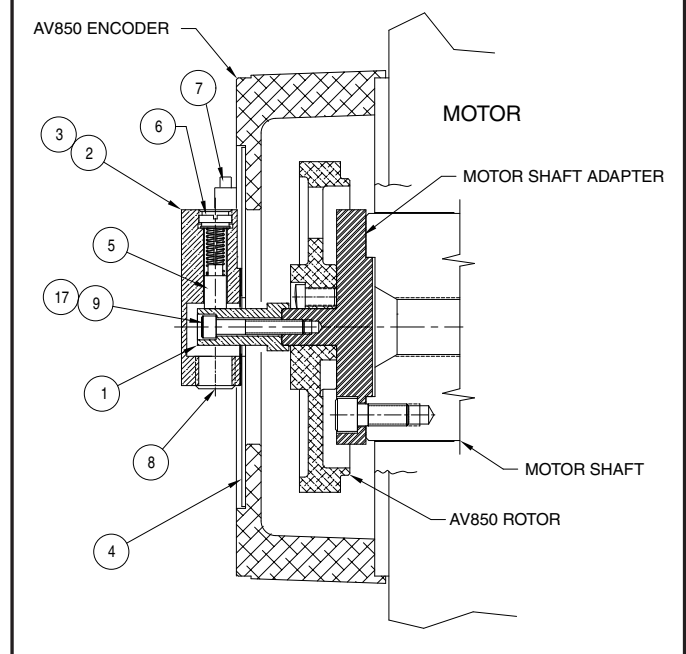


**FIGURE 2 PARTS LIST**

ITEM NO.	PART NO.	DESCRIPTION
1	B31525	Shaft, Extender
2	C23866	Holder, Brush
3	A22158	Gasket, Brush Holder
4	B31107	Plate, Support
5	410523	Brush, Electrical
6	410522	Screw Cap, Brush Holder
7	367013	Lug, Terminal
8	416559	Plug, Pipe, 3/8 NPT, SST

**FIGURE 3 Shaft Grounding Kit Assembly Side View**

for CD360AT, CD400AT, CD500AT, CD505, CD680, CD6000, CD4300 Thru CD4700, CD5400, CD6400, CD6500, CD7500, CD7600, CD8500, CD8600



**FIGURE 3 PARTS LIST**

ITEM NO.	PART NO.	DESCRIPTION
1	A29485	Shaft, Extender
2	C23866	Holder, Brush
3	A22158	Gasket, Brush Holder
4	B31107	Plate, Support
5	410523	Brush, Electrical
6	410522	Screw Cap, Brush Holder
7	367013	Lug, Terminal
8	416559	Plug, Pipe, 3/8 NPT, SST
9	507541	Screw, SOC HD 1/4-20 x 1.50
17	910244	Threadlocker GR242

Specifications subject to change without notice.  
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