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Shaft Grounding Kit Instructions

MODEL AV685

Shaft Option "G"

DESCRIPTION

These shaft grounding kits are designed to be installed by customers when used with AV685 encoders and are intended for the reduction of bearing problems caused by shaft currents.

CAUTION

Improper shaft grounding can cause or increase motor bearing damage; Avtron does not recommend the use of shaft grounding kits on motors with only 1 insulated/isolated bearing.

These kits are also available for other types of Avtron encoders.

Under certain operating conditions, a motor shaft can be subject to shaft currents that seek the lowest resistance path to ground. If this path is through bearings, it can shorten 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, silver graphite brush, a wire lug and stainless steel mounting hardware. The wire lug is intended to provide a lower resistance ground connection than relying on the mounting hardware.

- Position encoder so that the face is 1.35" from the end of the 1-1/8" diameter portion of the shaft.
- Tighten encoder onto shaft as described in pulse encoder instructions.
- Install cap. Ensure that cap is flush with end of 1-1/8" diameter section of shaft $\pm 1/16"$. If not properly positioned remove cap and adjust encoder position accordingly. Repeat until correct position is achieved. Apply Loctite (10) to screw threads.

CAUTION

If encoder is not positioned correctly, damage to grounding brush assembly or encoder may occur.

- Mount the brush holder (1) and gasket (2) to the cap using #8-32 x 1.25 screws (11) and flat washer (12). Apply Loctite (10) to the last 0.25 of screws.
- Assemble to brush holder the brush (3), screw cap (4), pipe plug (5) and terminal lug (6) using items (7, 8, and 9).
- A ground wire (6-14 AWG) must be connected to the terminal lug attached to the top of the brush holder. The ground should be connected to a good earth ground, typically the motor frame.

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 is worn 3/8" maximum (see Figure 1). 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".

Avtron Encoder Part Number Code Identification of Shaft Grounding Option:

Model: AV685

Model	Other Options		Other Options
AV685	XX	G	XXXXXXXXXX

- E -End-of-Shaft Option
- T -Through Shaft Option
- O -Overspeed Switch Option
- G -Shaft Grounding Option

INSTALLATION

(See accompanying figure 1 on the back of this page.)

- Install encoder as a thru shaft model described in the encoder instructions.

Cleaning

The brush holder cavity should be cleaned every time the brush is removed for inspection. Refer to Figure 1, and clean as follows:

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

WARNING

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

Shaft Grounding Option Replacement Parts List:			
No.	Part No.	Qty.	Description
1	C23881	1	Brush holder
2	A24405	1	Gasket
3	410523	1	Brush
4	410522	1	Screw Cap, brush holder
5	416559	1	Pipe Plug
6	367013	1	Terminal Lug
7	509821	1	Screw, Pan Hd, #10-24 X 0.62
8	530073	1	Washer, Flat #10
9	532579	1	Washer, Lock, #10
10	910244	1	Loctite
11	509131	4	Screw, Pan Hd, #8-32 X 1.25
12	530084	4	Washer, Flat #8

FIGURE 1 – Shaft Grounding Kit – Outline Dimensions and Assembly

