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## INSTALLATION & OPERATING INSTRUCTIONS FOR FLAP POSITIONING SYSTEM

### Installation

Raise flaps on **RV-(4,6,7,9,&10)** and lower flaps on **RV-8**, remove necessary cover panels to gain access to the flap actuator. For installations on **RV-8's**, remove the actuator completely to enlarge the hole in armrest allowing the switch bracket, when attached to actuator housing, to pass through the armrest with out interference.

Remove the lower half of the switch bracket and position it over actuator housing, (use supplied plastic bushing if the actuator is a Motion System brand, do not use the bushing if the actuator is a Van's Aircraft brand actuator) Reinstall the lower half of the switch bracket and torque screws. When it's approximately 1/4" from end of housing, refer to **Figure 1**.

**CAUTION: DO NOT LOOSEN JAM NUT OR REMOVE HEIM BEARING FROM FLAP ACTUATOR SHAFT**

Remove the lower half of the positioning rod assy and slide into switch bracket, reinstall the lower half of clamp around actuator shaft. Position clamp at the end of actuator shaft but do not torque screws at this time.

For installations on **RV-4's** modifications may be needed to the EF-401 guide block, allowing the positioning rod clamp clearance when the flap actuator is retracted. There has to be adequate clearance between positioning rod assy and EF-401 guide block in the flap down position, for correct operation.

At this time you can adjust the distance of positioning rod assy to switch bracket as follows:

**RV-(4,6,7,9 &10)** lower the flaps (retract actuator), adjust the positioning rod assy to a distance of 15/16" from the switch bracket then torque screws. Refer to **Figure 1**. **RV-8** adjust the positioning rod assy to a distance of 5 15/16" from the switch bracket then torque screws. Refer to **Figure 1**.

**Note:** flap actuator must be fully retracted for **RV-(4,6,7,9,&10)** and fully extended for **RV-8**. If actuator is not at it's complete limit of travel (*retracted or extended*) the position rod assy distance will be incorrect and the FPS will not operate properly.

Secure the control box to airframe structure in an area within the length of wiring, (**RV-8's** allow enough slack in wiring for the movement of actuator and switch bracket during operation).

Install the new flap toggle switch in the instrument panel. Connect a 14v power wire from the aircraft electrical buss via a five amp breaker to the #2 position of toggle switch, continue this wire and connect to the red power wire of control box. Connect the extend wire from control box to the #1 position of toggle switch, and the retract wire from switch bracket to the #3 position of toggle switch. Connect the black ground wire from control box to suitable airframe structure.

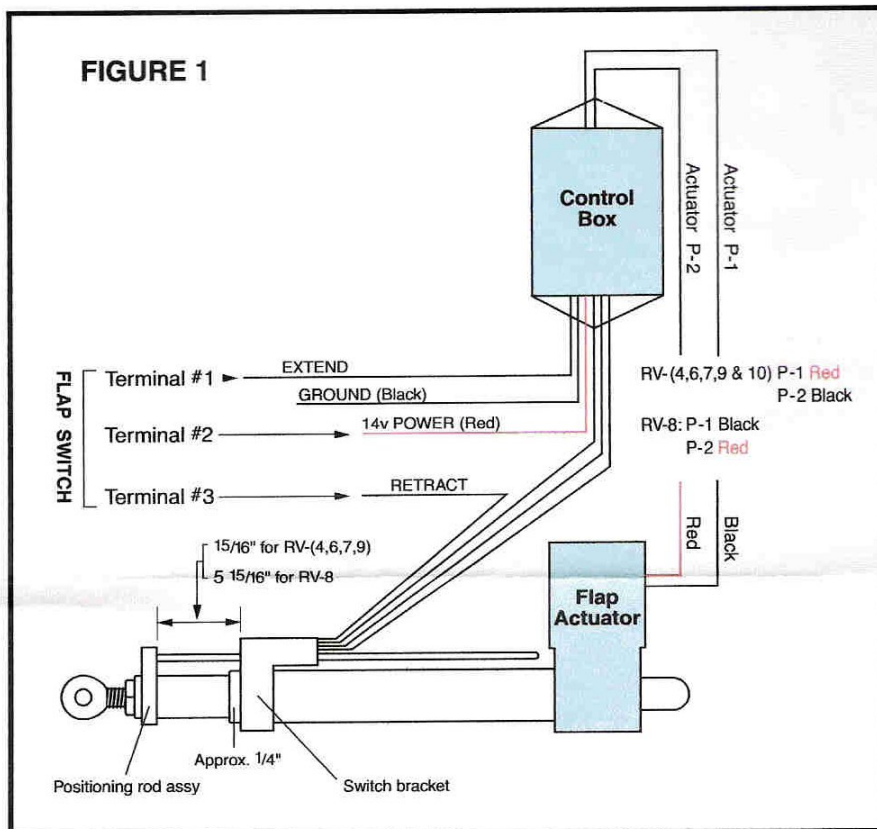
Connect flap actuator wires to the control box as follows;

**RV-(4,6,7,9 &10):** connect actuator P-1 to red wire, actuator P-2 to black wire. **RV-8:** connect actuator P-1 to black wire, actuator P-2 to red wire. Refer to **Figure 1**.

**CAUTION: INCORRECT WIRE CONNECTIONS CAN CAUSE PERMANENT DAMAGE TO THE CONTROL BOX, DOUBLE CHECK ALL WIRE LABELING FOR CORRECT INSTALLATION BEFORE OPERATING THIS SYSTEM.**

Test run the system, if flap actuator does not run, review above wiring steps. Check that the actuator does not continue to run at the retract or extend limits. Should flap actuator continue to run, make small adjustments to the positioning rod assy as defined in above steps. (**RV-8** installations make sure the switch bracket has adequate clearance when passing threw the arm rest, and wiring to the control box has enough slack for full travel of the actuator)

Replace all access panels, (make sure the fasteners in access panels do not obstruct positioning rod assy or switch bracket travel.)



## Operation

To lower the flaps during normal operations press the toggle switch down momentarily.

For the next positions simply repeat the first step, for instant full flap deployment when flaps are in the raised position press and hold the toggle switch until the second to last flap position has been exceeded.

To raise the flaps press the toggle switch up to the stationary position, once flaps are fully raised the switch can be reset to the middle neutral position. (The flap actuator will shut down automatically when flaps are fully raised, so resetting switch is not time sensitive.)

If a flap position other than the preselected positions is desired (short field takeoff flaps), lower the flaps to mid position. Hold the toggle switch up momentarily, once desired position has been achieved reset switch to the neutral position.

**WARNING, NEVER LOWER THE FLAPS ABOVE THE MANUFACTURERS RECOMMENDED FLAP DEPLOYMENT SPEED**

**FAILURE TO INSTALL OR OPERATE THIS PRODUCT PER INSTRUCTIONS MAY CAUSE THE FLAPS NOT TO OPERATE PROPERLY JEOPARDIZING FLIGHT SAFETY.**