



## INSTALLATION & OPERATING INSTRUCTIONS FOR FLAP POSITIONING SYSTEM

### Installation

Installation of the **Flap Positioning System** should not be completed until the flap system has been installed per the manufacturer's instructions and operates accordingly.

**Note:** Check the fit of the switch bracket on the flap actuator housing prior to installation of the FPS. If the switch bracket will not clamp tightly to the actuator housing please contact Show Planes. A bushing will be sent to facilitate the correct installation of switch bracket.

Extend the flaps on all RV models then remove necessary cover panels to gain access to the flap actuator. For installations on **RV-8** remove the actuator and enlarge the hole in the armrest to allow the switch bracket when attached to the actuator housing to pass through the armrest without interference.

**CAUTION: DO NOT LOOSEN JAM NUT OR REMOVE ROD END BEARING FROM THE FLAP ACTUATOR SHAFT**

Remove the end caps from both the switch bracket and positioning rod assembly; slide the positioning rod assembly into the switch bracket. Install the switch bracket and positioning rod on the actuator, position the switch bracket approximately 1/4" from the end of the actuator housing then install switch bracket end cap and torque screws. Refer to **Figure 1**

Now adjust the distance of positioning rod assembly to the switch bracket as follows: **RV- 4,6,7,9 &10** adjust the positioning rod assembly to a distance of 15/16" from the switch bracket, install end cap and torque screws. Refer to **Figure 1**. **RV-8 & 14** adjust the positioning rod assembly to a distance of 5 15/16" from the switch bracket, install end cap and torque screws. Refer to **Figure 1**.

**Note:** the flap actuator must be completely retracted for **RV- 4,6,7,9,&10** and completely extended for **RV-8 & 14**. If the actuator is not at it's complete limit of travel (*retracted or extended*) the position rod assembly distance will be incorrect and the FPS will not operate properly.

For installations on **RV-4's** modifications may be needed to the EF-402 guide block, allowing the positioning rod clamp clearance when the flap actuator is retracted. There has to be adequate clearance between the positioning rod assembly and EF-402 guide block in the extended flap position.

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 flap toggle switch in the instrument panel. Connect a 14v power wire (refer to AC 43.13-1/B for correct wire gage) from the aircraft electrical buss via a 5 amp breaker to the #2 position of the toggle switch. Continue this wire and connect to the red power wire on control box. Connect the blue extend wire from control box to the #1 position of toggle switch, and the orange retract wire from switch bracket to the #3 position of toggle switch. Refer to **Figure 1**. Connect the black ground wire from control box to suitable airframe structure.

**Note:** The provided toggle switch may be substituted with a new switch provided it can handle at least one amp at 14v and operates in the same manner.

**CAUTION: DO NOT INSTALL THE FLAP CONTROL SWITCH IN A LOCATION THAT COULD CAUSE ACCIDENTAL DEPLOYMENT OF THE FLAPS AT EXCESSIVE AIRSPEEDS WITHOUT APPROPRIATE GUARDING OF THE SWITCH.**

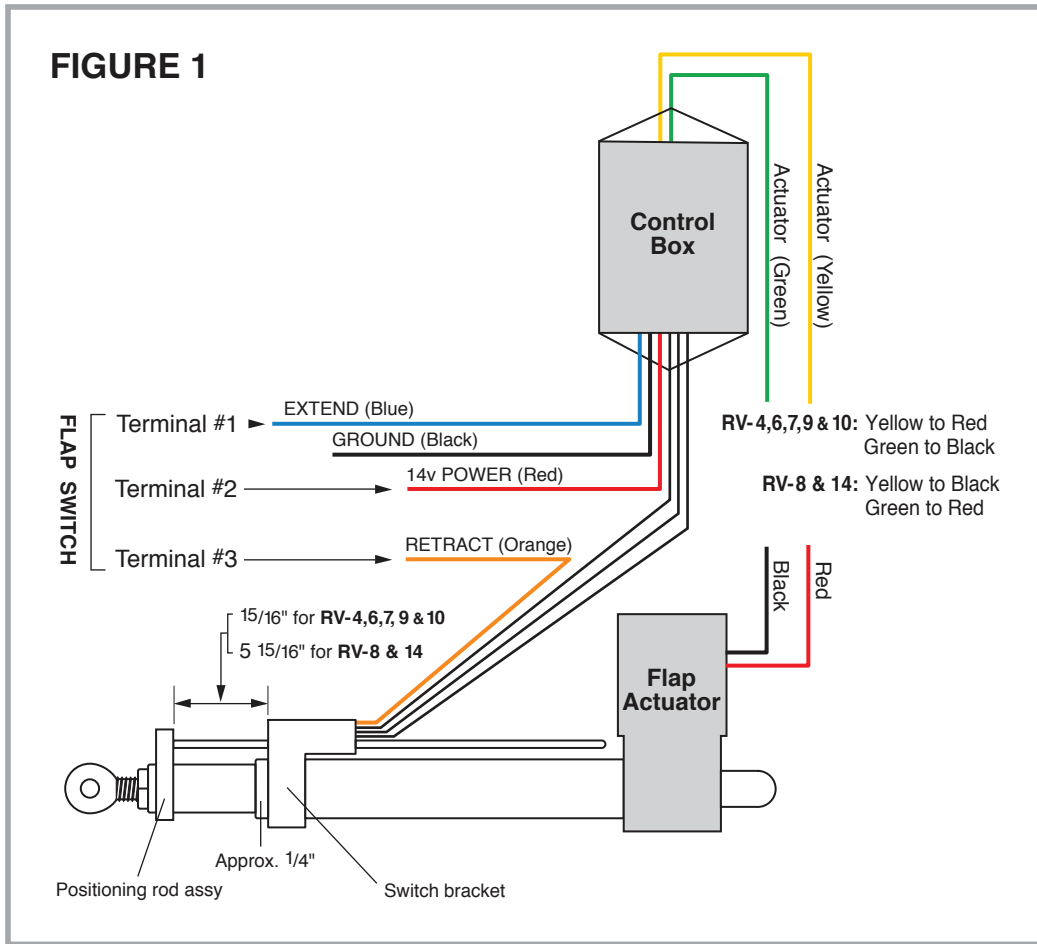
Connect flap actuator wires to the control box as follows: **RV- 4,6,7,9,&10:** red actuator wire to yellow and black to green wire. **RV-8 & 14:** black actuator wire to yellow and red to green wire. Refer to **Figure 1**.

**CAUTION: DO NOT REVERSE THE POWER AND GROUND WIRE CONNECTIONS. DO NOT APPLY POWER TO THE CONTROL BOX ACTUATOR WIRES. INCORRECT WIRE CONNECTIONS CAN CAUSE PERMANENT DAMAGE TO THE CONTROL BOX, DOUBLE CHECK ALL WIRE CONNECTIONS FOR CORRECT INSTALLATION BEFORE OPERATING THE SYSTEM.**

Test run the system, if flap actuator does not run, review above wiring steps. Check that the flap actuator does not continue to run at the retract or extend limits. Should the flap actuator continue to run, make small adjustments to the positioning rod assembly as defined in the above steps. (**RV-8** installations make sure the switch bracket has adequate clearance when passing through 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 the positioning rod assembly or switch bracket travel).

**FIGURE 1**



## Operation

To extend 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 retracted (reflex position for RV-10 & 14) position press and hold the toggle switch until the second to last flap position has been exceeded.

To retract the flaps press the toggle switch up to the stationary position, once the flaps are fully retracted (reflex position for RV-10 & 14) the switch can be reset to the middle neutral position. The flap actuator will shut off automatically when flaps are completely retracted; resetting the 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.**