

## S70 SERVO MOUNTING AND CALIBRATION

Servo kits can be field installed on any continuous duty actuator (30 or 60 sec. operation speed) to provide proportional positioning in response to a control signal. Intermittent duty actuators are not adaptable for servo control.

### SERVO KIT CONSISTS OF:

- 1) One servo board
- 2) One quick connect plug in connector with marker
- 3) Three double ended snap fit mount/standoffs
- 4) Two standoffs
- 5) Two #4 x long cross drive pan head screw (for servo)
- 6) One potentiometer assembly
- 7) Two #6 x long cross drive pan head screws (for pot)
- 8) Two #6 type A internal lockwashers (for pot)
- 9) One wiring diagram sticker for servo units
- 10) One wiring diagram sticker for servo units with torque switches

### TOOLS REQUIRED:

- For servo trimmer pot adjustment      Screwdriver, 1/16" flat blade
- For terminal wiring      Screwdriver, 3/16" flat blade
- For servo and terminal screws      Screwdriver, No.1 phillips
- For pot mounting screws      Screwdriver, No.2 phillips

### INSTALLATION PROCEDURE:

#### Remove the on/off 8 point terminal strip and its marker

1. Disconnect all wiring to the terminal strip.
2. All wiring in the actuator is color coded to facilitate wiring, and does not need to be tagged or marked.
3. Field wiring should be marked if it is not already color coded.

#### Mount the servo board

4. Push the snap fit mounts into the 2 (or 3) non-threaded holes of the trapezoidal pattern on the switchplate.
5. Push the servo onto the mounts.
6. Place the standoff(s) between the servo and the plate and screw the #4 mounting screw(s) into the plate. The lower right mounting screw is also the conductor that grounds the board.

#### Install the potentiometer assembly

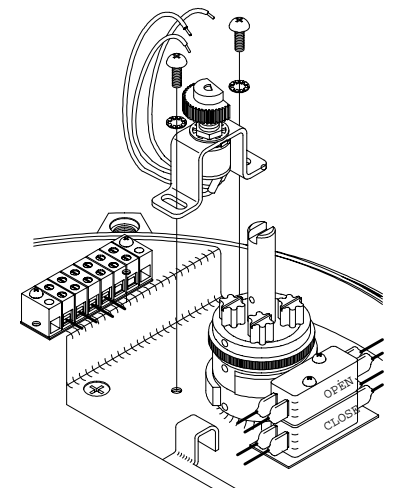
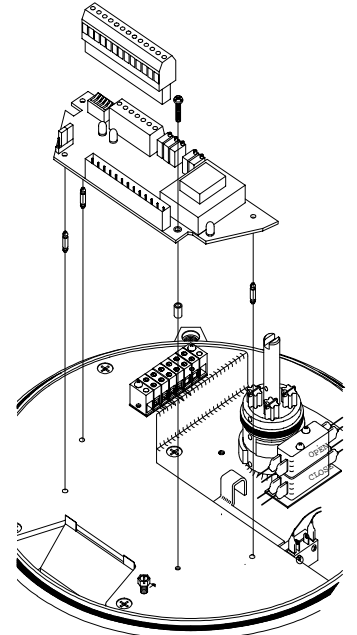
7. The potentiometer installs next to the camshaft where there are two threaded holes provided.
8. The potentiometer assembly must be mounted in the correct orientation with its gear. Simply center the pot, and orient it so the gears are meshing.
9. Push the assembly towards the cam to mesh the pot gears. Then tighten the mounting screws.

#### Wire the pot to the servo

10. The pot wires into the small 7 position terminal strip on the servo.
11. Wire according to the wiring diagram provided.

#### Wire the servo to the actuator

12. Wire according to the wiring diagram provided.
13. See the servo calibration instructions on the next page.



## SERVO CALIBRATION

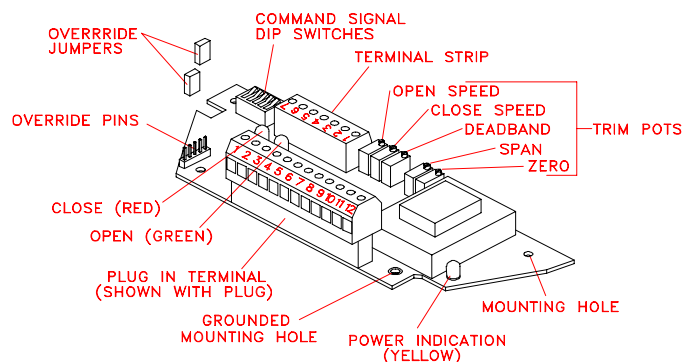
It is important that the travel switches and travel stops are set properly prior to calibrating the servo. Use a controlled and known command signal source. Factory installed servos are pre-calibrated.

### Set the Potentiometer:

- 1) Manually operate the actuator handwheel until the unit is in the fully closed position.
- 2) Rotate the **black** potentiometer drive gear adjustment knob to just engage the potentiometer gear segment at the closed position. The closed position is indicated by a white dot.
- 3) Manually operate the actuator to the fully open position.
- 4) Fine tune the potentiometer adjustment at this end to equalize the difference between the open and closed ends. The potentiometer gear segment should maintain engagement with the drive gear throughout full actuator travel. If this is not the case, either the travel is exceeding 90 degrees or the pot is mounted backwards.

### Set the Servo:

- 1) Set the 5 position command signal dip switches located on the servo board to match the command signal. A chart is provided on the wiring diagram.
- 2) Wire the command signal to the correct positions on the terminal strip (see wiring diagram provided with servo). Correct positive and negative connections are important.



- 3) Five (5) trim pot settings are on the servo. Rotating any one of them in the clockwise direction (cw) will increase its function. The trim pots faintly click when they reach either end of travel.
- 4) Both the open speed (OS) and closed speed (CS) trim pots should be adjusted to the fastest setting by rotating them both fully clockwise (cw) until a faint click is heard. This is the standard factory setting.
- 5) The Dead Band (DB) trim pot should be adjusted to its maximum setting by rotating the trim pot fully clockwise (factory setting). If increased sensitivity is desired, rotate the trim pot counterclockwise until desired control is achieved. It is important not to set the Dead Band overly sensitive to prevent the actuator from hunting or searching for a setpoint.
- 6) Power-up the actuator. The yellow LED should light, indicating power to the servo.
- 7) The Zero (Z) trim pot sets the low command signal to the closed position. Set the command signal to the closed setting and turn the trim pot clockwise to move the actuator towards the close cam until it is tripped. If the cam is already tripped, rotate the trim pot counterclockwise to pull it off the switch, and then clockwise until the switch just trips.
- 8) The Span (S) trim pot is set the same as the zero, but for the opposite end.
- 9) Run the actuator throughout its range to verify all settings are correct.