



## STYLE 7900 ELECTRIC ACTUATOR AND CONTROLLER FOR AKRON BUTTERFLY VALVES INSTALLATION INSTRUCTIONS

The electric actuator and controller is designed to operate current model Akron Style 7940, 7945, 7950 and 7960 Butterfly Valves up to 250 psi working pressure.

These instructions are prepared to accommodate conversion of current design valves now in service using manual handle, handwheel or pneumatic operators.

### I. CONVERSION OF MANUAL HANDLE (Figure 1)

- A. Remove handle bolt (pc. 1).
- B. Remove washer and handle (pcs 2 & 3).
- C. Remove notched throttle plate and bolts (pcs 4 & 5).
- D. Enlarge four (4) bolt holes in mounting flange with  $15/32$ " drill.
- E. See Section IV for installation instructions.

### II. CONVERSION OF HANDWHEEL OPERATOR (Figure 1)

- A. Remove four (4) bolts (pcs. 5) through mounting flange and lift handwheel operator (pc. 6) off.
- B. Enlarge four (4) bolt holes in mounting flange with  $15/32$ " drill.
- C. See Section iv for installation instructions.

### III. CONVERSION OF AIR ACTUATOR (Figure 1)

- A. Remove three (3) bolts (pcs. 5) through mounting flange and lift air actuator (pc.7) off.
- B. Enlarge four (4) bolt holes in mounting flange with  $15/32$ " drill.
- C. See Section IV for installation instructions.

### IV. INSTALLATION OF ELECTRIC VALVE ACTUATOR (Figure 2)

- A. Position actuator as shown in Fig. 2, View A.
- B. Remove cover by removing four (4) allen head screws with  $3/32$ " Allen wrench.
- C. Verify gear sector is in same position as shown. If it is not, use a  $7/16$ " socket wrench to position correctly by turning shaft.
- D. Replace cover.
- E. Set butterfly disc in fully open position.
- F. Mount actuator on  $5/8$ " square shaft positioning the four (4) studs through holes on mounting flange (Fig 2, View B). Actuator may be mounted in one of four positions.
- G. Place lock washer and nuts onto protruding studs and tighten alternately.
- H. Proceed to Section V for control installation.

### V. MASTER CONTROLLER INSTALLATION

**NOTE:** This controller may only be used with Akron Electric Valve Actuator. Do not attempt to use it with other actuators or damage will occur. This new design controller may be used with all 4" through 6" butterfly valves and actuator must be marked on gear housing, 64:1.

**CAUTION:** Always disconnect all wiring and cables from the valve controller before electric arc welding at any point on apparatus. Failure to do so will result in damage to the controller.

A. Select the mounting location on the control panel for the controller. The controller is mounted from the outside of the panel and will need a clear space behind the mounting position of 2.5 inches. The dimensions of the panel cutouts for the controller housing and mounting screws are shown on the attached template (Figure 3). If not already made, these holes should be cut at this time.

**⚠ WARNING:** The controller is a sealed unit and should not be disassembled. Disassembly will damage the seal. This can result in the controller malfunctioning.

B. Attach the controller to the panel using the four screws provided.

C. Connect the 12 volt electrical system of the apparatus to the controller. Use the proper wire gauge when connecting the controller to the power hook-up. Depending on the distance of the controller from the power source, the following wire gauge size is recommended.

6 feet or less - 16 AWG or heavier

10 feet or less - 14 AWG or heavier

15 feet or less - 12 AWG or heavier

25 feet or less - 10 AWG or heavier

**NOTE:** Any intermediate connections or loads between controller and power source can impact operation of the controller. It is recommended that direct runs be used for all connections. Do not splice. Use good weather proof connections. (Controller supplied with Weatherpack connector.) A minimum of 11.5 volts is required under full load (28 amps). Typical current draw is 2 to 4 amps during normal travel; however, when the mechanical stop is contacted current draw can reach 28 amps. This will activate the red and green lights on the controller. For maximum performance, engine should always be running when operating the valves.

**CAUTION:** Exercise caution when working with the truck electrical system. Disconnect cable from truck battery positive terminal before connecting power to controller. See truck manual for additional information. **NOTE:** It is essential that the connections must be watertight to prevent water from wicking up the wires into the controller. Therefore, the unit is provided with a weatherpack connector, (See Figure 2) which we recommend using. The information for mating connector is provided in Figure 2.

D. Attach provided 10 foot wiring harness to valve motor and controller. (One additional wiring harness may be added to a maximum of 20 feet.) Typically, a master controller is the main link between the power source and the motor/actuator. Never use more than 20 feet of wiring harness between them. Never splice a wiring harness or connect through collector (slip) rings, as voltage drop will be increased. Never install master controller in a position requiring power wire to connect through collector (slip) rings.

Distances beyond 20 feet will require an auxiliary (or dual) controller. These controllers, (connected to the master controller) can operate up to 370 feet away from the master control. Also, the auxiliary cable can be spliced to connect through turret collector (slip) rings on aerial devices. **NOTE:** All splices must be well sealed to prevent water from wicking through the wires into the controller.

E. Once installation is complete, operate the controller Open/Close switches through a complete cycle to ascertain that the valve is operating properly and to calibrate the valve position readout.

## VI. AUXILIARY CONTROLLER INSTALLATION

**NOTE:** The auxiliary controller may only be used with Akron Master Controller.

Auxiliary controller to be installed at desired at desired location following same mounting instructions as master controller. It is recommended that if a customer wants to separate the auxiliary control from the master control a great distance (i.e., aerial basket, etc.), the auxiliary must be the control package the farthest distance away. The master control must be closest to the power supply, and the valve. The 6 wire connecting cable between the master and auxiliary should be spooled, if required, and no smaller than 18 AWG per strand. This will allow a separation of up to 370 feet between the master and auxiliary control package.

If a dual control package is used on an aerial, it is also recommended that the Brad Harrison receptacles be used to make the connection through the turret slip rings.

A 10 ½ foot connector cable from the auxiliary controller is to be connected to the mating 6 inch cable on master controller.

# CONTROLLER INSTALLATION TEMPLATE

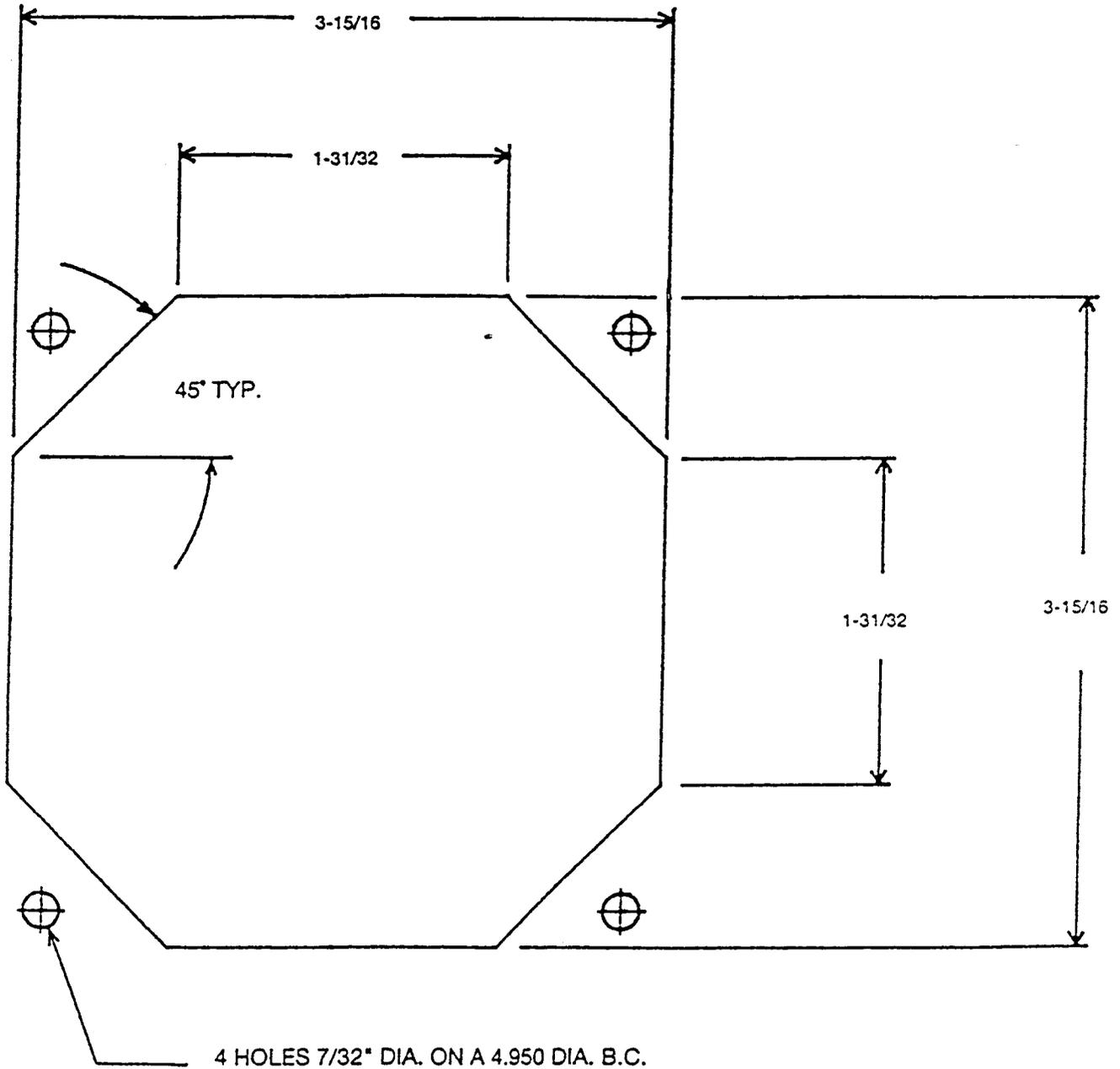
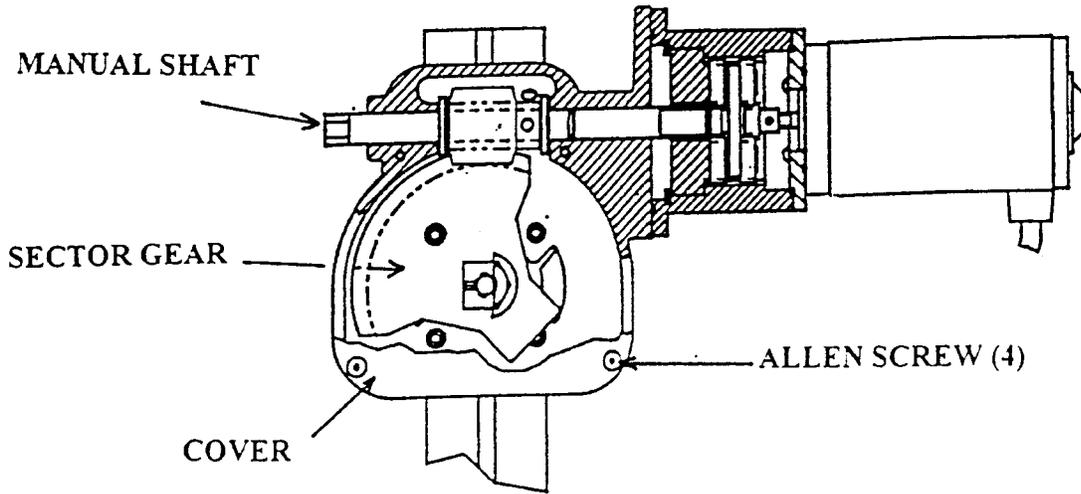
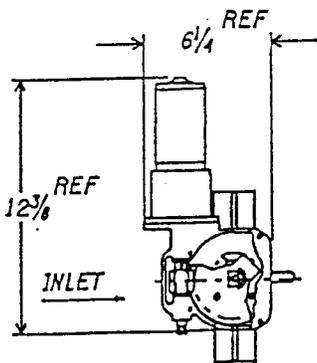
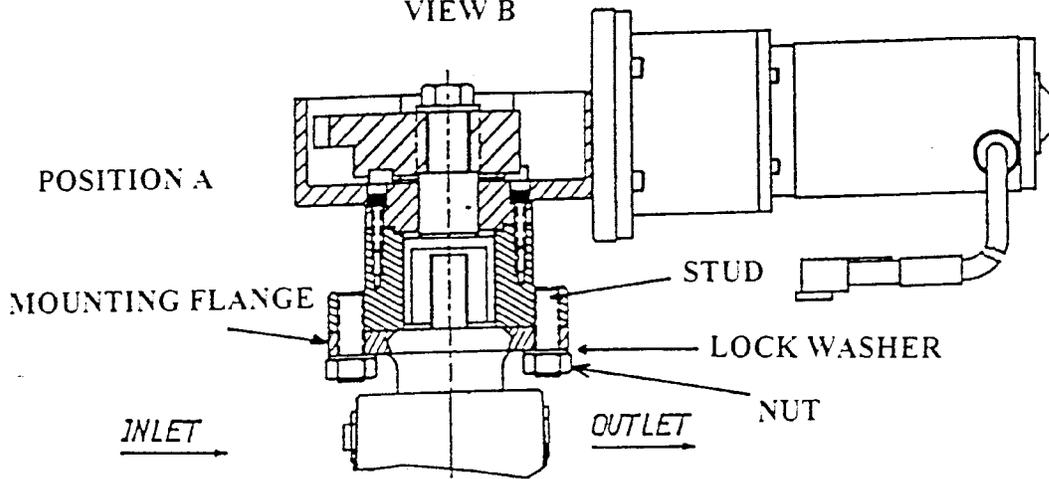


FIGURE 3

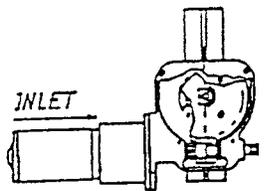
VIEW A



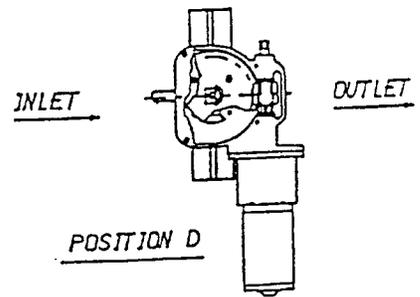
VIEW B



POSITION B



POSITION C



POSITION D

NOTE: ALL POSITIONS SHOWN WITH DISK OPEN

FIGURE 2

If additional length is needed, extensions are available. 11 foot - P/N 7820-0101, 35 foot - P/N 7820-0100, 125 foot - P/N 7820-0103.

## **VII. OPERATING INSTRUCTIONS**

The electrically actuated valve is operated by the momentary Open/Close switches, (Figure 4 & 5) of the controller mounted on the apparatus control panel. The controller features a lighted display indicating when the valve is fully open (Green), in a throttling position (Yellow) or fully closed (Red).

**TO OPEN VALVE** - Push the OPEN valve button, hold the button until the valve attains the desired position, then release the button.

**TO CLOSE VALVE** - Push the CLOSE valve button, hold the button until the valve attains the desired position then release.

### **AUXILIARY CONTROLLERS**

Both master and auxiliary controllers operate using the same procedure. However, master controller will override any auxiliary operations.

**MANUAL VALVE OPERATION** - If the valve fails to operate during use, disconnect the electrical connector on the valve. With a  $\frac{7}{16}$ " wrench, turn the hex head (Figure 6A) on the end of the motor drive shaft, to open or close the valve.

**DANGER** - Always disconnect the electrical connector on the valve when the gear cover is removed. **KEEP FINGERS AWAY FROM THE MOVING GEARS!**

### **⚠ WARNINGS:**

Not recommended for use flowing salt water.

After use with foam, flush with fresh water.

For use by trained firefighting personnel ONLY.

Charge all lines slowly to facilitate a controlled water pressure build up during start up.

For firefighting use ONLY.

For use with water or standard firefighting foams ONLY.

Replace any tags or bands that are worn or damaged and cannot be easily read.

Your Butterfly Valve should be inspected prior to and after each use, to ensure it is in good operating condition.

Periodically, an unanticipated incident may occur where the Butterfly Valve is used in a manner that is inconsistent with standard operating practices and those listed in IFSTA. A partial list of potential misuse follows:

1. Operating above maximum rated pressure and flow.
2. Not draining, and allowing water to freeze inside the valve.
3. Prolonged exposures to temperatures above +130 degrees F, or below -25 degrees F.
4. Operating in a corrosive environment.
5. Other misuse that might be unique to your specific firefighting environment.

Also, there are many "tell tale" signs that indicate Butterfly Valve repairs are in order, such as:

1. Controls that are either inoperable or difficult to operate.
2. Excessive wear.
3. Water leaks.

If any of the above situations are encountered, the Butterfly Valve should be taken out of service and repaired, plus tested by qualified valve technicians, prior to placing it back into service.

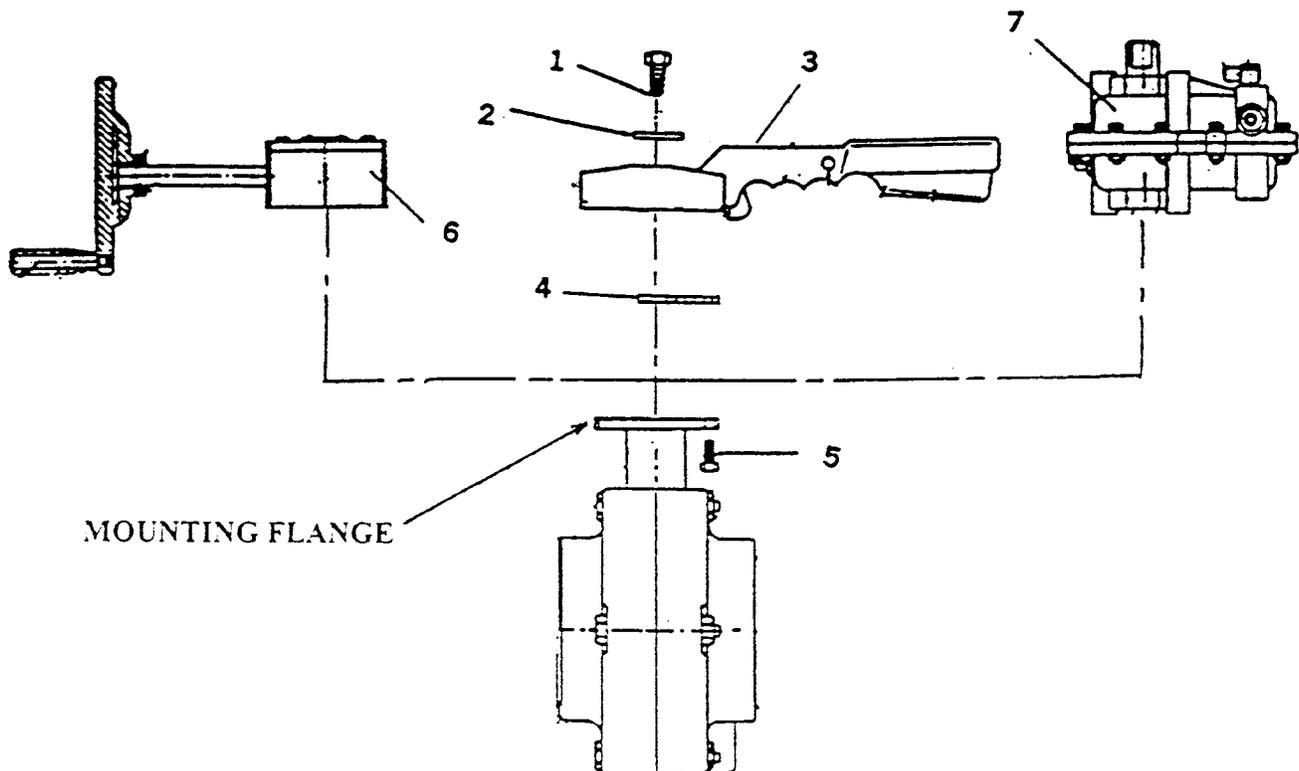
#### USE ONLY AKRON BRASS CERTIFIED REPLACEMENT PARTS

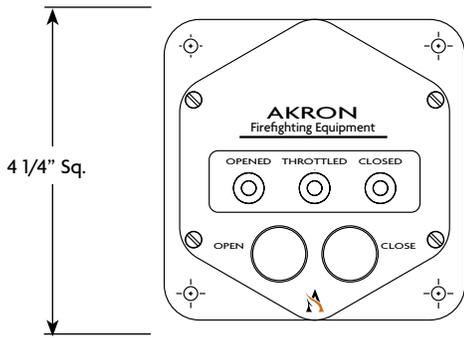
Butterfly Valves contain plastic and rubber components. The components can be damaged if cleaned with industrial strength cleaners and solvents. Always use warm water and a mild detergent when cleaning the valve's rubber and plastic components.

The Butterfly Valve is configured for optimum performance. Do not alter in any manner.

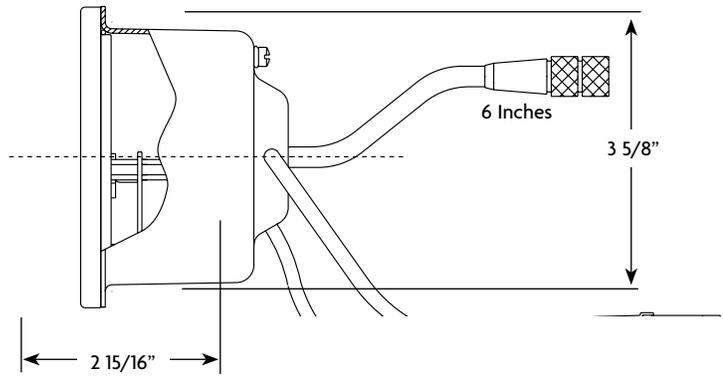
The Electric Butterfly Valve Actuator has been developed for use on Akron Brass Butterfly Valves. Do not attempt to install this electric operator on any other product other than those sold and approved by Akron Brass.

Akron Brass valve actuator must be used in conjunction with the Akron Brass push button/indicator controller. They are a matched pair. Do not attempt to use either the actuator or the controller in any installation independently.





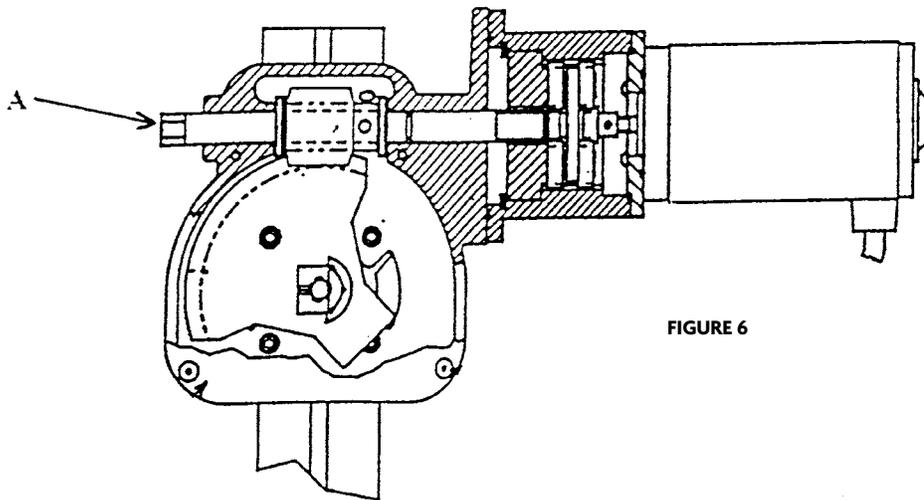
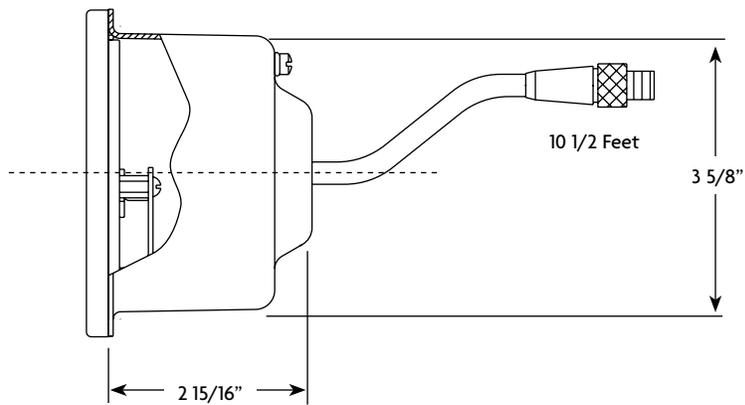
**MASTER CONTROLLER**  
**FIGURE 4**



← To Valve  
Mating Connector Specifications  
12015792 Tower (1)  
12124580 Terminal Sleeve (2)  
12010293 (2)



**AUXILIARY CONTROLLER**  
**FIGURE 5**



**FIGURE 6**



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