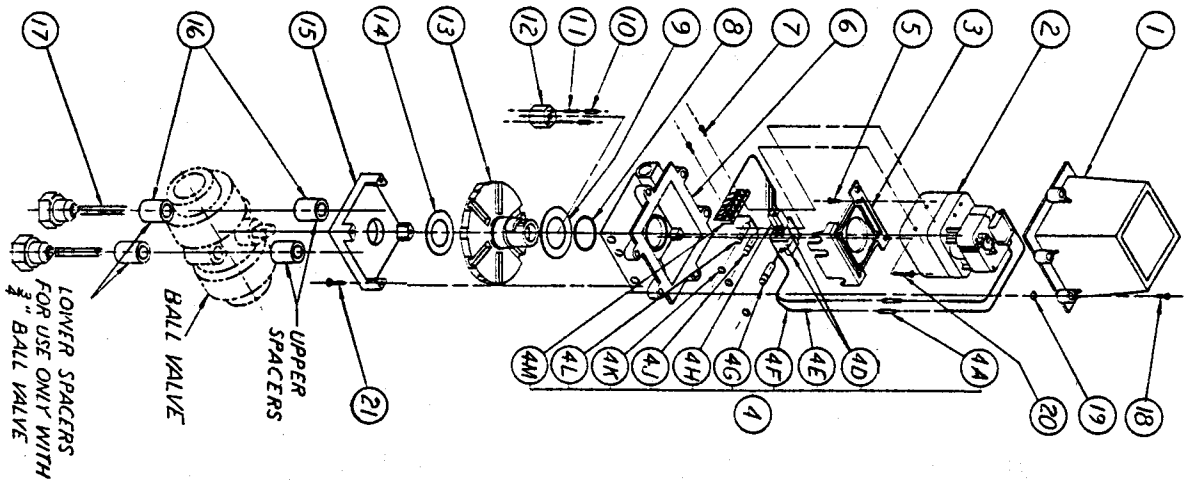


PARTS LIST
ELECTRIC ACTUATOR
MODEL NO. EBV-65 & EBV-104

| ITEM | QTY | DESCRIPTION |
|------|-----|--------------------------------------|
| 1 | 1 | COVER ASSEMBLY |
| 2 | 1 | MOTOR |
| 3 | 1 | SWITCH PLATE |
| 4 | 1 | HARNES & LIGHT ASSEMBLY |
| 4A | 2 | HEAT SHRINK TUBING |
| 4B | 4 | ROUND HEAD SCREW #4-40 x 5/8" LONG |
| 4C | 2 | WIRE SPLICE |
| 4D | 1 | HARNES |
| 4E | 1 | HARNES LIGHT |
| 4F | 1 | ROLLER SWITCH |
| 4G | 1 | RED LIGHT |
| 4H | 1 | "O" RING FOR LIGHTS |
| 4I | 1 | TERMINAL STRIP |
| 4J | 1 | FLAT HEAD SCREW #10-32 x 1/2" LONG |
| 4K | 1 | BASE |
| 4L | 1 | FILSTER HEAD SCREW #4-40 x 3/8" LONG |
| 4M | 1 | "O" RING FOR OVERRIDE WHEEL |
| 4N | 1 | UPPER THRUST WASHER |
| 4O | 1 | DOEL PIN |
| 4P | 1 | SPRING |
| 4Q | 1 | HEX INSERT |
| 4R | 1 | OVERRIDE WHEEL |
| 4S | 1 | LOWER THRUST WASHER |
| 4T | 1 | MOUNT |
| 4U | 2/4 | SPACERS |
| 4V | 2 | MOUNTING STUD |
| 4W | 17 | FLAT HEAD SCREW |
| 4X | 6/8 | "O" RING FOR COVER |
| 4Y | 19 | FLAT HEAD SCREW #6-32 x 1-1/4" LONG |
| 4Z | 2 | FLAT HEAD SCREW #10-ST |
| 5 | 4 | FLAT HEAD SCREW #10-ST |

EBV-65 & EBV-104



ASSEMBLY, INSTALLATION & OPERATING INST. INSTRUCTIONS
FOR TRUE-BLUE™ ELECTRIC ACTUATOR
MODELS EBV-65 & EBV-104

- A. Mounting of Electric Actuator to Ball Valve
1. Close the ball valve and hand tighten the union nuts. Remove the handle.
 2. Actuators will normally be supplied in the closed position. Check to be sure the ball valve shaft is properly aligned with the recess on the bottom of the actuator. If they are not aligned, rotate the actuator override wheel to the left until the recess is aligned with the shaft.
 3. Position the actuator over the ball valve so that the ball valve shaft slides into the recess.
- 4A. Mounting of 1/2", 3/4" & 1" VALVES:
Select the proper mounting hardware bag to mount the valve size being used (1/2", 3/4", 1"). See parts drawing. Slide the two (2) upper spacers between the bottom of the actuator and the mounting lugs of the ball valve. When mounting 1/2" and 1" ball valves, only two (2) spacers are used. When mounting 3/4" ball valves, a total of four (4) spacers are used; the shorter (2) spacers are used in the upper position while the longer (2) spacers are used in the lower position. When using 1/2" & 1" ball valves, there will be two (2) left-over spacers - discard them.
- 4B. Mounting of 1-1/4", 1-1/2" & 2" VALVES:
Slide the two (2) spacers between the bottom of the actuator and the mounting lugs of the ball valve. See parts drawing.
5. To avoid loosening due to vibration or continued cycling, use a couple of drops of Loctite #2128 thread adhesive on the bolt threads. Insert the mounting bolts through the lugs and spacers, then thread the mounting bolts snugly into the mount of the actuator. Tighten 1/4 turn past hand tight. Use extreme caution to prevent stripping out plastic threads.
- B. Installation of Actuator & Ball Valve Assembly into Piping System
1. Mounting position: Always mount the actuator in the "upright" position.
 2. Flow Direction: Due to the Trunnion design these valves are capable of handling flow and pressure in either direction.
 3. Threaded connections: Use Teflon® tape or a suitable pipe sealant on the threaded connections. Use a strap wrench to tighten only 1/4 turn more than hand tight. Do not use metal pipe wrenches.
 4. Socket connections: (PVC and CPVC only). Pipe ends must be cut off square and deburred. Clean pipe and valve end connector socket with proper cleaning solvent. After cleaning apply solvent cement with a brush to both the pipe and socket. Immediately insert pipe into socket rotating the socket about 1/2 turn during insertion. **CAUTION:** It is best to do this with socket end connector disassembled from valve to avoid getting solvent cement inside the valve. If you are not familiar with solvent cementing, contact your Plast-O-Matic distributor for further information.
 5. To maximize cycle-life of ball valve, turn the union nuts onto the ball valve hand tight only. Approximately 1,000 cycles later tighten again by hand with a strap wrench & the valve will never again need adjusting or tightening.
 6. Supporting the ball valve & actuator assembly: Tapped holes (1/4 - 20 for EBV-65, 3/8 - 16 for EBV-104) have been provided on the bottom

of the two mounting nuts. These tapped holes insure quick, easy mounting to a bracket or support.

7. Disassembly of downstream piping: The Trunnion design of this valve enables you to disassemble the downstream piping from the valve by unscrewing the valve's downstream union without leakage from the upstream pressure. The valve must be in the closed position before doing this. Use extreme caution with dangerous fluids.
8. Valve removal from piping: The True Union design enables you to simply unscrew the two valve union nuts and slide the valve body away from the piping. Pressure or liquid head must be removed from both sides of valve before doing this. Use extreme caution with dangerous fluids.

C. Connecting Actuator to Electrical System

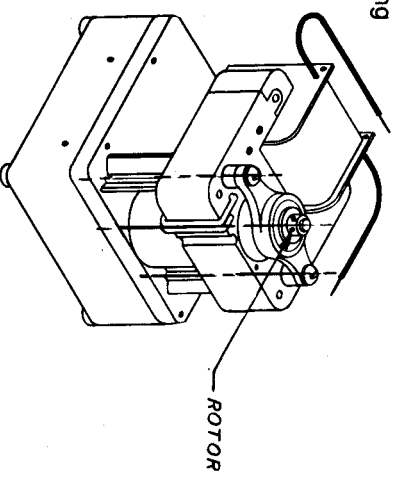
Follow all local wiring codes when wiring this actuator. Check the power requirement label (located on the cover directly above the conduit fitting) to be sure it matches the power source. The switch shown in the customer wiring section must remain in each position (open or closed) for a minimum of 8 sec. The switch may be left in either position for an infinite amount of time. If the control of this switch is independent of time (example - liquid level switch), the minimum amount of time that the switch could remain in each position should be determined.

Note: Momentary signals or signals lasting less than 8 sec. may be used, however extra circuitry is needed. Consult your nearest distributor or the factory for details.

1. Remove the screws which fasten the cover to the base (make sure the actuator is in the upright position).
2. Remove the cover & refer to the wiring diagram inside.
3. Install a suitable watertight conduit fitting into the 1/2" NPT threaded conduit boss.
4. Feed all wiring through the threaded conduit boss, then attach them to the top half of the terminal block as per the diagram. Do not remove the motor and switch plate assembly from the base.

D. Testing The Actuator

1. Apply power to the actuator using extreme caution to avoid contact with open electrical connections.
 2. Position the switch (in the customer wiring section) so that the amber light turns on. The rotor should spin.
 3. Due to the possibility of abnormally rough handling during shipment, the sleeve bearings in the motor may become misaligned, and cause sticking. This problem can easily be handled during installation as follows: grasp the rotor, lift slightly then spin by hand counter-clockwise several times until the rotor spins freely.
 4. Cycle the actuator from position to position (open, closed) to check for proper wiring and operation.
 5. Replace the cover and mounting screws.
- Do not over-tighten the cover mounting screws.



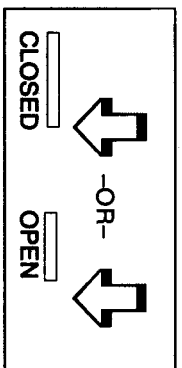
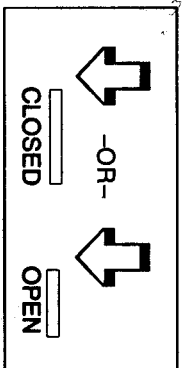
E. Manual Override Operation

In the event of a power failure, the valve position may be changed by rotating the override wheel. Rotate the wheel to the left (←)(with actuator vertical) using a lever - such as a screwdriver - until the desired position is reached.

CAUTION: Do not attempt to override the actuator while power is still supplied since rotation of the override wheel will cause the motor to turn on. This could cause a jamming of the lever being used and possible damage to the actuator. Always remove the lever from the override wheel.

Positioning of Override During Power Failure: The actuator can be manually positioned to operate in two ways when power is re-applied:

1. Respond to the signal (open, closed) being sent to the actuator.



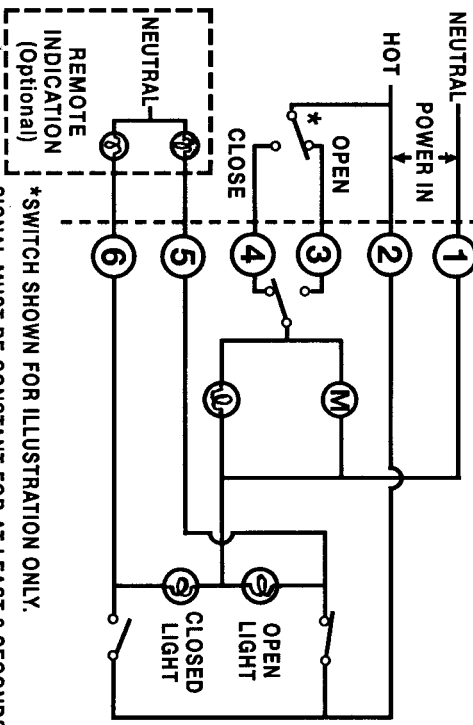
2. Remain at the position (open, closed) chosen at the time of override. The actuator will re-synchronize with the action signal after one position change.

Override Procedure: Rotate the override wheel until the arrow points to the extreme right of the solid line. These functions are provided for your convenience only. This is not a safety feature. Be sure to plan a safe start-up procedure in case of a power failure.

NOTE: Plast-O-Matic should be contacted immediately if there are any questions regarding the product or installation.

EBV WIRING DIAGRAM

CUSTOMER WIRING ACTUATOR WIRING (SHOWN WITH VALVE IN OPEN POSITION)



*SWITCH SHOWN FOR ILLUSTRATION ONLY. SIGNAL MUST BE CONSTANT FOR AT LEAST 8 SECONDS.