

## **TSM/TLC SOLENOID VALVE REPLACEMENT NOTE**

In many cases the need to replace the R.O. feed solenoid valve will be due to problems in the top half of the valve. In such event it is far easier to just replace the top half of the valve along with the new top half components. Removal and replacement of the complete valve is significantly more difficult and time consuming.

### **To replace the top half only, proceed as follows:**

1. Shut off the feed water supply to the system. Then place the system on/off lever in the on position. The system should try to start and then stop due to absence of feed pressure.
2. Remove electric power from the system.
3. Cut the two solenoid valve power wires about 2-3" from the coil body.

### **NOTE**

In the TSM system the solenoid valve coil may be located very close to the system pump body. It may be easier if the clamp holding the pump onto the pump motor is loosened and the pump temporarily pulled off the motor providing more room near the solenoid valve coil.

4. Loosen the four 1/4" bolts holding the valve top half to the bottom half. Remove the top half with its diaphragm and plunger/spring components. Clean the exposed surfaces of the in place bottom half with a sponge or damp paper towel.
5. Open the new valve in the same manner being careful to hold the diaphragm and internal plunger/spring in place when separating the top half. Move the new top half with its components into place on the existing installed bottom half and tighten the four retaining bolts. If the new diaphragm, plunger and spring are removed from the loose half of the new valve body they must be replaced in their original orientation.. Spring and plunger inserted into the coil bore with the spring first. Then the diaphragm placed on the loose body half with the small pointed cone side of the diaphragm touching the rubber end of the plunger. If the diaphragm is installed in reverse orientation the valve will not operate properly.
6. Trim the wires on the new coil to about 3" and then bare and connect these wires to the existing solenoid valve power leads using butt connectors or wire nuts.
7. Restore electric power and feed water to the system. Check the solenoid valve for leaks at the joint between bottom and top halves. Place the on/off lever at ON and check for proper system operation.

### **To replace the entire valve proceed as follows.**

1. Shut off the feed water supply to the system. Then place the system on/off lever in the on position. The system should try to start and then stop due to absence of feed pressure.
2. Remove electric power from the system.
3. Cut the two solenoid valve power wires about 2-3" from the coil body.

## NOTE

In the TSM system the solenoid valve coil may be located very close to the system pump body. It may be easier if the clamp holding the pump onto the pump motor is loosened and the pump temporarily pulled off the motor providing more room near the solenoid valve coil.

4. Unscrew the solenoid coil from the valve body and remove coil along with the plunger and spring inside the coil center.
5. Loosen and remove the four 1/2" machine bolts holding the white plastic manifold in place at the top front of the system frame.
6. Tilt the white plastic manifold back into the frame so that there is enough clearance to remove the 3/8" Quick Connect (QC) tee from the stem fitting at the bottom of the valve body. To loosen a QC fitting you must push in on the collet at the opening of the fitting while pulling the QC tee off of the stem.
7. Now unscrew the valve body from the brass fitting at the top end of the valve body. Remove the stem fitting from the valve body for use with the new valve.
8. Apply Teflon tape to the brass top fitting and to the stem fitting removed from the previous body. Install the stem fitting in the port of the new valve body marked OUT and tighten. Thread the other port of the valve onto the brass fitting and tighten. It may be easier to turn the valve body if the coil on the new valve is temporarily removed. Do not lose the plunger and spring if the coil is removed. The finished coil should be oriented with the coil bore pointing toward the pump.
9. Reinstall the 3/8" QC tee fitting onto the stem at the bottom of the valve. When properly installed the collet on the tee will almost touch the base of the stem fitting.
9. Rotate the white plastic manifold back into the upright position. Install the four retaining bolts and tighten. If the coil was removed re-install it. If the pump was loosened replace the pump on the motor and tighten the pump clamp.
10. Trim the wires on the new coil to about 3" and then bare and connect these wires to the existing solenoid valve power leads using butt connectors or wire nuts.
11. Restore electric power and feed water to the system. Check the solenoid valve for leaks at the inlet and outlet fittings. Place the on/off lever at ON and check for proper system operation.