

# Position Indicator Switch Adjustment

## 1 Explosion-proof NEMA 7 housings:

Unscrew the housing cover from the base and valve body assembly by using a strap wrench on the aluminum housing cover. The 2 switches and mounting block are now exposed.

## Waterproof NEMA 4 and standard NEMA 1 housings:

Unscrew the housing screw at the center of the housing bottom and remove the housing. The 2 switches and mounting block are now exposed.

*WARNING: Do not allow the weight of the housing cover to pull on the switch leads. This can permanently damage the switches.*

*Note: It is recommended that the following steps be performed with an ohmmeter connected directly to the lead wires of the position switches and the coil and cylinder cap removed so that the piston can be manually moved.*

2 With the valve in the closed position, loosen the Closed Switch Adjustment Set Screw and gently slide the Closed Position Switch either up or down in the mounting block until the switch closes.

3 Move the piston up from the closed position and verify that the switch opens before the piston reaches the full open position.

4 Adjust the position of the switch as required until the conditions of steps 3 and 4 are met.

*Note: The position of the switches will vary from valve to valve as the exact position of the reed switch within the switch tube is subject to variation.*

*Note: The switches can also be rotated in the mounting block. This can affect their sensitivity and in some cases aid in setting of the switches. Again, this is because there is variation in the position of the reed switch within the tube.*

5 Tighten the Closed Switch Adjustment Set Screw.

6 With the valve in the open position, loosen the Open Switch Adjustment Set Screw and gently slide the Open Position Switch either up or down in the mounting block until the switch closes.

7 Move the piston down from the open position and verify that the switch opens before the piston reaches the fully closed position.

8 Adjust the position of the switch as required until the conditions of steps 6 and 7 are met.

9 Tighten the Open Switch Adjustment Set Screw.

10 Repeat the test of the switches with the valve assembled, the valves position controlled by energizing the coil, and with full system pressure. Repeat the above steps as required.

*Note: There are 2 set screws in the center of the plastic mounting block that hold the block to the magnet tube. Generally it is not necessary to loosen these set screws and adjust the position of the block relative to the magnet tube. If necessary to achieve switch positioning this can be done.*

11 Replace the housing cover.

See page 85 for a drawing of the position indicator switch assembly.

## Aligning Coil Housings

Some valves use cast iron explosion-proof housings that are threaded directly to the valve body bonnets. This means that the angular position of the conduit fitting will be random when the housing is tightened down. These NEMA 7 housings are used on the following valve series:

2000, 3000, 4000, 5000, 6000, 7000, 8000, 12000 (DC only), 14000 (DC only), 15000, and 16000

When an explosion-proof housing is ordered on any of these valves, a set of 4 shims is included with the valve. The part number for this shim kit is 61427 (Atko p/n 229). If the angular alignment of the coil housing is not important the installation of the shims is not required.

### Instructions for Installing Shims

1 Unscrew the cast iron coil housing assembly from the valves bonnet or cylinder cap.

*Note: If holding the valve in a vise, clamp on it either end to end or on the hex portion. Do NOT clamp across the width of the valve body. This can distort the valve body and prevent proper piston motion.*

2 Place the shims over the cylinder cap tube so that they rest on the cylinder cap or bonnet.

3 Screw the cast iron coil housing back onto the bonnet or cylinder cap.

*Note: There are 4 shims with thickness of 0.005, 0.010, 0.015, and 0.020. Use any combination of these that allow the coil housing thread to bottom out such that the conduit fitting is oriented in the desired direction.*

4 Repeat steps 2 and 3 as required.

*Note: Do not use more than 0.050 if shims (all those provided) or the explosion-proof feature of the housing will be compromised.*

All other valves with any type of coil housing can be aligned by loosening the screw or nut at the top of the coil housing, rotating the housing, then re-tightening the screw.