

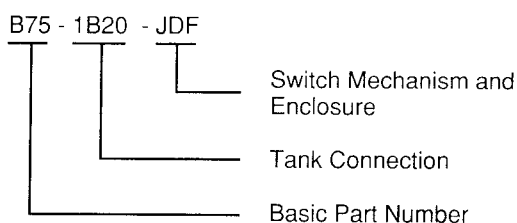
**GENERAL INSTRUCTIONS AND REPLACEMENT PARTS**

The Series "J" Pneumatic switch is a one-pipe bleed type valve with a movable flapper that is magnetically operated. It merely opens or closes — depending upon its setting; and, whether or not the magnet is being attracted.

**MODEL NUMBER DESCRIPTION**

Magnetrol level controls are identified by an alpha-numeric numbering system. The last three digits of the number describe the type of switch mechanism furnished.

EXAMPLE:



Switch Code			Max. Supply bar (psi)	Max. Process temp. °C (°F)	Orifice Dia. MM (Inches)	Cover Height MM (Inches)
Red Dot	Yellow Dot					
	①	②				
JDG	JDE	JKE	6.9 (100)	200 (400)	1.60 (.063)	102 (4)
JEG	JEE	JLE	4.1 (60)	200 (400)	2.39 (.094)	102 (4)
JFG	JFE	JME	4.1 (60)	370 (700)	1.40 (.055)	102 (4)
JGH	JGF	JNF	6.9 (100)	200 (400)	1.60 (.063)	152 (6)
JHH	JHF	JPF	4.1 (60)	200 (400)	2.39 (.094)	152 (6)
JJH	JJF	JRF	4.1 (60)	370 (700)	1.40 (.055)	152 (6)

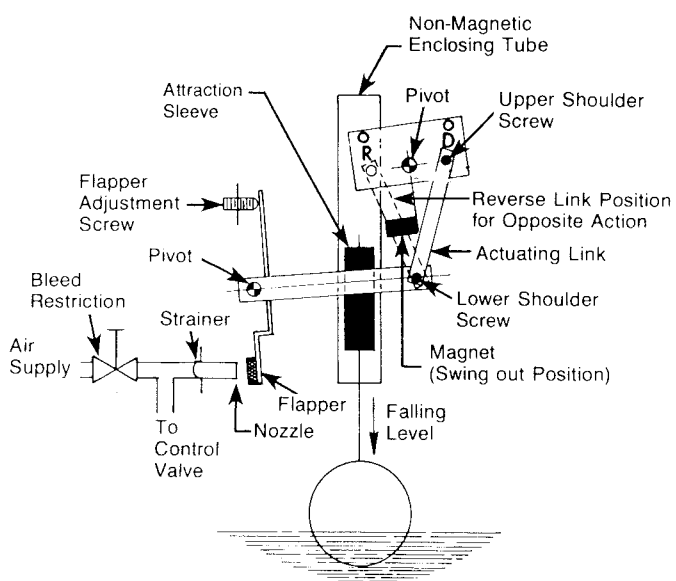
NOTE : Maximum leakage rate is .014m<sup>3</sup>/h at maximum supply pressure.

- ① For models rated below 102 bar (1480 psi), including model D75.
- ② For models rated 102 bar (1480 psi) and higher, excluding model D75.

**PRINCIPLE OF OPERATION**

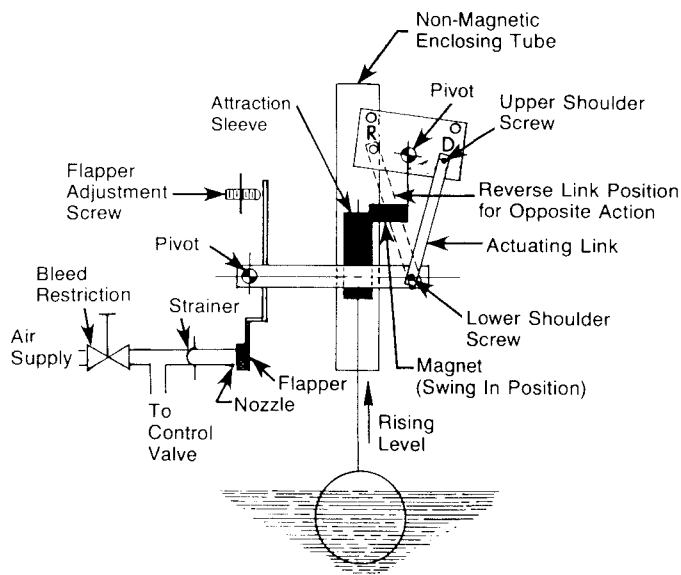
**Figure 1** shows the attraction sleeve and magnet in the position when the liquid level is such that the attraction sleeve is below the field of the magnet. In this position, the flapper has been drawn away from the nozzle by the fall out spring; and, air flows faster through the nozzle than it can be supplied through the restriction. The air pressure to the control valve then drops to zero.

**Figure 2** shows the position of the attraction sleeve and the magnet when the liquid level has risen, causing the attraction sleeve to attract the magnet against the enclosing tube. In this position, the flapper is held against the nozzle, thus shutting off the bleed of air. The air pressure to the control valve builds up to supply pressure. This action ("close" on high) is reversible to "open" on high with two simple adjustments. (See page 2).



**Figure 1**

Attraction Sleeve Below Field of Magnet



**Figure 2**

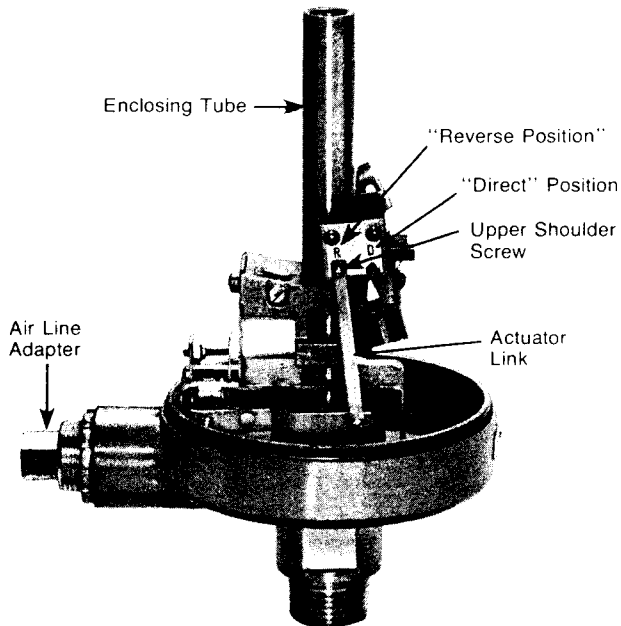
Attraction Sleeve In Field of Magnet

# REVERSING PILOT ACTION

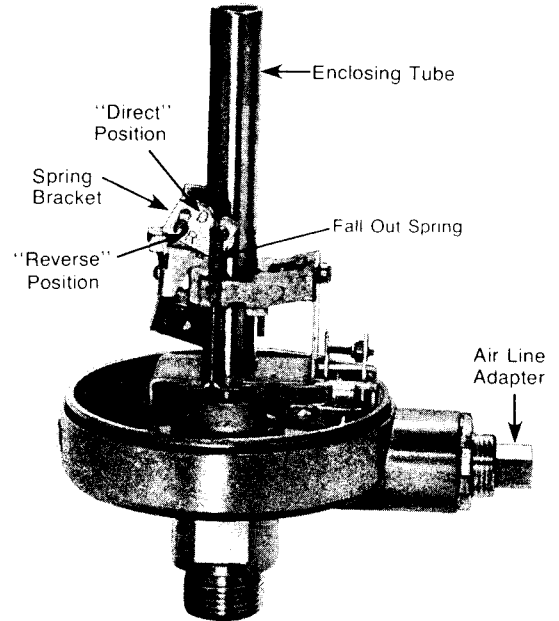
All Series J Pneumatic Switch Mechanisms are shipped from the factory in the direct (close) position at high level. They can be field modified for the reverse (open) position by following the steps below:

1. The action can be reversed by first removing the upper shoulder screw from the actuator link and moving it from the direct (D) position to the reverse (R) position as shown in **Figure 3**.

2. Loosen the screw that positions the spring bracket and move it from the direct (D) position to the reverse (R) position as shown in **Figure 4**. Fasten screw securely.



**Figure 3**



**Figure 4**

Now the switch is set up for reserve action

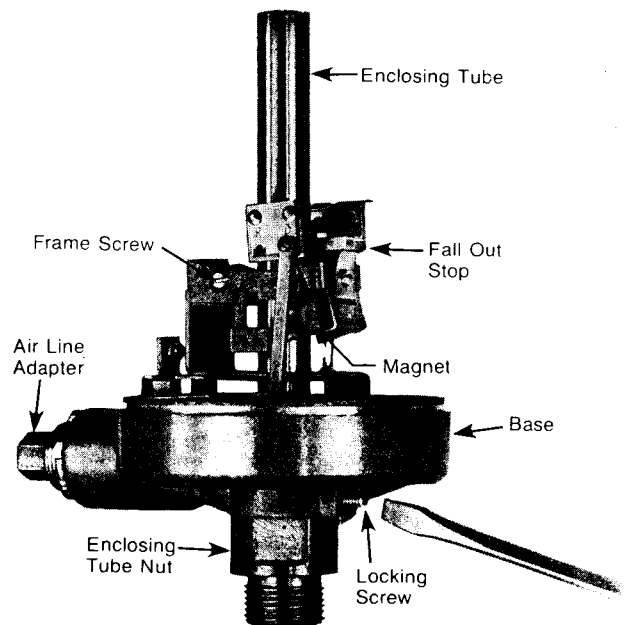
# LOCATING AIR LINE CONNECTION

The air line connection may be rotated a full 360° for your convenience in connecting the air supply.

1. Loosen both the special locking screw above the enclosing tube nut and the frame screw. **See Figure 5**.
2. Rotate the entire base to the desired position.
3. Retighten both the locking screw and the frame screw.

## REMOVE COMPLETE MECHANISM

1. Disconnect air line from air line adapter.
2. Loosen both the special locking screw, above the enclosing tube nut; and, the frame screw, approximately 3-4 turns. **See Figure 5**.
3. Lift the entire base straight up and off the enclosing tube.



**Figure 5**

# PREVENTATIVE MAINTENANCE

## NOZZLE CLEANING

To clean the nozzle, follow the steps below:

1. Unscrew and remove the adapter. See Figure 6.

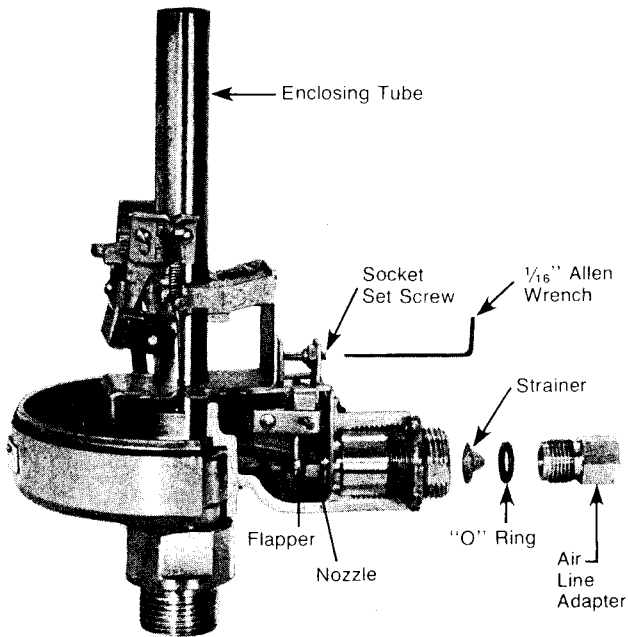


Figure 6

2. The "O" ring and strainer will now fall out when the switch is tipped.
3. Unscrew the socket set screw with a 1/16" Allen wrench. This will prevent damage to the flapper when cleaning in step 4.
4. Insert a 1/16" diameter wire into the nozzle from the air line connection side. See Figure 7. The wire may be moved back and forth to clean the opening of any accumulated matter.
5. Reassemble the "O" ring, strainer, and adapter; and, insert into nozzle. See Figure 6.
6. Screw in the adapter until securely fastened.
7. Readjust the flapper to its original position as noted under Nozzle Flapper Readjustment.

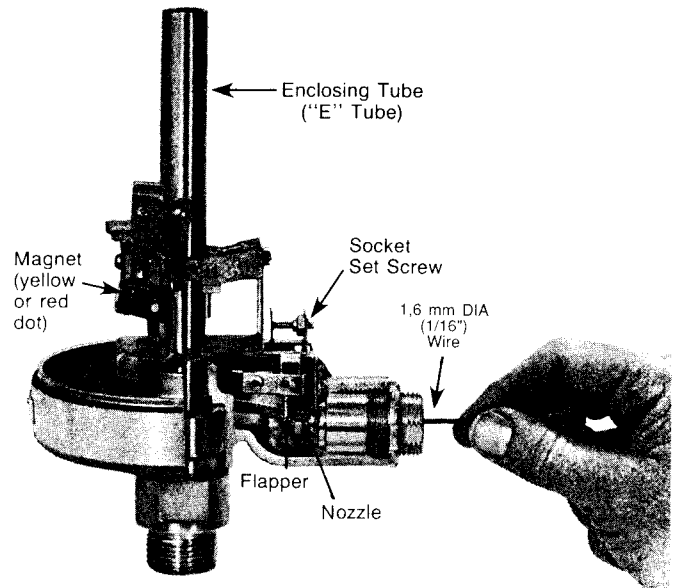


Figure 7

## NOZZLE FLAPPER READJUSTMENT

1. Connect an air line to the adapter.
2. Pressurize the air line.
3. Adjust the flapper with the socket set screw for:

### Direct Action

- A. Hold the magnet against the "E" tube.
- B. Adjust the socket set screw with a 1/16" Allen wrench until the air flow stops plus 1/8 extra turn.

### Reverse Action

- A. Hold the magnet against the fall out stop. See Figure 5.
- B. Adjust the socket set screw with a 1/16" Allen wrench until the air flow stops.

4. Manually actuate the switch under pressure to assure its correct actuation. The unit is now ready for service.
5. Operate control at normal process conditions to verify adjustments.

## REPLACEMENT PARTS

Replacement parts for the J Series Pneumatic Switch Mechanism are available as an assembly only. When ordering an assembly, please be sure to specify:

1. The model number of the level control in which the was installed. See plate attached to control.
3. The switch code of the switch being replaced, eg: JDE, JEE, JFE.
4. The part number of the replacement switch assembly, eg: 49-2601-001.

Switch Code		Switch Assembly Part Number
Red Dot	JDG, JGH	49-2601-002
	JEG, JHH	49-2602-002
	JFG, JJH	49-2603-002
Yellow Dot ①	JDE, JGF	49-2601-001
	JEE, JHF	49-2602-001
	JFE, JJF	49-2603-001
Yellow Dot ②	JKE, JNF	49-2604-001
	JLE, JPF	49-2605-001
	JME, JRF	49-2606-001

- ① For models rated below 102 Bar, (1480 PSIG) including model D75.
- ② For models rated above 102 Bar, (1480 PSIG) excluding model D75.

**CAUTION:** When ordering replacement switch mechanisms, be certain to determine color dot on magnet. NEVER replace a mechanism having a red dot magnet with one having a yellow dot magnet; and, vice versa.

# IMPORTANT

## SERVICE POLICY

Owners of Magnetrol products may request the return of a control; or, any part of a control for complete rebuilding or replacement. They will be rebuilt or replaced promptly. Magnetrol International will repair or replace the control, at no cost to the purchaser, (or owner) other than transportation cost if:

- a. Returned within the warranty period; and,
- b. The factory inspection finds the cause of the malfunction to be defective material or workmanship.

If the trouble is the result of conditions beyond our control; or, is NOT covered by the warranty, there will be charges for labor and the parts required to rebuild or replace the equipment.

In some cases, it may be expedient to ship replacement parts; or, in extreme cases a complete new control, to replace the original equipment before it is returned. If this is desired, notify the factory of both the model and serial numbers of the control to be replaced. In such cases, credit for the materials, returned will be determined on the basis of the applicability of our warranty.

No claims for misapplication, labor, direct or consequential damage will be allowed.

## RETURNED MATERIAL PROCEDURE

So that we may efficiently process any materials that are returned, it is essential that a «Return Material Authorization» tag be obtained from the factory for attachment to the goods. This is available through Magnetrol's local representative or by contacting Magnetrol Customer Satisfaction supplying the following information:

1. Purchaser Name
2. Description of Material
3. Magnetrol Order Number
4. Serial Number
5. Reason for Return
6. Desired Action

All shipments returned to the factory must be by prepaid transportation. Magnetrol will not accept collect shipments. All replacements will be shipped FOB factory.

UNDER RESERVE OF MODIFICATIONS

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