



Series J Pneumatic Switch Mechanism

Instruction Manual and Parts List

DESCRIPTION

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 attracted.

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 drop to zero.

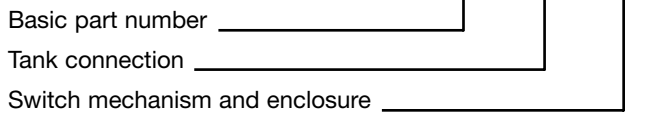
Figure 2 shows the position of the attraction sleeve and the magnet when the liquid level has risen, causing the attraction sleeve to attract the magnet against the enclosing tube. In this position, the flapper is held against the nozzle, thus shutting off the bleed of air. The air pressure to the control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

MODEL NUMBERING

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

PART NUMBER EXAMPLE:

B75 - 1B20 - JDE



Switch Code			Maximum Supply	Maximum Process Temp.	Orifice Diameter in. (mm)	Cover Height in. (mm)
Red Dot	Yellow Dot					
	①	②				
JDG	JDE	JKE	100 PSIG (6 Bar)	400° F (204° C)	.063 (1)	4 (101)
JEG	JEE	JLE	60 PSIG (4 Bar)	400° F (204° C)	.094 (2)	4 (101)
JFG	JFE	JME	60 PSIG (4 Bar)	700° F (371° C)	.055 (1)	4 (101)
JGH	JGF	JNF	100 PSIG (6 Bar)	400° F (204° C)	.063 (1)	6 (152)
JHH	JHF	JPF	60 PSIG (4 Bar)	400° F (204° C)	.094 (2)	6 (152)
JJH	JJF	JRF	60 PSIG (4 Bar)	700° F (371° C)	.055 (1)	6 (152)

① For models rated below 1480 PSIG.
② For models rated above 1480 PSIG.

NOTE: Maximum leakage rate is .5 SCFH at maximum supply pressure.

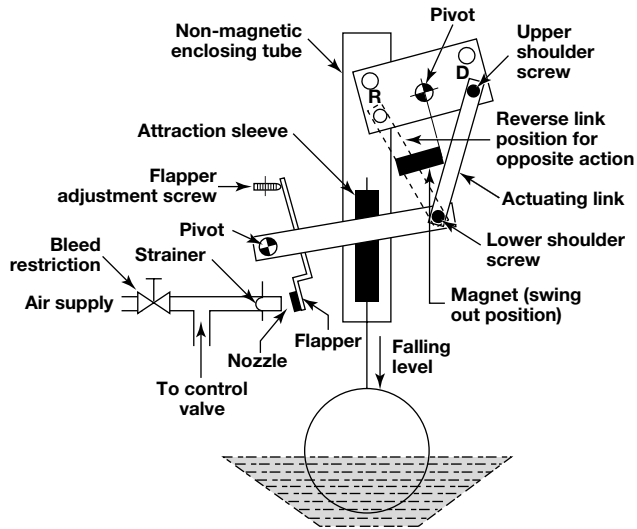


Figure 1
Attraction sleeve below field of magnet

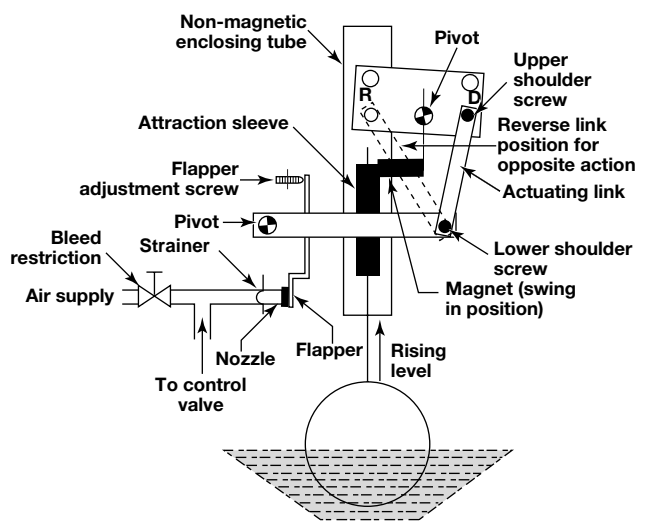


Figure 2
Attraction sleeve in field of magnet

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); refer to Figure 3.
2. Loosen the screw that positions the spring bracket and move it from the direct (D) position to the reverse (R) position; refer to Figure 4. Fasten screw securely.

The switch is now setup for reverse action.

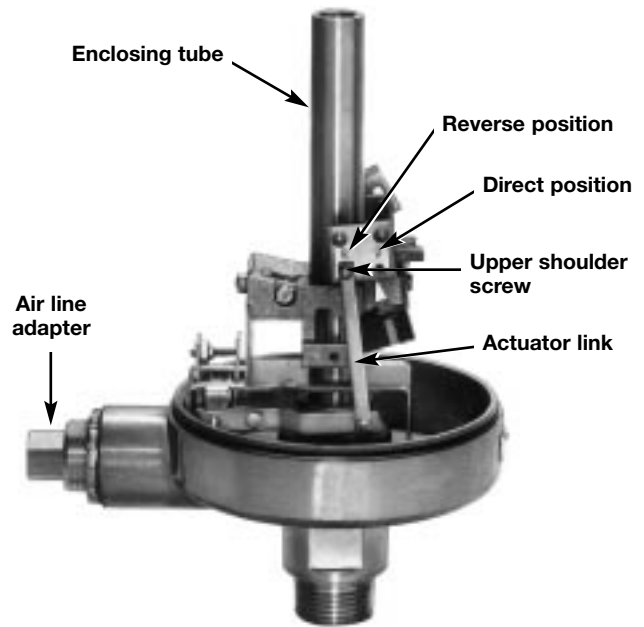


Figure 3

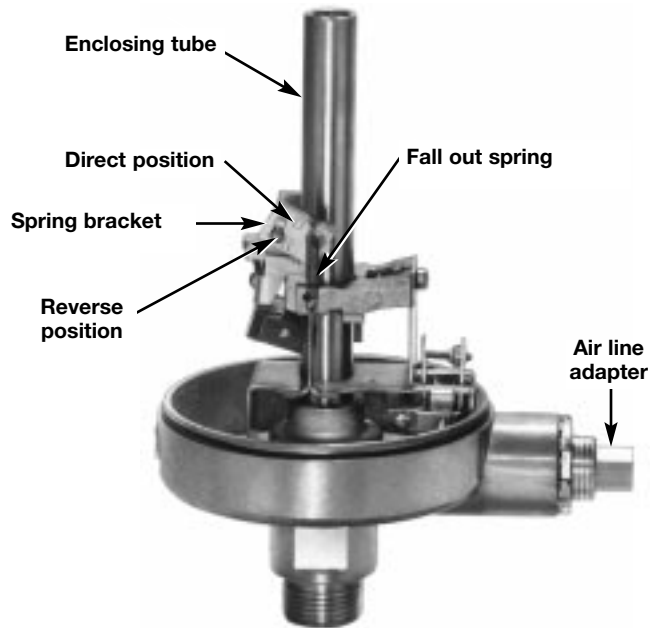


Figure 4

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. Refer to Figure 5.
2. Rotate the entire base to the desired position.
3. Tighten 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 to 4 turns. Refer to Figure 5.
3. Lift the entire base straight up and off the enclosing tube.

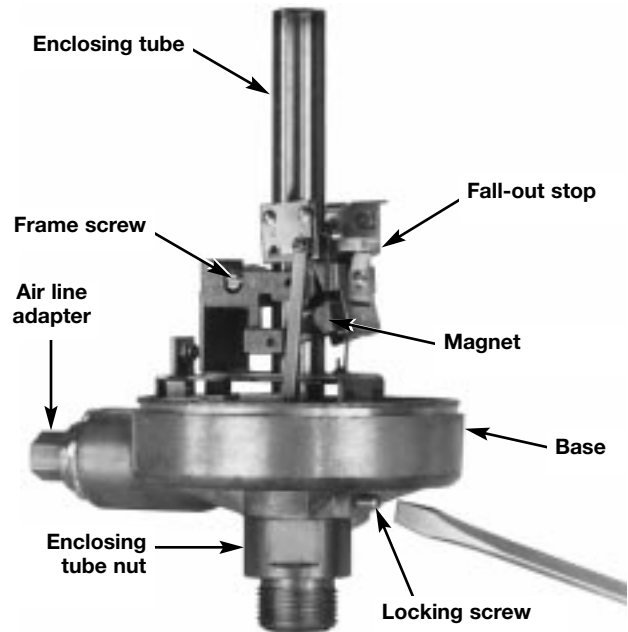


Figure 5

PREVENTATIVE MAINTENANCE

NOZZLE CLEANING

To clean the nozzle, follow the steps below:

1. Unscrew and remove the adapter. Refer to 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 $\frac{1}{16}$ " Allen wrench. This will prevent damage to the flapper when performing step 4.
4. Insert a $\frac{1}{16}$ " diameter wire into the nozzle from the air line connection side. Refer to 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 air line adapter; insert into nozzle. Refer to Figure 6.
6. Securely tighten the air line adapter.
7. Readjust the flapper to its original position; refer to Nozzle Flapper Readjustment procedure.

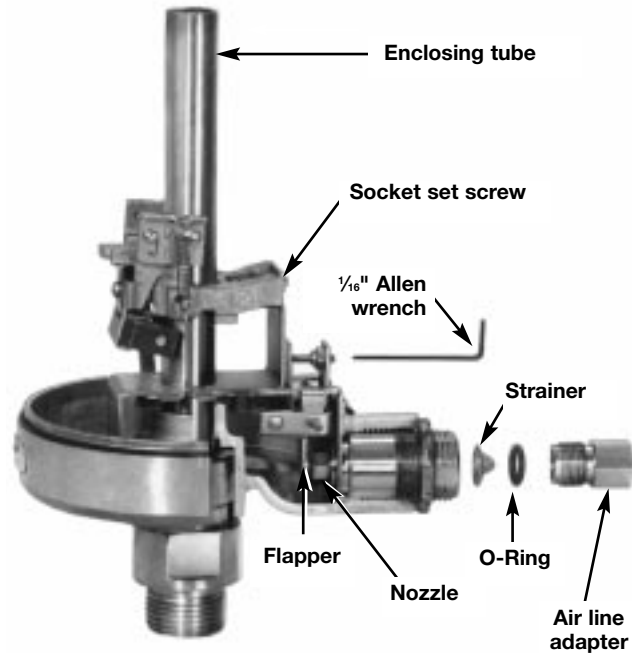


Figure 6

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 the desired action:

Direct Action

- A. Hold the magnet against the enclosing tube.
- B. Adjust the socket set screw with a $\frac{1}{16}$ " Allen wrench until the air flow stops, plus an extra one-eighth turn.

Reverse Action

- A. Hold the magnet against the fall out stop. Refer to Figure 5.
 - B. Adjust the socket set screw with a $\frac{1}{16}$ " 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.

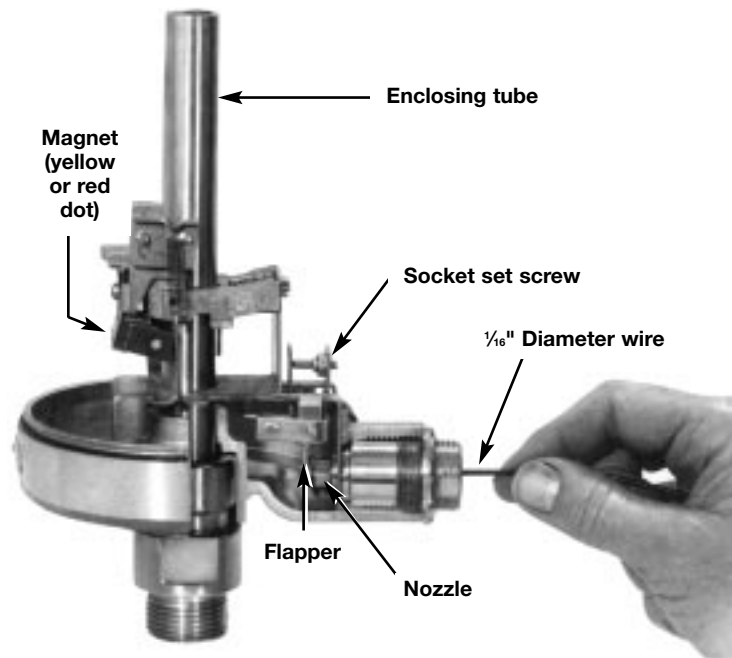


Figure 7

REPLACEMENT PARTS

J SERIES PNEUMATIC SWITCH

Replacement parts for J Series Pneumatic Switch Mechanisms are available as an assembly only. When ordering an assembly, be certain to specify:

1. The model number of the level control in which the switch was installed, for example B75.
2. The serial number of the level control in which the switch was installed. Refer to nameplate attached to control.
3. The switch code of the switch which is being replaced, for example JDE, JEE, JFE, or other.
4. The part number of the replacement switch assembly, for example 89-7501-026.

Description		Part Number
Red Dot	JDG, JGH	89-7501-027
	JEG, JHH	89-7501-029
	JFG, JJH	89-7501-031
Yellow Dot ①	JDE, JGF	89-7501-026
	JEE, JHF	89-7501-028
	JFE, JJF	89-7501-030
Yellow Dot ②	JKE, JNF	89-7501-032
	JLE, JPF	89-7501-033
	JME, JRF	89-7501-034

① For models rated below 1480 PSIG.

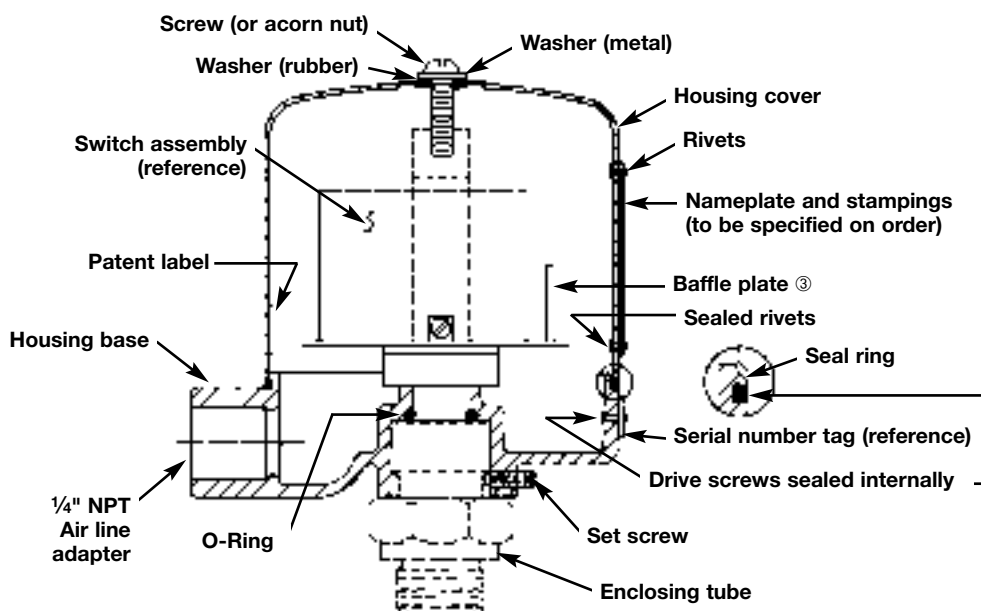
② For models rated above 1480 PSIG.

SWITCH HOUSING REPLACEMENT ASSEMBLY

Standard carbon steel housing replacement assemblies are designed for applications ranging from general purpose, indoor use to non-hazardous installations requiring a dust, water, lint, fiber/oil tight enclosure. Refer to Figure 8.

Description		Replacement Kit Part Number	
		Gray Cover	Blue Cover
Standard housing cover	Short 4" (102 mm)	89-6523-002	89-6509-003 ①
	Tall 6" (152 mm)	89-6523-001	89-6510-003 ①
Cover assembly hardware		89-6508-001	89-6508-001

① Includes assembly hardware kit 89-6508-001.



Carbon steel housing assembly
Figure 8

IMPORTANT

PRODUCT WARRANTY

All Magnetrol/STI mechanical level and flow controls are warranted free of defects in materials or workmanship for five full years from the date of original factory shipment. Repair parts are warranted free of defects in materials and workmanship for one year from the date of shipment. Materials, specifications, and contents are subject to change without prior written notice.

If returned within the warranty period; and, upon factory inspection of the control, the cause of the claim is determined to be covered under the warranty; then, Magnetrol/STI will repair or replace the control at no cost to the purchaser (or owner) other than transportation.

Magnetrol/STI shall not be liable for misapplication, labor claims, direct or consequential damage or expense arising from the installation or use of equipment. There are no other warranties expressed or implied, except special written warranties covering some Magnetrol/STI products.

QUALITY ASSURANCE

The quality assurance system in place at Magnetrol/STI guarantees the highest level of quality throughout the company. Magnetrol/STI is committed to providing full customer satisfaction both in quality products and quality service.



Magnetrol's quality assurance system is registered to ISO 9001 affirming its commitment to known international quality standards providing the strongest assurance of product/service quality available.

ASSURED QUALITY & SERVICE COST LESS

SERVICE POLICY

Owners of Magnetrol/STI controls 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. Controls returned under our service policy must be returned by Prepaid transportation. Magnetrol/STI will repair or replace the control at no cost to the purchaser (or owner) other than transportation if:

1. Returned within the warranty period; and
2. The factory inspection finds the cause of the claim to be covered under the warranty.

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.

LOW VOLTAGE DIRECTIVE

For use in Category II installations. If equipment is used in a manner not specified by manufacturer, protection provided by equipment may be impaired.

RETURN MATERIAL PROCEDURE

So that we may efficiently process any materials that are returned, it is essential that a "Return Material Authorization" (RMA) number be obtained from the factory, prior to the material's return. This is available through Magnetrol/STI's local representative or by contacting the factory. Please supply the following information:

1. Company Name
2. Description of Material
3. Serial Number
4. Reason for Return
5. Application

Any unit that was used in a process must be properly cleaned in accordance with OSHA standards, before it is returned to the factory.

A Material Safety Data Sheet (MSDS) must accompany material that was used in any media.

All shipments returned to the factory must be by prepaid transportation.

All replacements will be shipped F.O.B. factory.



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