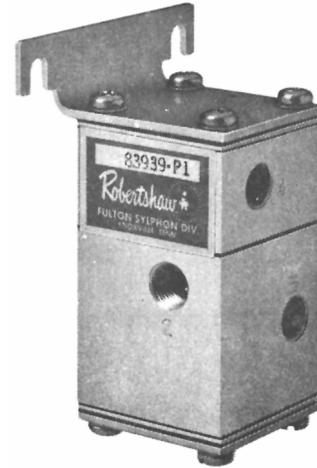


Lockout Relay No. 83939-P1

GENERAL DESCRIPTION

The 83939-P1 Lockout Relay is a two-position, five-ported, relay designed to prevent the loss of control pressure from those receiver-indicators which monitor variables normally unsafe during the starting period (Class B lockout).



SPECIFICATIONS

Construction:

- Body and Cap:**Anodized Aluminum Alloy.
- Mounting Bracket and Springs:** Stainless Steel.
- Diaphragms:** Neoprene on Nylon.
- Gaskets:** Buna-N on Nylon.
- Quad Ring:** Buna-N.
- Poppet:** Stainless Steel and Aluminum with resilient seat.

Control Pressure: 137.9 KPa to 206.8 KPa (20 to 30 psi).
 Maximum Pressure to Any Port: 241.3 KPa (35 psi).

Caution: Do not exceed maximum pressure ratings.

Transfer Pressure: See graphs 1 and 2.

Mounting: Surface.

Connections: 1/8" - 27 NPT.

Approximate Shipping Weight:340 kg. (12 oz.)

Control Medium: Air, natural gas, nitrogen, CO₂.

Filtration (Minimum): 24 microns.

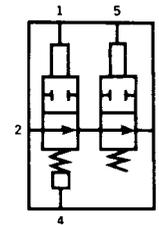
Moisture: Dewpoint 8.30° C. (15° F.) less than ambient temperature/ pressure.

Oil Content (Natural Base): 5 PPM.

Oil Content (Synthetic Base): 0 PPM.

Hydrogen Sulfide: 0 PPM.

These are suggested minimums for Control Medium Quality. For operation under more adverse conditions, consult factory.

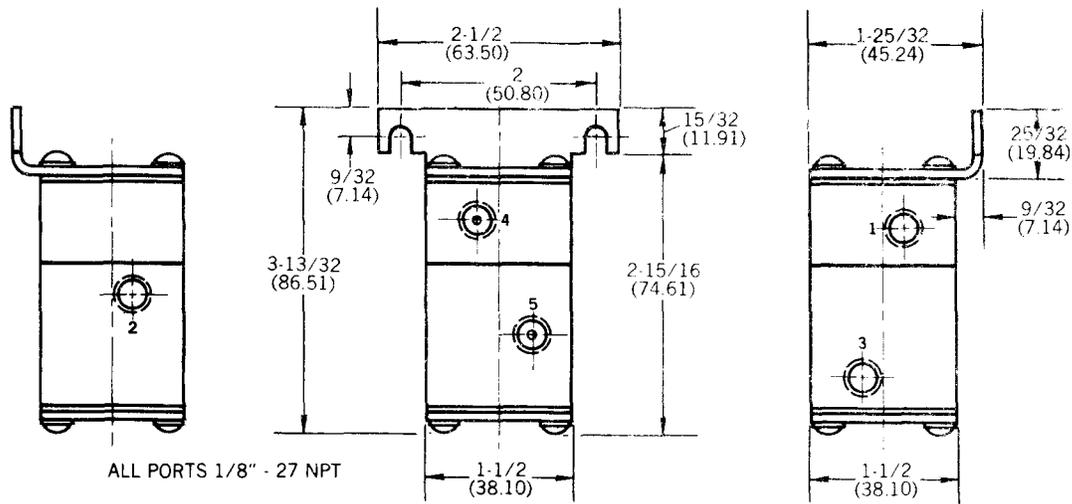


J.I.C. Symbol

ORDERING INFORMATION:

Specify: 83939-P1

DIMENSIONS, Inches (Millimeters)



INSTALLATION - See Figure 1

Figure 1

Mounting: The 83939-P1 Lockout Relay may be mounted in any position. It should be securely mounted using the two slots (clearance for No. 10. screws) provided in the mounting bracket. Care should be taken to prevent any foreign matter from entering the ports during installation.

Connections: The relay has five 1/8" - 27 NPT connections. Typically, control pressure will be connected to Port 2, a combination relay to Ports 1, 4 and 5, and the receiver-indicators to Port 3. See System Schematic for specific port connections.

Tubing and fittings used to connect the relay must be free of chips, dirt, moisture, or other foreign matter. It is recommended that a non-hardening, "anti-seize" type thread compound be applied to the second or third male thread in moderate amount. Do not allow any compound to be deposited inside the relay. Thread sealing tape is not recommended.

Any ports left open to atmosphere should have fittings installed and turned downward. Foreign matter and water must be prevented from entering the relay as they will impair operation.

OPERATION - See Figure 2

A control pressure entering Port 2 will pass through the upper and lower poppet seats and exit Port 3. Introduction of a pressure at Port 1 will pressurize the upper diaphragm causing it to move against the stem head. The stem will then force the upper poppet on seat which will close Port 2 from Port 3.

Introduction of a pressure at Port 5 will pressurize the lower diaphragm and cause it to force the lower poppet on seat. This will also close Port 3 from Port 2.

With pressure at Port 5 and Port 1, a pressure applied at Port 4 will nullify Port 1 pressure. This will cause the stem spring to lift the stem from the upper poppet which will in turn allow the upper poppet spring to lift the upper poppet off seat. However, Port 2 pressure will still be blocked from Port 3 because the pressure at Port 5 will maintain the lower poppet on seat.

If the pressure at Port 1 is lost, or nullified by pressure at Port 4, and the pressure at Port 5 is lost, both the upper and lower poppet will be lifted off seat to again allow the control pressure to flow from Port 2 to Port 3.

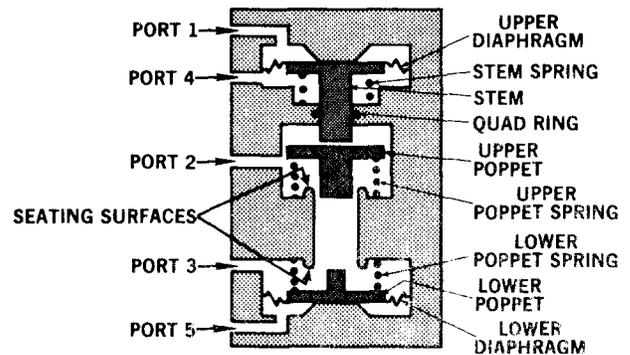
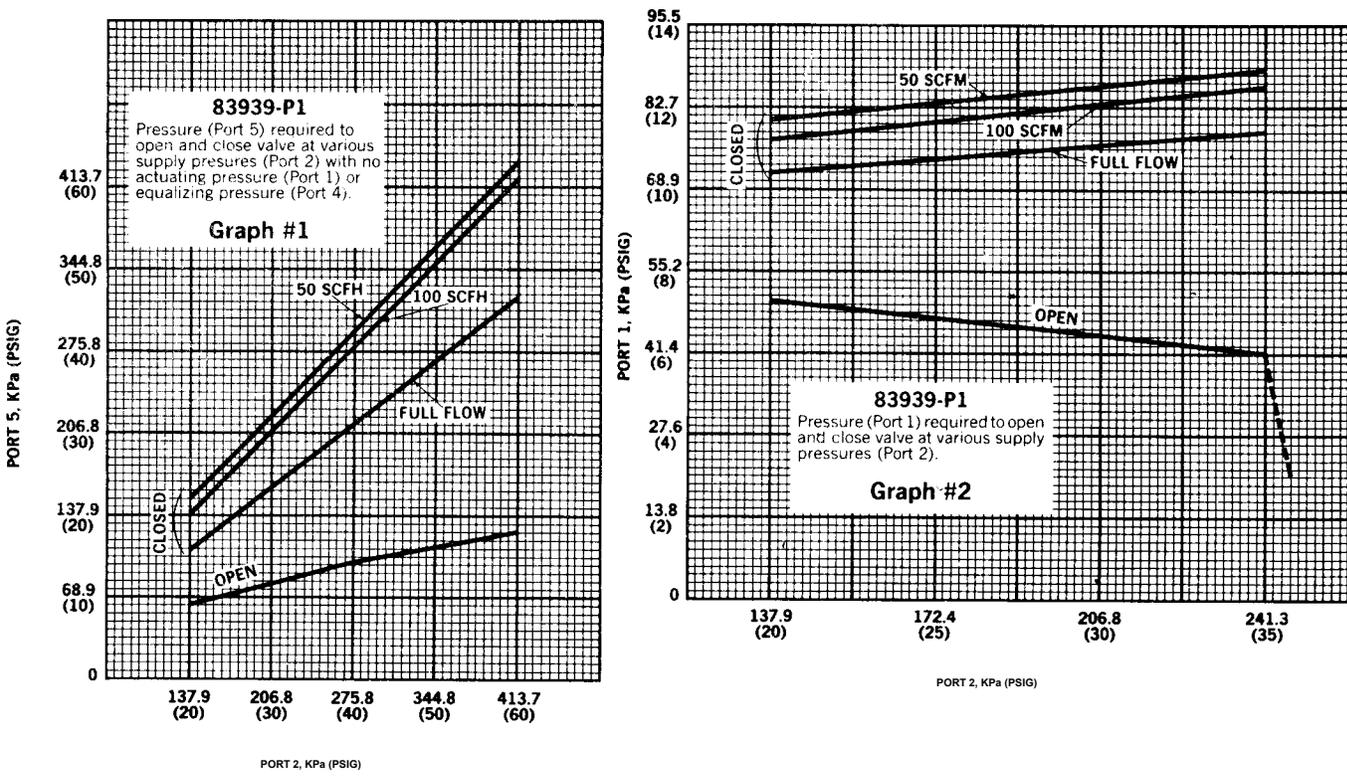


Figure 2



MAINTENANCE - See Figure 4

Warning: Use care when disassembling - spring forces present.

CAUTION: Do not subject quad ring, diaphragms, gaskets or poppets to cleaning fluid, acetone, or any halogenated hydrocarbons such as vapor degrease liquids, etc. Clean only with a soft, dry cloth. Metal parts may be cleaned with a suitable solvent and then dried thoroughly before reassembly. Gasket cement should not be used to seal leaks due to the possibility of plugging small passages or damaging the operating characteristics of the diaphragms and gaskets.

Cap and Quad Ring: Remove the gasket (detail 12), spacer (detail 13), diaphragm (detail 14), stem (detail 4), spring (detail 15) and cap (detail 5). Remove defective quad ring (detail 16) from cap. Lubricate replacement ring with a non-drying, silicone-type lubricant and place in, cap.

CAUTION: Do not permit lubricant to touch poppet seat or seating surface - see Figure 3.

Poppet (detail 7), gasket (detail 12), arid spring (detail 8) can also be removed if necessary. Reassemble, tightening cap screws from .115 to .173 Kgm. (10 to 15 in. - lbs.)

Body: Remove the four screws, lockwashers, and cover (details 17, 3 and 11). Noting for reassembly the orientation of the gasket (detail 12), spacer (detail 13), and diaphragm (detail 14), remove. Poppet (detail 7) and spring (detail 10) can also be removed if necessary.

Reassemble, tightening screws from .115 to .173 Kgm. 10 to 15 in. - lbs.).

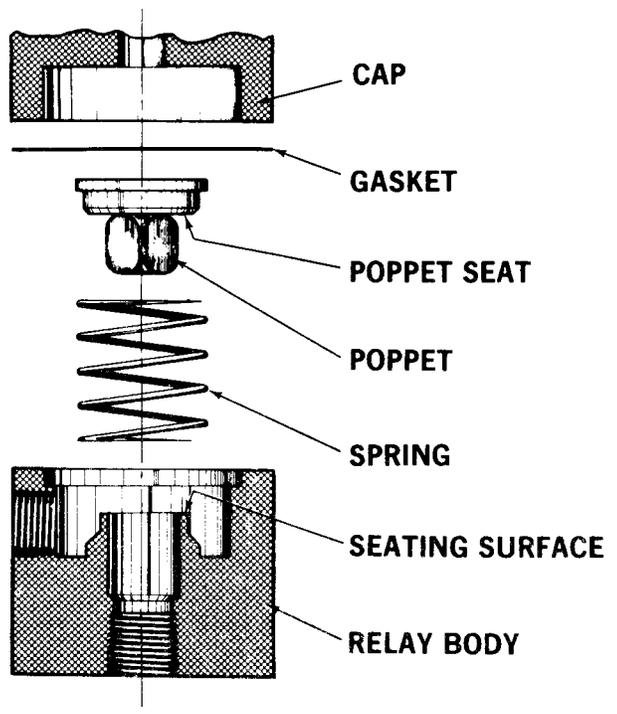
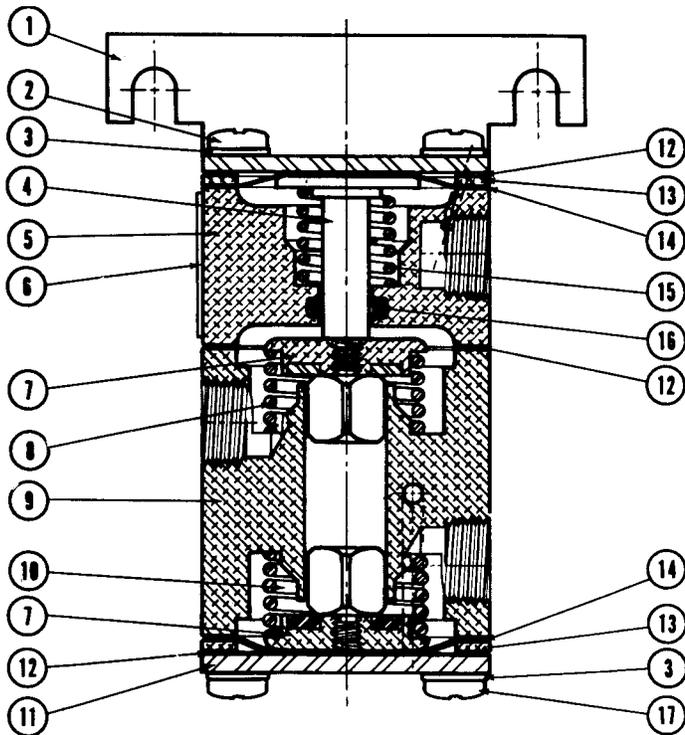


Figure 3



NOTE: Ports are shown on center line to show external connections.

Figure 4

PARTS LIST

Det. No.	No. Req'd	Description	Prod. Part No.
1	1	Mounting Bracket	24637-C2
2	4	Cap Screw	33713-H2409
3	8	Lockwasher	36600-L0609
4	1	Stem	85013-B1
5	1	Body	31857-E1
6	1	Nameplate	30036-G2
7	2	Poppet	99264-B1
8	1	Spring	25959-A1
9	1	Body	31857-J1
10	1	Spring	25121-A1
11	1	Cover	33666-A1
12	3	Gasket	33665-B1
13	2	Spacer	33430-A2
14	2	Diaphragm	24498-A1
15	1	Spring	24598-A1
16	1	Quad Ring	36243-N0010
17	4	Cap Screw	33713-G1109

For complete kit containing all quad rings, diaphragms and gaskets to service one unit, order Repair Kit No. 82665-F1.

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