

Description:

The PDP Pressure Differential Pilot Control Valve automatically maintains a constant pressure differential between any two pressure points in a system. It is a direct acting, spring-loaded, diaphragm type valve that operates hydraulically and is designed to maintain a pre-set pressure differential. When used as a pilot control with a Flomatic Automatic Control Valve, it will maintain a pressure differential sensing from across two points. See cross section drawing on back page.

Operation:

The Pressure Differential Control Valve is normally held closed by the force of the compression spring above the diaphragm. Pressure sensing from two points, one above the diaphragm and one below the diaphragm, acts on the diaphragm to maintain a preset pressure differential. The flow thru the valve responds to changes in differential pressure from the two sensing points.

Installation:

Installation must be performed by qualified, licensed personnel only.

The Pressure Differential Control Valve may be installed in any position. There is one $\frac{3}{8}$ " NPT inlet port and one $\frac{3}{8}$ " outlet port (two ports optional), for either straight or angle installation. Two $\frac{1}{4}$ " NPT sensing ports, one in the spacer and one in the cover connect to the controlling pressure. A flow arrow is marked on the body casting.

Adjustment Procedure:

The Pressure Differential Control Valve Model PDP can be adjusted to provide a pressure differential range as specified on the data plate (5-80 PSI standard range other spring ranges are available)

Pressure adjustment is made by turning the adjustment screw (first remove plastic protective cap and loosen jam nut on adjustment screw) to vary the spring pressure on the diaphragm. The greater the compression on the spring the greater the pressure differential.

1. Turn the adjustment screw in (clockwise) to increase pressure differential.
2. Turn the adjustment screw out (counter-clockwise) to decrease the pressure differential. When pressure adjustment is completed, tighten jam nut on adjustment screw and replace protective cap.

For best operation, observe the minimum flow rates given in the table are for the main valve on which the FCP is installed:

Control Valve Size	1-1/4" thru 3"	4" thru 8"	10" thru 16"
Minimum Flow GPM	15-30	50-200	300-650

Maintenance:

Annual inspection and maintenance is required of all plumbing system components. To ensure proper performance and maximum life, the PDP must be inspected, tested and cleaned on a regular basis.

Disassembly:

To disassemble follow the sequence of the item numbers assigned to parts on the cross section drawing on the reverse side of this sheet.

Reassembly:

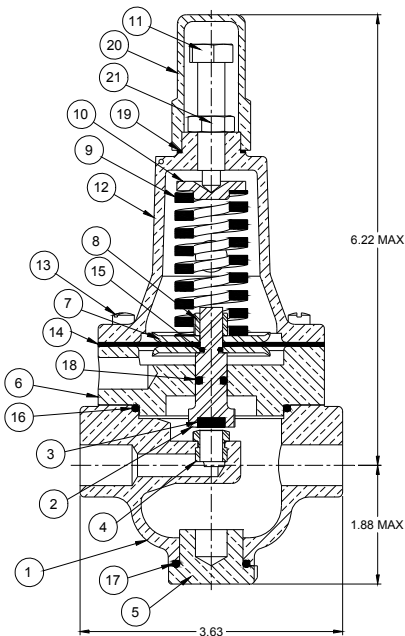
Reassembly is the reverse of the disassembly. Follow this procedure:

1. Install o-ring (17) onto plug (5) and screw into body (with spring for lower spring ranges than 30 PSI). Screw the plug in by hand. Use wrench to tighten only.
2. Install seat (4) into body (1). Use socket to tighten only.
3. Install o-ring (18) onto center groove on stem (2) and install o-ring (15) onto stem (2) in groove at the bottom of the thread.
4. Install stem (2) into spacer (6).
5. Assemble diaphragm plate (7) onto stem (2) with the radius facing up. Install the diaphragm (14) onto the stem. Install the second diaphragm plate (7) onto the stem (2) with the radius facing the diaphragm (14). Tighten the hex nut (8) hand tight onto the stem (2). Using a wrench on the bottom of the stem (2) and a wrench on the hex nut (8) tighten until snug.
6. Install o-ring (16) onto spacer (6).
7. Install spacer (6) onto body (1). Be sure to align machine screw holes with the threads in the body and position the $\frac{1}{4}$ " NPT in the spacer to its original position in order to re-attach the piping.

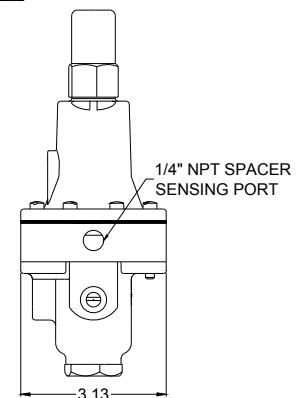
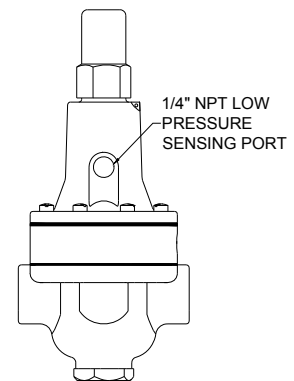
Model PDP 3/8"

8. Install spring (9) with spring button (10) on top of spring.
9. Install cover (12), adjusting screw (11) with jamb nut (21) using eight machine screws (13). Be sure to align the 1/4" NPT in the cover to its original position in order to re-attach the piping.
10. Install cap seal (19) onto top of cover (12) and attach metal adjustment cap (20). Using a wrench tighten the adjusting cap until snug.

Trouble Shooting Guide		
Problem:	Possible Cause:	Possible Solutions:
Fails to maintain a high preset pressure differential.	No spring compression.	Tighten adjusting screw to give higher pressure differential.
	Damaged spring (9)	Disassemble and replace spring (9).
	Spring button (10) is not in place	Disassemble and replace spring button (10) on top of spring (9).
	Damaged diaphragm (14)	Disassemble and replace diaphragm (14).
Fails to maintain a low preset pressure differential	Spring is too compressed	Back off adjusting screw (11) to give a lower differential pressure.
	Mechanical seat area obstruction	Disassemble and remove foreign material obstruction.
	Worn disc (3)	Disassemble; remove and replace stem (2).
	Stem dragging on inlet nozzle	Disassemble and replace diaphragm (14)
	Damaged diaphragm (14)	Remove cover and tighten nut (8)
Leakage from the cover, adjusting cap or vent hole	Loose diaphragm nut (8)	Disassemble PDP unit and replace diaphragm
	Damaged diaphragm (14)	Tighten cover screws (13)
	Loose cover screws (13)	Tighten adjusting cap (20)
	Loose adjustment cap (20)	Disassemble and replace spring (9).



Item #	Description:
1	Body
2	Stem
3	Disc
4	Seat
5	Body Plug
6	Spacer
7	Diaphragm Plate
8	Hex Nut
9	Spring
10	Spring Button
11	Adjustment Cap
12	Cover
13	Screw
14	Diaphragm
15	O'Ring
16	O'Ring
17	O'Ring
18	O'Ring
19	Adjustment Cap Seal
20	Adjustment Cap
21	Jamb Nut



Information needed to order repair parts:

Pilot Model
 Pilot Working Pressure

Limited One Year Warranty: Flomatic valves are guaranteed against defects of material or workmanship when used for the services recommended. If, in any recommended service a defect develops due to material or workmanship, and the device is returned, freight prepaid, to Flomatic Corporation within 12 months from date of purchase, it will be repaired or replaced free of charge. Flomatic Corporations' liability shall be limited to our agreement to repair or replacement of valve only.

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