



LOWFLOW
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I & M JBPH Series

Installation & Maintenance Instructions for JBPH Series Back Pressure Regulators

Warning: Low Flow Back Pressure Regulators must only be used, installed and repaired in accordance with these Installation & Maintenance Instructions. Observe all applicable public and company codes and regulations. In the event of leakage or other malfunction, call a qualified service person; continued operation may cause system failure or a general hazard. Before servicing any valve, disconnect, shut off, or bypass all pressurized fluid. Before disassembling a valve, be sure to release all spring tension.

Please read these instructions carefully!

Your LowFlow/Jordan product will provide you with long, trouble-free service if it is correctly installed and maintained. Spending a few minutes now reading these instructions can save hours of trouble and downtime later. When making repairs, use only genuine LowFlow Valve parts, available for immediate shipment from the factory.

Ideal Installation

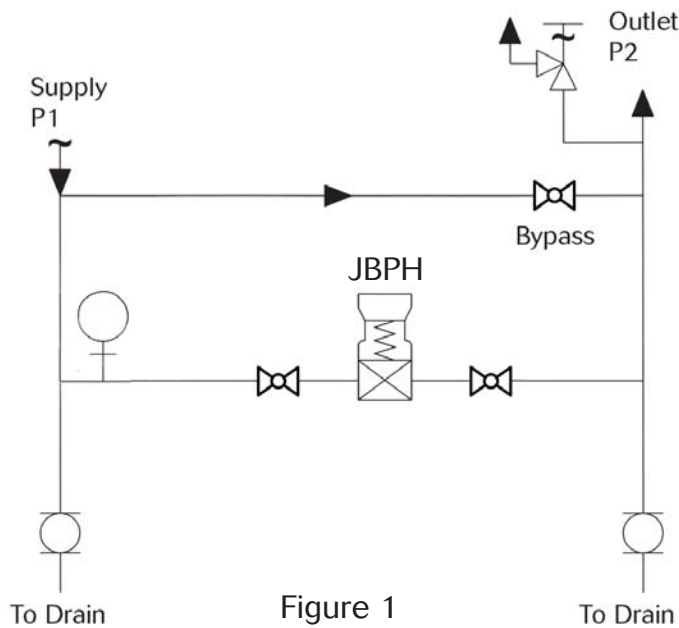


Figure 1

Preferred Installation

Caution! Installation of adequate overpressure protection is recommended to protect the regulator from overpressure and all downstream equipment from damage in the event of regulator failure.

1. An inlet block valve should always be installed.
2. If service application is continuous such that shutdown is not readily accomplished, it is recommended that an inlet block valve, outlet block valve, and a manual bypass valve be installed.
3. An inlet pressure gauge should be located approximately ten pipe diameters upstream, and within sight. If you have ordered your JBPH

with inlet gauge option on the valve body, please note that the pressure as registered on the gauge may be slightly different than a gauge located downstream.

4. All installations should include a upstream relief device if the inlet pressure could exceed the pressure rating of any downstream equipment or the maximum inlet pressure rating of the unit.
5. Flow Direction: install so that the flow direction matches the inlet/outlet marking on the main regulator body (1).
6. For best performance, install in well drained horizontal pipe.
7. Basic regulator - regulator may be rotated around the pipe axis 360°. Recommended position is with knob (6) vertical upwards.
8. Regulators are not to be buried underground.
9. For insulated piping systems, recommendation is to not insulate regulator.

Principles of Operation

1. Movement occurs as pressure variations register on the piston (17). The registering pressure is the inlet, P1, or upstream pressure. The range spring (3) opposes piston (17) movement. As inlet pressure rises, the piston (17) pushes up against the spring (3) opening the port; as inlet pressure decreases, the range spring (3) pushes down and the port opening closes.
2. A complete piston seal (9,11) failure will cause the regulator to fail closed.

Start Up

Caution! Do not exceed the maximum rated pressure of the regulator if installed for a hydrostatic test. Isolate the unit if the test is above the valve rating.

1. Start with the block valves closed. A bypass valve should be used to maintain upstream pressure in the system without changing the following steps.
2. Relax the range spring (3) by turning the adjusting knob (6) counter-clockwise (CCW) until there is no noticeable spring tension.
3. Slowly open the inlet block valve. Note: if no bypass valve is installed, extra caution should be used in starting up a cold system; i.e. do everything slowly.
4. Slowly open the outlet (downstream) block valve.
5. Slowly rotate the regulator adjusting knob (6) clockwise (CW) until flow begins.
6. Develop system flow to a level near its expected normal rate, and reset the regulator set point by turning the adjusting knob (6) CW to increase inlet pressure, or CCW to reduce inlet pressure.
7. Reduce system flow to a minimum level and observe set point. Inlet pressure will rise from the set point of Step 6.

Shutdown

1. On systems with a bypass valve, and where system pressure is to be maintained as the regulator is shutdown, slowly open the bypass valve while closing the inlet (upstream) block valve. (When on bypass, the system pressure must be constantly observed and manually regulated.) CAUTION! Do not walk away and leave a bypassed regulator unattended.
2. If the regulator and system are to both be shut down, slowly close the inlet (upstream) block valve. Close the outlet (downstream) valve only if regulator removal is required.

Maintenance

Warning! System Under Pressure. Prior to performing any maintenance, isolate the regulator from the system and relieve all pressure. Failure to do so could result in personal injury.

A. General

1. Maintenance procedures can be done after removal of the regulator unit from the pipeline where installed; it may be maintained in-line if it is determined safe to do so.
2. Always follow local or company procedures for removal, handling, cleaning and disposal of non-reuseable parts, i.e. o-rings, etc.

B. Trim Replacement

1. Remove adjusting screw assembly (6) completely out of the spring housing (5).
2. Clamp the valve in a vise using the body (1).
3. Remove the SHCS (13) then lift off spring housing (5).
4. Remove range spring (3) and upper spring guide (4).
5. Remove piston assembly ((7), (16), (17), and (18)). Remove cylinder face seal (10) and discard. Note: the return spring (19) and seals (9) and (11) are enclosed inside this assembly. See Figure 2.

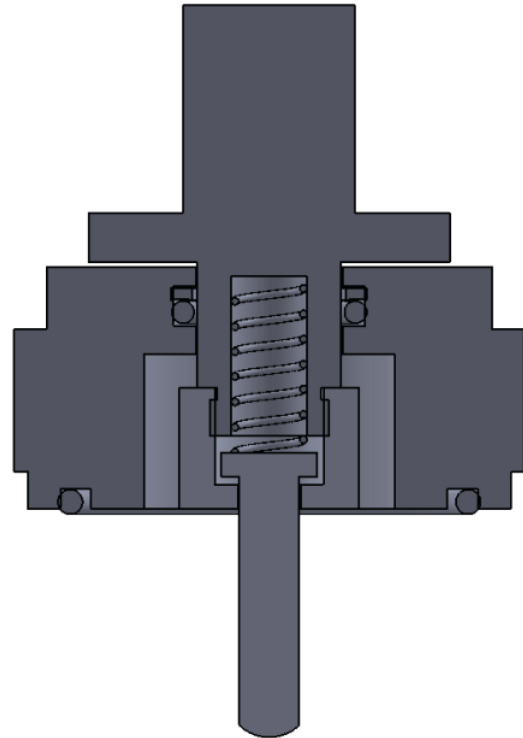


Figure 2

6. Refer to Figure 2. Place the piston assembly into a vise with the plug (18) pointing upward. Unscrew the plug holder (16) from the piston (17) using a 3/4" deep-welled socket. Caution: The return spring (19) is captured between the piston (17) and plug/plug holder (18/16). Take special care while disassembling the parts to prevent injury from the release of the plug holder (16) and return spring (19). Discard the old cylinder seals (9)(11) and replace with new ones (lubricate lightly with Krytox lubricant). Reassemble the piston assembly. Install new cylinder face seal (10) into bottom of cylinder (7) (lubricate lightly with Krytox lubricant).
7. Place the body (1) back in the vise right side up. Place piston assembly back in body (1), taking special care to guide the plug (18) into the bore hole in the body (1).
8. Place range spring (3) on top of piston assembly. Place upper spring guide (4) on top of spring (18).
9. Place spring housing (5) on top of body (1). Thread SHCS (13) into body hand tight. Cross tighten to 200 in lbs.
10. Thread adjusting knob (6) into spring housing (5)
11. Invert the body and remove the bottom cap (2) from body (1).

12. Remove seat assembly (14)(15) from body (1) and discard.
13. Inspect all parts for damage and replace if necessary. Remove and replace bottom cap seals (8)(12) (lubricate lightly with Krytox lubricant). Replace seat assembly (14) and insert the bottom cap (2) back into the body (1). Note: Use only parts manufactured and supplied by LowFlow Valve for these parts.

Troubleshooting

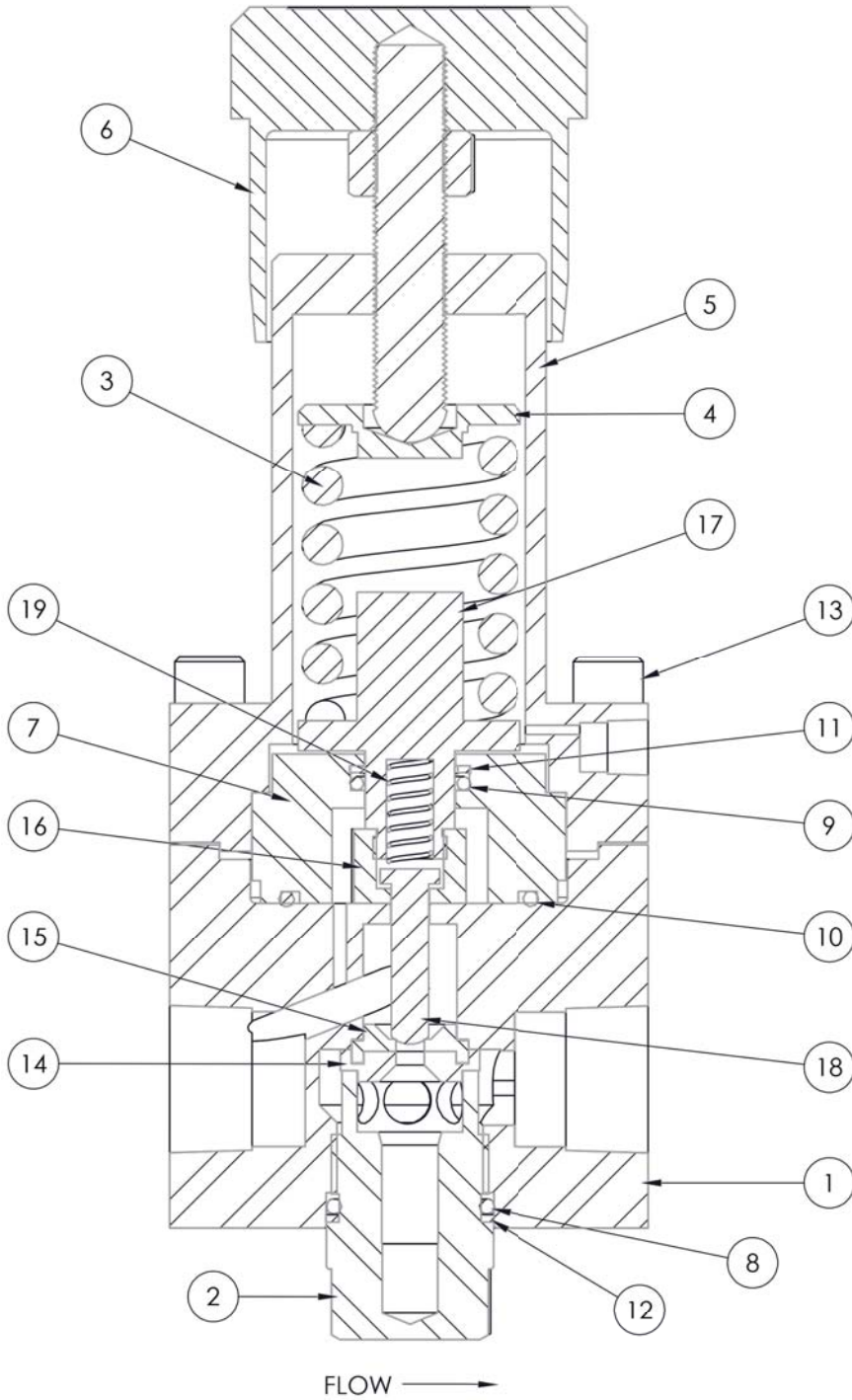
1. Erratic Operation; Chattering

- Oversize regulator; inadequate rangeability
 - Check actuator flow conditions, re-size regulator for minimum and maximum flow.
 - Increase flow rate.
 - Install next step higher range spring. Before replacing regulator, contact factory
- Worn plug or seat; inadequate guiding
 - Replace trim (possible body replacement)
- Valve is stuck in position.
 - Determine if corrosion is causing piston assembly/ plug to not move freely. Clean or replace parts as necessary.

2. Regulator can't pass sufficient flow

- Regulator not closing tightly
 - Inspect seat assembly and plug; replace if worn.
- Downstream blockage
 - Check system; isolate (block flow at regulator inlet- not outlet).
 - Relocate regulator if necessary
- No pressure relief protection
 - Install safety relief valve, or rupture disc.

Cross Section View



Item No.	Description	Quantity
1	Body	1
2	Bottom Cap	1
3	Range Spring	1
4	Upper Spring Guide	1
5	Spring Housing	1
6	Knob Assembly	1
7	Cylinder	1
8	O-Ring, -119	1
9	O-Ring, 2.62 X 15.5 Metric	1
10	O-Ring, -129	1
11	Back-Up Ring, -114	1
12	Back-Up Ring, -119	1
13	SHCS 5/16-18X1"	8
14	Seat Holder	1
15	Soft Seat	1
16	Plug Holder	1
17	Piston	1
18	Plug	1
19	Return Spring	1