Max Pressure – 175 PSI (12 BAR)
Max Temperature - 140ºF (60ºC)

Basic Installation Instructions

CAUTION: Installation of Backflow Preventers must be performed by qualified, licensed personnel. Faulty installation could result in an improperly functioning device.

NOTE: CHECK WITH GOVERNING AUTHORITIES FOR LOCAL INSTALLATION REQUIREMENTS.

The installer should be sure the proper device has been selected for the particular installation.

The Flomatic PVB contains an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. When the discharge pressure drops to 1 psi or below, the air vent opens and the spring loaded check valve closes the valve inlet, preventing back-siphonage. During normal flow, the water opens the check valve assembly and seat the vent disc holder against the bonnet as the body fills with water. The assembly is equipped with two resilient-seat quarter turn shut-off valves and two test-cocks

The Flomatic PVB is designer to prevent back-siphonage of contaminated water into the potable water supply.
NOTE: Installations must have continuous pressure with no back pressure. For installations requiring protection against backpressure install a Flomatic RPZE or RPZE II.

Installation

The Flomatic Model PVB must be installed in a vertical position with the supply connected to the bottom of the assembly, as shown above. The valve should be installed with adequate clearance on all sides to allow for periodic inspection, testing, and maintenance. The Assembly must be installed at least 12" above the highest downstream outlet. Do not install in a pit or vault. Protect the device from freezing. The Assembly must not be installed where back pressure is present.

In case of possible warranty claim, contact your local supplier or Flomatic Corporation representative. **DO NOT REMOVE ASSEMBLY FROM THE PIPELINE.**

The assembly must be protected from freezing and excessive pressure increases. Pressure increases can be caused by thermal expansion or water hammer. These excessive pressure situations must be eliminated to protect the valve and the system from possible damage. For protection against water hammer shocks, install a water hammer arrestor utilizing good plumbing practice.

Placing the Device in Service

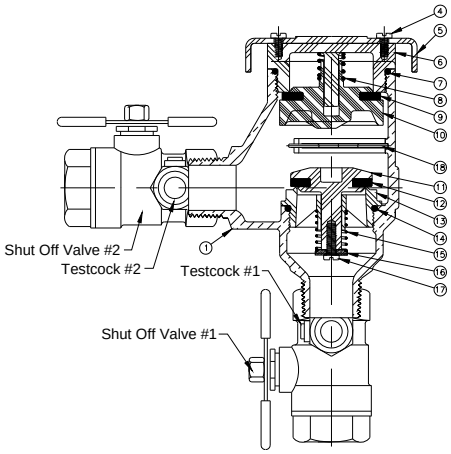
After proper installation of a Flomatic Model PVB, place the unit in service as follows:
1. Begin with both Shut Off Valves closed. Pressurize the system up to the Model PVB.
2. Open Shut Off Valve #1 completely. Some spillage may occur from the Canopy until the unit is pressurized.
Note: **Do not install in an area where the spillage of water may cause damage or be objectionable.**

3. Slowly open Shut Off Valve #2 to pressurize the downstream system. The Model PVB is now in service.
4. After the Model PVB has been properly installed and placed in service, the unit should be tested (*See Testing Procedures*).

NOTE: Annual inspection, testing & cleaning of valves / system is required. This will help to insure maximum life and proper function.

MAINTENANCE INSTRUCTIONS
1. Turn off the water supply to the Model PVB.
2. Release the pressure from the device.
3. Remove the Canopy Screws and Canopy.
4. Unscrew the bonnet from the body.
5. Remove spring clip (item 18) using needle nose pliers. Squeeze clip and disengage from side wall, then remove. ***Note:*** Starting July 1st 2005 on serial numbers P0001 and larger.
6. Unscrew the Check Valve Assembly from the body. ***Note:*** A 12 point 1-3/8" socket is recommended, a hot water heater element wrench with the sides ground down will also work, consult factory for other tools. A hot water heater element wrench with the sides ground down will also work. Consult factory for other tools.
7. Clean and inspect all components thoroughly prior to reassembly.
8. Vent and Check Valve Silicone Disc are reversible.
9. Replace parts as needed and reassemble in reverse order.

Testing Procedures
Test No. 1 Air Inlet Opening Point
Purpose: To determine the pressure in the body when the air inlet valve opens.
Requirement: The air inlet valve shall open when the pressure in the body is no less than 1.0 psi above atmospheric pressure, and the air inlet valve shall be fully open when the water drains from the body.
Steps:
a. Remove the Canopy.
b. Bleed water through both testcocks to eliminate foreign material.
c. Install appropriate fittings to testcocks.
d. Attach the high side hose of the differential pressure gage to Testcock #2, slowly open Testcock #2, make sure the end of low hose is level with Testcock #2.
e. Bleed air from the hose and gage by opening the high side bleed needle valve. Close the high side bleed needle valve.
f. Close (outlet) Shut Off Valve #2, then close (inlet) Shut Off Valve #1.
g. Slowly open the high side bleed needle valve no more than one-quarter (1/4) turn, being careful not to drop the differential pressure reading of the gage too quickly. Record the differential pressure reading of the gage when the air inlet valve opens, must be greater then or equal to 1.0 psi.
h. Close Testcock #2.
i. Remove equipment.
j. Open Shut Off Valve #1.



Test No. 2 Check Valve Closing Point
Purpose: To determine the static pressure drop across the check valve.
Requirement: The static pressure drop across the check valve shall be at least 1.0 psi.

Steps:

a. Attach high side hose of the differential pressure gage to Testcock #1, open Testcock #1.
b. Bleed all air from the hose and gage by opening high side bleed needle valve. Close high side bleed needle valve.
c. Close Shut Off Valve #1 (Shut Off Valve #2 remains closed from Test #1).
d. Open Testcock #2. The water in the body will drain out through Testcock #2. When the flow of water stops, the gage reading is the pressure drop across the check valve, must be greater then or equal to 1.0 psi.
e. Close both Testcocks.
f. Remove equipment.
g. Open Shut Off Valve #1, then Shut Off Valve #2.
h. Replace the Canopy.

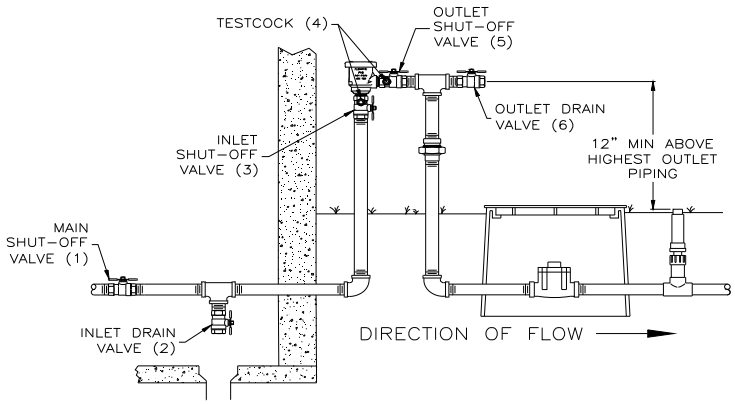
TROUBLE SHOOTING GUIDE

Problem	Possible Cause	Solution
1. Check valve fails to hold 1.0 psid minimum	A. Debris on sealing surfaces of valve B. Damaged seat disc C. Weak or broken spring D. Poppet broken due to thermal expansion	a. Disassemble and clean check b. Disassemble & replace seal c. Disassemble & replace spring d. Replace broken poppet
2. Poppet fails to open at 1.0 psig minimum	A. Debris restricting free operation B. Poppet seal adhering to bonnet C. Weak spring load	a. Disassemble and clean check b. Disassemble & clean or replace damaged parts c. Replace bonnet assembly
3. Minor leakage thru air vent	A. Damaged poppet seal B. Cracked or damaged poppet C. Cracked bonnet or damaged sealing edge D. Debris on sealing surface	a. Disassemble & replace seal b. Disassemble & replace poppet seal c. Disassemble & replace bonnet seal d. Disassemble & clean
4. Significant discharge thru air vent	A. Poppet not properly guided B. Major poppet or seal failure C. Low downstream pressure D. Insufficient inlet volume to operate device E. Poppet and/or bonnet broken	a. Disassemble & clean or replace damaged parts b. Disassemble & clean or replace damaged parts c. Check pressure @ #2 testcock, should be higher than 5 psig if low system d. Pressure needs to be increased or partially closed outlet ball valve to create higher pressure on poppet e. Replace broken bonnet/poppet due to thermal expansion
5. Chatter during flow conditions	A. Worn, damaged or defective check valve guide	a. Disassemble & repair or replace guide

Winterization

1. Close main shut-off (1) to stop water supply to system.
2. Open the inlet (2) and outlet (6) drain valves, inlet (3) and outlet (5) shut-off valve on PVB and both tescocks (4). All valves and testcocks must be left half open which is 45º to full open or close. This will allow complete drainage.

3. Blowing out the system downstream will require the outlet drain valve (6) to be opened and the PVB outlet shut-off valve (5) to be closed.
4. Attach air hose to the outlet drain valve (6), turn on air and make sure all water is removed from the downstream part of system.
5. **WARNING:** Make sure to put the PVB outlet shut-off valve (5) and outlet drain valve (6) back to the 45º open position after blowing open is completed.
6. If drain valves (2&6) are NOT part of your system and/or air is not used to blow out the system, make sure to remove the PVB internal components for the winter.
7. **WARNING:** Make sure the resilient seated main shut-off valve (1) is completely shut and remains so to prevent water from refilling the system causing damage.



3 Year Limited Warranty

All products manufactured & sold by Flomatic Corporation carry with them the following warranty: Flomatic Corporation warrants to the original purchaser (end user) all products manufactured by it will be free from defects in workmanship & material for a period of three (3) years.

This warranty is applicable provided such products are used under normal conditions within the recognized pressure, flow & temperature limits & are given normal service & care. FLOMATIC CORPORATION MAKES NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED, IN FACT OR IN LAW, & EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. In the event of a defect in material or workmanship of a product covered by this warranty, Flomatic Corporation shall at its solo option, repair or replace such defective product. Flomatic Corporation shall not be liable for any labor required to repair or replace any product covered by this warranty. This warranty is void with respect to any such product which is altered or tampered with by anyone without prior consent of Flomatic Corporation. Flomatic Corporation shall not be liable under any circumstances for damages caused by accident, misuse or abuse of the product or for failure to follow the installation, maintenance or operating instructions. IN NO EVENT SHALL FLOMATIC CORPORATION BE LIABLE FOR INCIDENTAL, INDIRECT, PERSONAL INJURY, PROPERTY OR PUNITIVE DAMAGES.

To make a claim under this warranty, the buyer must notify the factory in writing within ten (10) days of discovery of any claimed defects or workmanship, & if authorized by the factory, shall return the product in the same condition as when received by the buyer, transportation prepaid, to the factory or to such other location as directed by the factory. If said returned product is found by the factory to be defective in workmanship or materials, it shall be repaired or replaced without charge, pursuant to the terms of this warranty. This warranty excludes component parts or appurtenances not manufactured by Flomatic Corporation. Any claims with respect to such equipment must be made to the manufacturer in accordance with the terms of the warranty, if any, given by such manufacturer, or pursuant to such warranties as may exist by law. The physical or chemical properties of Flomatic Corporation products represent typical, average values obtained in accordance with test methods & are subject to normal manufacturing variations. This information is supplied as a technical service and is subject to change without notice.