Installation, Maintenance, and Repair Manual

Series 800M4, LF800M4

Pressure Vacuum Breaker Assemblies

½" – 2"

⚠ WARNING

THINK SAFETY FIRST

Read this Manual BEFORE using this equipment.

Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.

Keep this Manual for future reference.

⚠ WARNING

Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If the information provided here is not consistent with local building or plumbing codes, the local codes should be followed. This product must be installed by a licensed contractor in accordance with local codes and ordinances.

⚠ WARNING

Need for Periodic Inspection/Maintenance: This product must be tested periodically in compliance with local codes, but at least once per year or more as service conditions warrant. All products must be retested once maintenance has been performed. Corrosive water conditions and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal and external components helps assure maximum life and proper product function.

⚠ WARNING

Freeze sensor solely provides alerts about a possible freeze event and cannot prevent a freeze event from occurring. User action is required to prevent freeze conditions from causing product and/or property damage.

NOTICE

For Australia and New Zealand, line strainers should be installed between the upstream shutoff valve and the inlet of the backflow preventer.

If installed on a fire sprinkler system, all mechanical checks, such as alarm checks and backflow preventers, should be flow tested and inspected internally in accordance with NFPA 13 and NFPA 25.

Testing

For field testing procedure, refer to Watts installation sheets IS-TK-DL, IS-TK-9A, IS-TK-99D, and IS-TK-99E at www.watts.com.

For other repair kits and service parts, refer to the Backflow Prevention Products Repair Kits & Service Parts price list PL-RP-BPD at www.watts.com.

For technical assistance contact your local Watts representative.

800M4FR-FZ

Series 800M4 and LF800M4 antisiphon PVBs (FR and QT versions) are ideal for continuous pressure health hazard applications where exposure to sudden freezing conditions may occur, particularly in irrigation systems and industrial process water systems.

Both series include a sensor for use with SentryPlus Alert® technology to monitor temperature and alert facility personnel when freeze conditions can cause damage to equipment. (The sensor is installed on the assembly exterior and does not alter assembly functions or certifications.) The monitoring system is compatible with BMS and irrigation management systems, allowing freeze alerts to be distributed according to the BMS or IMS application. When the monitoring system is Wi-Fi enabled, notifications can be issued through the Smart Freeze Alert cloud service.

NOTICE

An add-on connection kit (sold separately) is required to activate the freeze sensor. Without the connection kit, the sensor is a passive component that has no communication with any other device. (The kit can also be used to install an alternative standalone outdoor sensor or to retrofit existing installations. See "Add-on/Retrofit Sensor Connection Kit," for ordering details.)

NOTICE

Use of the freeze sensor and activation kit with FZ models does not replace the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of the PVB assembly.

Watts is not responsible for the failure of alerts due to connectivity issues, power outages, or improper installation.

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Installation Guidelines

Pressure — Temperature

Working Temperature	33°F to 140°F (0.5°C to 60°C)
Maximum Pressure	150 psi (10.3 bar)
Minimum Pressure	15 psi (103 kPa)

Requirements

- Install 12" above the highest point of downstream piping. (See Figure 1.)

  NOTICE

  Installation as stated above is essential for proper operation
- Install bonnet side up and allow access for testing/service.
- Install where discharge or spillage is not objectionable.
- Do not undersize supply or oversize the valve relative to demand.
- Do not install where backpressure can occur.
- Protect from freezing. For freeze protection, specify Model 800M4FR or LF800M4FR. Or, consider the WattsBox insulated enclosure. For more information, download ES-WB at www.watts.com.
- Follow ASSE Standard 1020 that the atmospheric vent valve remains open until the valve body pressure exceeds 1 lb. Until this pressure is reached, some amount of spillage occurs at the atmospheric vent. To minimize this leakage on start-up, close the downstream shutoff valve and open the inlet shut-off valve quickly.

Start-up Procedure

1. Close shutoff No. 2 (outlet).
2. Open shutoff No. 1 (inlet) until water discharges from the bonnet then quickly open to pressurize the valve.
3. Open shutoff No. 2.

Freeze Protection

Use the following procedure to purge the PVB assembly with pessurized air. (See Figure 2.)

1. Close the main shutoff valve.
2. Open upstream drain, test cocks and isolation ball valves to depressurize line.
3. Purge with pressurized line.
4. Leave test cocks and isolation ball valve handles in 45° angle to drain ball valves and prevent casting damage.

Typical Installation

The TWS hydrant is usually included in the PVB installation to provide outside access to a building water supply for start-up, winterizing, and servicing of irrigation sprinkler systems. (See Figure 3.) The hydrant is connected to the PVB assembly and installed through the structure wall to connect to the water supply.

Figure 1

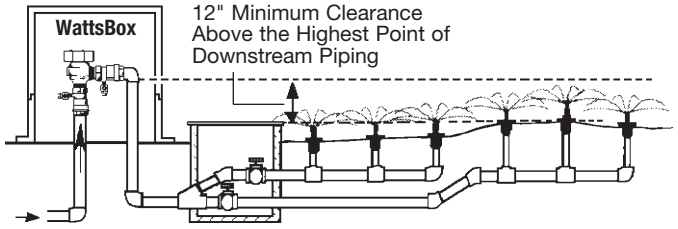


Figure 2

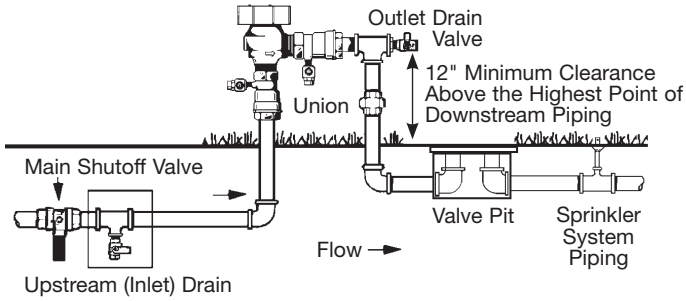
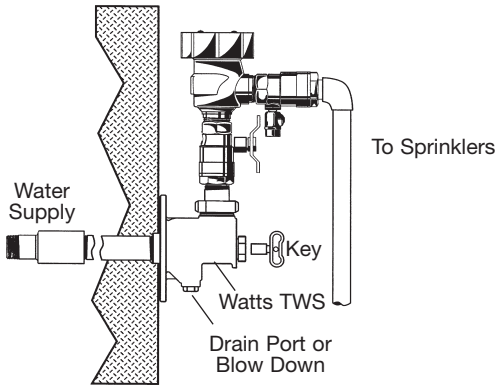


Figure 3



Servicing and Maintenance

Internal parts can be removed, repaired, or inspected without removing the valve from the piping.

Routine Service

1. In cold climates, open the test cocks to drain if operated only seasonally.
2. Replace rubber goods every 5 years.

Vacuum Breaker Disassembly

1. Shut off the supply pressure and drain the valve.
2. Remove the two hood screws and the hood.
3. Place a wrench on the parallel flats of the bonnet and stem assembly. Turn counterclockwise and remove.
4. Remove the vent assembly.
5. Press down on the spring retainer and disengage it from the retaining lugs. Then turn 90 degrees and remove.
6. Remove the spring retainer and spring. The large diameter of the spring is down on the guide assembly.
7. Remove the check disc holder and guide assembly.
8. Disassemble the check disc holder assembly.
9. Remove the seat (if required) by turning counterclockwise.

Vacuum Breaker Reassembly

Use the procedure above in reverse order to reassemble the vacuum breaker with new parts from the repair kit.

Add-on/Retrofit Sensor Connection Kit

Call customer service if you need assistance with technical details.

ORDERING CODE	ADD-ON/RETROFIT KIT		DESCRIPTION
88009515		FP-BF-WiFi/BMS/IMS-FZ Freeze Sensor Connection Kit	Includes freeze sensor in mounting clip, standalone outdoor sensor, activation module, wire nuts (2), and power adapter. This kit adds a monitoring system to alert facility personnel when temperature nears and reaches the freezing point.

Limited Warranty: Watts (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**

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