Model 460XL LEAD-FREE*

Spill-Resistant Pressure Vacuum Breaker
(3/8", 1/2", 3/4" & 1")
*This product contains a weighted average lead content less than 0.25% for wetted surfaces.
*Meets the requirements of NSF/ANSI 61

ZURN® WILKINS

❑ Installation ❑ Testing ❑ Maintenance Instructions

INSTALLATION INSTRUCTIONS

CAUTION: Installation of Pressure Vacuum breakers must be performed by qualified, licensed personnel. Faulty installation could result in an improperly functioning device. The installer should be sure the proper device has been selected for the particular installation.

ZURN WILKINS Model 460XL Spill Resistant Pressure Vacuum Breakers are for use on potable water lines where a health hazard could exist if a backsiphonage situation were to occur. They must not be installed where backpressure may occur.

Proper performance depends upon following these installation instructions and prevailing governmental and industry standards and codes. Failure to do so releases ZURN WILKINS of any liability that it might otherwise have with respect to that device. Such failure could also result in an improperly functioning device.

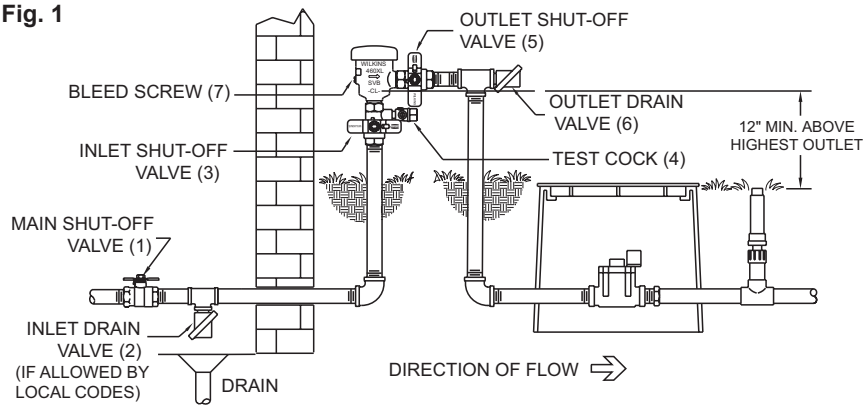
1. Before installing the ZURN WILKINS Model 460XL Spill Resistant Pressure Vacuum Breaker, flush the lines thoroughly to remove all debris, chips and other foreign matter.
2. The Model 460XL must be installed in a vertical position (see Fig. 1) to provide proper operation of the air inlet valve.
3. Provide adequate space around the installed unit so that the test cock and bleed screw will be accessible for testing and servicing.
4. Install the unit such that the critical level mark on the body is at least 12 inches above the highest downstream piping or water outlet.
5. Always consult local codes for installation methods, approvals and guidance.
6. The Model 460XL Spill Resistant Pressure Vacuum Breaker may be installed out doors only if the device is protected against any freezing conditions. Warning: do not block air vent opening with insulation. Exposure to freezing conditions will result in improper function or damage to the device. The installation location must be kept above 33°F.

PLACING THE DEVICE IN SERVICE

After the installation of a Model 460XL Spill Resistant Pressure Vacuum Breaker has been completed, place the unit in service as follows:

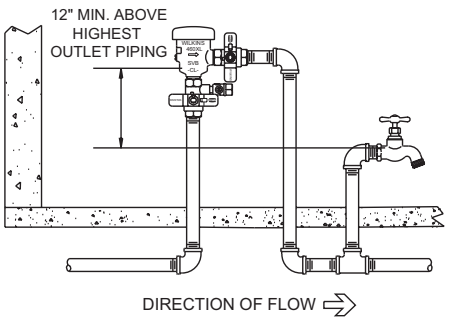
1. Start with both shut-off valves closed. Open the inlet shut-off valve until the Spill Resistant Pressure Vacuum Breaker is completely pressurized.
2. Immediately after the inlet shut-off valve is opened the air inlet valve should close, preventing any discharge from occurring. If the unit discharges water out the valve, refer to "MAINTENANCE INSTRUCTIONS". If no discharge occurs, proceed to step 3.
3. Slowly open the No. 2 shut-off valve. The Model 460XL is now in service.
4. After the Model 460XL has been properly installed, test the device. If the device fails the test, refer to "MAINTENANCE INSTRUCTIONS".

Fig. 1



Drain Procedure for Freeze Protection

1. Turn off main shut-off (1) that supplies water to the system.
2. Open both the inlet and outlet drain valves in the system (2 & 6). Open the inlet and outlet ball valves on the Spill Resistant pressure vacuum breaker (3&5). Open the test cock and the bleed screw (4&7). Leave all valves and test cock in the half open/half closed (45°) position to allow full drainage of the valve and test cock.
3. If you "blow out" the system downstream of the Spill Resistant pressure vacuum breaker, make sure the outlet drain valve (6) is open and the Spill Resistant pressure vacuum breaker shut-off valve (5) is closed.
4. Connect an air hose to the outlet drain valve (6) and inject an adequate volume of air to remove all water from the downstream portion of the system.
5. CAUTION: Open outlet shut-off valve to the pressure vacuum breaker (5) and outlet drain valve (6) to the half open/half closed (45°) position after "blow out" process is completed.
6. If drain valves (2 & 6) are not part of the system, and if air pressure is not used to "blow out" the system, the internal components of the pressure vacuum breaker should be removed for the duration of the winter.
7. Leave all drain valves (2 & 6), shut-off valves (3 & 5) and test cock in the half open/half closed position (45°) for the duration of the winter to prevent freezing. Caution: Be certain that main shut-off (1) remains tightly closed to prevent refilling of the system. Also, the main shut-off valve must be resilient seated to insure no leakage of water into the system.



WARRANTY: ZURN WILKINS 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 ZURN WILKINS within 12 months from date of purchase, it will be repaired or replaced free of charge. ZURN WILKINS' liability shall be limited to our agreement to repair or replace the valve only.

WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects and other reproductive harm
ADVERTENCIA: Este producto contiene una sustancia química que el Estado de California como causante de cáncer, defectos de nacimiento y otros daños reproductivos

Maintenance

1. Close inlet and outlet shut-off valves before disassembling device.
2. Remove canopy screw and drip canopy.
3. Bleed off pressure by opening the test cock and bleed screw.
4. Unscrew the bonnet from the body by turning counterclockwise.The drip canopy may be used as a bonnet removal tool.
5. Remove the check cartridge from the assembly by slowly rocking it back and forth within the body.
6. Unscrew the upper cage counterclockwise relative to the lower cage, allowing access to the diaphragm and air vent poppet.
7. Unscrew the check seat from the lower cage using the tool molded into the top of the bonnet labeled "CHECK SEAT TOOL".
8. Clean all parts with clean water only.
9. After completing inspection, replace necessary parts and reassemble. Repair kits are available from your supplier. Note: When threading the upper cage onto the lower cage, torque the upper cage by hand until the torque marks on the rim of the upper cage line up with the arrow on the lower cage.

Testing Procedures

TEST NO. 1

Purpose: To determine the inlet pressure when the air inlet valve opens.

Requirement: The air inlet valve shall open when the inlet pressure is no less than 1.0 PSI above atmospheric pressure and the outlet pressure is atmospheric. The air inlet valve shall be fully open when the inlet pressure is reduced to atmospheric.

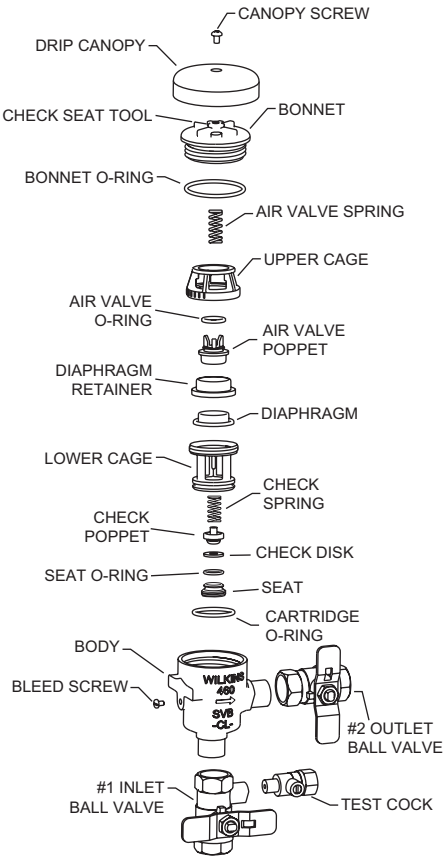
1. Remove the drip canopy.
2. Bleed water through the test cock to eliminate any foreign material.
3. Install the appropriate fitting to the test cock.
4. Install the high side hose of the differential pressure gauge to the test cock. Open the test cock and high side bleed valve on the test gauge and bleed the air from the hose and gauge.
5. Close the #2 shut-off valve and then the close the #1 shut-off valve.
6. Open the vent bleed screw.
7. Place a small amount of water into the top of the bonnet directly atop the air inlet valve.
8. Slowly open the high side bleed needle valve being especially careful not to drop the pressure differential too fast. Record the pressure differential at which the water in the top of the bonnet begins to drain into the body.
9. Open the high side bleed needle valve to lower the pressure to atmospheric – 0.0 PSID. Verify that the air inlet has fully opened.
10. Close the test cock and bleed screw.
11. Slowly open #1 shut-off valve.

TEST NO. 2

Purpose: To determine the static pressure drop across the check valve.

Requirement: The static pressure drop across the check valve must be at least 1.0 PSID.

1. Close the #1 shut-off valve.
2. Slowly open the bleed screw. The water in the body will drain out the bleed screw. When the flow of water stops the gauge reading will be the static pressure drop across the check valve. The gauge reading must be 1.0 PSID or greater. Record this value. If water continues to flow out the bleed screw then the #1 shut-off valve is leaking.
3. Close the test cock and bleed screw.
4. Replace the drip canopy.
5. Slowly open shut-off valve #1 and then open shut-off valve #2.



Troubleshooting

PROBLEM	POSSIBLE CAUSES
Air inlet valve does not open as gauge drops to 0.0 psid.	1. Air inlet o-ring stuck to bonnet, clean o-ring and bonnet 2. Broken or missing air vent spring.
Air inlet valve does not open and differential on gauge will not drop.	1. Leaking No. 1 shut-off valve. 2. Parallel installation with leaky No. 2 shut-off valve.
Air inlet opens below 1.0 psid.	1. Dirty or damaged air inlet o-ring. 2. Scale buildup on bonnet.
Check valve opens below 1.0 psid.	1. Dirty or damaged check disc. 2. Damaged seat. 3. Hole in diaphragm