Model 350XL LEAD-FREE*

Double Check Valve Assembly (1-1/4”- 2”)

*This product contains a weighted average lead content less than 0.25% for wetted surfaces.
*Meets the requirements of NSF/ANSI 61

❑ Installation ❑ Testing ❑ Maintenance Instructions

INSTALLATION INSTRUCTIONS

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

ZURN WILKINS Model 350XL Double Check Valve assemblies are for use on potable water lines where a health hazard does not exist in the event of a backflow situation.

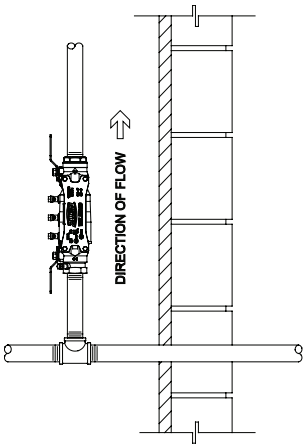
Damage to the device could result wherever water hammer and/or water thermal expansion could create excessive line pressure. Where this could occur, shock arresters, check valves and/or pressure relief valves should be installed downstream of the device.

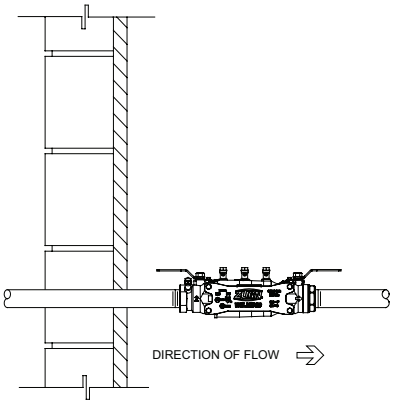
If installation is in a pit or vault, the Backflow Preventer must never be submerged in water because this could cause a cross-connection. Make sure that the pit or vault always remains dry by providing ample drainage.

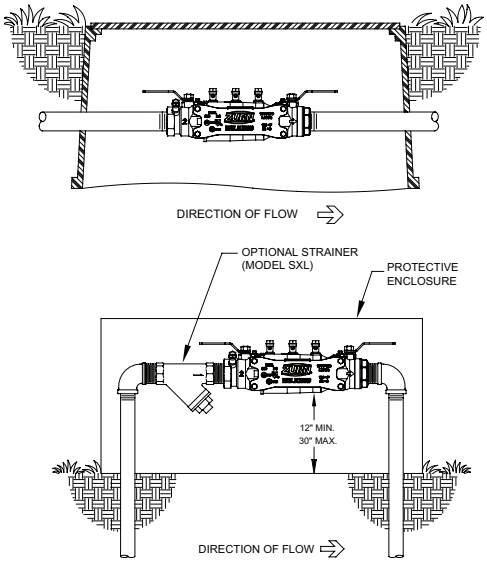
1. Before installing a Model 350XL Backflow Preventer, flush the line thoroughly to remove all debris, chips and other foreign matter. If required, a strainer should be placed upstream of the Backflow Preventer. CAUTION: Do not use a strainer in seldom used emergency waterlines such as fire lines.
2. Provide adequate space around the installed unit so that the test cocks will be accessible for testing and servicing.
3. Install valve at least 12 inches above surrounding flood level.
4. Always consult local codes for installation methods, approvals and guidance.

PLACING THE MODEL 350XL IN SERVICE

1. Start with both shut-off valves closed. Slowly open the inlet shut-off valve until the backflow preventer is completely pressurized.
2. When the unit has been pressurized, vent any trapped air by slightly opening each of the four test cocks.
3. Slowly open the downstream shut-off valve. The Model 350XL Double Check Valve assembly is now in service.
4. After the Model 350XL has been properly installed, test the device (see “TEST PROCEDURES”). If the device fails the test, remove the first and second check valves and thoroughly flush the device. Clean rubber and seats of all debris and place unit back in service.







VERTICAL INSTALLATION

Vertical installation is acceptable in applications where inlet and outlet piping are flowing vertically upwards. All the basic installation instructions apply to such installations. Consult factory for approval status.

INDOOR INSTALLATION

Indoor installation is preferred in areas that are subject to freezing conditions. All the basic installation instructions apply to such installations.

OUTDOOR INSTALLATION

The Model 350XL Backflow Preventer may be installed outdoors only if the device is protected against freezing conditions. Exposure to freezing conditions will result in improper function or damage to the device. The installation location must be kept above 32°F. All the basic installation instructions apply.

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
⚠ **AVERTISSEMENT:** Cancer et néfastes sur la reproduction - www.P65Warnings.ca.gov

Testing Procedures

MODEL 350XL DOUBLE CHECK VALVE ASSEMBLY

Equipment Required: Differential pressure gauge test kit.

TEST NO. 1 - TIGHTNESS OF #1 CHECK VALVE

REQUIREMENT:

The static pressure drop across check valve #1 shall be at least 1.0 psid. If test cock #3 is not at the highest point of the check valve body, then a vertical tube must be installed on test cock #3 so that it rises to the top of the check valve body.

PROCEDURE:

1. Slowly open all 4 test cocks to remove any foreign material and attach fittings.
2. Attach hose from the high side of the test kit to the #2 test cock.
3. Open test cock #2 and bleed all air from the hose and gauge by opening the high side bleed needle valve. Close high side bleed needle valve. If a tube is attached to test cock #3,open test cock #3 to fill the tube. Close test cock #3. Close #2 shut-off valve then close the #1 shut-off valve.
4. Hold gauge at same level as test cock #3 or water level in tube. Slowly open test cock #3. Record the static pressure drop across check valve #1 after gauge reading stabilizes and water stops running out of test cock #3.
5. Close all test cocks, open shut-off valve #1 and remove test equipment.

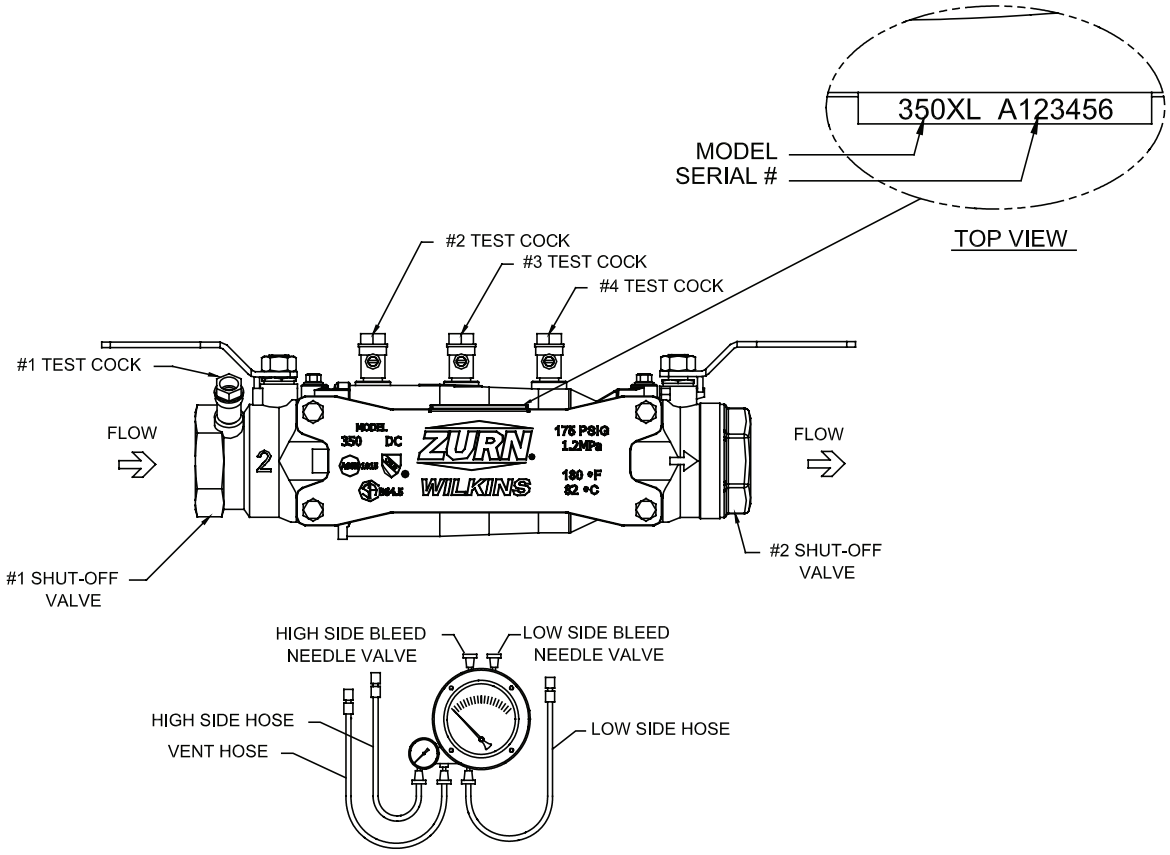
TEST NO. 2 - TIGHTNESS OF #2 CHECK VALVE

REQUIREMENT:

The static pressure drop across check valve #2 shall be at least 1.0 psid. If test cock #4 is not at the highest point of the check valve body, then a vertical tube must be installed on test cock #4 so that it rises to the top of the check valve body.

PROCEDURE:

1. Attach hose from the high side of the test kit to the #3 test cock.
2. Open test cock #3 and bleed all air from the hose and gauge by opening the high side bleed needle valve. Close high side bleed needle valve. If a tube is attached to test cock #4, open test cock #4 to fill the tube. Close test cock #4. Close #1 shut-off valve.
3. Hold gauge at same level as test cock #4 or water level in tube. Slowly open test cock #4. Record the static pressure drop across check valve #2 after gauge reading stabilizes and water stops running out of test cock #4.
4. Close all test cocks, slowly open shut-off valve #1 & #2 and remove test equipment.



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www.zurn.com

Maintenance Instructions

All Model 350XL Double Check Valve Backflow Preventers must be inspected and maintained by licensed personnel at least once a year or more frequently as specified by local codes. Replacement of worn or damaged parts must only be made with genuine “ZURN WILKINS” parts.

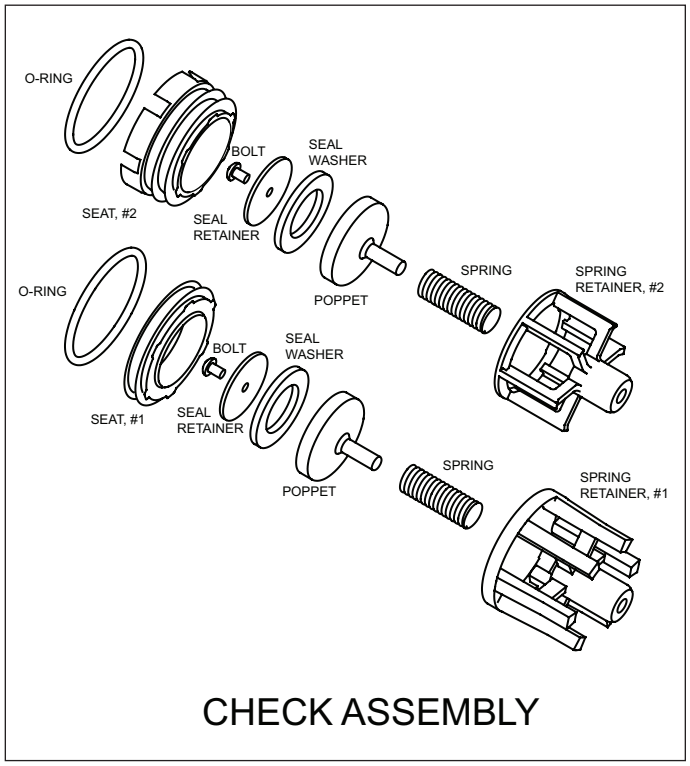
GENERAL MAINTENANCE

1. Clean all parts thoroughly with water after disassembly.
2. Carefully inspect rubber seal rings and o-rings for damage.
3. Test unit after reassembly for proper operation (refer to “TESTING PROCEDURES”).

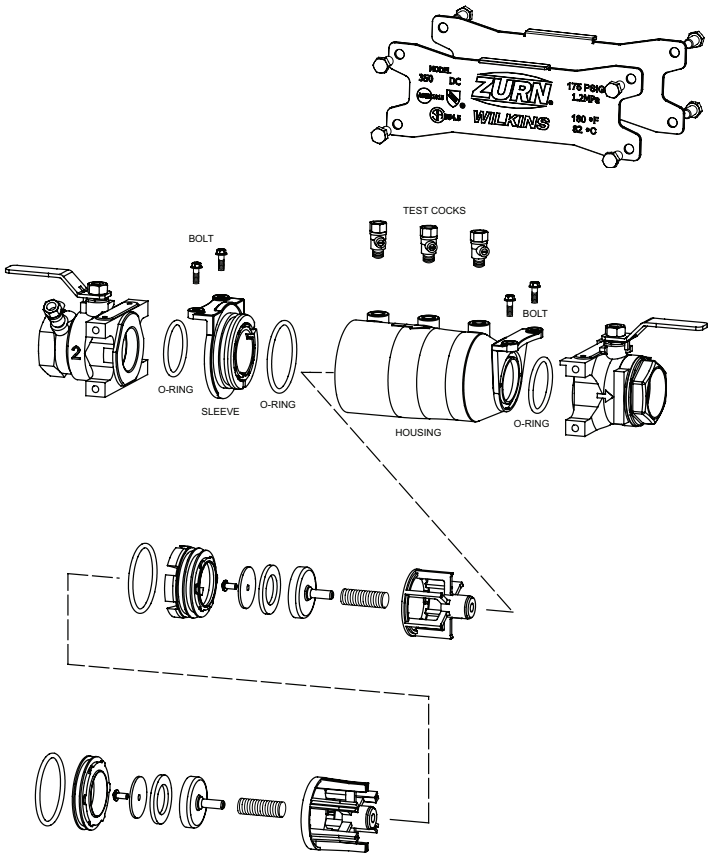
SERVICING CHECK VALVES

1. Close inlet and outlet shut-off valves.
2. Open No. 2, No. 3 and No. 4 test cocks to release pressure from valve.
3. Unscrew the 4 bolts (1/4-20 UNC Hex Flange) holding the housing in place. Lift housing up to remove.
4. Twist and remove sleeve from body. Using finger or blunt object, push in outlet end of body, both checks should slide out the body inlet. A short object like a socket can be placed on a flat surface. Place body over object so it pushes into valve outlet and push down on body.
5. Twist spring retainers counter-clockwise to remove from seats and access poppets.
6. Inspect the rubber seal ring for cuts or embedded debris. To remove seal ring, remove screw and seal ring retainer. If the reverse side of the seal ring is unused, it is possible to invert the seal ring. This will be considered a temporary solution to fixing a fouled check and should be replaced with a new seal ring as soon as possible.
7. Inspect seat surface for nicks or dings and replace if necessary. Use fingernail to check for dings. Re-grease seat o-rings.
8. Inspect seat o-ring sealing areas in body and wipe clean.
9. Reverse the above procedures to reinstall check valve assembly. Drop #2 check assembly in body. Then drop #1 check assembly in and turn until #1 spring retainer lines up with #2 seat. Then push both assemblies into body. Insert sleeve against checks. (Place sleeve down against flat surface and push on body with rocking motion.)
10. Lightly grease face of o-rings on housing and reinstall into body following the above procedures in revers order. Rock body side to side to help o-rings slide in. If it does not drop in completely, do not use screws to force it. An overly greased o-ring might slide out of groove at top of ball valve. Use a screw driver to push o-ring back in groove, then push body down in.

Note: When installing housing, match slight taper on the outlet of the housing with corresponding taper in body.



CHECK ASSEMBLY



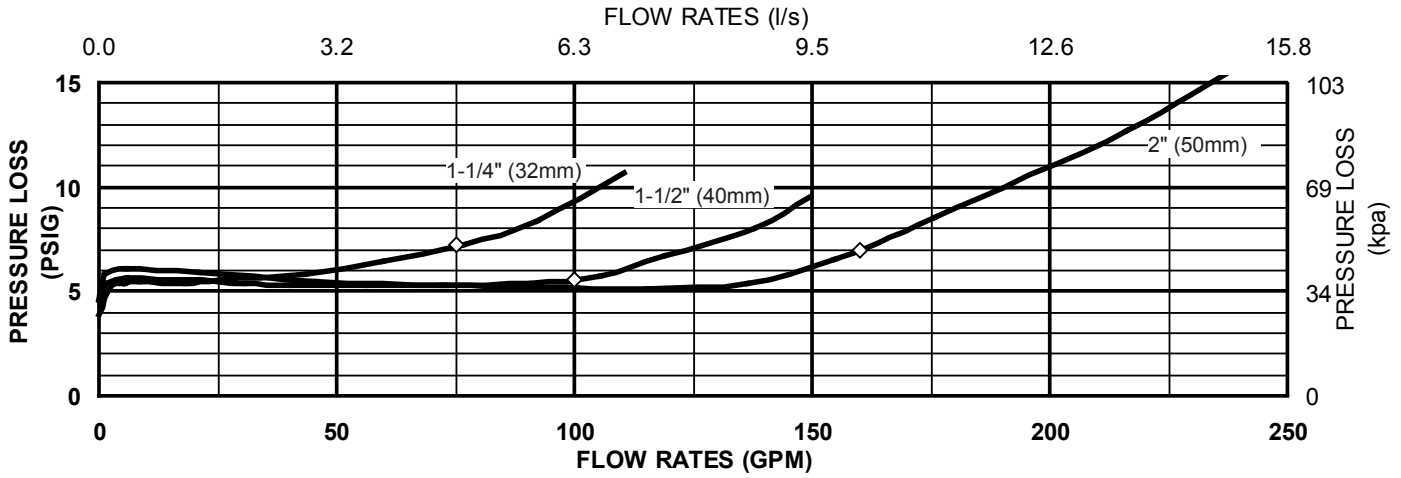
Troubleshooting

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
1. LEAKING CHECK VALVES	1. Debris on seat or seal ring 2. Damaged seat 3. Damaged seal ring 4. Damaged check o-ring	1. Clean seat and seal ring area 2. Replace seat 3. Replace poppet 4. Replace check o-ring
2. LOW OR NO FLOW	1. Device installed backwards 2. Shut-off valves or valve upstream may not be fully open 3. Low supply pressure	

Performance Characteristics

Flow Characteristics

MODEL 350XL 1-1/4", 1-1/2" & 2" (STANDARD & METRIC)



◇ Rated Flow (Established by approval agencies)

Capacity thru Schedule 40 Pipe				
Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
1/2"	5	7	9	14
3/4"	8	12	17	25
1"	13	20	27	40
1 1/4"	23	35	47	70
1 1/2"	32	48	63	95
2"	52	78	105	167

SPECIFICATIONS

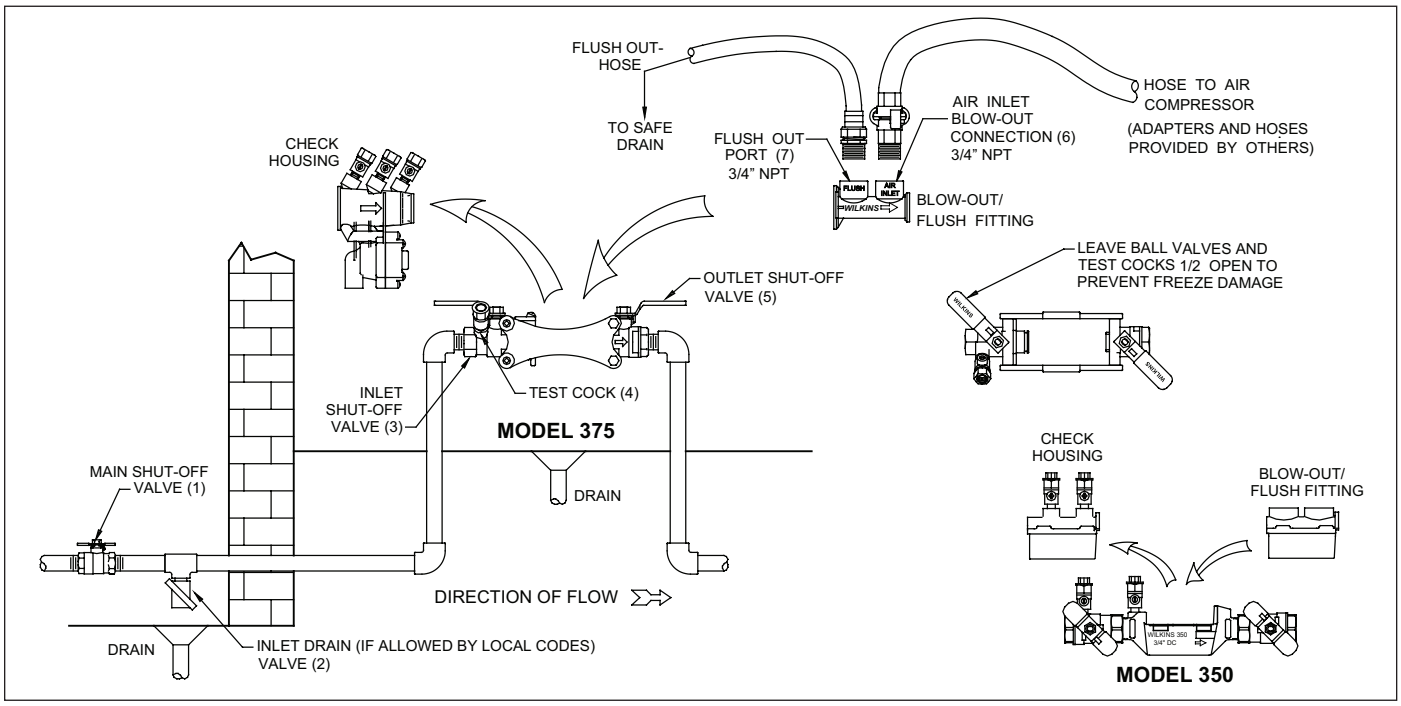
Maximum working water pressure: 175 PSI
Maximum working water temperature: 180°F
Hydrostatic test pressure: 350 PSI
End connections: Threaded ANSI B1.20.1

Proper performance is dependent upon licensed, qualified personnel performing regular, periodic testing according to ZURN WILKINS' specifications and prevailing governmental & industry standards and codes and upon following these installation instructions. 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.

Model 350 & 375

Double Check Valve Backflow Preventer 3/4" - 2"
Reduced Pressure Principle Backflow Preventer 3/4" - 2"

Blow-Out / Flush Procedure for Freeze Protection



To Blow Out System for freeze protection, use the following procedure:

1. Turn off main shut-off valve (1) that supplies water to the system.
2. Open inlet drain valve in the system (2). Open inlet and outlet shut-off valves on the backflow preventer (3 & 5) and all of the test cocks (4). Leave all valves and test cocks in the half open/half closed (45°) position to allow full drainage of the ball valves and test cocks.
3. Remove black backflow preventer housing. Replace with orange Blow-Out / Flush fitting. Store backflow preventer housing in a safe location for winter. Orange blow out flush fitting may remain in valve body during winter. Place plugs in ports to keep debris from entering housing.
4. A hose can be connected to flush out port (7) to drain water to a safe drain.
5. Connect an air hose to the air inlet connection (6). Inject an adequate volume of air to remove all water from the downstream portion of the system. Do not allow the fitting to overheat.
6. Leave drain valve (2), shut-off valves (3 & 5) and test cocks (4) in the half open/half closed position (45°) for the duration of the winter to prevent freezing.
7. Store valve housing/check assemblies, clamp/sleeve and o-rings in sealed plastic bag during winter to prevent weathering.

To Flush System during installation, use the following procedures:

1. Install backflow device in pipe system, leave water off.
2. Remove the black backflow preventer housing from the bronze body.
3. Install the orange Blow-Out / Flush fitting into the bronze body.
4. Thread a garden hose adapter into Flush-Out port (7). Connect a hose to the adapter and run to a safe drain. Shut-off valves (3) and (5) should be open.
5. Turn on water supply at main shut-off valve (1) to flush out any debris in the pipe. Turn water off.
6. Remove orange Blow-Out / Flush fitting and replace black check housing back into the line. Close shut-off valves (3) and (5). Turn water on at main shut-off (1).
7. Slowly open shut-off valve (3) to pressurize backflow preventer. Once fully open, pressurize system by slowly opening shut-off valve (5).

CAUTION: For freeze protection be certain that main shut-off valve (1) re-mains 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

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GENERAL TERMS AND CONDITIONS

PRICE AND TERMS OF PAYMENT

Terms are net, payable 30 days from date of invoice. All pricing in U.S. currency. The Buyer shall pay all sales, consumers, or other applicable taxes. A 1-1/2% monthly (18% annual) service charge will be added to the outstanding balance of all past due invoices.

Minimum invoice $250.00. Zurn Industries, LLC ("Zurn") reserves the right to apply a minimum order charge in order to meet the $250.00 minimum invoice requirement. All orders are subject to credit approval by the Zurn Credit Department prior to the acceptance of an order. Orders may be refused, delivery may be withheld, or shipment stopped in transit without any liability on Zurn's part at Zurn's sole discretion based upon Buyer's credit worthiness as determined by Zurn.

FREIGHT

All sales are F.O.B. seller's location. Zurn will allow full freight allowance when any of the following conditions are met: 1) Plumbing fixture only orders totaling $10,000 or more; 2) Zurn One System orders of $7,500 or more; 3) Any combination of Specification Drainage, Commercial Drainage, Finish Plumbing, Zurn Wilkins, Linear Drainage and Chemical Drainage orders of $5,000 or more; 4) Commercial Drainage only orders totaling $3,500 or more; or 5) PEX only orders totaling $3,000 or more. This full freight allowance applies when the shipment is within the continental United States and has a single destination of a Buyer's standard address or job location. Routing of shipment shall be determined at the sole direction of Zurn. Shipping dates are estimates and time of delivery shall not be of the essence of this sale contract. Under no circumstances will the Seller have any responsibility on account of any delays in manufacture, transportation, or otherwise. Terms of Export Shipment on application.

NOTE: Shipments in excess of 90" long or 3,000 lbs may be subject to additional charges, and shall be defined as an oversized and/or overweight product and Zurn's standard FFA terms may not apply. Please contact our Customer Service Department for guidance on potential additional shipping charges. This new policy supersedes any existing agreements.

These charges and restrictions apply in addition to Zurn standard terms and conditions for sale unless otherwise agreed upon by the parties.

LIMITED WARRANTY

Zurn goods sold hereunder are warranted to be free from defects in material and factory workmanship for the period of time from the date of purchase: AquaVantage® Flush Valves, AquaFlush® Flush Valves, Commercial Fixtures, Faucets, Showers, and Tubular Brass: three years; Chemical Drainage, Linear Drainage, Commercial Drainage, Specification Drainage, Zurn Wilkins, and Flush Valve, Faucets, and Tubular Brass decorative finishes: one year; PHIX® Cartridge: ten years; FOG-ceptor®: Lifetime. Where permitted by law, **THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO THE ABOVE IDENTIFIED PERIOD OF TIME AND SHALL BE LIMITED SOLELY TO THE REPLACEMENT OF THE DEFECTIVE GOODS.** A damaged/broken test cock or ball valve is not considered defective. Please contact Zurn Customer Care for assistance.

Zurn will replace goods at no cost that prove defective provided Zurn is notified in writing of such defect and the goods are returned prepaid at the specified Zurn location with evidence that they have been properly maintained and used in accordance with instructions. **ZURN SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY, OR DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES.** The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in the connection therewith. All weights stated in Zurn catalogs and lists are approximate and are not guaranteed.

RETURNED GOODS

Standard cataloged material may be returned only with written permission of Zurn. Returned goods are subject to a 25% restocking charge of total saleable material returned, plus cost of reconditioning, if necessary, to make material sellable. Transportation charges are the responsibility of the Buyer. Credit allowance will be in the form of merchandise credit only – not cash credit. The value of the return must total at least $100.00 to qualify for credit allowance. No credit will be allowed for parts unless originally ordered and invoiced as parts. No credit will be allowed for discontinued or made-toorder items. Items that have been specially made are not subject to return or cancellation except by special negotiation. Material must be returned within one year of invoice date for credit to be issued for Chemical Drainage, Linear Drainage, and Commercial Drainage. Material must be returned within two years of invoice date for credit to be issued for Commercial Fixtures, Flush Valve Products, Specification Drainage, Tubular Brass, and Zurn Wilkins. No credit is allowed for Linear Drainage products that have been cut and Specification Drainage product with auxiliary tappings. Flush Valve material over two years old will be subject to a 50% handling charge. Flush Valve material over five years old will not be accepted. Commercial Drainage and Specification Drainage galvanized material will be credited at value of Dura-Coated cast iron, and chrome plated at value of bronze. Zurn Wilkins damaged/broken test cocks or ball valves are not considered defective.

ILLUSTRATIONS OF TYPICAL INSTALLATIONS

The typical installations for various products found in each product section are intended to illustrate the products and potential options for the use of these products. Under no circumstances are they to be construed as recommended installation procedures. Consult local codes and project specifications for proper installation instructions.

SHORTAGE/DAMAGE CLAIMS

Notification of material shortages or incorrect filling of orders must be made to Zurn within 10 days of receipt. No claims over three months old will be honored. Buyer agrees to make all complaints for damage in transit or "short count" directly to the carrier; before the contents are unloaded have the carrier agent's acknowledgment of such damage noted on the bill of lading and to present to the carrier its agent's acknowledgment of such damaged material with formal claim covering said damage.

GENERAL

Zurn reserves the right to make changes in design or equipment of any item or product without incurring any obligation on previously sold items, and to discontinue items at any time, without notice. Possession of this Catalog or other sales literature is not to be construed as an offer to sell. All orders are subject to acceptance by Zurn. Catalog printed in U.S.A.

Zurn flush valves are designed to comply with Army Corp of Engineers and Naval guide specifications, Military Specification MIL.V.29193 and Federal Specification WWP541.

Zurn flush valves comply with the following standards: ASME A112.18.1/CSA B125.1, A112.19.5, A112.19.2, A112.19.6, ASSE 1037 and 101 are listed by the following agencies: Canadian Standards, IAPMO/UPC/CUPC, and CSA 125.3. Zurn flush valves are manufactured from dezincification resistant alloys. For additional compliances, contact Zurn Industries, LLC, Finish Plumbing Operation, or 1-800-997-3876.

Zurn is not responsible for typographical errors. The contents of this guide are subject to revision without notice.

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