



INSTALLATION & MAINTENANCE

MODEL 350 AL 65-250mm

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 350 Double Check Valve assemblies are for use on potable water lines where a health hazard does 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 arrestors, 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 350 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 300mm above surrounding flood level.
4. Always consult local codes for installation methods, approvals and guidance.
5. Resilient seated shutoff valves are required to be installed on both the inlet and outlet of the device to make field testing possible.

PLACING THE DEVICE 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 350 Double Check Valve assembly is now in service.
4. After the Model 350 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.

PERFORMANCE

MODEL 350 FEATURES

Max. Working Water Pressure	1200kPa
Max. Working Temperature	60 Celsius
Hydrostatic Test Pressure	2400kPa
End Connections Threaded	Grooved

STANDARDS COMPLIANCE

- Australian Watermark (AS/NZS 2845.1) Approved Lic. 1379
- Type Tested AS/NZS 4020 Lic. 20111



WATERMARK
AS/NZS 2845.1
LIC. 1379



TYPE TESTED
AS/NZS 4020
LIC. 20111

OUTDOOR INSTALLATION: *The Model 350 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 0°C. All the basic installation instructions apply.*

WARRANTY: ZURN WILKINS Valves are guaranteed against defects of material or workmanship when used for the services recommended. Please refer to the LWG Zurn/ Zurn Wilkins Product Warranty Statement for details.

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TESTING PROCEDURES

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.

EQUIPMENT REQUIRED: Differential pressure gauge test kit.

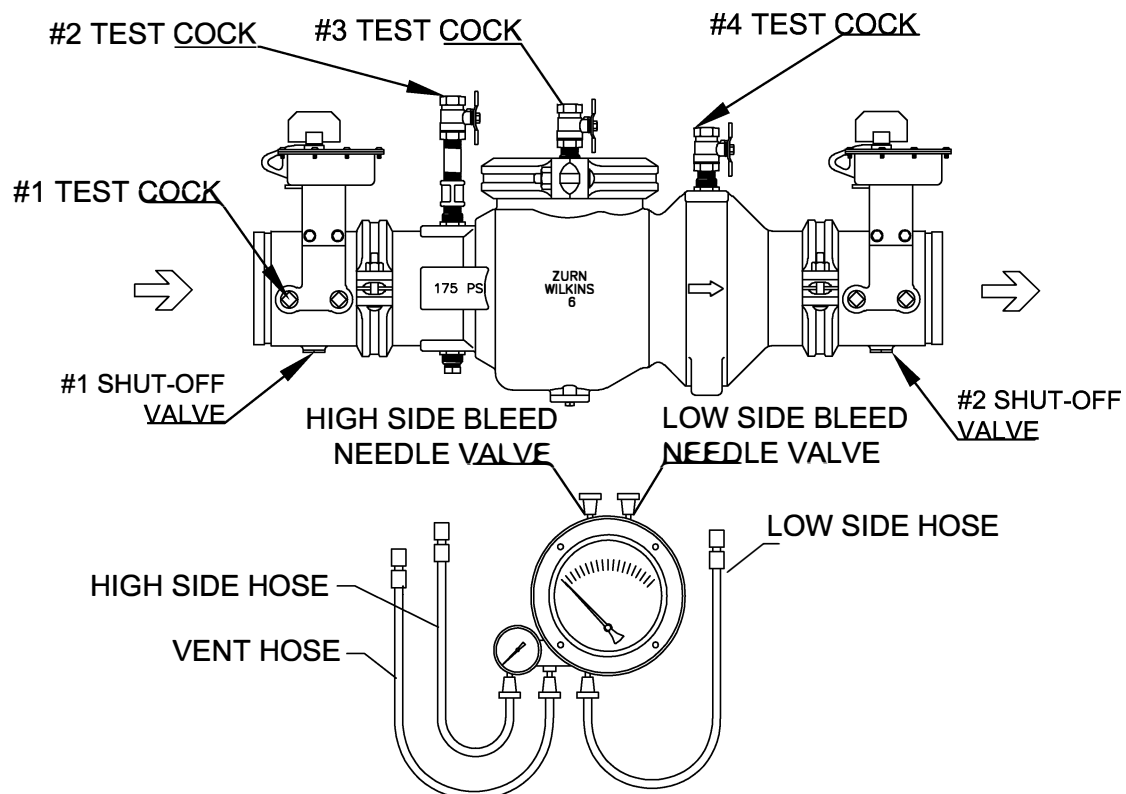
TEST NO. 2 - TIGHTNESS OF #2 CHECK VALVE

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:

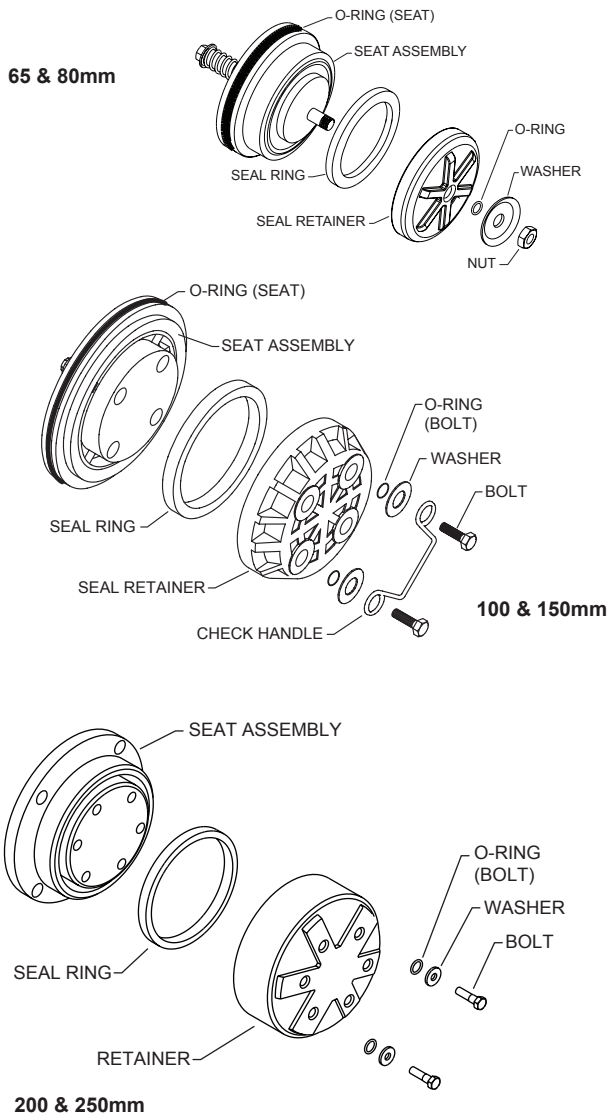
1. Attach hose from the high side of the test kit to the #3 test cock.
2. Open test cock #3 and bleed all air from the hose and gauge by opening the high side bleed needle valve. Close high side bleed needle valve. If a tube is attached to test cock #4, open test cock #4 to fill the tube. Close test 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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CHECK ASSEMBLY



All Model 350 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.

SERVICING CHECK VALVES

Attach a ratchet wrench, 17mm deep socket, and a 100mm long extension are recommended for removing check assemblies.

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. Loosen & remove the grooved coupling around the access cover. Remove cover.
4. To service only the #1 check assembly, remove the 6 bolts, washers and o-rings from the back of the #1 check assembly. Separate the retainer and the seal ring from the check assembly and proceed to step #8.
5. To service both checks or the #2 check, the #1 check assembly must first be removed. Remove the 4 nuts and washers retaining the #1 check assembly. Remove the #1 check assembly from the body.
6. To remove the #2 check assembly, remove the 7 nuts, washers and the #2 check retaining ring. Grasp the check assembly by the stem and remove from valve.
7. Remove all 6 bolts, washers and o-rings from the check assembly (See "Check Assembly" illustration). Separate retainer from check assembly to expose seal ring for inspection.
8. Inspect the rubber seal ring for cuts or embedded debris. If the reverse side of the seal ring is unused, it is possible to invert the seal ring. This would be considered a temporary solution to fixing a fouled check and should be replaced with a new seal ring as soon as possible.
9. Inspect valve cavity and seating areas. Remove any debris.
10. Reverse the above procedures to reinstall check assemblies. Lubricate seat o-rings to hold them in place while reinstalling seat. Place washers on studs and tighten retaining nuts evenly.
11. Reinstall access cover and grooved coupling.

NOTE:

If any portion of the seat assembly is damaged or missing or if the seat sealing rib is damaged in any way, do not attempt to field repair it. Contact your local ZURN WILKINS representative for assistance.

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").

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SERVICING CHECK VALVES *cont'd*

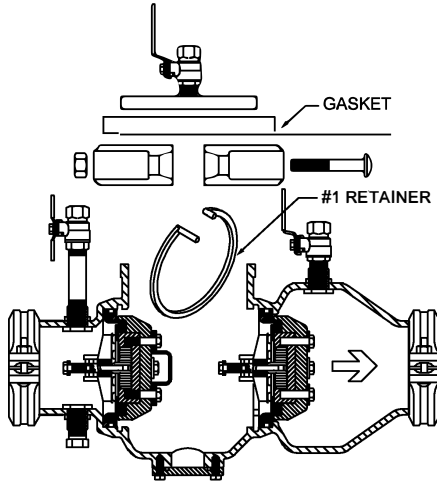


FIGURE 1

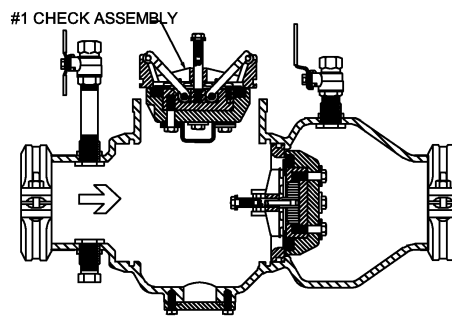


FIGURE 2

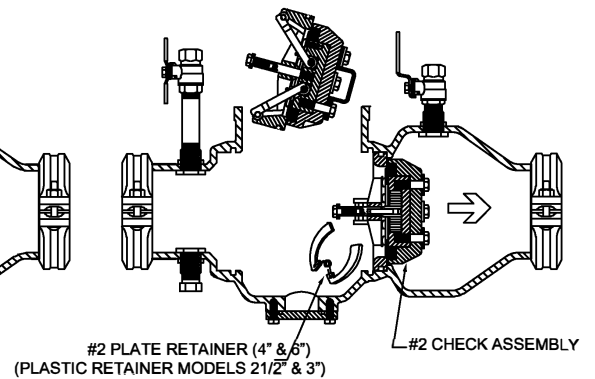


FIGURE 3

TROUBLESHOOTING

PROBLEM

LEAKING CHECK VALVES

POSSIBLE CAUSES

1. Debris on seat or seal ring
2. Damaged seat area
3. Damaged seat o-ring
4. Damaged bolt o-ring(s) on check retainer

CORRECTIVE ACTION

1. Clean seat area
2. Replace check assembly
3. Replace seat o-ring
4. Replace o-ring(s)

LOW OR NO FLOW

1. Device installed backwards
2. Gate valves not fully open
3. Low supply pressure

1. Verify flow direction arrow
2. Turn handles counter-clockwise
3. Attach pressure gauge to testcock #1 & verify pressure



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PERFORMANCE CHARACTERISTICS

