

Test Procedure for Backflow Preventer Valve Assembly

Set Up Procedure for Testing

1. Verify that upstream shut-off valve No. 1 is open, and there is water pressure. Close downstream shut-off valve No. 2. **Note for Reduced Pressure Zone Valves:** A discharge from the relief port indicates a leaking No. 1 check valve. If there is no discharge No. 1 check can be assumed to be holding tight.
2. Flush test cocks Nos. 2, 3 & 4.
3. Close Test Kit high valve (A) and low valve (B), leave vent valve (C) open.

Reduced Pressure Zone Valve Assembly Test

- A) Test the **first check valve** for tightness at a minimum of 5 PSID of static pressure:
1. Connect high-pressure hose to test cock #2.
 2. Connect low-pressure hose to test cock #3.
 3. Open test cocks #2 & #3.
 4. Open test kit high valve (A) and bleed air and water through vent hose... Close high valve (A).
 5. Open test kit low valve (B) and bleed air and water through vent hose... Close low valve (B) Slowly.
 6. Observe stable differential pressure on gauge and record on test form. (Must be 5 PSID Minimum)
- B) Test the **second check valve** for tightness against backpressure:
1. Connect vent hose to test cock #4.
 2. Open test cock #4.
 3. Open test kit high valve (A)... **Slowly**.
 4. Observe gauge and record on test form. Second check is tight if differential pressure drops slightly and holds steady. If pressure continues to drop until relief port discharges second check is leaking.
- C) Test **No. 2 shut-off valve** for tightness:
1. Close test cock #2.
 2. Observe gauge, if #2 shut-off valve is tight gauge will hold steady, if leaking the differential pressure will fall. Record result on form.
- Note:** If No. 2 shut-off valve is leaking tests **A & B are invalid**; since the valve is not in a static condition. Another shut-off valve downstream or a temporary by-pass from test cock #1 to test cock #4 must be utilized.
- D) Test the operation of the **differential pressure relief valve:** Relief valve must open at a minimum of 2PSID below inlet.
1. Open test cock #2, test kit high valve (A) shall remain open and close test kit vent valve (C).
 2. **Slowly** open the test kit low valve (B) until the differential pressure begins to fall... **Slowly**.
 3. Observe the relief valve port for the first discharge of water and record the pressure differential on the gauge at this point on the form.

Double Check Valve Assembly Test

- A) Test the **first check valve** for a minimum of 1 PSID of static pressure drop:
1. Connect high-pressure hose to test cock #2.
 2. Connect low-pressure hose to test cock #3.
 3. Open test cocks #2 & #3.
 4. Open test kit high valve (A) and bleed air and water through vent hose... Close high valve (A).
 5. Open test kit low valve (B) and bleed air and water through vent hose... Close low valve (B) **Slowly**.
 6. Observe stable differential pressure on gauge and record on test form. (Must be 1 PSID Minimum)
- B) Test the **second check valve** for a minimum of 1 PSID static pressure drop: (close test cocks #2 & #3 and remove high & low-pressure hoses)
1. Connect high-pressure hose to test cock #3.
 2. Connect low-pressure hose to test cock #4.
 3. Open test cocks #3 & #4.
 4. Open test kit high valve (A) and bleed air and water through vent hose... Close high valve (A).
 5. Open test kit low valve (B) and bleed air and water through vent hose... Close low valve (B) **Slowly**.
 6. Observe stable differential pressure on gauge and record on test form. (Must be 1 PSID Minimum)
- C) Test **No. 2 shut-off valve** for tightness:
1. Repeat procedure for test A.
 2. Connect vent hose to test cock #4.
 3. Open test cock #4.
 4. Open test kit high valve (A) **Slowly**.
 5. Close test cock #2.
 6. Observe gauge, if #2 shut-off valve is tight gauge will hold steady, if leaking the differential pressure will fall. Record result on form.
- Note:** If No. 2 shut-off valve is leaking tests **A & B are invalid**; since the valve is not in a static condition. Another shut-off valve downstream or a temporary by-pass from test cock #1 to test cock #4 must be utilized.