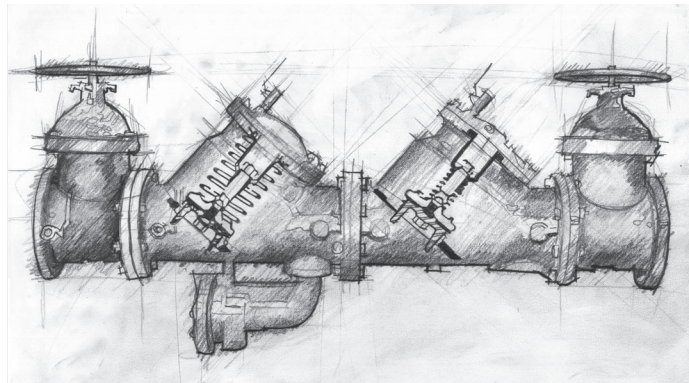


Backflow Assembly Field Test Procedures

*Using Three-Valve & Five-Valve
Test Kits*



Bureau of Water
South Carolina Department of Health
and Environmental Control

5-Valve Test Procedure for a Reduced Pressure Principal Backflow Preventor (ASSE1013)

PREPARING TO TEST THE ASSEMBLY

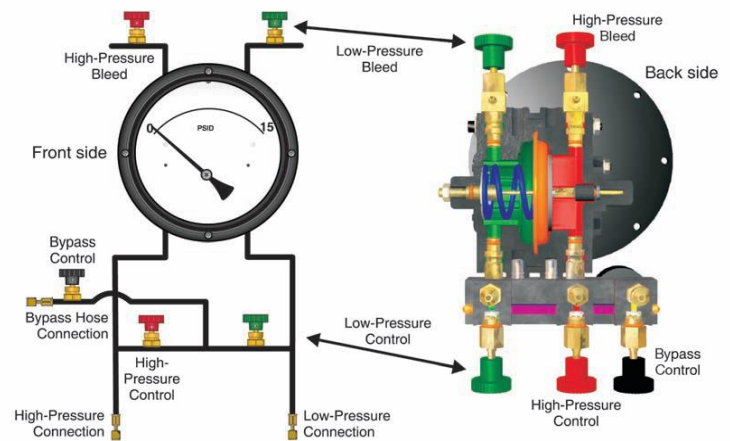
- ☐ 1. Notify the customer
- ☐ 2. Inspect the area for safety
- ☐ 3. Determine if the assembly is Approved & Appropriate
- ☐ 4. Record Make, Model #, Serial # & Assembly Type

FLUSHING OF TEST COCKS

- ☐ 1. Place Test Adapters on Test Cocks 1, 2, 3, and 4 – (If Applicable)
- ☐ 2. Open TC # 4 – **Let flow**
- ☐ 3. Open TC # 1, then close
- ☐ 4. Open TC # 2, then close
- ☐ 5. Open TC # 3, then close
- ☐ 6. Close TC # 4
- ☐ 7. Make sure all 5 Valves on the Gauge are **CLOSED!!!**
- ☐ 8. **Close Shutoff valve #2**

ATTACHING THE TEST KIT

- ☐ 1. Attach High Side Hose to TC # 2
- ☐ 2. Attach Low Side Hose to TC # 3
- ☐ 3. Slowly open TC#3
- ☐ 4. Open Low Side Bleed Valve (Leave Open)
- ☐ 5. Open TC #2
- ☐ 6. Open High Side Bleed Valve, Bleed Air, Then Close
- ☐ 7. Close Low Side Bleed Valve
- ☐ 8. Attach By-Pass Hose to TC # 4
- ☐ 9. Open High Side Control Valve (one full turn)
- ☐ 10. Open By-Pass Valve (1/4 Turn)
- ☐ 11. Loosen By-Pass Hose at TC # 4 to Bleed Air, Then Tighten
- ☐ 12. **S-L-O-W-L-Y** Open Low Side Bleed Valve to Cause Differential Reading to Rise – Then Close
- ☐ 13. Observe apparent pressure on CV #1 - (RECORD as CLOSED TIGHT or LEAKING)
- ☐ 14. Record Value of System Pressure (If Required)



Test #1. TIGHTNESS OF # 2 SHUT OF VALVE

- ☐ 1. Open TC # 4
- ☐ 2. Close TC # 2 – Pause to Allow Gauge to Readjust
- ☐ **3. Read the Gauge & Record Value (ex: Closed Tight)**
 - A) If the Pressure Differential Gauge Remains Steady, Record the #2 Shut Off Valve as Tight.
Test procedure PASSED.
 - B) If the Pressure Differential Gauge Drops to ZERO, This Means The # 2 Shut Off is in a Flow Condition and the #2 Shut Off Valve is Not Holding.
Test procedure FAILED.

Test #2. BACKPRESSURE TEST FOR # 2 CHECK

- ☐ 1. If No Water is Dripping from the Relief Valve, the # 2 Check Valve is Considered to be Tight.

5-Valve Test Procedure for a Reduced Pressure Principal Backflow Preventor (ASSE1013)

Test #3. TEST THE # 1 CHECK VALVE DIFFERENTIAL VALUE (5psid>)

- ☐ 1. **Close the By-Pass Valve!!! – Close the By-Pass Valve!!! – Close the By-Pass Valve!!!**
- ☐ 2. Open TC # 2
- ☐ 3. Open Low Side Bleed Valve, to Cause Reading to Rise, Then Close Low Side Bleed Valve
- ☐ **Read the Gauge and Record Value**
 - A) If the Pressure Differential Gauge Reading is 5 PSID or Above, Record the #1 Check Valve as tight.

4. RELIEF VALVE OPENING VALUE

- ☐ **1. Place the Top of Your Hand Under the Relief (2psid>)**
- ☐ **2. S-L-O-W-L-Y Open Low Valve**
- ☐ 3. As Soon as You Feel the First Drop of Water on Your Hand.
- ☐ **Read the Gauge and Record Value**

5. TIGHTNESS OF # 2 CHECK (1psid>) (USC & ASSE Optional Test / some water systems require)

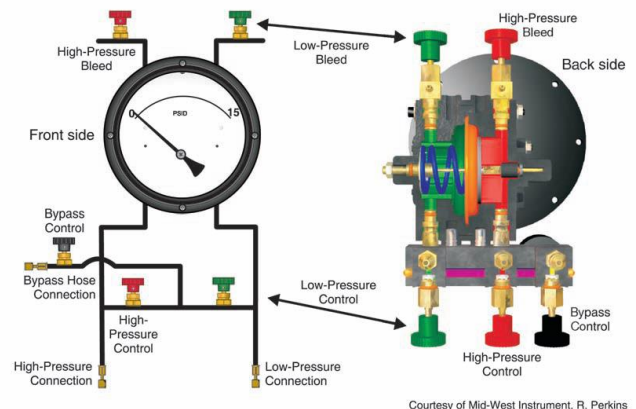
- ☐ 1. Close TC # 2
- ☐ 2. Close TC # 3
- ☐ 3. Close TC # 4
- ☐ 4. Remove By-pass Hose from TC # 4
- ☐ 5. Remove Low Side Hose from TC # 3 and place it on TC # 4
- ☐ 6. Remove High Side Hose from TC # 2 and Place it on TC # 3
- ☐ 7. Open TC # 3
- ☐ 8. Open High Side Bleed Valve – Bleed Air, Then Close
- ☐ 9. Open TC # 4
- ☐ 10. Open Low Side Bleed Valve – Bleed Air, Then Close
- ☐ **9. Read the Gauge & Record Value**

RESTORE SYSTEM

- ☐ 1. Close All Test Cocks
- ☐ 2. Remove Hoses
- ☐ 3. Open All Valves on the Test Kit and Drain Water
- ☐ 4. Restore Water to Building by Opening # 2 Shut Off Valve on Assembly

COMPLETE THE BACKFLOW PREVENTION ASSEMBLY TEST REPORT FORM

- ☐ 1. Enter the Property Name, Address, City, State and Zip Code Where Test Was Conducted
- ☐ 2. Obtain Owner Information of Building
- ☐ 3. Review Calibration Date of Test Kit Used During Backflow Test
- ☐ 4. If Applicable – Describe Repairs If Device Failed
- ☐ 5. If Applicable – Describe Parts Used During the Repair Process
- ☐ 6. Validate Field Test Report by Signing and Dating the Document



5-Valve Test Procedure for a Double Check Valve Assembly Backflow Protector

(DCVA-ASSE 1015)

PREPARING TO TEST THE ASSEMBLY

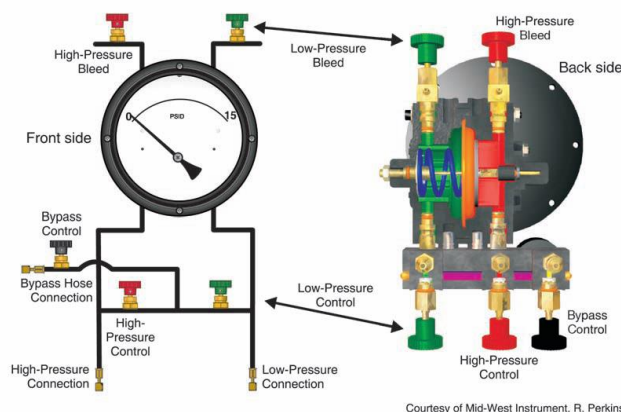
- ☐ 1. Notify the customer
- ☐ 2. Inspect the area for safety
- ☐ 3. Determine if the assembly is Approved & Appropriate
- ☐ 4. Record Make, Model #, Serial # and Static Working Pressure on test report form

FLUSHING OF TEST COCKS

- ☐ 1. Place Test Adapters on Test Cocks (TC) 1, 2, 3, and 4 – (If Applicable)
- ☐ 2. Open TC # 1, Bleed, then Close
- ☐ 3. Open TC # 2, Bleed, then Close
- ☐ 4. Open TC # 3, Bleed, then Close
- ☐ 5. Open TC # 4, Bleed, then Close
- ☐ 6. **Make sure all 5 valves on Gauge are closed**

ATTACHING THE TEST KIT

- ☐ 1. Attach High Side Hose to TC # 2
- ☐ 2. Attach Low Side Hose to TC # 3
- ☐ 3. Open TC # 2
- ☐ 4. Open TC #3
- ☐ 5. Open High Side Bleed Valve, Bleed Air, Then Close
- ☐ 6. Open Low Side Bleed Valve, Bleed Air, Then Close
- ☐ 7. Attach By-Pass Hose to TC # 4
- ☐ 8. Open High Side Valve (1/4 Turn)
- ☐ 9. Open By-Pass Valve
- ☐ 10. Loosen By-Pass Hose at TC # 4 to Bleed Air, Then Tighten
- ☐ 11. **S-L-O-W-L-Y** Open Low Side Bleed Valve to Cause Differential Reading to Rise – Then Close



Test #1 TIGHTNESS OF # 2 SHUT OF VALVE

- ☐ 1. Turn **Off** Shut Off Valve # 2
- ☐ 2. Open TC # 4
- ☐ 3. Close TC # 2 – Pause to Allow Gauge to Readjust
- ☐ 4. Read the Gauge & Record Value (Example: Tight)

Test #2 TIGHTNESS OF #1 CHECK

- ☐ 1. Close TC # 4
- ☐ 2. Close High Valve
- ☐ 3. Remove By-Pass Hose from TC #4
- ☐ 4. Open TC # 2
- ☐ 5. **S-L-O-W-L-Y** Open Low Side Bleed Valve to Cause Differential Reading to Rise – Then Close
- ☐ 6. Read the Gauge & Record Value

If the Pressure Differential Gauge Reading should be 1 PSID or Above.

5-Valve Test Procedure for a Double Check Valve Assembly Backflow Protector

(DCVA-ASSE 1015)

Test #3 TIGHTNESS OF # 2 CHECK

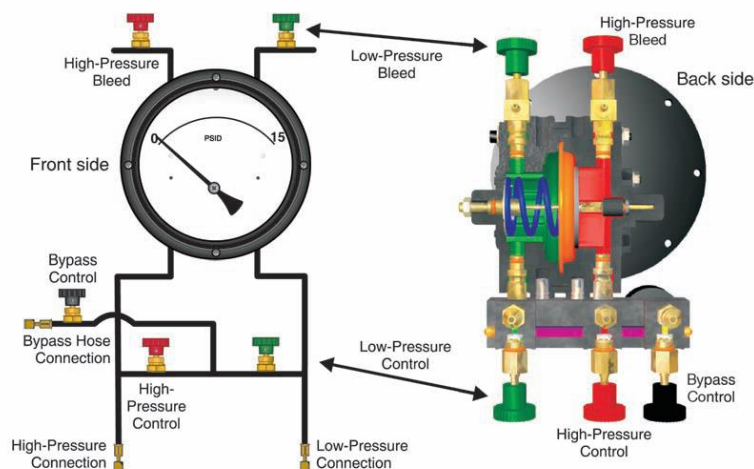
- ☐ 1. Close TC # 2
- ☐ 2. Close TC # 3
- ☐ 3. Remove Low Side Hose from TC # 3 and place it on TC # 4
- ☐ 4. Remove High Side Hose from TC # 2 and Place it on TC # 3
- ☐ 5. Open TC # 3
- ☐ 6. Open High Side Bleed Valve – Bleed Air, Then Close
- ☐ 7. Open TC # 4
- ☐ 8. Open Low Side Bleed Valve – Bleed Air, Then Close
- ☐ 9. Read the Gauge & Record Value
 - A) If the Pressure Differential Gauge Reading Should be 1 PSID or Above.

RESTORE SYSTEM

- ☐ 1. Close All Test Cocks
- ☐ 2. Remove Hoses
- ☐ 3. Open All Valves on the Test Kit and Drain Water
- ☐ 4. Restore Water to building by Opening # 2 Shut Off Valve on Assembly

COMPLETE THE BACKFLOW PREVENTION ASSEMBLY TEST REPORT FORM

- ☐ 1. Enter the Property Name, Address, City, State and Zip Code Where Test Was Conducted
- ☐ 2. Obtain Owner Information of Building
- ☐ 3. Review Calibration Date of Test Kit Used During Backflow Test
- ☐ 4. If Applicable – Describe Repairs If Device Failed
- ☐ 5. If Applicable – Describe Parts Used During the Repair Process
- ☐ 6. Validate Field Test Report by Signing and Dating the Document



THESE DIRECTIONS ARE FOR THE FIVE (5) VALVE TEST KIT
DOUBLE CHECK VALVE TEST
DIRECTION OF FLOW

IMPORTANT: SINCE THE GAGE AND LOW HOSE MUST BE HELD AT THE SAME LEVEL AS THE DCVA AND SINCE MANY SMALL DCVA'S ARE INSTALLED IN METER BOXES WITH VERY CLOSE SIDE CLEARANCES, THIS TEST MAY NOT BE ACCEPTABLE IN SUCH INSTANCES. IF SO, YOU MAY SUBSTITUTE THE VERTICAL TUBE TEST. THE THEORY AND PRACTICE ARE SIMILAR ON THESE TWO TESTS.

TEST PROCEDURE

Test Check Valve # 1

1. Close all (5) valves on test kit.
2. Attach high hose of gage to test cock # 2.
3. Slowly open test cock # 2.
4. Open high bleed valve on test kit and bleed air from kit.
5. Close high bleed valve after air is expelled.
6. Close shut-off valve # 2 then # 1 (With both shut-off valves now closed pressure is trapped inside of the DCVA.)
7. Open test cock # 3 (Test cock # 2 should still be open.)
8. At this point, the gage needle **must not drop below 1.0 psi.**
9. If the gage needle holds at **1.0 psi** or greater then the check valve is holding tight.

Test check valve # 2

1. Close test cocks # 2 and # 3 on the DCVA and close the high bleed valve on the test kit.
2. Move the high hose from test cock # 2 to test cock # 3.
3. Open shut-off valve # 1.
4. Slowly open test cock # 3.
5. Open high bleed valve on test kit and bleed air from kit.
6. Close high bleed valve after air is expelled.
7. Close shut-off valve # 1. (Pressure is trapped inside of the DCVA.)
8. Open test cock # 4. (Test cock # 3 should still be open.)
9. If the gage needle holds at **1.0 psi** or greater then the check valve is holding tight.

-IN CLOSING-

1. Close all test cocks, remove hoses, and brass fittings.
2. Open customer hose bibb for flushing if possible.
3. Slowly open both shut-off valves on DCVA.
4. Allow water to flow for a minute from the open hose bibb.
5. Close hose bibb.
6. Check with customer, flush a toilet, and/or run some water within the facility if possible before leaving.

ALL VALVES ON THE TEST KIT SHOULD BE OPENED AND THE KIT ALLOWED TO DRAIN PRIOR TO STORAGE. THIS IS ESPECIALLY IMPORTANT DURING COLD WEATHER DUE TO THE DANGER OF FREEZING.

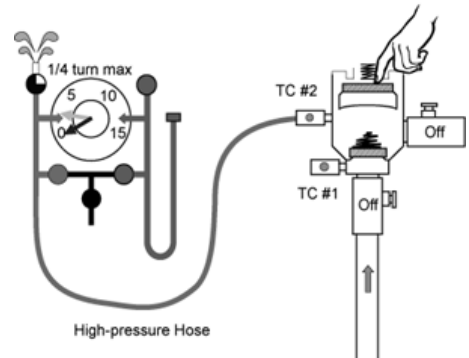
NOTE* THE ABOVE TESTING PROCEDURE IS CONDUCTED WITH THE #1 SHUT-OFF VALVE IN THE CLOSED POSITION. THIS MEANS THAT THE #1 SHUT-OFF VALVE MUST NOT LEAK. OPEN TEST COCK # 2 AND INSPECT FOR CONTINUOUS LEAKAGE. IF THE # 1 SHUT-OFF VALVE IS LEAKING THEN YOU CAN NOT USE THIS TEST. HOWEVER, THE VERTICAL TUBE OR DIFFERENTIAL PRESSURE TEST CAN BE USED ON DCVA'S WHERE SMALL LEAKAGE OCCURS PAST THE # 1 SHUT-OFF VALVE.**

5 - Valve Test Procedure – PVB (ASSE 1020)

PREP WORK

1. Notify the customer
2. Inspect the area for safety
3. Determine if the assembly is Approved & Appropriate
4. Record Make, Model #, Serial # and Static Working Pressure on test report form
5. Close All Valves on Test Gauge
6. Remove Low Side Hose from Gauge
7. Remove By-Pass Hose from Gauge
8. Remove Canopy and Clean Debris Around Air Inlet
9. Flush TC#1
10. Flush TC#2
- 11. Turn Off The # 2 Shut off Valve**
12. Open High Side Bleed Valve

Note: OK to low hose and gauge at the same level as the pressure vacuum breaker

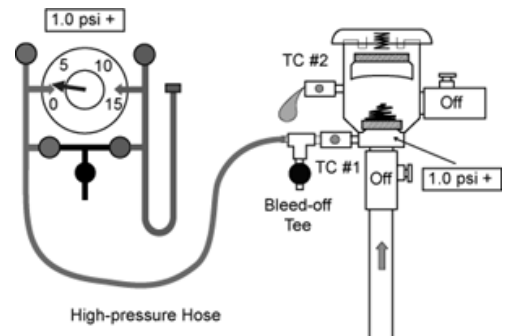


STEP # 1 - Air Inlet Opening

1. Attach high hose to TC #2
2. SLOWLY Open TC #2
3. Close High Side Bleed Valve
- 4. Turn Off The # 1 Shut off Valve**
5. Center Gauge to PVB
6. Place Finger / Small Screwdriver to Air-Inlet Valve
7. With the Gauge Centerline at Elevation of PVB
8. SLOWLY Open High Side Bleed Valve and Observe PSID Recording when Air Inlet Pops
9. Close TC # 2
- 10. Turn on the # 1 Shut off Valve**

STEP # 2 - Check Valve Value

1. Open High Side Bleed Valve
2. Attach High Side Hose to TC #1
3. SLOWLY Open TC # 1
4. Close High Side Bleed Valve
5. **Turn Off The # 1 Shut off Valve**
6. With the Gauge Centerline at Elevation of PVB
7. SLOWLY Open TC # 2 and Record PSID Value When Water Stops Flowing From TC #2
8. Close TC #2 & TC #1
9. Remove Hose from TC#1



Restore system by:

1. Turning On The # 1 Shut off Valve First
2. Then Turn On The # 2 Shut off Valve

3-Valve Test Procedure for a Reduced Pressure Principal Backflow Preventor (ASSE1013)

PREPARING TO TEST THE ASSEMBLY

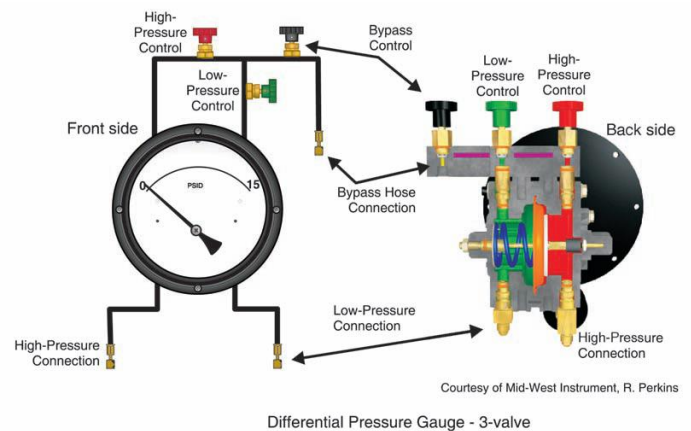
- ☐ 1. Notify the customer
- ☐ 2. Inspect the area for safety
- ☐ 3. Determine if the assembly is Approved & Appropriate
- ☐ 4. Record Make, Model #, Serial # & Assembly Type

FLUSHING OF TEST COCKS

- ☐ 1. Place Test Adapters on Test Cocks 1, 2, 3, and 4 – (If Applicable)
- ☐ 2. Open TC # 4 – **Let flow**
- ☐ 3. Open TC # 1, then close
- ☐ 4. Open TC # 2, then close
- ☐ 5. Open TC # 3, then close
- ☐ 6. Close TC # 4
- ☐ 7. Make sure High & Low Valves on the Gauge are **CLOSED!!**
- ☐ Open Vent/Bypass Valve on gauge
- ☐ 8. Close Shutoff valve #2

ATTACHING THE TEST KIT

- ☐ 1. Attach High Side Hose to TC # 2
- ☐ 2. Attach Low Side Hose to TC # 3
- ☐ 3. Slowly open TC#3
- ☐ 4. Open Low Side Control Valve (Leave Open)
- ☐ 5. Open TC #2
- ☐ 6. Open High Side Control Valve, Bleed Air, Then Close
- ☐ 7. Close Low Side Bleed Valve
- ☐ 8. Close Vent/Bypass Valve on gauge
- ☐ 9. Observe apparent pressure on CV #1 - (RECORD as CLOSED TIGHT or LEAKING)



Test #1. TIGHTNESS OF # 2 SHUT OF VALVE

- ☐ 1. Attach Vent/Bypass Hose to TC # 4
- ☐ 2. Open High Side Control Valve
- ☐ 3. Open Vent/Bypass Valve on gauge
- ☐ 4. Loosen Vent/Bypass Hose at TC # 4 to Bleed Air, Then Tighten
- ☐ 5. Open TC # 4
- ☐ 6. Close TC # 2 – Pause to Allow Gauge to Readjust
- ☐ 7. **Read the Gauge & Record Value (ex: Closed Tight)**
 - A) If the Pressure Differential Gauge Remains Steady, Record the #2 Shut Off Valve as Tight.
Test procedure PASSED.
 - B) If the Pressure Differential Gauge Drops to ZERO, This Means The # 2 Shut Off is in a Flow Condition and the #2 Shut Off Valve is Not Holding.
Test procedure FAILED.

Test #2. BACKPRESSURE TEST FOR # 2 CHECK

- ☐ 1. If No Water is Dripping from the Relief Valve, the # 2 Check Valve is Considered to be Tight.

3-Valve Test Procedure for a Reduced Pressure Principal Backflow Preventor (ASSE1013)

Test #3. TEST THE # 1 CHECK VALVE DIFFERENTIAL VALUE (5psid>)

- ☐ 1. Close TC#4
- ☐ 2. Close High Control Valve
- ☐ 3. Remove Vent/Bypass hose from TC#4
- ☐ 2. Open TC # 2
- ☐ 3. Open Low Side Control Valve, to Cause Reading to Rise, Then Close...
- ☐ **Read the Gauge and Record Value**
 - A) If the Pressure Differential Gauge Reading is 5 PSID or Above, Record the #1 Check Valve as tight.

4. RELIEF VALVE OPENING VALUE

- ☐ 1. Close Vent/Bypass Valve on gauge
- ☐ 2. Open High Control Valve
- ☐ 3. **S-L-O-W-L-Y** Open Low Valve
- ☐ 4. Place the Top of Your Hand Under the Relief (2psid>)
- ☐ 5. As Soon as You Feel the First Drop of Water on Your Hand. **Read the Gauge and Record Value**

5. TIGHTNESS OF # 2 CHECK (1psid>) (USC & ASSE Optional Test / some water systems require)

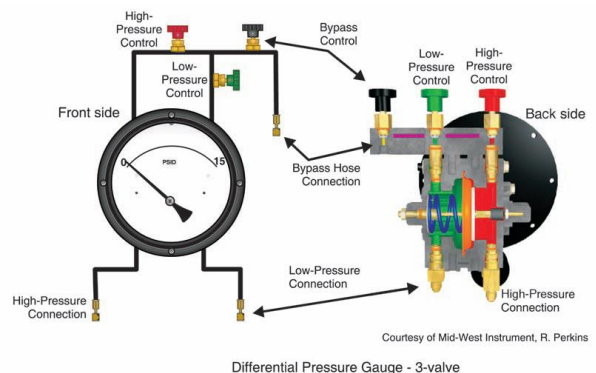
- ☐ 1. Close TC # 2
- ☐ 2. Close TC # 3
- ☐ 3. Remove Low Side Hose from TC # 3 and place it on TC # 4
- ☐ 4. Remove High Side Hose from TC # 2 and Place it on TC # 3
- ☐ 5. Open TC # 3
- ☐ 6. Open Vent/Bypass Valve on gauge
- ☐ 7. Open High Side Control Valve – Bleed Air, Then Close
- ☐ 8. Open TC # 4
- ☐ 9. Open Low Side Control Valve – Bleed Air, Then Close
- ☐ 10. Close Vent/Bypass Valve on gauge
- ☐ **11. Read the Gauge & Record Value**

RESTORE SYSTEM

- ☐ 1. Close All Test Cocks
- ☐ 2. Remove Hoses
- ☐ 3. Open All Valves on the Test Kit and Drain Water
- ☐ 4. Restore Water by Opening # 2 Shut Off Valve on Assembly (Leave #2 Shutoff in condition found)

COMPLETE THE BACKFLOW PREVENTION ASSEMBLY TEST REPORT FORM

- ☐ 1. Enter the Property Name, Address, City, State and Zip Code Where Test Was Conducted
- ☐ 2. Obtain/Verify Owner Information of Building
- ☐ 3. Review Calibration Date of Test Kit Used During Backflow Test
- ☐ 4. If Applicable – Describe Repairs If Assembly Failed
- ☐ 5. If Applicable – Describe Parts Used During the Repair Process
- ☐ 6. Validate Field Test Report by Signing and Dating the Document



3 Valve Test Procedure for Double Check Valve Assembly Backflow Protector (ASSE 1015)

PREPARING TO TEST THE ASSEMBLY

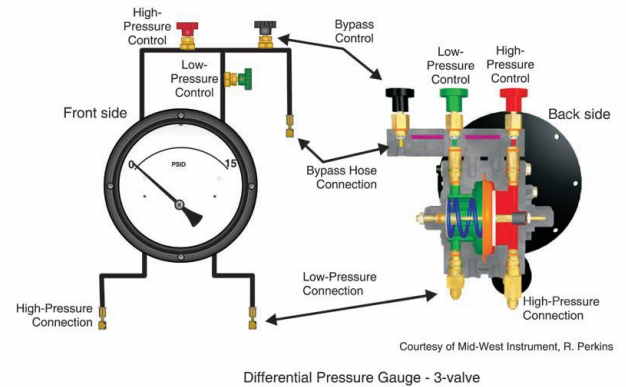
- ☐ 1. Notify the customer
- ☐ 2. Inspect the area for safety
- ☐ 3. Determine if the assembly is Approved & Appropriate
- ☐ 4. Record Make, Model #, Serial # and Static Working Pressure on test report form

FLUSHING OF TEST COCKS

- ☐ 1. Place Test Adapters on Test Cocks (TC) 1, 2, 3, and 4 – (If Applicable)
- ☐ 2. Open TC # 1, Bleed, then Close
- ☐ 3. Open TC # 2, Bleed, then Close
- ☐ 4. Open TC # 3, Bleed, then Close
- ☐ 5. Open TC # 4, Bleed, then Close
- ☐ 6. Close High & Low control valves
- ☐ 7. Leave Open Vent/Bypass valve
- ☐ 8. Turn off Shut Off Valve # 2 on assembly

ATTACHING THE TEST KIT

- ☐ 1. Attach High Side Hose to TC # 2
- ☐ 2. Attach Low Side Hose to TC # 3
- ☐ 3. Open TC # 2
- ☐ 4. Open High Side Control Valve, Bleed Air, Then Close
- ☐ 5. Open TC #3
- ☐ 6. Open Low Side Control Valve, Bleed Air, Then Close
- ☐ 7. Attach Vent/Bypass Hose to TC # 4
- ☐ 8. Open Low Control Side Valve
- ☐ 9. Loosen By-Pass Hose at TC # 4 to Bleed Air, Then Tighten
- ☐ 10. Close Low Control Valve
- ☐ 11. Open High Control Valve



Test #1 TIGHTNESS OF # 2 SHUT OF VALVE

- ☐ 1. Open TC # 4
- ☐ 2. Close TC # 2 – Pause to Allow Gauge to Readjust
- ☐ 3. Read the Gauge & Record Value (Example: Tight)

Test #2 TIGHTNESS OF #1 CHECK

- ☐ 1. Close TC # 4
- ☐ 2. Close High Valve
- ☐ 3. Remove Vent/Bypass Hose from TC #4
- ☐ 4. Open TC # 2
- ☐ 5. Open Low Side Control Valve to Cause Differential Reading to Rise – Then Close
- ☐ 6. Read the Gauge & Record Value

Pressure Differential Gauge Reading should be 1 PSID or Above.

3 Valve Test Procedure for Double Check Valve Assembly Backflow Protector (ASSE 1015)

Test #3 TIGHTNESS OF # 2 CHECK

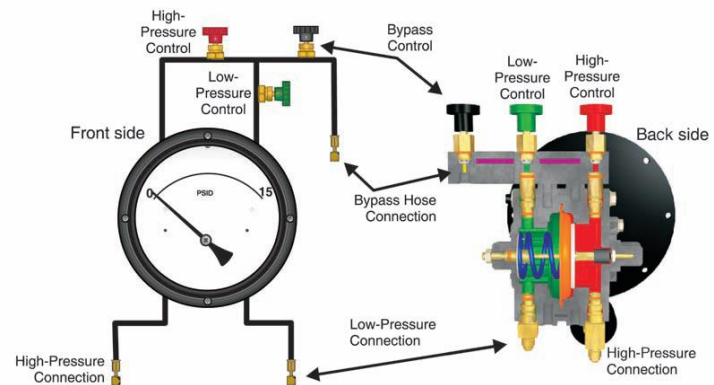
- ☐ 1. Close TC # 2
- ☐ 2. Close TC # 3
- ☐ 3. Remove Low Side Hose from TC # 3 and place it on TC # 4
- ☐ 4. Remove High Side Hose from TC # 2 and Place it on TC # 3
- ☐ 5. Open TC # 3
- ☐ 6. Open High Side Bleed Valve – Bleed Air, Then Close
- ☐ 7. Open TC # 4
- ☐ 8. Open Low Side Bleed Valve – Bleed Air, Then Close
- ☐ 9. Read the Gauge & Record Value
 - A) If the Pressure Differential Gauge Reading Should be 1 PSID or Above.

RESTORE SYSTEM

- ☐ 1. Close All Test Cocks
- ☐ 2. Remove Hoses
- ☐ 3. Open All Valves on the Test Kit and Drain Water
- ☐ 4. Restore Water to building by Opening # 2 Shut Off Valve on Assembly (Leave Valve as found)

COMPLETE THE BACKFLOW PREVENTION ASSEMBLY TEST REPORT FORM

- ☐ 1. Enter the Property Name, Address, City, State and Zip Code Where Test Was Conducted
- ☐ 2. Obtain Owner Information of Building
- ☐ 3. Review Calibration Date of Test Kit Used During Backflow Test
- ☐ 4. If Applicable – Describe Repairs If Device Failed
- ☐ 5. If Applicable – Describe Parts Used During the Repair Process
- ☐ 6. Validate Field Test Report by Signing and Dating the Document



Differential Pressure Gauge - 3-valve

THESE DIRECTIONS ARE FOR THE THREE (3) VALVE GAUGE
DOUBLE CHECK VALVE TEST
DIRECTION OF FLOW

IMPORTANT: SINCE THE GAUGE AND LOW HOSE MUST BE HELD AT THE SAME LEVEL AS THE DCVA AND SINCE MANY SMALL SIZE DCVA'S ARE INSTALLED IN METER BOXES WITH VERY CLOSE SIDE CLEARANCES, THIS TEST MAY NOT BE ACCEPTABLE IN SUCH INSTANCES. IF SO, YOU MAY PREFER THE DIFFERENTIAL PRESSURE TEST WHERE YOU USE THE DIFFERENTIAL GAUGE AND TWO HOSE TEST.

TEST PROCEDURE

Test Check Valve # 1

1. Close all valves on test kit.
2. Attach high hose of gauge to test cock # 2.
3. Slowly open test cock # 2.
4. Open high "A" and vent "C" on test kit and bleed air from kit.
5. Close vent "C" valve on gauge after air is expelled.
6. Close shut-off valve # 2 then # 1 (With both shut-off valves now closed some pressure is trapped inside of the DCVA.)
7. Open test cock # 3 (Test cock # 2 should still be open.)
8. At this point, the gauge needle **must not drop below 1.0 psi**.
9. If the gauge needle holds at **1.0 psi** or greater then the check valve is holding tight.

Test check valve # 2

1. Close test cocks # 2 and # 3 on the DCVA and close high "A" and vent "C" on the test kit.
2. Move the high hose from test cock # 2 to test cock # 3.
3. Open shut-off valve # 1 on the DCVA.
4. Slowly open test cock # 3 on DCVA.
5. Open high "A" and vent "C" valves to bleed air from the kit.
6. Close vent "C" valve on gauge after air is expelled.
7. Close shut-off valve # 1 on the DCVA. (Pressure now trapped inside of the DCVA.)
8. Open test cock # 4. (Test cock # 3 should still be open.)
9. If the gauge needle holds at **1.0 psi** or greater then the check valve is holding tight.

- IN CLOSING -

1. Close all test cocks on DCVA.
2. Open customer hose bibb for flushing if possible.
3. Slowly open both shut-off valves on DCVA.
4. Allow water to flow for a minute from the open hose bibb.
5. Close hose bibb.
6. Check with customer, flush a toilet, and/or run some water within the facility if possible before leaving.

ALL VALVES ON THE TEST KIT SHOULD BE OPENED AND THE KIT ALLOWED TO DRAIN PRIOR TO STORAGE. THIS IS ESPECIALLY IMPORTANT DURING COLD WEATHER DUE TO THE DANGER OF FREEZING.

NOTE THE ABOVE TESTING PROCEDURE IS CONDUCTED WITH THE # 1 SHUT-OFF VALVE IN THE CLOSED POSITION. THIS MEANS THAT THE # 1 SHUT-OFF VALVE MUST NOT LEAK. WHILE THE #1 SHUT-OFF VALVE IS CLOSED OPEN TEST COCK # 2 AND INSPECT FOR CONTINUOUS LEAKAGE. IF # 1 SHUT-OFF VALVE IS LEAKING THEN YOU CANNOT USE THIS TEST. HOWEVER, THE DIFFERENTIAL PRESSURE TEST WITH TWO HOSES CAN BE USED ON DCVA'S SINCE THE #1 SHUT-OFF STAYS OPEN FOR THE TEST.**

3-Valve Test Procedure – PVB (ASSE 1020)

(ASSE Based)

PREP WORK

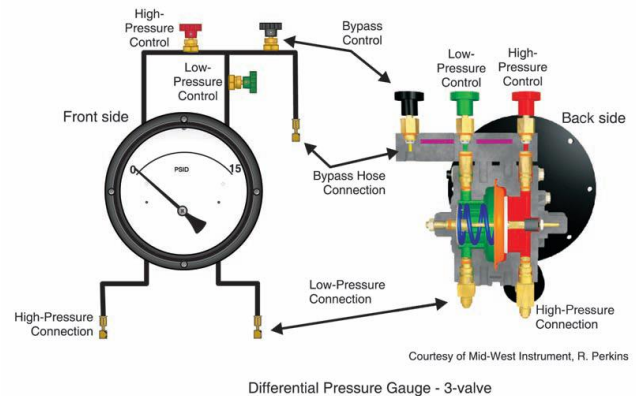
1. Notify the customer
2. Inspect the area for safety
3. Determine if the assembly is Approved & Appropriate
4. Record Make, Model #, Serial # and Static Working Pressure on test report form
5. Close All Valves on Test Gauge
6. Remove Low Side Hose from Gauge (optional)
7. Remove Canopy and Clean Debris Around Air Inlet
8. Flush TC#1
9. Flush TC#2

Note: OK to keep low hose and gauge at the same level as the PVB

10. Turn Off The # 2 Shut off Valve

STEP # 1 - Air Inlet Opening

1. Attach high hose to TC #2
2. SLOWLY Open TC #2
3. Open High Side Control Valve
4. Open Vent/Bypass Valve, Bleed Air
5. Close Vent/Bypass valve
6. ***Turn Off The # 1 Shut off Valve***
7. Center Gauge to PVB
8. Place Finger / Small Screwdriver to Air-Inlet Valve
9. With the Gauge Centerline at Elevation of PVB
10. SLOWLY Open Vent/Bypass Valve and Observe PSID Recording when Air Inlet Pops
11. Close TC # 2 & Remove Hose
12. ***Turn on the # 1 Shut off Valve***



STEP # 2 - Check Valve Value

1. Open High Side Control Valve
2. Open Vent/Bypass Valve
3. Attach High Side Hose to TC #1
4. SLOWLY Open TC # 1
5. Close Vent/Bypass Valve
6. ***Turn Off The # 1 Shut off Valve***
7. With the Gauge Centerline at Elevation of PVB
8. SLOWLY Open TC # 2 and Record PSID Value When Water Stops Flowing from TC #2
9. Close Test Cocks and Remove hose

Restore system by:

1. *Open The # 1 Shut off Valve First*
2. *Open The # 2 Shut off Valve*