

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
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!!
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 (Reset)
13.	Record Value of System Pressure (If Required)
TEST # 1. TIGHTNESS OF # 2 SHUT OFF VALVE	
1.	Close Shutoff valve # 2
2.	Open TC # 4
3.	Close TC # 2 – Pause to Allow Gauge to Readjust
4.	<i>Read the Gauge & Record Value (ex: Closed Tight)</i>
•If the Pressure Differential Gauge Remains Steady, Record the # 2 Shut Off Valve as Tight. Test procedure PASSES.	
•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 ON # 2 CHECK VALVE	
1.	If No Water is Dripping from the Relief Valve, the # 2 Check Valve is Considered to be Tight.
TEST #3. DIFFERENTIAL VALUE ON #1 CHECK VALVE (5	
1.	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
4.	<i>Read the Gauge and Record Value (5 PSID>)</i>
TEST # 4. RELIEF VALVE OPENING POINT	
1.	Place the Top of Your Hand Under the Relief
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 (2 PSID>)
4.	Close Low Control Valve
TEST # 5. TIGHTNESS OF # 2 CHECK	
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
11.	<i>Read the Gauge & Record Value (1 PSID>)</i>
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

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5-Valve Test Procedure / Double Check Valve Assembly (Pressure Differential)

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 (If needed)
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 OFF 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 - The Pressure Differential Gauge Reading should be 1 PSID or Above

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 - 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

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Northwestern Supply
Irrigation Utility Supply

5-Valve Test Procedure for a Double Check Valve Assembly (Direction of Flow)

****Remove unused hoses from gauge or keep hoses the same level as gauge****

PREPARING TO TEST THE ASSEMBLY

1. Notify customer
2. Inspect the area for safety
3. Determine if the assembly is Approved & Appropriate
4. Record Make, Model, Serial #, Size & Type
5. Install test adapter fittings (if required)
6. Flush TC # 1, 2, 3, 4
7. Close all valves on gauge

TEST # 1: CHECK VALVE # 1

1. Install vertical tube on TC # 3
2. Open High bleed valve on gauge
3. Attach high hose to TC # 2
4. Open TC # 2 slowly
5. Close high bleed valve when air stops
6. Open TC # 3 to fill vertical tube
7. Close TC # 3
8. Close shut-off valve # 2
9. Record service line pressure (if required)
10. Close shut-off valve # 1
11. Center gauge with top of vertical tube
12. Open TC # 3
13. Record status of check valve # 1 (closed tight @ 1 PSID> or leaking)
14. Close TC # 2 and TC # 3
15. Open shut-off valve # 1

TEST # 2: CHECK VALVE # 2

1. Move vertical tube from TC # 3 to TC # 4
2. Move high hose to TC # 3
3. Open high bleed valve
4. Open TC # 3 slowly
5. Close high bleed valve when air stops
6. Open TC # 4 to fill vertical tube
7. Close TC # 4
8. Close shut-off valve # 1
9. Center gauge with top of vertical tube
10. Open TC # 4
11. Record status of check valve # 2 (closed tight @ 1 PSID> or leaking) CONDITION OF

SHUT OFF VALVES

1. Close TC # 3 & # 4
2. Remove all hoses
3. Open shut-off valve # 1
4. Open shut-off valve slowly # 2

RESTORE SYSTEM

1. Close TC # 3 & # 4
2. Remove all hoses
3. Open shut-off valve # 1
4. Open shut-off valve slowly # 2

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5 - Valve Test Procedure – Pressure Vacuum Breaker

****Remove unused hoses from gauge or keep hoses the same level as gauge****

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 # on test report form
5.	Close All Valves on Test Gauge
6.	Remove Low Side Hose from Gauge
7.	Remove Canopy and Clean Debris Around Air Inlet
8.	Flush TC # 1
9.	Flush TC # 2
10.	Turn Off The # 2 Shut off Valve
11.	Open High Side Bleed Valve
TEST # 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 (OK to listen for POP)
7.	With the Gauge Centerline at Elevation of PVB
8.	SLOWLY Open High Side Bleed Valve and Observe PSID Recording when Air Inlet Pops (1 PSDI>)
9.	Close TC # 2
10.	Turn on the # 1 Shut off Valve

TEST # 2: CHECK VALVE VALUE	
1.	Attach High Side Hose to TC # 1
2.	SLOWLY Open TC # 1
3.	Close High Side Bleed Valve
4.	Turn Off The # 1 Shut off Valve
5.	With the Gauge Centerline at Elevation of PVB
6.	SLOWLY Open TC # 2 and Record PSID Value When Water Stops Flowing from TC # 2 (1 PSID>)
7.	Close TC # 2 & TC # 1
8.	Remove Hose from TC # 1
RESTORE SYSTEM	
1.	Open the # 1 Shut off Valve First
2.	Open the # 2 Shut off Valve

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3 Valve Test Procedure for a Reduced Pressure Principal Backflow Preventor

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 (If needed)
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!!
8. Open Vent/Bypass Valve on gauge

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

TEST #1: TIGHTNESS OF # 2 SHUT OFF 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. Close Shutoff valve #2
6. Open TC #4
7. Close TC #2 – Pause to Allow Gauge to Readjust
8. *Read the Gauge & Record Value (ex: Closed Tight)* - If the Pressure Differential Gauge Remains Steady, Record The #2 Shut Off Valve as Tight. Test PASSED. Test #2:

BACKPRESSURE TEST FOR #2 CHECK

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

TEST #3: CHECK VALVE #1 DIFFERENTIAL VALUE

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

TEST #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 (2 PSID>)
5. As Soon as You Feel the First Drop of Water on Your Hand. Read the Gauge and Record Value

TEST #5: 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 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 SYSETM

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

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3-Valve Test Procedure for Double Check Valve Assembly Backflow Protector (Pressure Differential)

PREPARING TO TEST THE ASSEMBLY	
1.	Notify the customer
2.	Determine if the assembly is Approved & Appropriate
3.	Record Make, Model #, Serial # and type on test report form
FLUSHING OF TEST COCKS	
1.	Place Test Adapters on Test Cocks (If needed)
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 OFF VALVE	
1.	Close TC # 4
2.	Close TC # 2 - Pause to Allow Gauge to Readjust
3.	Read the Gauge & Record Value (Example: Tight)
TEST # 2 TIGHTNESS OFF # 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.
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 - 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

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3-Valve Test Procedure for a Double Check Valve Assembly (Direction of Flow)

****Remove unused hoses from gauge or keep hoses the same level as gauge****

PREPARING TO TEST THE ASSEMBLY

1.	Notify Customer
2.	Inspect the area for safety
3.	Determine if the assembly is Approved & Appropriate
4.	Record Make, Model, Serial #, Size & Type
5.	Install test adapter fittings (if required)
6.	Flush TC # 1, 2, 3, 4
7.	Open High & Low control valves and Bypass valve on gauge

TEST # 1: CHECK VALVE # 1

1.	Install vertical tube on TC # 3
2.	Install High hose on TC # 2
3.	Close Low control valve
4.	Open TC # 2 slowly
5.	Close High control valve when air stops
6.	Open TC # 3 to fill vertical tube, then close
7.	Close shut-off valve # 2
8.	Record supply pressure (if required)
9.	Close # 1 shut-off valve
10.	Center gauge with top of vertical tube
11.	Open TC # 3
12.	Record value of check valve # 1 (1.0 PSID or > to pass)
13.	Close TC # 2 and TC # 3
14.	Open # 1 shut-off valve

TEST # 2: CHECK VALVE # 2

1.	Move vertical tube from TC # 3 to TC # 4
2.	Move high hose from TC # 2 to TC # 3
3.	Open TC # 3 slowly
4.	Open high control valve then close high control valve
5.	Open TC # 4 to fill vertical tube
6.	Close TC # 4
7.	Close # 1 shut-off valve
8.	Open TC # 4
9.	Record value of check valve # 2 (1.0 PSID or > to pass)

RECORD SHUT-OFF VALVES

1.	Record shut-off valve # 1 & # 2 (closed tight or leaking)
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RESTORE SYSTEM

1.	Close TC # 3 & # 4
2.	Remove all hoses
3.	Open shut-off valve # 1
4.	Open shut-off valve # 2

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3-Valve Test Procedure for a Pressure Vacuum Breaker Assembly (Direction of Flow)

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 # 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 |
| 10. | Turn Off The # 2 Shut off Valve |

TEST #1: AIR INLET OPENING

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|-----|--|
| 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 SLOWLY Open Vent/Bypass Valve and Observe PSID Recording when Air Inlet Pops. |
| 10. | Close TC # 2 & Remove Hose |
| 11. | Turn on the # 1 Shut off Valve |

TEST # 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 <u>SLOWLY</u> Open TC # 2 Fully and Record PSID Value When Water Stops Flowing from TC # 2 |
| 8. | Close Test Cocks and Remove hose |

RESTORE SYSTEM

- | | |
|----|-------------------------------|
| 1. | Open Shut off Valve # 1 First |
| 2. | Open Shut off Valve # 2 |

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