

TEST NO. 1**SINGLE HOSE 3-VALVE DIFFERENTIAL ASSEMBLY****TEST OBJECTIVE:**

To determine if the check valves close tight, to measure the static PSID across the check valves and also to determine the opening PSID of the differential relief valve.

LOCATION OF EQUIPMENT:

Hold the test kit and all unused hoses level with the center of the assembly.

Testing The Reduced Pressure Zone Backflow Prevention Assembly Using the “High Hose” (Single Hose) Method

Using a 3-Valve Differential Pressure Gauge Test Kit

Test Cock Flushing Procedure for Reduced Pressure Principal Assembly (RP):

1. Open test cock #4 to flush out any dirt or foreign material.
2. Leave test cock #4 open enough to maintain flow across the assembly.
3. Open test cock #1 to flush out any dirt or foreign material.
4. Close test cock #1.
5. Open test cock #2 to flush out any dirt or foreign material.
6. Close test cock #2.
7. Open test cock #3 to flush out any dirt or foreign material.
8. Close test cock #3.
9. Close test cock #4.

Attach Test Kit

10. Close the low side control valve.
11. Attach high pressure hose to test cock# 2.
12. Open test cock #2 bleeding air out of the assembly.
13. Close the high side control valve.

Direction of Flow Test - Check Valve No. 1

14. Close shutoff valve #2
15. Close shut off valve #1.
16. Open test cock# 3 slowly.
17. Observe the needle on the test kit. When water stops flowing from test cock # 3, record the PSID at which the water stopped flowing. If the differential reading is 5 PSID or above, Record the check valve # 1 as “closed tight”.

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Relief Valve Opening

18. Place your hand under the relief valve.
19. Slowly open high side control valve, allowing the gauge needle to move slowly.
20. Observe the needle on the test kit. Read and record the PSID at which the relief valve first drips on your hand. If the relief valve does not drip at 2 PSID or above, the assembly has failed the performance test.
21. Continue to open high side control valve and verify that relief valve fully opens. If the relief valve does not fully open record that the relief valve did not open.
22. Close test cock # 2.
23. Close test cock # 3.
24. Remove the high pressure hose.

Direction of Flow Test - Check Valve 2 Differential

25. Open shut off valve # 1 (or attach bypass hose from TC 1 to TC 2 and open both test cocks.
26. Attach high pressure hose to test cock # 3.
27. Open test cock # 3 bleeding air from the assembly.
28. Close the high side control valve.
29. Close shut off valve # 1 (or close test cock #2).
30. Slowly open test cock # 4.
31. Observe the needle on the test kit. When water stops flowing from test cock # 4, record the PSID at which the water stopped flowing. If the differential reading is 1 PSID or above, record check valve # 2 as "closed tight".
32. Close test cock # 3.
33. Close test cock # 4.
34. Remove the high pressure hose from test cock # 3.
35. Open shut off valve # 1.
36. Open shut-off valve # 2.
37. Open all valves on the test kit.
38. Drain hoses and test kit to prevent freezing.

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Direction of Flow Test - Check Valve 2 Differential

39. Dry the entire RP assembly and inspect for any leakage from the test cocks, check valve covers, relief valve outlet and shut-off valve packings. The RP assembly must be holding pressure with no leakage when finished testing.
40. Record on the test form that the shut-off valves No. 1 and No. 2 are open.

Note: Steps 41 and 42 are for RP Assemblies Installed in Fire Protection Systems Only.

41. Record the Valve Supervision; verify that the supervisory panel is indicating normal operation, chain and lock shut-off valves in the open position.
42. Remind the owner to notify the Fire Department that the system is back in service.
43. Inform the owner of the actions you have taken.
44. Complete, sign and distribute the cross connection control performance test form.