

Double Check Valve Assemblies

(Figure 41)

Some field test procedures for testing double check valve assemblies require that the number 1 shut-off valve be closed to accomplish the test. This procedure may introduce debris such as rust and tuberculin into the valve that will impact against check valve number 1 or number 2 and compromise the sealing quality. This potential problem should be considered prior to the selection of the appropriate test method.

Two test methods, one requiring closing of the number 1 shut-off valve, and one without this requirement are presented below:

Method 1

Utilizing the differential pressure gauge and not shutting off number 1 shut-off valve. (Figure 41)

Step 1 checking check valve number 1

1. Verify that the number 1 shut-off is open. Shut off number 2 shut-off valve.
2. Connect the high hose to test cock number 2.
3. Connect the low hose to test cock number 3.
4. Open test cocks 2 and 3.
5. Open high side bleed needle valve on test kit bleeding the air from the high hose. Close the high side bleed needle valve.
6. Open low side bleed needle valve on test kit bleeding the air from the low hose. Close the low side bleed needle valve.
7. Record the differential gauge pressure reading. It should be a minimum of 1 psid.
8. Disconnect the hoses.

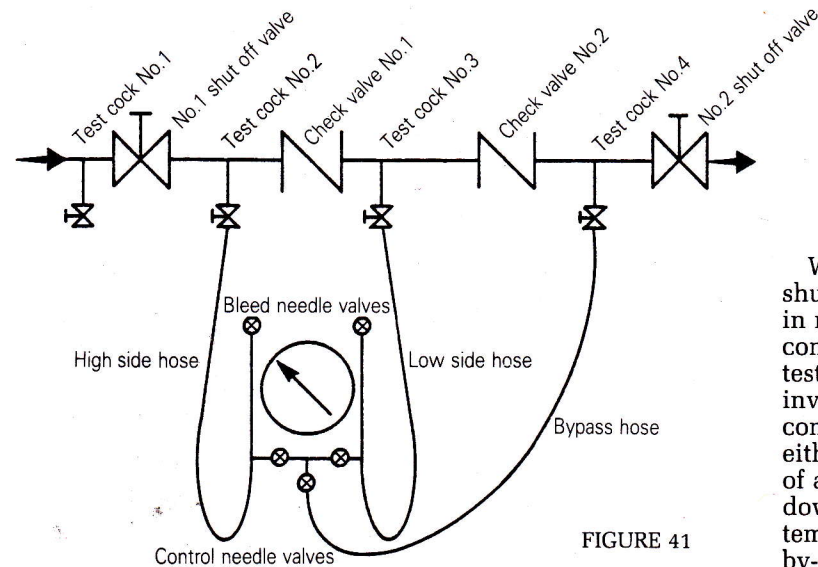


FIGURE 41

Step 2 Checking check valve number 2.

1. Connect the high hose to test cock number 3.
2. Connect the low hose to test cock number 4.
3. Open test cocks number 3 and 4.
4. Open high side bleed needle valve on test kit bleeding the air from the high hose. Close the high side bleed needle valve.
5. Open low side bleed needle valve on test kit bleeding the air from the low hose. Close the low side bleed needle valve.
6. Record the differential gauge pressure reading. It should be a minimum of 1 psid.
7. Disconnect the hoses.

To check tightness of number 2 shut-off valve, both the check valves must be tight and holding a minimum of 1 psid. Also, little or no fluctuation of inlet supply pressure can be tolerated.

The testing is performed as follows:

1. Connect the high hose to number 2 test cock.
2. Connect the low hose to number 3 test cock.
3. Connect the by-pass hose to number 4 test cock.
4. Open test cocks numbers 2, 3, and 4.
5. Open high side bleed needle valve on test kit bleeding the air from the high hose. Close the high side bleed needle valve.
6. Open low side bleed needle valve on test kit bleeding the air from the low hose. Close the low side bleed needle valve.
7. The differential gauge pressure should read a minimum of 1 psid.
8. Open the high side control needle valve and the by-pass hose control needle valve on the test kit. (This supplies high pressure water downstream of check valve number 2).
9. Close test cock number 2. (This stops the supply of any high pressure water downstream of number 2 check valve). If the differential pressure

gauge holds steady, the number 2 shut-off valve is recorded as being tight. If the differential pressure gauge drops to zero, the number 2 shut-off valve is recorded as leaking.

With a leaking number 2 shut-off valve, the device is, in most cases, in a flow condition, and the previous test readings taken are invalid. Unless a non-flow condition can be achieved, either through the operation of an additional shut-off downstream, or the use of a temporary compensating by-pass hose, accurate test results will not be achieved.

This completes the standard field test for a double check valve assembly. Prior to removal of the test equipment, the tester should insure that he opens number 2 shut-off valve thereby reestablishing flow. All test data should be recorded on appropriate forms and the test kit drained of water.