



The Repair Guys

Leaking Shutoff

In our line of work, we field questions from contractors and technicians concerning repairs, installations, and general backflow prevention practices. We'd like to share some questions that we receive as well as our answers. Everyone has different opinions on these subjects and we would like to hear yours. Contact us with questions and ideas via email at: imark@backflowparts.com or mail us at American Backflow Products Co., PO Box 37025, Tallahassee, Florida 32315.

~ Mark Inman and Doug Taylor

Question:

I am testing a double check valve assembly using a differential gauge and the one hose test method. I hook the high side hose to testcock #2. When I open testcock #3 to drain the water, it will not stop flowing. Can you explain?

Mark

Sounds like 1 of 2 problems either you have not closed both shutoff valves completely or you have a leak in one. Having a leaking shutoff valve is a common problem, especially on larger units that use gate valves as shutoffs. Try opening and closing the valves again, in an effort to make them seal better. If not, then you will have to compensate for the leaking shutoff valve to proceed with the test.

Doug

To compensate for a leaking shutoff valve is easier than it sounds. You are simply diverting the flow of water away from the check valve so that you can get an accurate reading on your test gauge. With the one hose test you do this by installing a bleed off valve assembly on testcock #2 and then attach your high side hose. Open the needle valve on the bleed valve assembly until the water from testcock #3 stops flowing and observe your gauge reading for check valve #1.



Mark

This works well as long as the leak in the shutoff valve is small. If the bleed off valve assembly cannot divert enough water to stop testcock #3 from flowing, you know the inlet shutoff valve is leaking very badly. At this point the shutoff valve must be fixed or replaced in order to test the unit correctly.



Doug

Once you get your readings for check valve #1 then you can move on to check valve #2. Just move the bleed off valve assembly to testcock #3 and proceed with the test. One thing to remember is that some local jurisdictions may not allow a device to pass with leaking shutoff valves. So, it is important to check the rules in your area.

Question

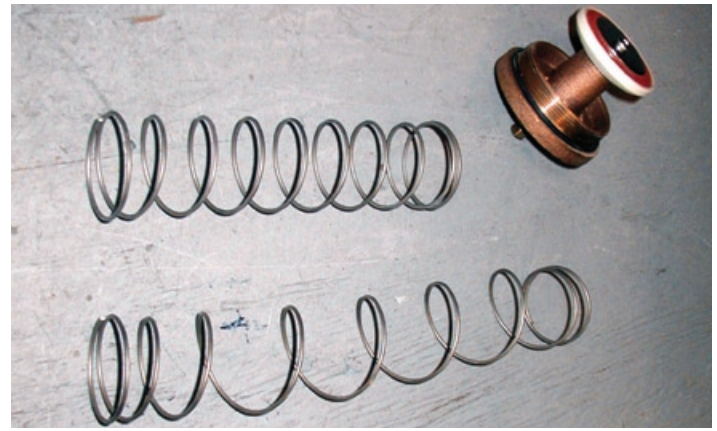
Normally when I test the first check valve on a RPA, I will get a reading of 6.0 psid to 8.0 psid. I have an assembly that has a reading of 12.2 psid. Can the pressure drop across check valve #1 be too high?

Mark

Yes, you can have an above normal psid for check valve #1, but it does not happen very often. First, we want to make sure that your outlet shutoff valve is closed tight and not leaking. Flow through the assembly is usually the cause of a high psid across the check valves. Once you are positive that the outlet shutoff valve is closed tight then we have to determine what the static psi is supposed to be for that particular assembly.

Doug

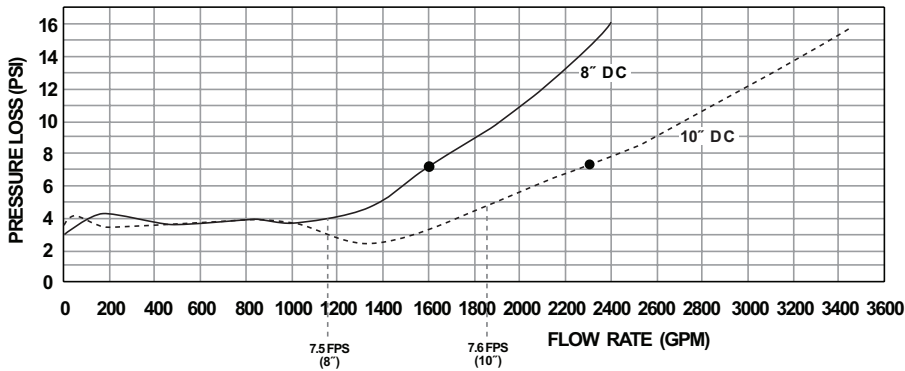
The best way to determine that information is by referring to the manufacturer's flow curve. That's right, it's time to find the specification sheet that we usually ignore or throw away when the assembly was originally installed. What you want to look at is the first part of the curve at 0 gpm or flow. This



will give you a good idea about what the static pressure drop should be for that assembly.

Mark

Now, if the flow curve shows that the valve is to be 8.0 psid and your reading is 8.2 psid that does not necessarily mean you have a problem. But if you get a reading of 12.2 psid, something is not right and the check valve needs to be serviced.

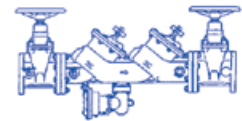


Doug

Since this is not a very common problem, when you take the check valve apart, the cause is usually very obvious. Sometimes, it can be caused by someone who has not repaired the check assembly correctly in the past. If you need an idea, be on the lookout for a distorted or bent check spring. ♡



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