



The Repair Guys

Second Check

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 working on a 2 inch Febco 825Y. My initial test showed the second check valve holding against backpressure but leaking on the differential test. The rubber disc looks great and the seating surface is in good condition. Should I replace the spring, or maybe even stretch the spring to make it stronger?

Mark

Do you mean "stretch" or "bend" the spring? There is a difference. If you merely stretch the spring it will return to its original position very quickly. If you bend the spring you are actually pulling the spring to a point where it changes the size and shape. Understand that these springs have been engineered to be a certain size and strength and if you alter that you have re-engineered the backflow preventer and may have not fixed the real problem.

Doug

By bending the spring you will make it stronger temporarily. This temporary strength can also increase the pressure drop across the valve affecting systems down stream from your valve. Also, the bend in the metal of the spring can become a weak spot and can eventually break. There are reasons that springs break or get weak and need to be replaced, but we'll save that question for a later time.

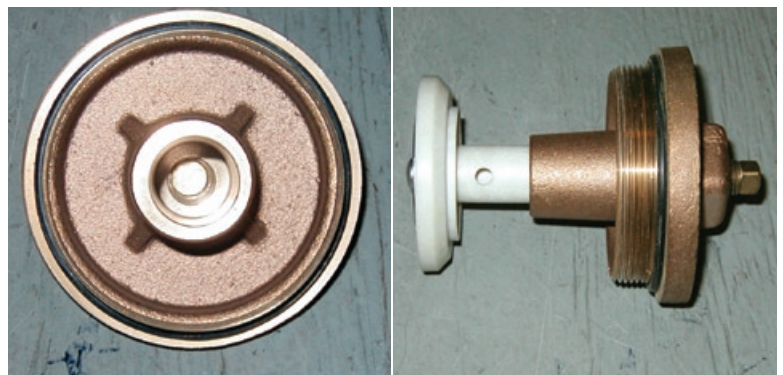


Mark

Sometimes after verifying a good rubber disc and a clean seat, we quickly suspect the spring to be the culprit. This is not necessarily the case. You mentioned that the check held against backpressure, but leaked during the differential test. The test results would lead me to believe that the second check valve has some guide problems, which could be remedied with a little elbow grease. On this 2 inch device you are working with a poppet style check valve and your guide surface is actually a recess in the cover. Clean the poppet stem and inspect the cover for debris and or build-up. Once clean, the poppet should move in and out of the cover with ease.

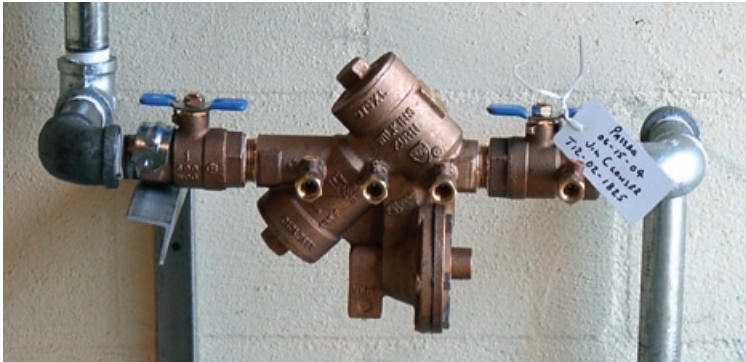
Doug -

There are a few manufacturers that use check valve lids as guides for the poppet. We have found that when the hole is drilled it is not always centered. This can cause the poppet to bind in its travel. You can try adjusting the cover a little to allow the poppet to fall squarely on the seat. Once you have the cover fully closed, simply turn the lid counter-clockwise 1/8 to 1/4 of a turn. This may be just enough to let the check valve seat into place.



Question

We have a 1 inch Wilkins 975XL device that is located in a mechanical room above other equipment. The RV is discharging water periodically. When I test the valve I can find nothing wrong. Any suggestions?



Mark

Sounds like you are dealing with pressure fluctuations upstream of the device. Check your line pressure gauge when you test the unit to see if it shows the pressure rising and lowering very quickly. If it does, then the device is working correctly and it is just sensing the pressure spikes. Now we can figure out how to make it stop sensing the spikes.

Doug

Pressure spikes can be stressful on the internal parts of the device. You want to find out how large the fluctuations are. If there is a 10 to 15psi fluctuation you could install a soft-seated inline spring-loaded check valve directly upstream of the device. This can help dampen the spikes just enough that the relief valve does not sense them.

Mark

If the fluctuations are 20 to 30psi you may want to try a pressure-regulating valve just upstream on the device. This can be adjusted to help absorb larger spikes. The drawback to using this type of valve is that you will lower the downstream pressure to the customer. If they have pressure to spare than this will work very well and will also help extend the life of the backflow preventer.

Doug

Your customer may not want water on his other equipment so you definitely want to install an air gap drain on the assembly and pipe it to a floor drain in the mechanical room.

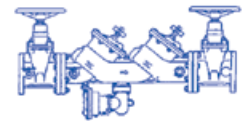


Sometimes in this situation you may not completely get rid of the periodic discharge, so have the right equipment installed so it does not cause any further problems. Lastly, because of the excess wear that is caused by pressure fluctuations, you may want to have the assembly tested at least twice a year to ensure that it stays in working order. ▼



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