

The Repair Guys

Wilkins 375 Reduced Pressure Principle Assembly

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

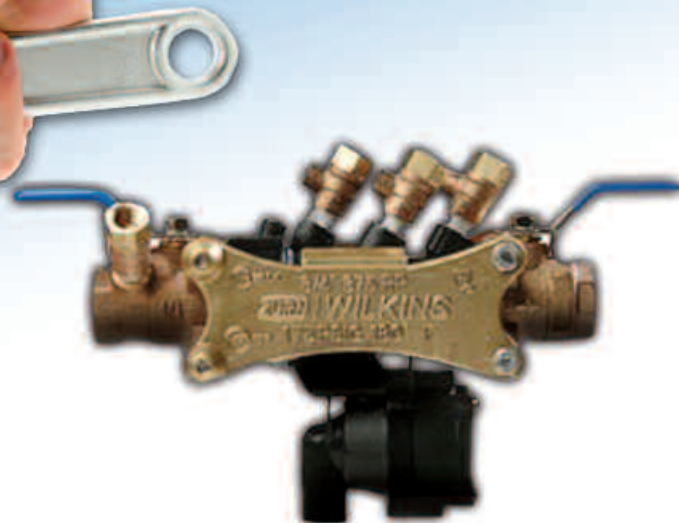
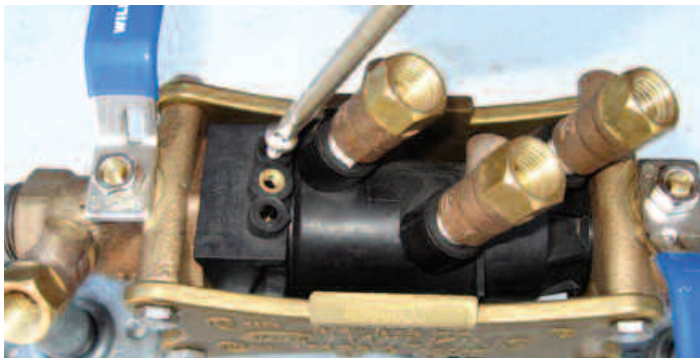
Question

I have run into a few of the new 3/4 inch to 1 inch Wilkins backflow assemblies. I have tested them but have not had to go inside to clean or repair one as of yet. I wanted to get some general information on these units and find out what to expect if one needs to be repaired?

Doug:

Last month we talked about how to repair the new 3/4 inch - 1 inch Wilkins 350 double check valve assembly. This month we will be looking at the new 375 reduced pressure principle assembly.

The model 375 utilizes a plastic vessel or body that contains both check valves and the relief valve assembly. The plastic body is secured to the inlet and outlet ball valves by two bronze struts. To repair this unit, the plastic body must be removed from the strut system. You will see that there is a plastic "wedge" containing two screws on the inlet side of the vessel.



Start by removing both screws using a Phillips head screwdriver. The wedge can then be removed by pulling it up and away from the body.



If the wedge will not come out you can insert one of the wedge screws in the center hole of the wedge to get a better grip. Once the wedge is out, push the vessel towards the inlet ball valve in order to push the plastic "sleeve" back and pull the vessel straight out of the cradle. We can now work on removing the check valve modules.

Mark:

The 375 uses two independent check valve modules that slide into the vessel. To remove them, simply push the check modules out of the vessel through the body inlet.



The checks are sealed with an o-ring and you should be able to push them out with your fingers. You will notice that the two check modules are different in appearance. The check #1 module is wider and also has the heavier spring. These check modules are spring-loaded and need to be taken apart in order to replace the rubbers. Hold the check firmly in one hand and use the other hand to twist the check seat counter clock-wise to release the spring tension.



Now that you have the check apart, examine the check seat for damage. If the seat is damaged you will need to replace the complete check module. In order to replace the rubber on the check remove the retaining screw on the poppet using a screwdriver. After you have replaced the check rubber, reassemble module in reverse order. Before re-installing the modules, replace and lubricate the check o-rings that are located on the outside of the check seats. Now you can slide the #2 check completely in with the check seat facing towards the inlet of the body. With the #2 securely in the body, insert the #1 check the same way. You will notice notches on the seat of the #2 module. These notches will line up with the spring retainer or "cage" of the #1 module. If installed correctly the check #1 seat will be even with the outer ring of the vessel.

Doug:

Now we can work on the relief valve assembly. In order to get to the relief valve internals you will need to remove the six screws on the relief valve cover. There will be a slight spring tension on the cover, so make sure to hold the cover firmly while removing the screws.



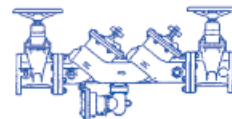
Once the screws are removed, the cover should come straight off and the relief valve stem and spring should now be free. The RV seat is o-ring sealed and pushes into the body. The RV stem is held together by a retaining screw. Once the screw is removed the relief valve stem will separate so you can replace the diaphragm and seat disc. Be sure when replacing the diaphragm that the raised lip of the diaphragm is placed on the stem facing towards the seat disc. Before you replace the RV cover, be sure to replace the stem o-ring (O-ring may be stuck inside of relief valve cover) and the small sensing line o-ring that is located on the vessel body.

Mark:

The last thing we need to do is put the vessel back in line. There are two o-rings that seal the vessel, one each on the inlet and outlet sides. Make sure to lubricate these o-rings before replacing the vessel. Set the vessel between the struts. Be sure the flow arrow on the vessel is pointing in the correct direction. Once the vessel is in position, slide the plastic sleeve downstream against the vessel. The wedge will slide back into place with the flat end facing the inlet ball valve. The wedge may not slide down all the way, but once you tighten the screws it will pull the wedge into place. Make sure to tighten the screws alternately and do not over tighten them. ▼



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