The Repair Guys

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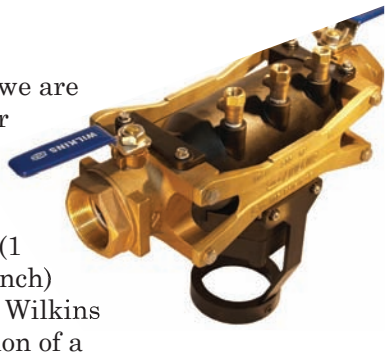
In our line of work, we field questions from contractors and technicians concerning repairs, installations, and general backflow prevention practices. We'd like to share some questions that we receive as well as our answers. Everyone has different opinions on these subjects and we would like to hear 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.

Repairing the Wilkins 375

Question:



This month we are going to offer some repair instruction and tips on the Wilkins (1 ¼ inch to 2 inch) 375. This is Wilkins newest version of a Reduced Pressure Principle Assembly. We have fielded a few calls on these particular assemblies and just wanted to help with the repair procedures on this model.

Doug:

You might notice that the model 375 in sizes 1 1/4-2inch looks very different from anything that is on the market at this time. The housing or "vessel" is made of an FDA approved reinforced black nylon and is sealed by two o-rings. The vessel is held in place within a pair of brass struts sometimes called a "cradle". The inlet and outlet ball valves are an integral part of the strut assembly. In order to repair or service this model, the vessel must be completely removed from the strut assembly. There are four 3/8" stainless steel bolts on the top side of the vessel that secure it to the strut assembly. Once the bolts are removed you can pull the vessel straight up and out. **(1)**

Mark:

The model 375 utilizes check valve modules that are located inside the vessel. The first and second check modules slide out through the inlet of the vessel. First, be sure to open the three test cocks in order to remove any vacuum that has formed inside the vessel.

On the inlet side of the vessel you will notice that there is a closure sleeve that holds the modules in place. The closure sleeve is o-ring sealed and must be removed before the check modules can slide out. To remove the closure sleeve, simply insert a flat head screwdriver into the slot on the under side of the vessel and gently pry it loose. **(2)**

To remove the check modules, you must push on the backside of the #2 check through the opening on the outlet side of the vessel. The check modules are o-ring sealed and may be a little difficult to push out by hand. A short blunt object such as a socket or a piece of wood can be placed on a flat surface. Place the outlet side of the vessel over the object and push down until the modules slide out. The #1 check assembly is made of a gray plastic while the #2 check is black. The checks are spring loaded.To disassemble the checks, twist the seat counter-clockwise about ¼ turn. Once the check is apart you can inspect the seat and change the rubber disc. Reassemble checks in reverse order. **(3)**

Doug:

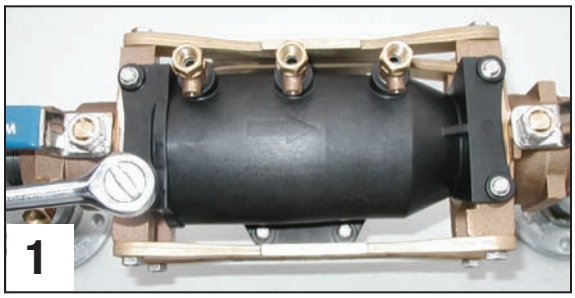
To work on the relief valve, it must be removed from the vessel. There are 3 bolts that secure the RV body to the vessel. Using a 3/8 inch socket remove the three bolts on the under side of the RV body. **(4)**

Pull the relief valve away from the vessel. This will reveal the relief valve disc which is attached to the vessel. The RV disc can be replaced by simply removing the retaining screw. To inspect the diaphragm we must remove the four bolts that hold the upper and lower relief valve bodies together and separate them. Once they are apart, pull the relief valve stem assembly up and out of the lower relief valve body. Be careful not to loosen the two small sensing line o-rings on each side of the relief valve body.

To replace the diaphragm you will need to release the spring tension on the stem assembly. Use a pair of channel locks to hold onto the wrench flats on the plunger. Hold onto the relief valve seat, which is on the top side of the stem assembly, and turn counter-clockwise. Once apart, you can replace the diaphragm and seat. **(5,6)**

Mark:

Reassemble the diaphragm stem assembly in reverse order. Note: You may need to place it seat down on a flat surface to help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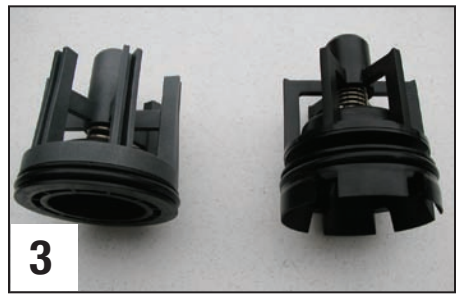
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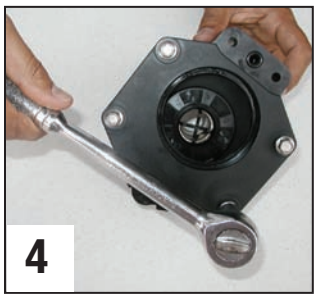
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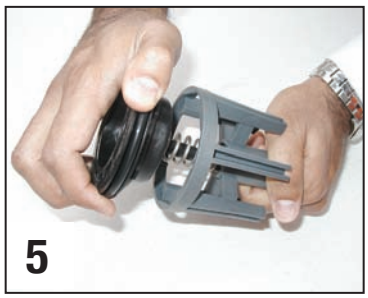
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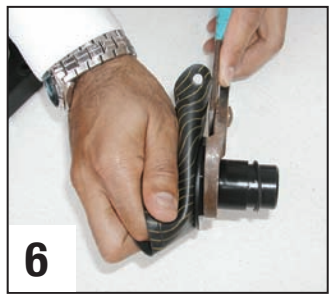
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compress the RV spring. (Be careful to not damage the seat). Once the stem assembly is assembled, place it back into the lower relief valve body. **(7)**

Make sure all your o-rings are in place and align the diaphragm bolt holes. Reattach the upper and lower relief valve bodies with four bolts and tighten. Now that the RV body is back together, inspect and replace the body o-ring if needed. To reattach the RV body to the vessel, place the relief valve on a flat surface and push vessel and RV body completely together. Secure the three body retaining bolts. Now the vessel is ready to be placed back into the strut assembly. **(8)**

Be sure to lubricate the vessel o-rings. Rock the vessel from side to side as it slides into position. Watch the o-rings on both ends so that they do not slide out of their groove. Make sure that the vessel is fully in position before replacing the four retaining bolts.


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