

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 we receive and our answers. Everyone has different opinions on these subjects and we would like to hear yours. Contact us with your questions and ideas via email at: imark@backflowparts.com or mail us at American Backflow Products Co., Post Office Box 37025, Tallahassee, FL 32315.

— Mark Inman and Jason Gregg

QUESTION

I read a previous article that explained the repair of a 2½ through 4-inch Ames model C200(a) double check valve assembly. I've just recently tested and repaired a 6-inch Watts model 957 reduced pressure principle assembly (the Watts equivalent to the Ames Colt series). I thought the repair would be similar, but I ran into a problem with the number 1 check assembly. The first check spring will not budge and I can't lock the spring into place to be able to change the check rubber. How do I replace the rubber on the first check of this assembly?

Mark -

You're right this repair can be similar to the Ames Colt series, but there is a difference when repairing the first check valve. There will also be a different procedure for opening the device. One of the first things that comes to

mind is the relief valve assembly, which is beneath the device and is attached to the closure sleeve. If you recall the previous Ames C200(a) article, we discussed that to gain access to the checks you have to rotate the closure sleeve 90 degrees in both directions to break the seal, and then slide the closure sleeve towards the outlet gate valve. With the reduced pressure principle assembly you must be aware when rotating the sleeve that the relief valve does not hit anything in the process or gets caught or damaged when sliding the closure sleeve to the open position.

- Jason

That is a good thing to keep in mind, because whoever installed the assembly may not have known anything about the clearance needed on either side of this particular assembly to make a repair. The main thing is to be careful while sliding the closure sleeve open. You do not want to get the relief valve caught on anything that would bend or warp the relief valve body and/or the closure sleeve, which could turn into a costly repair. If you do find that the relief valve is in a spot that won't allow the rotation of the closure sleeve you can always remove the relief valve temporarily. Another thing to keep in mind is the relief valve sensing line. Make sure that there is enough length to allow the sleeve to be opened fully. You wouldn't want to break the hose or any fittings that it attaches to. If it seems like it's too short just remove one end of the hose.

Mark -

After closing both gate valves and bleeding any excess pressure through the test-cocks, remove the number 3 test-cock by turning counterclockwise. Removing this test-cock will unlock the closure sleeve. Welded onto the closure sleeve you'll notice a tab with a hole just the right size for a screwdriver. Place a screwdriver through the hole in the tab and using your screwdriver for leverage, turn the closure sleeve 90 degrees in both directions to break the sleeve O-ring seals, and then slide the sleeve towards the outlet gate valve. With the sleeve out of the way we can now remove the check retainer and remove

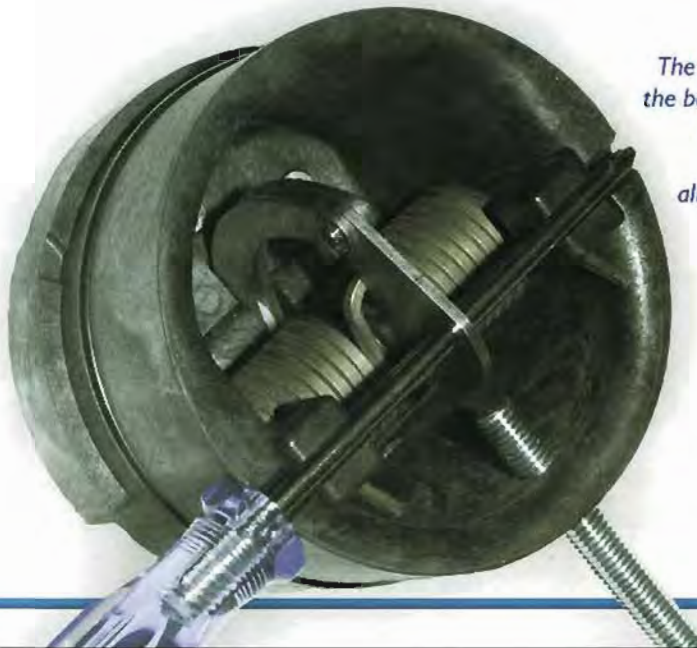


Be sure to inspect this O-ring when the check valve is removed from the body - and again before placing the check into the assembly body - and don't forget to lubricate this O-ring.

the check valves. **Note:** The retainer should not be difficult to remove. If you are having trouble pulling the retainer straight up and out, **STOP!** Make sure that you have opened test-cock number 2 and 4 to relieve all pressure in the device body. Leave test-cocks 2 and 4 open, as this will make removing and reinstalling the check valves easier. Now you should be ready to get started on that first check valve assembly.

- Jason

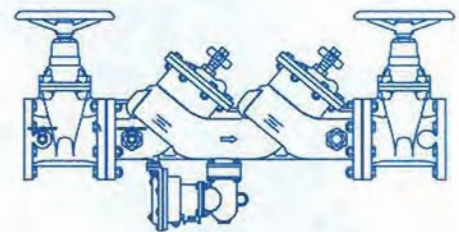
After removing the retainer, you'll notice two notches in the number 1 check valve, place the tip of a slotted screwdriver in these notches and pry the check valve out. With the number 1 check valve in hand, clean or replace the seat o-ring. If you turn the check valve over so that you're looking at the inlet end of the check you'll notice two links (bi-link). One link is attached to the disc retain-



The bolt threaded through the body will apply pressure on the check allowing the hole and slots to align for the screwdriver.



Once the screwdriver (or other 'retainer') is in place, you may back off the bolt to relieve pressure for the next step - shown on the next page.



PARTS

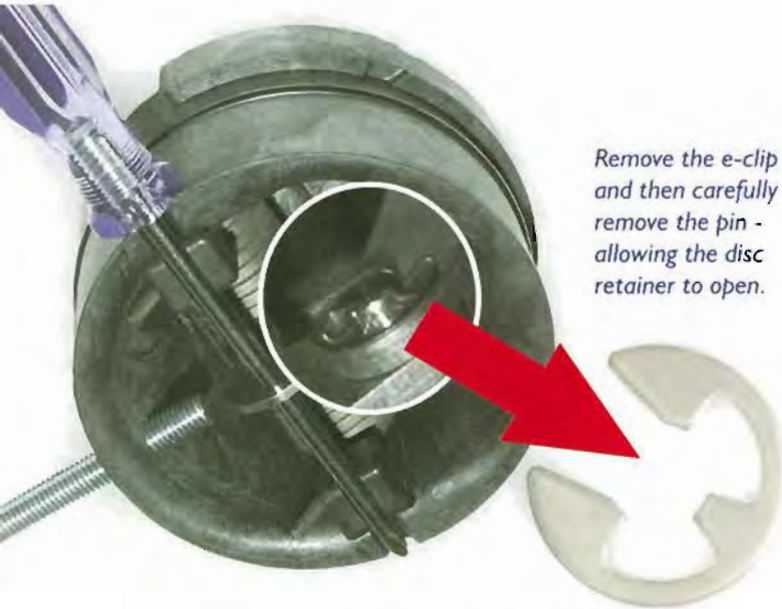
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Remove the e-clip and then carefully remove the pin - allowing the disc retainer to open.

The e-clip and hinge have been magnified in these photos.



As you remove the clip and pin, make sure the spring assembly is held in place. It is important that it not leave the check body.

er and one is attached to the spring assembly. Here is where we want to lock the spring link in place. To do this you'll need a 1/2"-13 fully threaded hex head bolt at least 5 inches long. Locate the threaded hole adjacent to the spring linkage and hand thread into the hole until the bolt comes in contact with the spring link. Using a wrench, continue to thread bolt in until the hole in the spring linkage is aligned with the notches on the spring arbors. Slide a Phillips screwdriver through the arbors and the hole in the spring linkage making sure that the tip of the screwdriver extends past the ends of the arbors by at least a 1/4-inch. Now back the 1/2-inch bolt out until the spring load is placed on the screwdriver then remove the 'E' clip and cotter pin which joins the two linkages, which will allow the disc holder to swing free. Now grasp the screwdriver in the center and pull the spring mechanism out of the check and store in a safe place. Now you can remove the (5) screws out of the disc holder and replace the disc if necessary. Once this is complete you can reassemble in reverse order.

dw&bp

There are five bolts in the retainer that must be removed. [Editor's note: You may notice the carriage bolt in this photo. The author recommends a hex bolt. When preparing these photos, our hardware store did not have a fully-threaded hex.]



When removing the check disc, take care that the spring assembly does not 'fall out' from the other side of the check assembly. This must be held in place.

