

# The Repair Guys



MARK INMAN



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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](mailto:imark@backflowparts.com) or mail us at

American Backflow Products Co., PO Box 37025, Tallahassee, Florida 32315.

## Question

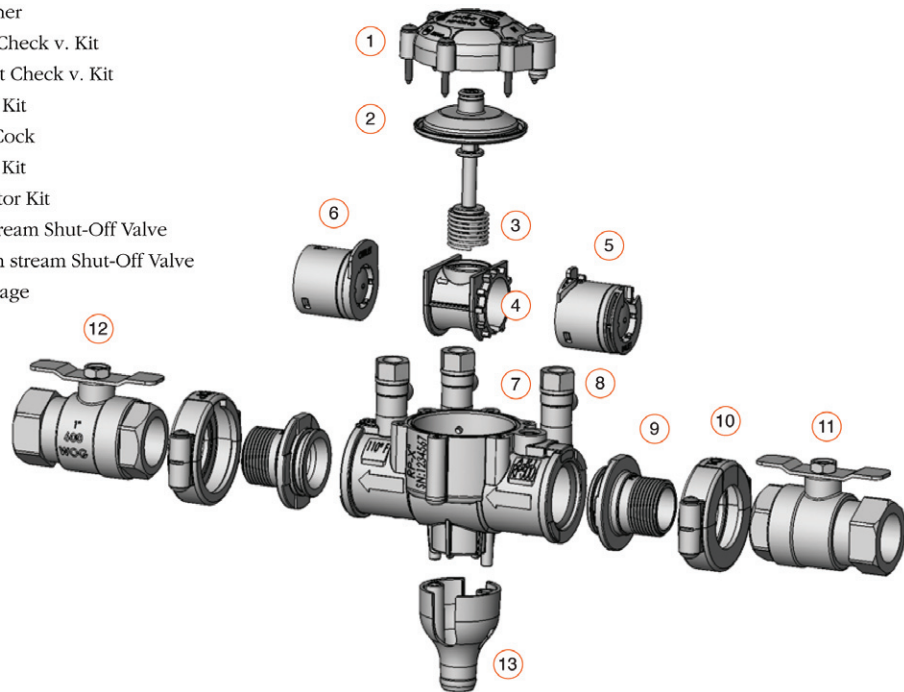
I am working on a 3/4-inch ARI assembly. The model number is RP-500. Can you guys give me an overview of this assembly and any tips that may help me if I need to make a repair?

### PARTS LIST AND SPECIFICATION

No.	Part
1.	Cover Kit
2.	Relief Valve Kit
3.	Relief Valve Spring
4.	Retainer
5.	Inlet Check v. Kit
6.	Outlet Check v. Kit
7.	Body Kit
8.	Test Cock
9.	Band Kit
10.	Adaptor Kit
11.	Up stream Shut-Off Valve
12.	Down stream Shut-Off Valve
13.	Drainage



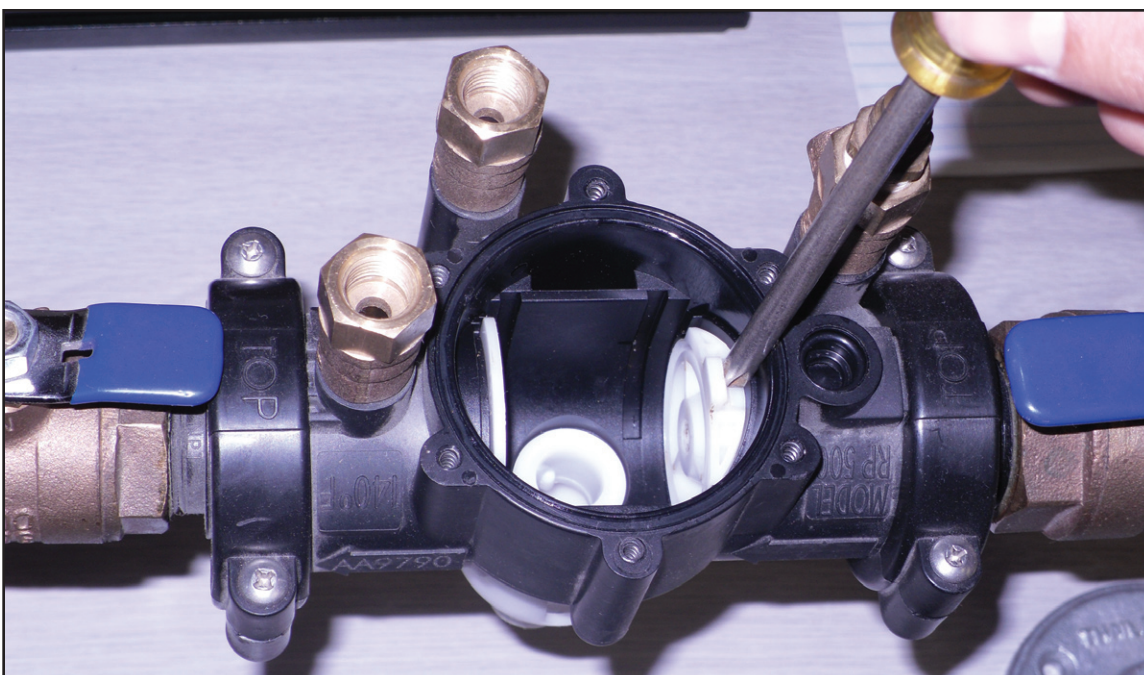
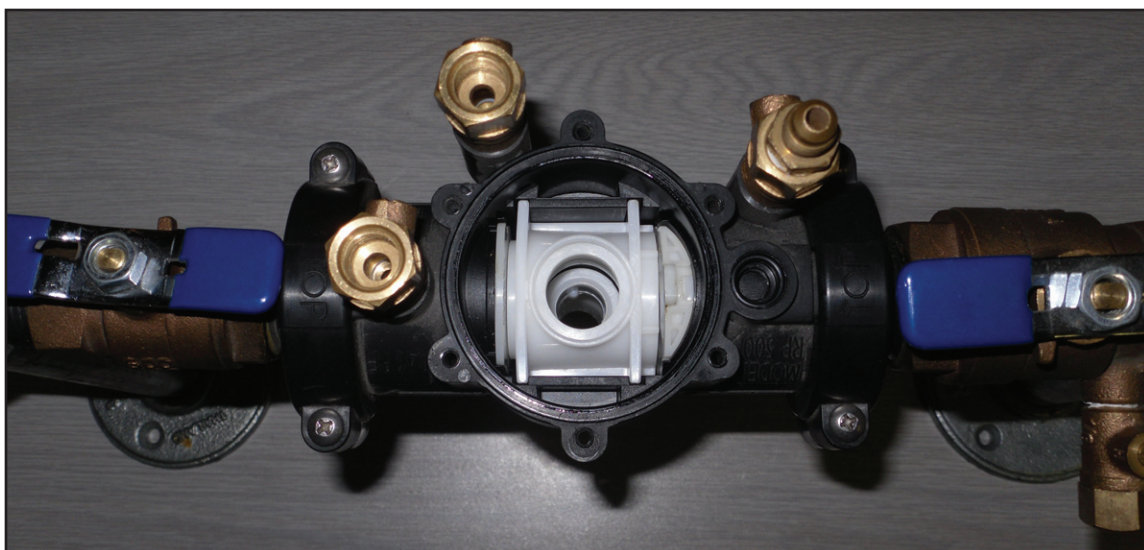
The ARI RP-500. Image and diagram courtesy of ARI.



## DOUG

The ARI RP-500 is a reduced pressure principle assembly. This unit is relatively new to the US market. They are produced in 3/4-inch-2-inch sizes. The body is made of a black composite plastic material. The inlet and outlet shut off valves and test cocks used for this assembly are made of brass. All the

internal components can be removed through a single access cover. The check valves for the RP500 are modular in design and are held in place with a retainer. No special tools are required to repair. We will now cover the repair steps for the 3/4-inch and 1-inch relief valve and check valve modules.

**MARK**

The access cover is sealed by the relief valve diaphragm and is secured with six phillips head screws. There is a slight spring load on the cover, so be sure to keep pressure on it as you remove the screws. Once the cover has been removed, the relief valve stem assembly and spring are free and can be inspected. To replace the RV diaphragm, remove the screw at the top of the RV stem. Once the screw is removed, the top plate is free and the diaphragm can be inspected or changed. There is an o-ring located on the RV stem under the bottom diaphragm plate. Simply slide the bottom plate back to expose the o-ring. The relief valve disc is located at the bottom of the stem assembly and is held in place by the stem

fin guide. The rubber disc must be pulled out from around the fin guide. Please note that the stem fin guide is not removable, so be careful not to damage it when removing the rubber disc. The relief valve seat is o-ring sealed and made of a white plastic. The RV seat is located in the bottom of the device body and is pushed into the device body. The seat can be pushed out from the underside of the assembly.


**DOUG**

The check valve modules for the RP500 are made of a white plastic and the springs are contained. The check valves modules are o-ring sealed into the body and are held in place by a retainer. The check retainer is white plastic and will slide straight up and out of the



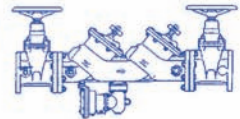
device body. The check valves can be removed by first using a screwdriver to pry them from the body and then sliding them toward the access hole. Once the check modules have been removed, you can examine or replace the o-ring along the outside of the check module. The check modules are not designed to be disassembled any further. If there is a problem with the module, it must be replaced.

**MARK**

At this point we can reinstall the checks by sliding them back into the body. The check retainer should slide into place very easily. If it does not, make sure the checks are fully seated into the body. The RV stem will insert through the hole in the retainer. The RV spring will rest on top of the check retainer. Before you reinstall the cover, be sure to examine your sensing line o-ring, which is located inside the sensing line passage of the body. Finally, remember that the diaphragm is what seals the access cover, so make sure that the ridge on the diaphragm lines up with the groove on the body before you tighten the cover screws. 



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