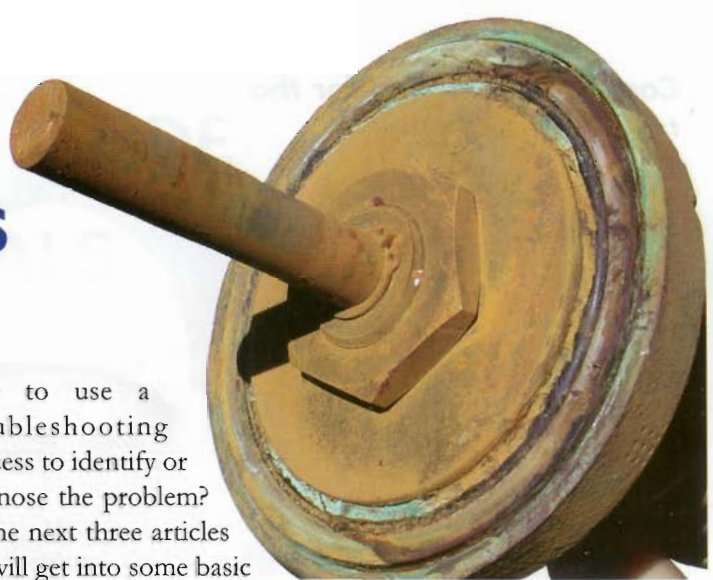


# The Repair Guys



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](mailto:imark@backflowparts.com) or mail us at American Backflow Products Co., P.O. Box 37025, Tallahassee, FL. 32315.

## QUESTION —

When I find an reduced pressure principle assembly leaking, the first thing I do is replace the relief valve. This seems to take care of the problem only part of the time. I would like to cut down on the cost and amount of time it takes to repair a unit. Is there any way to tell what the exact cause of this problem could be?

## Mark —

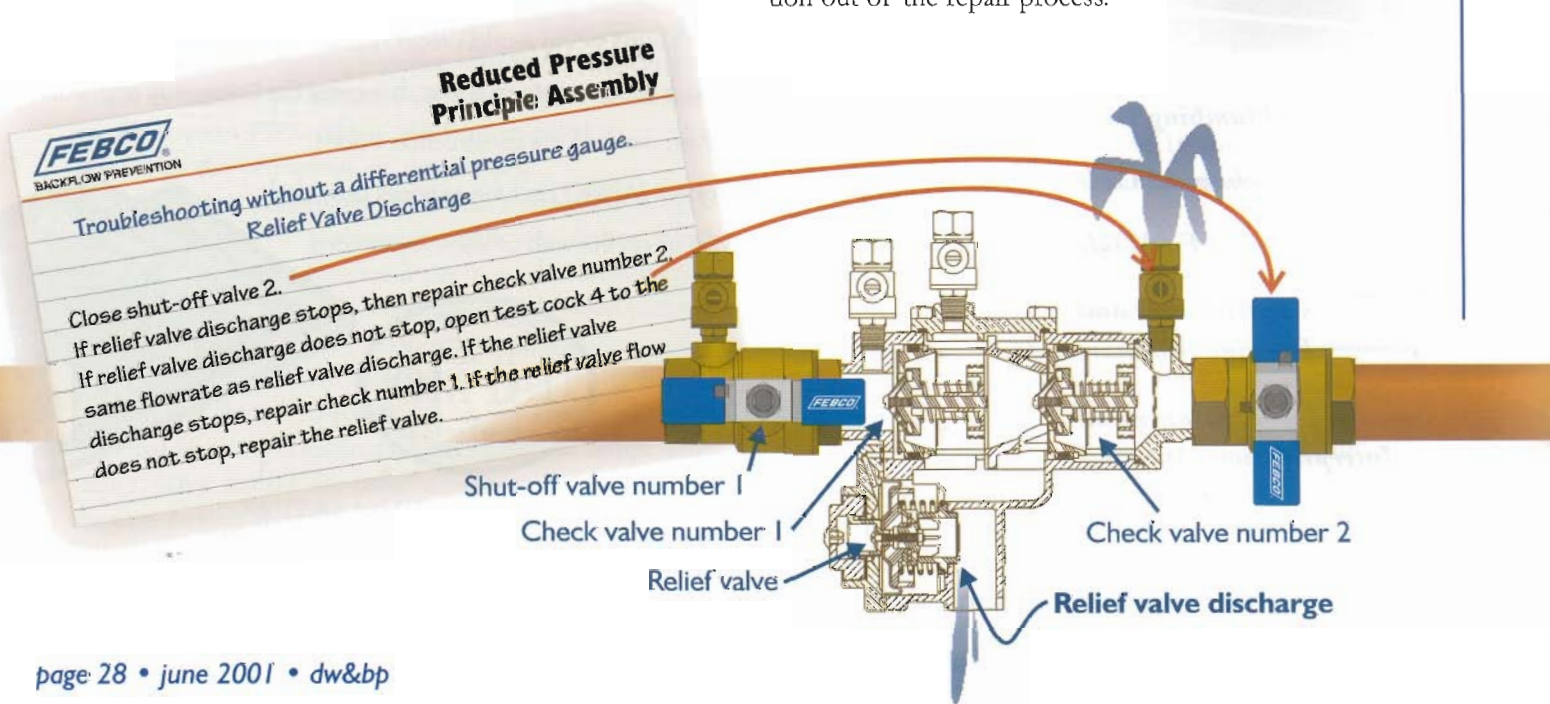
Yes, the cause of the problem is easy. You are trying to repair before you troubleshoot. Troubleshooting a device is one of the most important things that a backflow tester or technician does in the field. Anyone can memorize test procedures, what hoses go where, what valve to turn and what the needle is supposed to do, as long as the device is working correctly. But, if a problem occurs or the gauge does something we are not used to seeing, does the technician understand

how to use a troubleshooting process to identify or diagnose the problem?

In the next three articles we will get into some basic concepts of troubleshooting, what information is needed and some ideas on troubleshooting the customer. A basic understanding of troubleshooting can help each individual develop his own process that can work best for him.

- Jason

Now, I know we have all heard the argument that it costs less to replace a valve than to repair or diagnose the problem. In some situations that might be true, but what about the device that may need a \$20 part that takes 10 minutes to install? We are replacing it with a \$120 device that takes 1 hour to install. A good example would be your car. You take your car in to an A.S.E. certified technician because it seems to be running a little rough. When he brings the car into the garage and pops the hood, does he immediately pull the motor and start rebuilding it or replace the engine completely? Of course not. He has diagnostic tools, computers and techniques he uses to troubleshoot and pinpoint the problem. It would be a little costly and silly to replace an engine that only needed spark plugs. The same thing applies to backflow preventers. Troubleshooting it first will help take much of the assumption out of the repair process.





**CONBRACO** Pressure Vacuum Breaker Assembly

Troubleshooting the air-inlet valve.

- If the air-inlet valve fails to OPEN:
1. The float assembly may be improperly assembled to the cap assembly, or
  2. The float O-ring could be sticking to the cap.
- If the air-inlet valve fails to CLOSE:
1. The float assembly may be improperly assembled to the cap assembly, or
  2. The float O-ring is fouled with debris.

**Mark –**

I am the type of person that likes to have a solid base to work from, so, let's start with a definition. My definition of troubleshooting would be the ability to gather and use information available to determine or diagnose a mechanical problem. To me troubleshooting is an art. It is not something you are born with, it is something that is learned and developed over a period of time. I consider troubleshooting a step by step process that

is used to verify a problem. Once the problem is verified you can pinpoint where the problem is in the valve and concentrate your energy there. The main problem we see is that many technicians will try to repair a valve before they troubleshoot the problem. This can cost needless time, money and headaches if they don't get lucky the first time.

**- Jason**

Troubleshooting is something we have all done before, whether we realize it or not. Let's face it, repairing a backflow preventer is not brain surgery, but if we can save time and money for the customer or for ourselves then it can be a very valuable tool. Hopefully, we have brought up some good ideas of what troubleshooting is and why it should be an important part of the repair process. In the next article, we will get into the different types of information that can be used to help troubleshoot backflow preventers.

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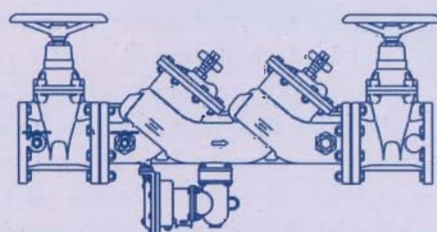


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