



# The Repair Guys



Mark Inman



Doug Taylor

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.

## Automatic Valves

### QUESTION:

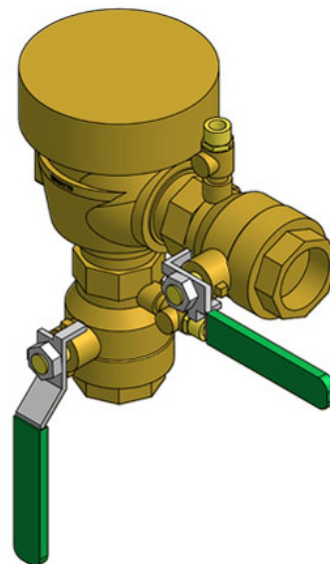
I have heard about an automatic valve that can be installed on an assembly that will keep it from freezing without the use of electricity. Can you explain how it is used and if it is reliable?

### Mark

What you have heard about is called a freeze protection valve. Their purpose is to help protect assemblies that are installed above ground. Freeze valves are mainly used in milder climates that are subject to moderate freezing. These valves use an element that opens and closes based on the temperature of the air surrounding the valve, or in some cases, the temperature of the water. When the temperature drops below a set point, the valve will begin to open and drain water automatically. As the temperature rises above the set point, it will close automatically. The standard temperature set points range from 34 to 45 degrees, depending on the manufacturer and model of the freeze protection valve. These valves normally come in 1/4 inch or 1/2 inch inlet sizes.

### Doug

The concept behind a freeze protection valve is that as the colder water is draining from the assembly, it will be replaced with warmer supply water coming up from the meter. The warmer water will help keep the assembly from freezing. It's the same idea as letting the faucets in your house drip during cold weather to protect your piping. Installation of the freeze valve is done one of two ways. For existing assemblies, the freeze valve can be installed



Above: Watts 800M4FR Freeze Resistant Pressure Vacuum Breaker

on the #4 test cock of the RPA and DCA or the #2 test cock of the PVB. The only problem is that the #2 shut-off valve is not protected. When the backflow assembly is initially piped, it is best to install the freeze valve immediately down stream of the outlet shut-off valve. This allows the freeze valve to protect the entire assembly.



Above: Apollo FPV

**Mark**

Now, I know this sounds like the perfect cure for freeze problems, but there are some things to be aware of. Freeze protection valves operate mechanically and are not fail proof. This means that they can be ideal as a back-up means of freeze protection especially in colder climates. They should be used in conjunction with an enclosure or your normal means of protection, not as a replacement. In milder climates they are sometimes used as the only means of protection. This is fine, but there are problems that can arise.

**Doug**

The biggest problem occurs when the testcock that it is connected to is not opened. Obviously if there is no water supply to the freeze valve, it cannot work. Another major problem is that insects love to nest in the outlet port of the valve, clogging it up. So, if you install them it is a good idea to clean and inspect the freeze valve each time you test the assembly. For the most part, if a freeze protection valve is used properly and installed correctly, it can be a very reliable means of freeze protection.



◀ Watts Series FR 500 Thermostatic Freeze Relief Kits are designed to keep water from freezing in the backflow preventer, while avoiding discharges based on the air temperature dropping below freezing. Series FR 500 thermostatically measures the water temperature and opens at 35°F (1.6°C) and closes at 40°F (4.4°C). Maximum Working Pressure: 175psi (12.06 bar).

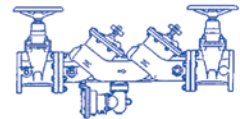


◀ Watts Series HY42 Non-Freeze Wall Hydrants with Backflow Preventer are used in commercial and industrial applications to provide freeze protection and backsiphonage protection of the external water supply. It consists of a brass body construction with chrome-plated brass finish and 3/4 in. hose thread nozzle, 3/4 in. female or 1 in. male IPS threaded inlet connection, replaceable EPDM seat, one-piece valve plunger to control both flow and automatic drain functions, and loose tamper-resistant tee key.



# American Backflow

Products Company



**Mid-West**  
Instrument

**WATTS**  
REGULATOR

**SAFE-T-COVER**

**CLA-VAL**

**FLOMATIC**

**RAIN BIRD**

**Your Complete Source For:  
Backflow Preventer Repair Parts  
Accessories • Enclosures  
Test Gauge Calibration**

**800-575-9618**

[www.backflowparts.com](http://www.backflowparts.com)

**AMES**  
FIRE & WATERWORKS

**ZURN / WILKINS**

**Hersey**  
PRODUCTS

**Hot Box**

**CONBRACO**  
'Apollo' Valves

**FEBCO**