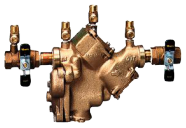
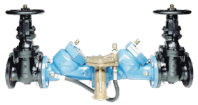
What do backflow preventers look like?

There are many manufactures, type, sizes and configurations of backflow devices each suited for different applications.



A **Reduced Pressure Zone (RP)** backflow preventer may be used on direct connection which may be subject to backpressure or backsiphonage, and where there is the possibility of low or high hazard contamination.



An **Atmospheric Vacuum Breaker (AVB)** backflow preventer may be used on direct connections where there is the possibility of low and high hazard contamination. This device is designed to protect against backsiphonage only and can only be installed on the discharge side of the last control valve. These units are not designed to operate under continuous supply pressure. Installation requirements limit where these units can be used.

A **Pressure Vacuum Breaker (PVB)** or **Spill-resistant Vacuum Breaker (SVB)** backflow preventer may be used on direct connections where there is the possibility of low and high hazard contamination. These devices are designed to protect against backsiphonage only. These units may be used under continuous supply pressure but are also limited on where they can be installed.

A **Double Check Valve (DC) assembly** may be used as protection against all direct connections where there is a possibility of low hazard contamination only. These are typically used on fire suppression systems.

Who can install and test backflow preventers?

Only a person who is a certified backflow tester registered with the Iowa Department of Public Health can install and test backflow prevention assemblies.

WE REALIZE THAT THERE IS EXPENSE AND INCONVENIENCE INVOLVED WITH COMPLYING WITH THESE REQUIREMENTS. PROTECTING OUR WATER SUPPLY IS EVERYONE'S RESPONSIBILITY AND WE TAKE OUR PART VERY SERIOUSLY. IF AT ANY TIME YOU NOTICE A CHANGE IN THE LOOK, SMELL OR TASTE OF YOUR DRINKING WATER SUPPLIED BY CFU'S WATER SYSTEM PLEASE CONTACT US AT 266-1761 OR 268-5331.

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Cross-Connection Program

HAZARDS

PROTECTING OUR WATER

PREVENTION

CFU's Cross-Connection Program

The Cedar Falls Municipal Water Utility works hard to protect your drinking water from all forms of contamination. This effort begins with the protection of the aquifer that our water is pumped from and continues through the entire treatment and distribution process right up to where the water service enters your home or business. What about after that point? Who protects the water from there to your glass? What is a cross-connection? What is backflow? What are the hazards of backflow? What can we all do to help protect the water supply? The following information will help in answering these questions.

What is a cross-connection?

A "cross-connection" is any actual or potential connection between the public water supply and a source of contamination or pollution. Common examples of this would be the garden hose attached to a faucet and the other end submerged in a tub of detergent; or the hose being used to apply lawn insecticide or fertilizer. That is a cross-connection.

What is backflow?

Backflow is a reversal in the direction of the normal flow of water in a piping system. This can be caused by backsiphonage or backpressure. A negative pressure in the supply piping causes backsiphonage much the same way as drinking through a straw. Potential for backpressure backflow exist wherever there is a heating system, elevated tank, or other pressure producing equipment. When the pressure producing equipment exceeds the supply pressure, the flow in the supply piping is reversed.

Does water really flow backwards?

Yes, it does happen. Water is like electricity. They both take the path of least resistance from higher pressure to a lower pressure. When the water distribution system is in normal operation, water flows directly from CFU mains to your property. However, in certain situations a backflow can occur, causing water to flow back into the distribution system. The most likely time for this to happen is during periods of high water usage such as when fighting a fire, flushing a hydrant, water main breaks or repairs in the water distribution system.

Many cases of illness and injury occur every year from cross connections and backflow. Recognizing this hazard, the Iowa legislature in 1991 passed amendments to the State's Uniform Plumbing Code Section 641-25.5 (135). The amended code requires water purveyors such as Cedar Falls Municipal Water Utility to protect the public water system against cross connections and backflow. The American Backflow Prevention Association has a website that lists many recent reported backflow incidents and articles from throughout the country. To learn more visit: http://www.abpa.org/inci-dents.htm.

What hazard could that cause?

Backflow due to cross-connections are serious plumbing problems. Water within your property is exposed to many different types of fixtures, including lawn irrigation systems, fire sprinklers, washing machines, garden hoses, kitchen sinks, tubs, showers, and toilets. For industrial users, the exposure includes possible exposure to boilers, photo processing equipment, chemical mixing tanks, chillers, water reclaimers, pressure pumps, healthcare and laboratory equipment, etc. An actual or potential connection between any of these fixtures and the potable water system is a cross connection, and a potential source of pollution or contamination.

How does the cross-connection program work?

Fortunately, we have not had any documented major backflow incidents within our local water system and we are taking every precaution to keep it that way. CFU's Cross-Connection Control Program begins with the identification of all businesses and industries that are on CFU's water distribution system. As mandated by the federal, state, and local governments, a Cross-Connection Hazard Survey form is being sent to all water service accounts starting with the commercial accounts. The information on these forms will be used to determine whether a hazard exists and whether it is a low hazard or high hazard. The customer will be notified if a backflow containment device is required on this service. Backflow prevention devices are to be tested after installation and annually thereafter.

What is the difference between low and high hazard?

A low hazard cross-connection is one that may cause an impairment of the quality of potable water to a degree that does adversely affect the aesthetic qualities of the potable water. High hazard cross-connection may cause an impairment of the quality of the potable water by creating an actual hazard to the public health, through poisoning, the spread of disease, industrial fluids or waste.

What can we do to help protect the water supply?

Have you ever put the end of the garden hose into the bucket of soapy water while washing your car? Have you ever sprayed insecticide or fertilizer with a garden hose sprayer? Have you attached a hand spray attachment to the kitchen faucet to wash your hair or the dog? These actions seem harmless but they create cross connections that could endanger the health and safety of you, your family, and your neighbors. If the water supply pressure drops creating a backsiphonage while the hose is submerged in a bucket of soapy water, insecticide, fertilizer, etc., that contaminate could be sucked back into your pipes and the water supply. Fortunately, keeping your water safe from these contaminants is easy.

A **Hose Bibb Vacuum Breaker** is an inexpensive backflow preventer that would prevent this. One should be installed on every sill cock or threaded water fixture. Most new homes are equipped with antisiphon faucets already. There is no need to install additional backflow devices on these faucets.

Do you have a lawn irrigation system?

You must have a backflow preventer device on your lawn irrigation system. Your landscape has all kinds of nasty things in it that will make you sick or worse if you drink them. For this reason, irrigation systems are considered a high hazard. A licensed tester must test the backflow device annually.