



KEEPING YOUR WATER SYSTEM FLOWING

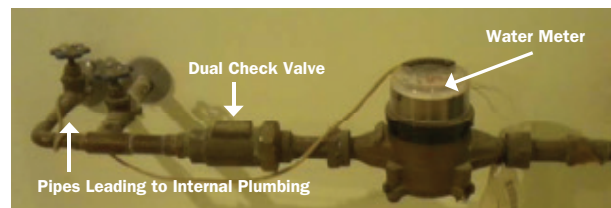
EXPANSION TANKS & DUAL CHECK VALVES

WHAT IS AN EXPANSION TANK?

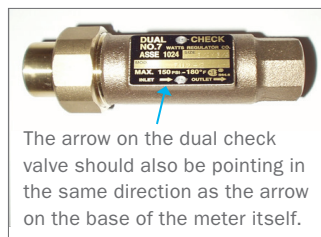
An expansion tank is a device that helps to relieve internal piping pressure within a home. Fluctuating pressure is normal and is usually caused when a water heater is heating water.

WHAT IS A DUAL CHECK VALVE?

A dual check valve is a device used to ensure that water flows in a single direction. Proper installation of a dual check valve is required by Missouri American Water's filed water tariff as it prevents water from flowing out of a customer's residence and back into the public water supply system, protecting against potential contamination.



A dual check valve is typically installed close to the water meter. It should always be installed on the customer's side of the meter. This is the side that leads to your internal plumbing. There is typically an arrow on the dual check valve itself, which indicates the direction of the water flow. This arrow should be pointing away from the meter and toward your internal plumbing.

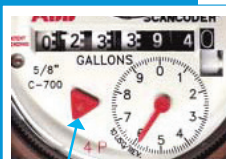


PREVENTING BACKFLOW & BILLING INACCURACIES

If you have an expansion tank installed in the plumbing system in your home, but do not have a check valve (or dual check valve) installed on your service line, it could result in consumption and/or billing inaccuracies.

In the absence of a check valve (or dual check valve) installed on your service line, with the presence of an expansion tank, water pressure fluctuation in the distribution system may cause cyclical forward and backward movement on your water meter. When this occurs, the flow indicator on your water meter changes from moving counter-clockwise (the direction that the flow indicator should move) to clockwise (the incorrect direction).

NOTE: The flow indicator only moves when water is moving through the meter. If you have a digital meter, see reverse side to determine if water is flowing in the correct direction.



FLOW INDICATOR
Indicates water flowing through the meter and in which direction

WHAT IS BACKFLOW?

BACKFLOW is the reverse flow of water or other substances through a cross connection into the treated drinking water distribution system. There are two types of backflow: backpressure and backsiphonage.

BACKPRESSURE occurs when the pressure of the contaminant source exceeds the positive pressure in the water distribution main. An example would be when a drinking water supply main has a connection to a hot water boiler system that is not protected by an approved and functioning backflow preventer. If pressure in the boiler system increases to where it exceeds the pressure in the water distribution system, backflow from the boiler to the drinking water supply system may occur.

BACKSIPHONAGE is caused by a negative pressure (vacuum or partial vacuum) in the water distribution system. This situation is similar in effect to the sipping of water through a straw. Negative pressure in the drinking water distribution system can occur because of a water main break or when a hydrant is used for fire fighting.

WHY DOES MISSOURI AMERICAN WATER REQUIRE A DUAL CHECK VALVE TO BE INSTALLED?

A dual check valve prevents water from flowing out of a customer's residence and back into the public water supply system, protecting against potential contamination.

WHAT IF I DON'T HAVE A DUAL CHECK VALVE?

While you may be able to install one yourself, Missouri American Water recommends that you hire a professional plumber to ensure the job is done correctly.

CAN I REFUSE TO INSTALL A DUAL CHECK VALVE?

Missouri American Water's water service tariff, as approved by the Missouri Public Service Commission, requires that all residential customers install and maintain a functioning dual check valve (ASSE 1024) on their service pipes. Otherwise, the Company can refuse to continue providing water service.

AM I REQUIRED TO INSTALL AN EXPANSION TANK?

Missouri American Water's tariff does not require customers to install expansion tanks. However, they do help to protect internal piping and prevent leaks. Increases in water pressure caused by a water heater or other internal plumbing issues can cause a small amount of water to flow back into the public water system if a dual check valve is not installed.

Installing a dual check valve will prevent this backflow, but could increase pressure inside the home. In these cases, an expansion tank can help to protect internal piping and prevent leaks. Customers should consult a plumber, as well as applicable municipal and plumbing codes, before deciding not to install an expansion tank.

I HAVE A DIGITAL METER. HOW CAN I DETERMINE IF WATER IS FLOWING IN THE CORRECT DIRECTION?

To activate the screen, shine a light on the face of the meter. As water moves through the meter, there are two ways you can determine if water is flowing in the correct direction.

- **When the meter reading appears on the display, the number will increase** (indicating your water use). If water is flowing in the reverse or incorrect direction, it will count down, meaning that backflow is occurring. This should be addressed immediately by installing a dual check valve on your service line or having your current dual check valve serviced.
- **On the display, an arrow will appear showing you which direction the water is moving.** The direction of the arrow should match the direction of the arrow that appears on the base of the meter itself. If it does not, this should be addressed immediately by installing a dual check valve on your service line or having your current dual check valve serviced.

NOTE: The flow arrow will only appear and the meter reading will only calculate if water is moving through the meter.

FOR MORE INFORMATION

- Contact your plumber.
- Visit us online at www.amwater.com/mocrossconnection.
- Contact our Cross Connection Hotline at 1-866-554-2912 from 8 a.m. – 4:30 p.m. or moaw.crossconnection@amwater.com. **NOTE:** This hotline is for questions related to cross connection and backflow prevention only.
 - Other inquiries should be directed to our Customer Service Center at 1-866-430-0820, M–F, 7 a.m. – 7 p.m. For emergencies, we're available 24/7.

