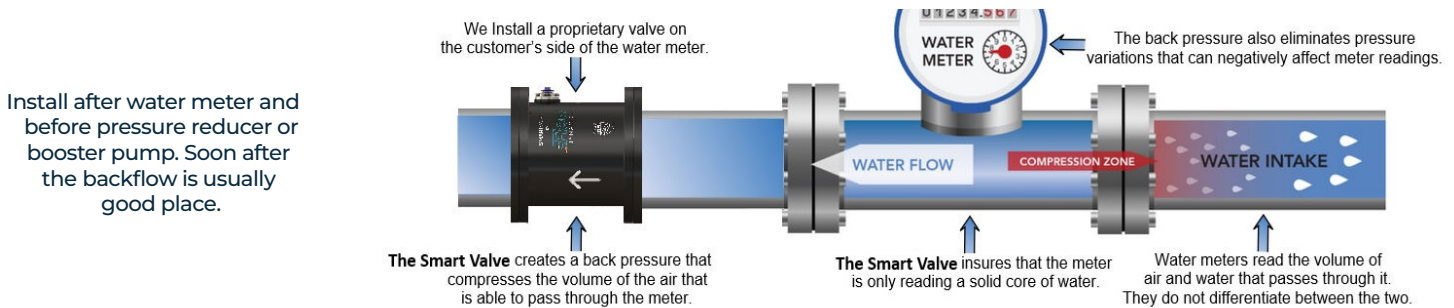# Installation and Adjustment Instructions

Congratulations on your purchase of the SMARTVALVE™. You are about to start saving!

Installation should only be done by a licensed plumber or Mechanical Engineer.

Install after water meter and before pressure reducer or booster pump. Soon after the backflow is usually good place.

We Install a proprietary valve on the customer's side of the water meter.

The back pressure also eliminates pressure variations that can negatively affect meter readings.

WATER METER

WATER FLOW

COMPRESSION ZONE

WATER INTAKE

The Smart Valve creates a back pressure that compresses the volume of the air that is able to pass through the meter.

The Smart Valve insures that the meter is only reading a solid core of water.

Water meters read the volume of air and water that passes through it. They do not differentiate between the two.

FLANGED SMARTVALVE™

1. Identify installation location and prepare pipe for installation on the user side of the water meter. Install location should be before any other fixtures or devices such as a pressure reducer orbooster pump. Immediately after the backflow preventer is often a good place.

2. It is recommended wherever possible to have 10 diameters buffer zone after the water meter and before a booster pump intake to ensure there are no turbulence issues. I.e.: 4" valve x 10 dia. = 40".

3. Prepare pipe flange spacing to allow for length of valve and gaskets to be installed inline. Valve length varies by size, please see Cut Sheets for exact dimensions.

4. Install using flange gaskets (usually 150-pound gasket) at each flange joint.

5. Make sure the closed orifice end faces upstream and the open orifice end faces downstream. See flow direction arrow on the valve.

6. Slowly turn water supply back on. Vent trapped air from the water line where possible. Flow may be turbulent until excess air is out of the system.

IMPORTANT: If the water line is used as a Ground Fault Line, YOU MUST USE A GROUNDING STRAP ACROSS THE VALVE FROM PIPE TO PIPE. The Smart Valve will NOT conduct an electrical current through the pipe.

Adjustment Instructions

The Smart Valve is an EXTERNALLY ADJUSTABLE device, allowing you to fine tune the valve setting for maximum results, and to allow you to adjust to any future changes in your water system pressure and/or flow rate. The valve manages pressure UPSTREAM to maintain as close to city static pressure as possible back to the water meter.

YOUR GOAL is to adjust the Smart Valve to the strongest setting that does not cause problems due to too much pressure drop downstream during peak water demand. The stronger the setting you can achieve, the better the results will be. The ideal setting will be unique to the conditions of each system. Installing a pressure gauge (temporary or permanent) at least a few feet downstream of the Smart Valve will greatly assist in calibrating the valve with your water system, but it is not mandatory.

Once the valve has been properly installed and the water turned on, locate the 'adjustment dial' (see photo below). The dial is marked BACK PRESSURE, and has markings from 0 to 100, which indicate what percentage of the range of effect the valve is set at from minimum to maximum. The 0% setting will have little or no effect on the system, while a 100% setting will likely have a very significant effect. Depending on the system a severe pressure loss will likely occur at some point less than 100%. That point, wherever it is, will be the threshold setting that we want to get as close as we can to, but not exceed. Again, it is at peak demand when we will find the true threshold.

At the center of the Smart Valve dial is a 1/8" Allen wrench hole to make adjustment easy. Around the hole is a locking nut, which is used to lock the desired setting into place and avoid any unwanted or accidental adjustments. To adjust the valve, use pliers to loosen the locking nut. Then use the included Allen wrench to SLOWLY increase the setting. It is recommended that you first adjust the setting to no more than 30%. Tighten the locking nut, making sure not to change the adjustment setting, then let the system run until you can be sure you have reached a point of peak water demand. If there are no pressure complaints, increase the setting another 10-20%. Continue this until you cross a threshold where the pressure downstream drops more than can be tolerated. Reduce the setting back a little from this position and this should be your ideal setting. Calibration is complete. If at any time conditions change you can re-adjust the setting.

Flow DYNAMICS