

THERMOSTATIC WATER CONTROL VALVES

WHAT ARE THEY?

A Thermostatic valve is a unit that will hold water temperature stable at a preset value irrespective of the interruptions or temperature fluctuations that can occur to the valves hot and cold water supplies. They will also have inbuilt fail safe operations to cut the hot water supplies in the event of cold water failure.

The heart of the unit is the thermostat cartridge. The performance of your valve is solely reliant upon the quality of this component.

So what does a thermostatic valve consist of?

It will have connections for your hot and cold water supplies. These connections will normally be $\frac{1}{2}$ inch or $\frac{3}{4}$ inch. UK water regulations require that non return valves are fitted as the water enters the valve. The reason for these is to eliminate the possible occurrence of water passing from say the cold side and going back down the hot feed. The non return valves are important and have to be protected by a filter. The filter is there to stop any debris that may be present in your plumbing system from entering the valve and causing failure of the components. Regulations stipulate that the non return valves must be protected.

The hot and cold water will then pass through the water ways of the thermostat cartridge and into the mixed water chamber where the tail of the wax bulb thermostatic element expands or contracts. This small precise movement controls a moving shuttle in the thermostat cartridge. As the shuttle moves it will allow more cold or hot water to enter the mixing chamber. This is all calibrated by your temperature control handle. The mixed water then has to exit the mixing chamber and pass through some form of on off control mechanism. This on/off valve can be an inbuilt part of the thermostat valve itself or remote. From the on/off control the water will then be directed to your choice of outlets, namely shower heads and bath fillers, body jets and pull up hand showers or indeed all. Regulations stipulate that the distance from the mixed water outlet to the shower head/ bath filler must not exceed 2 meters.

Simple and there are many on the market to cater for every consumers budget. All making over simplified claims.

Before making your choice of product, consider the following.

- 1). **How easy is it to get at the filters protecting the non return valves.** If this filter is doing its job it will need cleaning. Note many of the more competitively priced products have the non return valves and filters placed in the hot and cold supply pipes. The only way to get at these once the valve is installed is to remove the valve. A very costly and sometimes impossible task..

2). **How easy is it to change the working components of the valve** namely the thermostatic cartridge, the on off valve, and indeed the non return check valves and filters.

3) Can the incoming water supplies be easily isolated to perform maintenance functions on all parts of the valve? If they cannot make sure you fit check valves to isolate the supplies to the valve. This will make maintenance easier in the future.

4). **Are the spare parts that will be required easily available** and will they be available in say 5 years time.

5). Who is the manufacturer of the thermostatic cartridge? Your valve will only be as good as the quality of this component.

A further consideration is the new Part G building regulations which apply to new build housing projects.

In brief usage of water in a household has to be cut from 150 liters per person per day to 125 liters per person per day. Basically water conservation.

Temperature of the hot water entering the bath cannot exceed 48 degrees. This is to avoid scalding accidents. It is not clear about shower, bidet and basin water temperatures however the TMVA Thermostatic mixing valve association provide the following guidelines.

- 1). 44 degrees Celsius for unassisted bath fill
- 2). 46 degrees Celsius for assisted bath fill.
- 3). 41 degrees Celsius for showering applications and basins.
- 4). 38 degrees Celsius for bidet applications.

There are 2 main conforming certifications

TMV2 for use in the majority of residential environments.

TMV3 for use in commercial environments namely National Health Service applications, care homes sports clubs etc.