

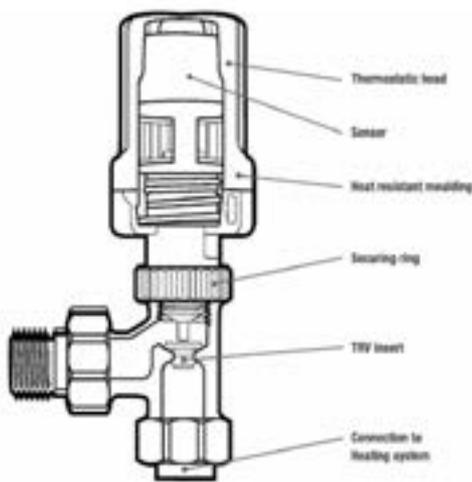
# Consumer Guide; Thermostatic Radiator Valves



**Fitting Thermostatic Radiator Valves (TRVs) is the most efficient and effective way to control the temperature of the home. They work in conjunction with boilers timers and wall mounted room thermostats and are a simple and affordable way of controlling the heat output of a radiator and the temperature of a room.**

TRVs are designed to control the air temperature of a room by automatically adjusting the amount of hot water that enters the radiator they are fitted to. A TRV allows the occupant to have control of the temperature in each room of their home, ensuring a warm and comfortable space whilst making the heating system more efficient and cost-effective.

It is important to set each TRV correctly so that it creates different heating zones throughout the home, as most have one centralised boiler that provides the main source of heat.



**A Thermostatic Radiator Valve is self-regulating and works by automatically changing the flow of hot water into the radiator.**

**The mechanism consists of two main parts the thermostatic valve head and the valve body that screws to the radiator.**

## How do they work?

When the temperature of the room changes, a sensor in the head of the TRV will expand or contract automatically moving a pin in the body of the valve which causes it to either open or close.

If the temperature in your room drops too low, the sensor will contract and retract the pin; allowing more hot water to enter your radiator and increase its temperature. Once the room reaches the set temperature the expansion of the sensor will allow the pin to close the valve and reduce the flow of hot water through the radiator.

The sensor in thermostatic radiator valves operates using a metal spring and is filled with wax or liquid. Liquid models are more expensive but tend to operate quickly to changes in temperature which can give a more precise room temperature.

## Fitting TRVs

Fitting any new radiator valve could mean that you need to drain down your heating system, so if you are having a new boiler fitted it is always a good time to have TRVs

fitted to your radiators. It's also good practice to re-fill the heating system with an inhibitor – see our [Consumer Guide to Protecting your Boiler & Heating System](#).

Most boiler manufacturers recommend to have one radiator on the heating system without a thermostatic radiator valve fitted and to leave that radiator permanently switched on. This is normally the radiator in the room where the wall thermostat is fitted. This prevents the two controls from trying to control the same room space. For example; you could turn your wall thermostat up to increase the space temperature, only to find that the thermostatic valve on the radiator operates to close off the supply of hot water.

Some boilers and systems can operate with a TRV on every radiator but always consult the manufacturer's instructions.

## Bathroom TRVs

It is advised to set bathroom TRVs to a high setting as the extra warmth generated by the bath or shower may turn the TRV off prematurely.

## System Balancing

System balancing is essential to efficient heating. If the flow of water through the radiators is not balanced, the result can be that some radiators can take the bulk of the hot water flow from the boiler, leaving other radiators with little flow.

This can affect the boiler efficiency and home comfort conditions as some rooms may be too hot or remain cold.

Heating systems are typically balanced using the lock shield valve but some models of TRV include an integrated balancing insert; this allows the system to be balanced and remain balanced when a radiator is removed for decorating or replacement.

**See our [Consumer Guide to Balancing the Central heating System](#) for further information.**



## Setting the room temperature

To ensure the right comfort level in the living room most people have the temperature set to 21 or 22°C, however a bedroom is generally set at no more than 18°C. Controlling these different zones in your home with a TRV allows you to reduce the heat required and therefore saving money on the heating bill.

The numbers on the TRV do not represent specific room temperatures, as the temperature at which the valve operates depends on the water temperature flowing through the radiator, airflow around the head of the TRV, the room size, and any heat loss in that space through walls, windows and floors.

If you have a room thermometer it is a good way to measure the room temperature and set the correct number on the TRV. Always try to keep the area around the TRV clear so that it has good air flow around the head and can sense the right temperature.

Using a vacuum cleaner to carefully remove any dust from the head of the TRV is also advised. Large rooms may be heated by two separate radiators and there will be an interaction between the two TRVs, using the same setting on the TRVs is a good way to start adjusting the room temperature. Then increase or decrease the TRV in the hottest or coldest part of the room.

## Battery Powered TRVs

A battery-powered thermostat with more advanced heat detection ensures the TRV performs with greater accuracy. Battery powered TRVs can be connected to a digital thermostat. The TRV will then take a temperature reading from the thermostat, and not the radiator. As such, it is more accurate than a conventional TRV, and is not affected by its surroundings; such as curtains near the radiator or direct sunlight.

## Smart TRVs

Smart TRVs are remotely controlled to constantly monitor and manage the temperature of the room via a central hub. They can also be used with other heating control components to create an intelligent heating system with individual zones. This allows you to accurately monitor and control the temperature of individual rooms in the home all from the touch of the button on a smart, web enabled device. If you already have TRVs fitted you can easily upgrade them by replacing the control head with a smart TRV.



## Servicing

We recommend having your central heating system serviced annually, including a check that the TRVs are operating correctly.

## TRV Top Tips

- Fitting TRVs can help you save money on your heating bill.
- It is a good time to fit TRVs when the heating system is drained down.
- Keep the head of the TRV clear of curtains and furniture, to allow the air to flow and the TRV to operate effectively.
- Do not fit TRVs in the same room as the wall mounted boiler thermostat.
- Bathrooms, especially towel rails may not need a TRV.
- Use a room thermometer to help with setting the TRV.
- Always use a professional, accredited heating engineer.
- Smart TRVs ensure the right level of comfort is maintained in different zones and can deliver further savings on your heating bill.

**The Heating and Hotwater Industry Council, HHIC, is a not for profit trade association committed to effectively driving, supporting and promoting the sustained growth of the UK domestic heating and hot water industry.**



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