

## Thermostatic Radiator Valves (TRV) and Lock shield valves & FAQs

A Thermostatic Radiator Valve (TRV) is a valve with a sensor which can be fixed and/or replaced if required in position on the top of the valve, this sensor as the name suggests senses the ambient air temperature in the room, when warm causing the internal components of the sensor to react by expanding, this expansion pushes down the pin on the valve closing off the water supply, when the sensor detects a drop in the room temperature this then contracts and allows the pin on the valve to lift allowing the flow of water through the valve to heat the room to the desired temperature.

The TRVs should be set at a temperature that you are comfortable with, with temperatures varying from room to room, settings in each room are a personal preference and essential for efficiency.

As the sensor opens and closes depending on the ambient air temperature, it is advisable not to cover the sensor or conceal behind curtains or furniture

TRVs have a dial with numbers on, each corresponding to the temperature, Stelrad valves also have the snowflake symbol that represents frost protection: with approximate temperatures below:

- **0:** Off
- **Frost protection:** 8°C
- **I:** 12°C
- **II:** 16°C - Bedroom
- **III:** 20°C - Living Room
- **IIII:** 24°C - Bathroom

### **Positive SHUT OFF Feature :**

By turning the sensor past the frost protection symbol ( slight resistance will be felt ) to the setting **0** the valve will be rendered fully shut off, by shutting off the Lock shield valve the radiator can now be drained and removed for replacement or maintenance

**Note:** Not all valve manufacturers have this functionality and this sets the Stelrad valve apart from others

### **Bidirectional TRV: Angled**

The angled TRV can be installed vertically - the most common installation in the UK or horizontally - the most preferred in Europe on either the flow or return pipework.

Installed vertically is an aesthetic choice in the UK whereas the choice of horizontal in Europe is based on efficiency.

The sensor detects the surrounding air, if installed vertically it can sense the heat from the pipe work directly below when this starts to heat up, possibly shutting off the supply to the radiator prematurely and not heating the room to the desired temperature.

Located at the top of the valve is the Grey setting ring which has an arrow on either side indicating

the direction of flow through the valve, to determine the direction of flow through the radiator with the heating system on check which pipe to the radiator heats up first, the first to start heating is the flow, now turn the Grey setting ring so that the arrow corresponds to the flow of water to or from the radiator

**Bidirectional TRV: Straight**

The same principal applies to the straight TRV with the only obvious difference being this is a straight valve, or sometimes referred to as an inline valve and usually installed below towel rails where the pipe work is coming from the floor directly below.

Standard horizontal radiators have the connections located on the side of the radiator, this would normally require angled valves, where certain vertical radiators have connections at the bottom of the radiator a straight valve would be the valve of choice.

The choice of valves for a radiator or towel rail installation will vary vastly and not straight forward, as the valve is dependent on where the pipework to the radiator or towel rail is fed from, this could typically be from below the floor directly to the radiator or through the wall and from the wall or a more contemporary style in new builds or refurbishments is the pipework in the wall feeding the radiator from the rear of the radiator

**Lock shield Valve :**

This is the valve that accompanies the TRV both angled and straight, when purchasing as a pack, this valves primary purpose is to allow the system to be balanced for maximum efficiency and to also isolate the radiator in the event of a radiator leak or if simply removing for replacement or maintenance.

To isolate or balance the Stelrad Lock shield valve remove the cap on top of the valve to expose the brass internal locking device, to turn on or off you will require a 6mm Allen key; by turning clockwise fully you will shut off the valve, to open turn anti clockwise.

Lock shield valves are bidirectional and require no adjustment for flow direction

**FAQs:**

**Q:** What size are the connections on Stelrad's TRV and Lock shield valves?

**A:** The radiator tailpiece connection for the radiator is half inch (½) the industry standard size for all radiators with the pipework connections again as the current industry standard size of 15mm - nut and olive connection.

**Q:** What are the threads on the radiator tailpiece?

**A:** The threads on the tailpiece are half inch tapered threads.

**Q:** Why does my radiator not shut off when I turn the TRV sensor to the off position?

**A:** Is the sensor installed correctly on the valve body - between the valve body and the sensor you should not be able to see any of the brass (Yellow) valve body, only the Chrome valve body and the Chrome sensor or the White sensor and Chrome

**Q:** How do I know the TRV is bidirectional?

**A:** With the sensor removed from the valve body, you will see there is the grey cover which has 2 arrows on, each indicating the direction, once you know the direction of water in the system you can turn the grey setting ring to suit.

**Q:** How do I change the direction of water through the valve body?

**A:** Determine the direction of water, then turn the grey setting ring with the 2 arrows on to suit the direction.

**Q:** What is the grey cover supplied with the valve for?

**A:** This is sometimes called a decorator's cap, as the name suggests removing the sensor and fit the cap to protect when decorating.

**Q:** How do I fit or remove the sensor to the valve body?

**A :** To the rear of the sensor there is a small grub screw, to install the sensor to the body using a 2mm Allen key loosen the grub screw, ensure the sensor is turned to the fully open position, sit the sensor on the valve body and secure, to remove the sensor loosen the grub screw.

**Q:** Which way can the valve and sensor be installed?

**A:** The valve body and sensor can be installed vertically or horizontally, preferred method in the UK is horizontally.

**Q:** Why does my radiator not heat up when the TRV sensor is fully turned on?

**A:** The sensor may have been fully turned off for a while, leaving the pin on the valve fully pushed down in the closed position, so when you turn on the sensor the pin may not lift.

To resolve, remove the sensor and push the pin down in an attempt to release the pin, you will know if the pin has been released when all the pin is visible and you may hear the water flowing through the radiator and valve.

**Q:** How do I isolate my lock shield valve?

**A:** To isolate the lock shield valve, remove the protective cap on top of the lock shield valve and using a 6mm Allen key turn clockwise to isolate / turn off, turning anti clockwise will turn the valve on.

**Q:** What temperatures are the settings on the TRV dial?

**A:** The numbers on the dial of the TRV below show the approximate temperatures

- **0:** Off
- **Frost protection:** 8<sup>o</sup>c
- **I:** 12<sup>o</sup>c
- **II:** 16<sup>o</sup>c - Bedroom
- **III:** 20<sup>o</sup>c - Living Room
- **IIII:** 24<sup>o</sup>c - Bathroom

**Q:** Can I install the Stelrad TRV in an LST Standard?

**A:** You can as they meet the criteria for a valve in the LST Standard, but due to the sensor design and operation it is not recommended to install in the LST Standard through the knockout.

**Q:** What are the valves made of?

**A:** Brass body and chrome plated; the sensor is made of plastic.