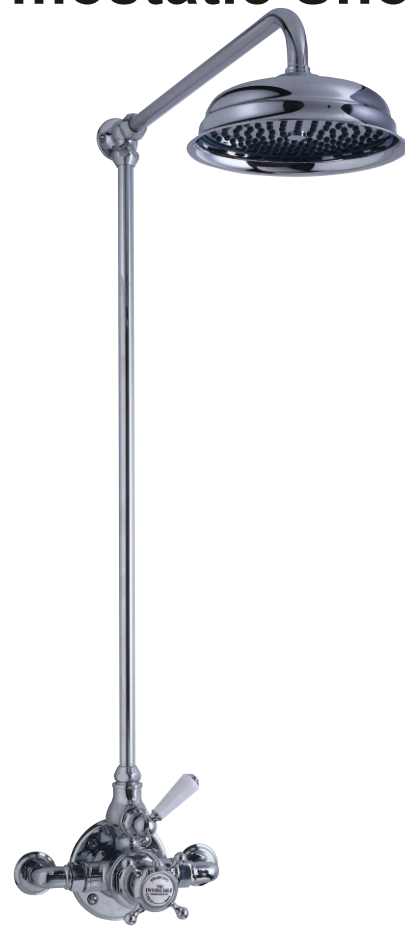


Swadling Brassware Invincible Thermostatic Shower Valve.



TMV2 Scheme

This valve is an approved TMV2 Thermostatic Mixing Valve and will operate as such under the following installation conditions.

	High pressure	Low pressure
Maximum Static Pressure	10 Bar	10 Bar
Flow Pressure, Hot & Cold	0.5 to 5 Bar	0.1 to 1 Bar
Hot Supply Temperature °C	55 to 65 °C	55 to 65 °C
Cold Supply Temperature °C	≤ 25 °C	≤ 25 °C

NOTE: Valves operating outside these conditions cannot be guaranteed by the scheme to operate as Type 2 valves.
 Designation of use, HP & LP. Except low pressure bath fill.
 Recommended mixed water temperatures for applications of use.
 44°C for bath fill.
 41°C for shower applications
 41°C for washbasin applications
 38°C for bidet applications

These are recommended for all premises and should never exceed 46°C
 The Thermostatic mixing valve will be installed in such a position that maintenance of the TMV and it's valves and the commissioning and testing of the TMV can be undertaken.
 The fitting of isolation valves is required as close as practicable to the water supply inlets of the TMV.
 These should be 22mm so as not to restrict the high flow rate available.

TMV2 Commissioning Notes for Thermostatic Mixing Valves

The first step in commissioning a thermostatic valve is to check the following

1. The designation of the thermostatic valve matches the application.
2. The supply pressures are within the valves operating range.
3. The supply temperatures are within the valves operating range.
4. Isolating valves are provided.

The mixed water temperature at the terminal fitting must never exceed 46°C.
 TMV2 valves shall be tested against the original set temperature results once a year. When testing is due the following performance checks shall be carried out.

1. Measure the mixed water temperature at the outlet.
2. Carry out the cold fail safe shut off test by isolating the cold water supply to the TMV, wait for Five seconds if water is still flowing check that temperature is below 46°C.
3. If there is no significant change to the set outlet temperature(±2°C or less from original settings) and the fail-safe is functioning , then the valve is working correctly and no further service work is required.

How to test mixed water outlet temperatures once TMV's are installed. The following guidance should be followed where appropriate.
 Temperature readings should be taken at the normal flow rate after allowing the system to stabilise.

1. The sensing part of the thermometer probe must be fully submerged in the water that is to be tested.
2. Any TMV that has been adjusted or serviced must be re-commissioned and retested In accordance with the manufacturers' instructions.

The Installation of thermostatic mixing valves must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999.

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Please read these instructions in full before commencing any installation. After The work is completed, pass these instructions on to the end user for their future reference. We recommend that before tiling or finishing, you ensure that the valve is operating correctly and that there are no leaks.

Most problems with any thermostatic valve are caused by debris from new pipework getting into the thermostat when it is first installed.
It is most important to flush out all new pipework before commissioning.

This thermostatic valve is suitable for use with all water systems up to a maximum operating pressure of 5.0 Bar, (beyond which we recommend pressure reducing valves be fitted)

Overall Height 1000-1005mm
 Pro-arm 500mm adjustable
 Pipe centres 195mm
 Wall Flanges 50mm Dia
 Valve fixing centres 64mm centres
 Equidistant from vertical centre line
 Equidistant from pipe centre line
 Max projection (temp knob) 140mm

Showering Height

From centre line of feeds to base of Rose 860mm approx

Suitable for



DESCRIPTION

The Invincible is a thermostatically controlled shower-mixing valve. Temperature is controlled by a wax cartridge thermostat, which will maintain a constant temperature and compensate automatically for fluctuations in HOT and COLD inlet pressures. Should either HOT or COLD supplies fail, the valve will shut down almost instantly to avoid any risk of scalding. A simple quarter turn ceramic disc valve controls flow.

WATER SYSTEMS

The Invincible is suitable, without modification, for all types of installation, including pumped gravity systems, mains pressure and combined boilers. Please see our current brochure for recommended pressures appropriate for each shower kit.

INSTALLATION EXPOSED VALVE

The valve must be installed with the outlet pointing upwards, the HOT water coming in on the left and the cold on the right. It will not operate the other way round. The inlet elbows are fitted with 15mm olives and compression nuts. It is important that all new pipe work should be thoroughly flushed through before connecting the valve. The valve is screwed to the wall with four 2" No10 brass woodscrews, which are provided.

TEMPERATURE SETTING AND ADJUSTMENT

AFTER INSTALLATION THE INVINCIBLE VALVE MAY NEED THE MAXIMUM TEMPERATURE RESETTING.

Loosen grub screw in the temperature control knob.

To set temperature, rotate the thermostat spindle (clockwise for cold, counterclockwise for hot) until the maximum desired showering temperature is reached [normally about 42°C]. Then line up the peg/screwhead on the back of the control knob with the first stop on the stop ring, push the knob onto its spline and tighten the grub screw. You should now be able to override the set temperature by depressing the button for topping up baths etc.

MAINTENANCE

The Invincible valve is extremely easy to maintain. The temperature and flow are controlled by separate one-piece cartridges, which are easily removed from the front of the valve for cleaning or replacement.

TROUBLE SHOOTING

After having produced thousands of Invincible Thermostatic Valves, we are able to pinpoint the following problems and solutions, which have occurred. These will cover 99% of cases.

- 1) After installation shower only runs HOT or COLD and will not mix.
Solution: Hot & cold supplies are plumbed the wrong way round. Remove the thermostat and refit with the locating peg pointing up wards.
- 2) Shower will not run hot enough when first installed.
Solution: Maximum temperature setting needs adjusting as above.
- 3) Cold water tracking through the valve into the hot system.
Solution: This is prevented in the Invincible by non-return valves in the inlets. Check and clean non-return valves.
- 4) Very low flow or no flow (gravity)
Solution: Check Hot & Cold feeds, the valve will shut down if either Hot or Cold supply Fails.

