

- G.** Once the valve has been commissioned a cold water supply shut off test should be performed:
- Isolate the cold supply. The flow should reduce to a trickle within a second or two.
 - Restore the cold supply and check that the set temperature has not altered.
 - Repeat the test for the hot supply.

H. If either test does not show the correct performance, ensure that the supply pressures and temperatures are within the valve's normal working parameters. In addition, check that the hot supply temperature is at least 10°C above the valve's set mixed outlet temperature. If this is not the case then the valve will be slow to shut down on cold water failure.

I. For optimum performance it is recommended that the dynamic pressure be as close to equal as possible. If the dynamic pressures are outside a 5:1 ratio then a pressure reducing valve should be fitted to the higher supply pressure or if preferred, the lower supply pressure boosted.

J. When the Saracen TMV2/3 valve has been set and tested re-fit the cap.

K. A record of the commissioning settings should be made for comparison with future performance checks.

Please note: If there is a residual flow on cold shut off, then this is acceptable providing the temperature of the seeping water is no more than 2°C above the designated maximum water outlet temperature setting of the valve or if the total flow is no more than 120 ml in one minute.

5. Maintenance

TMV3 Application:

To comply with the current DH guidelines the Saracen valve should be tested against the original performance results 6-8 weeks after installation. If the temperatures have remained to within +/- 2°C and the hot and cold water supply isolation tests are operating correctly, then a six monthly cycle of performance testing can be implemented.

TMV2 Application:

The performance of the Saracen TMV2/3 valve should be checked on an annual basis and verified against the original installation performance. If the water or installation conditions are more severe this check should be carried out more frequently.

6. Performance Checks

Performance checks that should be carried out at routine maintenance times are:

- Check the set temperature using a hand-held digital thermometer.
- Carry out the cold and hot water supply isolation tests.
- If there is no significant change to the set outlet temperature (1°C or less change from the original settings) and the fail-safe shut off is functioning, then the valve is working correctly and no further service work is required.

7. Cleaning the valve

- Isolate the hot and cold supplies and remove the valve from installation. Please make note of the orientation of the parts as they are removed so that they can be re-assembled in the correct manner.
- Clean the strainers fitted in the hot and cold water inlets and check for damage, rinse in clean potable water.
- To clean the internals of the main valve body first remove the cap, and then carefully remove the valve headwork by unscrewing the large hex nut.
- Slide the shuttle valve and thermostat assembly out of the valve body, clean all internal surfaces and o-rings with a weak solution of scale remover approved for use with potable water.
- Using a WRAS approved silicone based waterproof grease, lightly lubricate the o-ring in the body and the external surface of the shuttle valve.
- After cleaning, re-assemble the Saracen TMV2/3 valve. Exercise, reset and test the valve as laid out in steps F and G of the commissioning section.

Failure to comply with these instructions will result in the warranty becoming null and void.

TECHNICAL HELPLINE:

0800 156 0050

All supply pipework must be thoroughly flushed at a high flow rate (>1.5m/s) to dislodge and remove all dirt, debris, grease and flux. In accordance with BS EN 806-4:2010 and PD 855468:2015.

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SARACEN

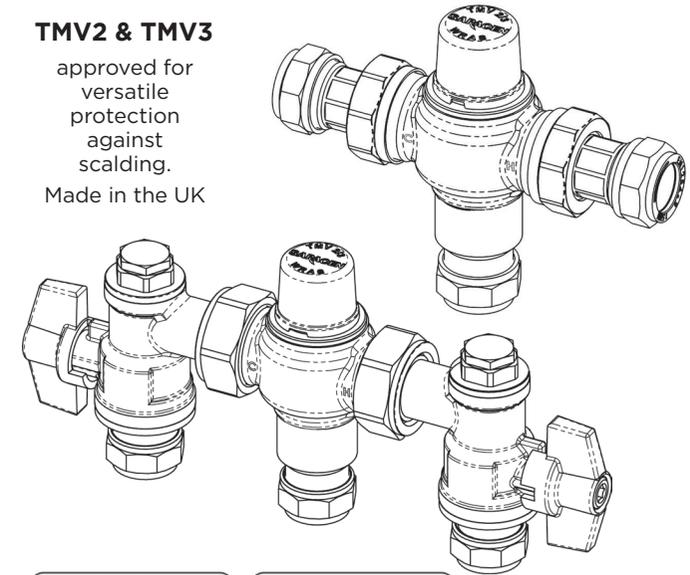
Thermostatic Mixing Valve Installation, Commissioning & Maintenance Instructions

The Saracen thermostatic mixing valve (15mm & 22mm models) is manufactured to DH D08 & BS7942-2011 as part of the TMV3 scheme, as well as BS EN1287 & BSEN 1111 under the TMV2 scheme. Independently tested, the TMV carries: WRAS, TMV2, TMV3 and NSF TMV scheme approval.

STMV23

TMV2 & TMV3

approved for versatile protection against scalding.
Made in the UK



2 YEAR GUARANTEE



Saracen TMV2/3
15mm/22mm



Saracen TMV2/3
15mm/22mm



Saracen TMV2/3
15mm/22mm UA



Saracen TMV2/3
15mm/22mm UA

1. Working parameters & Specifications

	TMV3	TMV2
Factory temperature setting:	43°C	43°C
Temperature setting range:	38°C - 46°C	38°C - 46°C
Temperature, hot supply:	55-65°C (Max 85°C)	55-65°C (Max. 85°C)
Temperature, cold supply:	5-20°C	Equal to or less than 25°C
Minimum hot to mix differential temperature:	10°C	10°C
Temperature stability:	+/- 2°C	+/- 2°C
Working pressure, static:	10 bar max	10 bar max.
Working pressure (high), dynamic:	1.0-5.0 bar	0.5-5.0 bar
Working pressure (low), dynamic:	0.2-1.0 bar	0.1-1.0 bar
Maximum pressure loss ratio:	5:1	5:1
Flow rate, minimum:	4 lpm	4 lpm
Designation 15mm	LP-SE, LP-BE & LP-WE HP-B/S/W/T44/T46	HP-B/S/W/T
Designation 22mm	LP-B/S/W HP-B/S/W/T44/T46	LP-S, LP-B & LP-W HP-B/S/W/T

Please note: If water supply is fed by gravity then supply pressures should be verified to ensure the conditions of use are appropriate for the valve. Valves operating outside these conditions cannot be guaranteed by the scheme to operate as Type 3 or Type 2 valves.

2. Approved specification and standards

Code	Operating Pressure	Application	Recommended Temperature	Maximum Temperature
Scheme			TMV2 TMV3	TMV2 TMV3
HP-S	High pressure	Shower	41°C 41°C	43°C 43°C
HP-W	High pressure	Washbasin	41°C 41°C	43°C 43°C
HP-T44	High pressure	Bath	44°C 44°C	43°C 46°C
HP-T46	High pressure	Assisted Bath	46°C 46°C	48°C 48°C
LP-S/SE	Low pressure	Shower	41°C 41°C	43°C 43°C
LP-B/BE	Low pressure	Bidet	38°C 38°C	40°C 40°C
LP-W /WE	Low pressure	Washbasin	41°C 41°C	43°C 43°C

3. Installation

It is important that the installer reads these instructions and is fully aware of their responsibility and duty of care to ensure that all aspects of the installation comply with all current regulations and legislation.

- A.** Check that the designations of the TMV matches the intended application. Ensure the local supply pressures fall within the range of operating pressures for the designation of the valve, and that the supply temperatures are within the range permitted for the valve and by guidance information on the prevention of legionella etc.
- B.** Consideration must be made for the possibility of multiple/ simultaneous demands being made on the supply system whilst the Saracen TMV (15mm & 22mm models) is in use, all practical precautions must be made to ensure that the valve is not affected. Failure to make provision within the pipe sizing, etc will affect the performance of the valve.
- C.** The supply system to which the Saracen TMV (15mm & 22mm models) is to be installed must be thoroughly flushed and cleaned to remove any debris, which may have accumulated during the installation. Failure to remove any debris will affect the performance and the manufacturer's warranty of the product.
- D.** Independent isolation valves must be fitted in conjunction with the valve, adjacent to the hot and cold water inlet supplies to the TMV. This is not required if fitting the variant supplied with 4in1 union angle valves.
- E.** In areas subject to aggressive water, provision must be made to treat the supplies prior to the supplies entering any Saracen product.
- F.** Saracen TMV (15mm & 22mm models) have been designed to ensure that the valve can be installed in any position, whether vertical or horizontal, and can be surface mounted or within a supply duct. It is essential that access to the valve must not be obstructed for any future maintenance that may be required to the valve or associated fittings.
- G.** It is recommended that the Saracen TMV (15mm & 22mm models) failsafe thermostatic mixing valve is installed as close as is practicably possible to the outlet which it is serving. Attention must be paid to the maximum distance of pipework from the mixed water outlet of the valve to any terminal fitting. Current guidelines recommend a maximum distance of 2m from the outlet of the mixing valve to the furthest terminal fitting/outlet which the mixing valve is to serve.
- H.** The hot and cold water supplies must be connected to the valve strictly in accordance with the indications on the body of the valve i.e. hot water supply to the hot port of the valve.
- I.** In a situation where one or both of the water supply pressures are excessive, it is possible to fit a pressure reducing valve to reduce the pressure(s) to within the limits as quoted above.
- J.** Any thermostatic mixing valve must be fitted with a backflow prevention device, such as check valves, to prevent the cross contamination of supplies. The Saracen (15mm & 22mm models) is complete with integral insert check valves and strainers.

- K.** It is essential that the Saracen (15mm & 22mm models) failsafe thermostatic mixing valve should not be installed in situations where there is a possibility of the valve being deprived of water or where demands for water exceed the actual stored supplies.
- L.** To ensure that performance levels of the Saracen (15mm & 22mm models) valve are maintained (in the event of cold water failure), the temperature of the hot water supply at the point of entry to the Saracen valve must be a minimum of 10°C above the commissioned mixed water discharge temperature.
- M.** The Saracen (15mm & 22mm models) failsafe thermostatic mixing valves must not be subject to any extreme temperature variations either during the installation or under normal **operating conditions.**
- N.** 46°C is the maximum mixed water temperature from the bath tap. The maximum temperature takes account of the allowable temperature tolerances inherent in thermostatic mixing valves and temperature losses in metal baths, it is not a safe bathing temperature for adults or children. The British Burns Association recommends 37 to 37.5°C as a comfortable bathing temperature for children. In premises covered by the Care Standards Act 2000 the maximum mixed water outlet temperature is 43°C

4. Commissioning

Please note: If water supply is fed by gravity then supply pressures should be verified to ensure the conditions of use are appropriate for the valve.

Please ensure that the commissioning of the valve is completed under normal operating conditions. The Saracen TMV2/3 thermostatic mixing valve is supplied factory set at 43°C. To alter this setting, proceed as follows:

- A.** Remove the cover cap.
- B.** With both the hot and cold supplies turned on and the terminal fitting open, test and record the hot and cold inlet temperatures. Then adjust the temperature to the required setting, using a spanner.
- C.** Turn the adjustment spindle clockwise to decrease or anti-clockwise to increase the temperature.
- D.** A digital hand-held calibrated thermometer should be used to measure the outlet temperature correctly. The outlet supply for the TMV3 applications must be set to a specific temperature for each individual application:

Washbasin or shower	41°C
Bath (unassisted)	44°C
Bath (assisted)	46°C
Bidet	38°C
- E.** Once the correct outlet temperature has been achieved, the valve's temperature stability should be checked and recorded: firstly at a high flow rate, and then at a low flow rate (ensure this is no less than the valve's minimum flow rate of 4 lpm).
- F.** The valve's internal mechanism should be exercised at least 3 times by alternately isolating the hot and cold supplies. This will cause the piston to travel its full stroke and will ensure that the valve is operating correctly. If the set temperature has drifted after this operation, then the commissioning operation should be repeated.