

BRISTAN

TMV3 Service Installation Requirements

IMPORTANT

Installer, when you have read these instructions please ensure you leave them with the user.

Please keep this booklet for future reference.

General Information

The TMV3 scheme for use in Healthcare and Commercial situations and performs to the requirements of NHS Specification D08. It also satisfies the requirements of the water supply (water fittings) regulations 1999 and current bylaws.

BS 6700 recommends the temperature of stored water should never exceed 65°C. A stored water temperature of 60°C is considered sufficient to meet all normal requirements and will minimise the build up of lime scale in hard water areas.

Important: Nominally equal (balanced) inlet supply pressures are recommended for optimum performance with mixer showers.

This shower valve should be installed in compliance with the Water Regulations.

If in doubt, contact a registered plumber or your Local Water Authority or the Secretary of The Institute of Plumbing, address as follows:-

The Institute of Plumbing,
64 Station Lane,
Hornchurch,
Essex, RM12 6NB
Tel:01708 472791

Guide to designations

HP High Pressure
LP Low Pressure
S Shower

Recommended Usage			
Domestic	✓	Heavy Commercial	✓
Light Commercial	✓	Health Care	✓

Conditions of Use for Type 3 (Thermostatic Mixer) valves

In order to give compliance with NHS specification D08 the table below lists the conditions for normal use. These valves will perform adequately outside these parameters, however they cannot be guaranteed by the scheme to operate as Type 3 valves. If they are required to work with other supply conditions an engineer must carry out a risk assessment and satisfy themselves that the valves are suitable for use.

Table 1: Normal Conditions of Type 3 valves

	High Pressure	Low Pressure
Maximum Static Pressure (Bar)	10	10
Flow Pressure, Hot & Cold (Bar)	1.0 to 5.0	0.2 to 1.0
Hot Supply Temperature (°C)	55 to 65	55 to 65
Cold Supply Temperature (°C)	5-20	5-20
Minimum Temperature Differential (°C)	10°C	10°C

Table 2: Mixed Water Temperature

Application	Mixed temperature (at point of discharge) °C
Bidet	38
Shower	41
Washbasin	41
Bath (44° C fill)	44
Bath (46° C fill)	46

Note 1: For wash basins, washing under running water is assumed.

Note 2: Bath fill temperatures of more than 44°C should only be available when the bather is always under the supervision of a competent person (e.g. Nurse or Care Assistant).

Note 3: A thermostatic mixing valve having multiple designations (i.e. it is capable of satisfying the requirements of this specification for more than one application) should be re-set on site to suit its other designations.

Commissioning

Commissioning notes for Thermostatic Mixing Valves

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

1. The designation of the thermostatic mixing 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 (and strainers preferred) are provided.

If all these conditions are met, proceed to set the temperature as stipulated in the Maintenance section.

The mixed water temperature at the terminal fitting must never exceed 46°C.

It is a requirement that all TMV3 approved valves shall be verified against the original set temperature results once a year. When commissioning / testing is due the following performance checks shall be carried out:

- Measure the mixed water temperature at the outlet.
- Carry out the cold water supply isolation test by isolating the cold water supply to the TMV, wait for five seconds, if water is still flowing check that the temperature is below 46°C.

If there is no significant change to the set outlet temperature ($\pm 2^{\circ}\text{C}$ 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.

Notes: If there is a residual flow during the commissioning or the annual verification (cold water supply isolation test), then this is acceptable providing the temperature of the water seeping from the valve is no more than 2°C above the designated maximum mixed water outlet temperature setting of the valve.

Temperature readings should be taken at the normal flow rate after allowing for the system to stabilise.

The sensing part of the thermometer probe must be fully submerged in the water that is to be tested.

Any TMV that has been adjusted or serviced must be re-commissioned and re-tested in accordance with the instructions in the Maintenance section.

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

In-Service Testing

Purpose

The purpose of in service tests is to regularly monitor and record the performance of the thermostatic mixing valve.

Deterioration in performance can indicate the need for service work on the valve and / or water supplies.

Procedure

Using the same measuring equipment or equipment to the same specification as used in the commissioning section, adjust the temperature of the mixed water in accordance with the manufactures instructions and the requirement of the application. Carry out the following sequence.

- a) Record the temperature of the hot and cold water supplies.
- b) Record the temperature of the mixed water at the largest draw-off flow rate.
- c) Record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured.

If the mixed water temperature has changed significantly from the previous test results (e.g. >1K), record the change and before re-adjusting the mixed water temperature check:

- a) That any in-line or integral strainers are clean.
- b) Any in-line or integral check valves or other anti-back siphonage devices are in good working order.
- c) Any isolating valves are fully open.

With an acceptable mixed water temperature, complete the following procedure:

- a) Record the temperature of the hot and cold water supplies.
- b) Record the temperature of the mixed water at the largest draw-off flow rate.
- c) Record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured.
- d) Isolate the cold water supply to the mixing valve and monitor the mixed water temperature.
- e) Record the maximum temperature achieved as a result of (d) and the final stabilised temperature.

Note: The final stabilised mixed water temperature should not exceed the values in Table 17

- f) Record the equipment, thermometer etc. used for the measurements.

In-Service Testing

Application	Mixed water temperature °C
Bidet	40
Shower	43
Washbasin	43
Bath (44°C fill)	46
Bath (46°C fill)	48

Table 17: Guide to maximum stabilised temperatures recorded during site tests

If at step (e) the final mixed water temperature is greater than 41°C and / or the maximum temperature exceeds the corresponding value from the previous results by more than about 2K, the need for service work is indicated.

Note: In-service tests should be carried out with a frequency, which identifies a need for service work before an unsafe water temperature can result. In the absence of any other instruction or guidance, the procedure described in Annex F of D 08 may be used.

Annex F of D 08 (informative)

Frequency of In-service tests

General

In the absence of any other instruction or guidance on the means of determining the appropriate frequency of in-service testing, the following procedure may be used:

- 6 to 8 weeks after commissioning carry out the tests in 'In-Service Tests'.
- 12 to 15 weeks after commissioning carry out the tests detailed in 'In-Service Tests'.

Depending on the results of the above tests, several possibilities exist:

- If no significant changes (e.g. <1K) in mixed water temperatures are recorded between commissioning and 6 to 8 week testing, or between commissioning and 12 to 15 week testing the next in-service test can be deferred to 24 to 28 weeks after commissioning.
- If small changes (e.g. 1 to 2K) in mixed water temperatures are recorded in only one of these periods, necessitating adjustment of the mixed water temperature, then the next in-service test can be deferred to 24 to 28 weeks after commissioning.
- If small changes (e.g. 1 to 2K) in mixed water temperatures are recorded in both these periods, necessitating adjustment of the mixed water temperature, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.
- If significant changes (e.g. > 2K) in mixed water temperatures are recorded in either of these periods, necessitating service work, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.

Notes

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