

Hot water Supply Thermostatic Mixing Valve.

Model Ref. **VQ4**.

Installation and operating instructions.



Approved by **WRAS** & **TMV 3** Schemes.
Designed to exceed **DO8** Requirements.

Operating parameters.

Product performance & flow rates satisfy requirements of WRAS / DO8.

Maximum hot inlet temperature ~ 65° C

Preferred Cold Inlet range ~ 5° C to 20° C

Preferred Hot inlet range ~ 52° C to 65° C

Maximum working pressure ~ 10 bar (static)

Low pressure range ~ 0.2 to 1.0 bar.

High pressure range ~ 1.0 to 5.0 bar.

Note: Balanced pressures are desirable but must be maintained within ranges above.

A 10° C difference between the mixed and inlet hot temp must be maintained to assure correct fail safe activation.

Outlet Temperature adjustment range ~ 30° C to 50° C

Temperature stability ~ + / - 2o C

VQ4 Suitability for use – (NHS DO8 Designation table).

Application & maximum mixed water set Temperature	High pressure (1.0 to 5.0 bar)	Low pressure (0.2 to 1.0 bar).
Basin up to 41° C	✓	✓
Shower up to 41° C	✓	✓

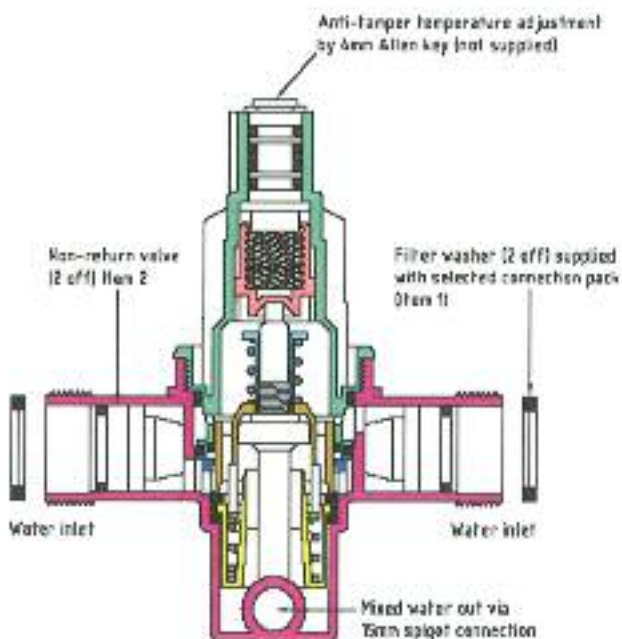
Installation:

Water inlet ports are connected using assembly parts supplied separately to suit your local requirements. The mixed water out let tube accepts any standard 15.0mm female connection method such as compression or push fit unions.

This unit is clip mounted please ensure pipe runs are secure whilst connecting the unit. The inlets are identified for Hot & Cold supply and this unit may be mounted at any angle or orientation. Leave good accessibility for routine calibration and maintenance.

It is advisable to install full bore isolating valves near to the valve and assure all new pipe runs are flushed through prior to connecting the valve. If this is not possible please remove, clear and replace both inlet strainer washers (Item 1) & confirm free operation of both non return valves (item 2) after commissioning the unit.

Thermostatic mixing valves must be installed in accordance with the Thermostatic Mixing Valve Manufacturers Association Recommended code of practice for safe water temperatures (www.tmvva.org.uk)



Operation:

The task of the TMV is to regulate the maximum potential discharge temperature of hot water to a selected application such as a wash hand basin. This TMV is pre set (Calibrated on commissioning with reference to designation table) there is no end user accessible adjustment to the mixed water temperature.

Commissioning:

It is important that incoming water supplies conform to the requirements specified (page 2) for pressure and temperature. Assure that supply water conditions satisfy any guidance information for the control of bacteria and that the designation of the supplied valve suits the application. Do not continue commissioning until supplies are correct and stable considering variation caused by other service users.

Use a calibrated thermometer for testing incoming and mixed water.

With the hot supply filling fully open and both hot and cold supplies on, adjust the maximum set water temperature by rotating the valve set screw with a 4.0mm Allen key to reach the desired output. Allow the temperature to stabilise and retest following the sequence below:

- i) Record temperature of the incoming hot and cold supply.
- ii) Record temperature of mixed discharge at maximum draw off rate.
- iii) Record temperature of mixed discharge at minimum draw off rate.
- iv) Isolate the cold water supply and measure the mixed water temperature as the cold water failure device reacts. This should deviate by no more than $\pm 2^{\circ}\text{C}$ of the initial maximum set point. Restore the cold supply and measure the stabilised mixed water temperature. This must not deviate by more than $\pm 2^{\circ}\text{C}$ of the initial set recorded result. Record these findings.
- v) Record the measuring equipment used for the measurements.

The above records must be retained and updated during the service life of the TMV.

In-service Testing & Maintenance:

The continuing performance of the TMV must be assured. In service validation testing must be conducted at appropriate intervals. The following method is recommended.

First service: Between 5 to 8 weeks after commissioning repeat the initial tests. That is i), ii) & iii) as above.

If the stabilised mixed water temperature has changed by $> 1^{\circ}\text{K}$ ³ from the initial recorded setting, check the following before re setting the mixed water temperature.

- a) Check inline filters washers (item 1) are clear
- b) Check non return valves (item 2) are clear and operational.
- c) Any isolating valves are fully open.

If the reset temperature is acceptable $< 1^{\circ}\text{K}$ from initial reading repeat the recording routine as i) to v) above.

Second service: Between 12 & 15 weeks after commissioning repeat the tests and check measures of the First service. If no significant drift from the initial settings are noted, that is $< 1^{\circ}\text{K}$ record findings accept the tests and expand service interval as below.

If the test results have drifted repeat recovery methods of the first service and conduct the second service again after 6 to 8 weeks.

Service intervals: Subsequent frequency can be determined with reference to previous test results. Where no significant deviation was recorded the test interval can be made equal to the maximum recorded interval to that point.

Note. Check valve and strainer servicing must be conducted at each test interval.

If the recorded mixed water temperature is greater than $> 2^{\circ}\text{K}$ from the initial recorded settings or the set point cannot be reached / stabilised further action is required.

It is important to establish that the incoming water supplies still satisfy the initial guidance and also that no additional draw off variation that could affect performance has occurred.

The material selection for this valve has excellent resistance to scale build up and is designed such that there are no serviceable parts beyond items 1 & 2 as described previously.

In the very unlikely event that initial performance cannot be achieved, and all external parameters are correct, the unit may require replacement.

Spare parts availability:

Filter washers & non return valves are available as spare parts on request.

³ *K = Kelvin, a unit of thermodynamic measurement used to represent a difference of Celsius ($^{\circ}\text{C}$). Kelvin and Celsius units are equivalent.*

Problem solving hint & tips:

Erratic flow or poor flow from the water fitting.

a) Changing inlet flow, pressure or temperature such as where water is drawn off from other parts of the water system. Also consider demand and pipe sizing calculation.

b) Filter washers blocked or partially blocked. Clean and replace.

c) Check valves blocked or sticking. Clean and replace.

Mixed water will not calibrate or runs full hot or full cold only:

a) The hot and cold inlets to the TMV are reversed.

b) Extreme imbalance of water pressure. Consider pressure balancing exercise.

Mixed water to hot:

a) Hot has migrated into the mixing chamber past the non return valves.

b) Temperature was initially set with the incoming hot water temp too low.

Mixed water to cold:

a) Cold has migrated into the mixing chamber past the non return valves.

b) Incoming hot water supply temperature has dropped.

Valve will not fall safe on test:

a) The minimum temperature differential between incoming hot and mixed water temperature is too close.

b) Internal mechanism hindered by debris.

Any queries please contact Customer Care: 01282 446789

Commissioning and service test record.

(See Commissioning & service notes to determine test frequency and acceptance criteria).

