installation & maintenance guides

Heatguard® TMV3 Thermostatic Mixing Valve

Heatguard® TMV3 Installation Instructions

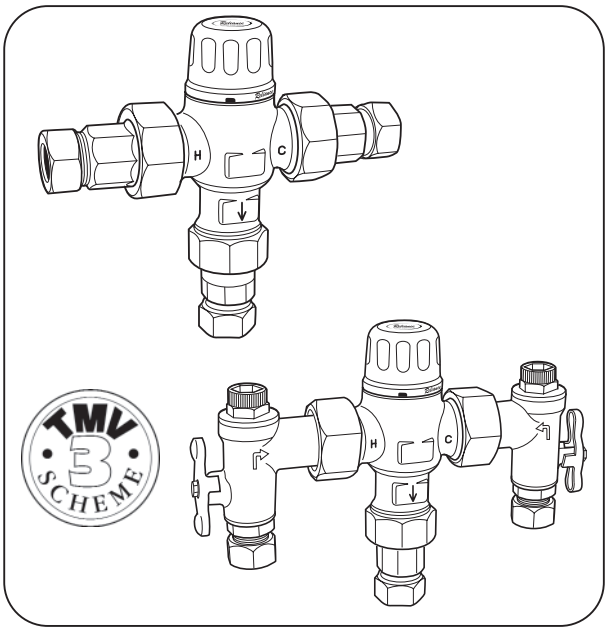
Installation

Before installing the Heatguard® TMV3 valve ensure that the designation of the valve matches the application, flow rates, dynamic pressures, and temperatures must be within the limits stated.

The Heatguard® TMV3 valve can be installed in any orientation provided that the hot and cold supplies are connected to the appropriate indicated inlets. The Heatguard® TMV3 valve should be fitted with the supplied union type adaptors.

The valve should not be installed until the system has been flushed until free of all debris. Once this is done the strainers and check valves can be fitted into the adaptors and the valve body installed.

The Heatguard® TMV3 thermostatic mixing valve contains temperature sensitive components. Soldering near the union adaptors or main valve body must be avoided.



The Heatguard® TMV3 is a type 3 thermostatic mixing valve which has been manufactured to NHS model engineering specification DO8 and is approved under the TMV3 scheme.

Commissioning

Please ensure that the commissioning of the valve is done under normal operating conditions. The Heatguard® TMV3 thermostatic mixing valve is supplied factory set at 38˚C. To alter this setting proceed as follows:

1. Remove the cover cap (Fig 1).

2. With both the hot and cold supplies turned fully on and the terminal fitting open, adjust the temperature to the required setting. Using the adjuster tool supplied turn the adjuster clockwise to decrease or anti-clockwise to increase the temperature (Fig 2). A digital hand-held thermometer should be used to measure the outlet temperature correctly.

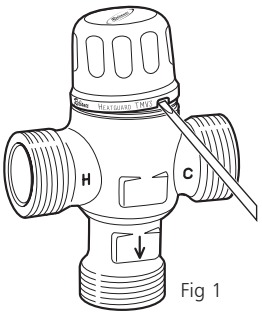


Fig 1

3. Once the correct outlet temperature has been achieved 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.

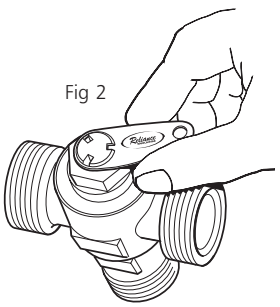


Fig 2

Once the valve has been commissioned a fail-safe shut off test should be performed.

1. Isolate the cold supply. The flow should reduce to a trickle within a second or two depending on site conditions.

2. Restore the cold supply and check that the set temperature has not altered.

3. Repeat the test for the hot supply.

If either fail-safe function does not operate, ensure that supply pressures and temperatures are within the valve's normal operating parameters. In addition, check that the hot supply temperature is at least 10˚C above the valve's set mixed outlet temperature i.e. hot to mix differential temperature.
If this is not the case then the valve will be slow to shut down on cold water failure.

For optimum performance it is recommended that the dynamic pressures be as close to equal as possible. If the dynamic pressures are outside a 10:1 ratio then a pressure reducing valve should be fitted to the higher supply pressure or if preferred, the lower supply pressure boosted.

When the Heatguard® TMV3 valve has been set and tested, refit the cap.

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

Maintenance

To comply with current NHS guidelines the Heatguard® TMV3 valve should be tested against the original performance results 6-8 weeks after installation. If the temperatures have remained set to within 2˚C and the fail-safe function is operating correctly, then a six monthly cycle of performance testing can be implemented.

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Performance checks

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

1. Check the set temperature using a hand-held digital thermometer.

2. Carry out the cold and hot fail-safe shut off tests.

3. If there is no significant change to the set outlet temperature (2˚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.

Cleaning the valve

1. Isolate the hot and cold supplies and remove the valve body from the installation by undoing the adaptor union nuts. Make note of the orientation of the parts as they are removed so that they can be reassembled in the correct manner (Fig 3).

2. Remove the check valves and strainers fitted in the adaptors and check for damage, rinse in clean potable water.

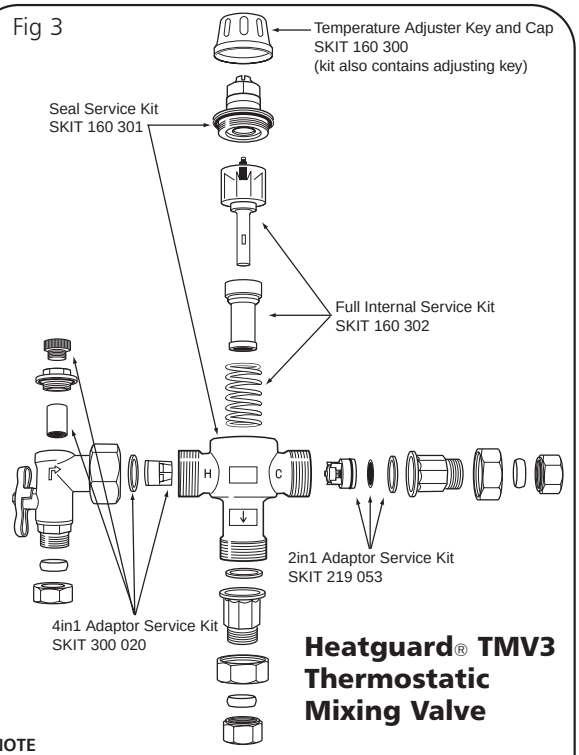
3. To clean the internals of the main valve body, first remove the cap, and then carefully remove the valve headwork by unscrewing the large hex nut.

4. Slide the piston and thermostat assembly out of the valve body and clean all internal surfaces and 'O' rings with a weak solution of scale remover approved for use with potable water.

5. Using a WRAS approved silicone based waterproof grease, lightly lubricate the 'O' ring in the body and the external surface of the piston.

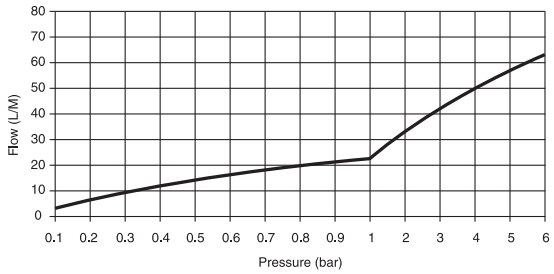
6. After cleaning, re-assemble the Heatguard® TMV3 valve. Exercise, reset and test the valve as laid out in the commissioning section.

Fig 3



NOTE
When re-assembling the mixing valve, ensure that the components are replaced in the correct order (as illustrated).
Use only WRAS Approved silicon based waterproof grease.

Flow Rate



Working parameters and specifications

Factory temperature setting :	38˚C
Temperature setting range :	38-46˚C
Temperature, hot supply :	52-65˚C
Temperature, cold supply :	5-20˚C
Minimum hot to mix differential temperature :	10˚C
Temperature stability :	± 2˚C
Working pressure, static :	16 bar max.
Working pressure, dynamic :	Low pressure 0.2 - 1 bar High pressure 1 - 5 bar
Maximum pressure loss ratio :	10:1
Flow rate, minimum :	4 lpm
Flow rate @ 1bar pressure loss :	21 lpm

Approved specifications

Code	Operating Pressure	Application
HP-S	High Pressure	Shower - maximum temperature 41˚C
HP-W	High Pressure	Washbasin - maximum temperature 41˚C
HP-B	High Pressure	Bidet - maximum temperature 38˚C
HP-T44	High Pressure	Bath fill- maximum temperature 44˚C
LP-S	Low Pressure	Shower - maximum temperature 41˚C
LP-W	Low Pressure	Washbasin - maximum temperature 41˚C
LP-B	Low Pressure	Bidet - maximum temperature 38˚C

Reliance WATER CONTROLS

Reliance Water Controls Ltd

Worcester Road, Evesham, Worcs WR11 4RA, UK.
TEL: +44 (0)1386 47148 FAX: +44 (0)1386 47028
SALES DIRECT LINE: +44 (0)1386 712400

www.rwc.co.uk

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