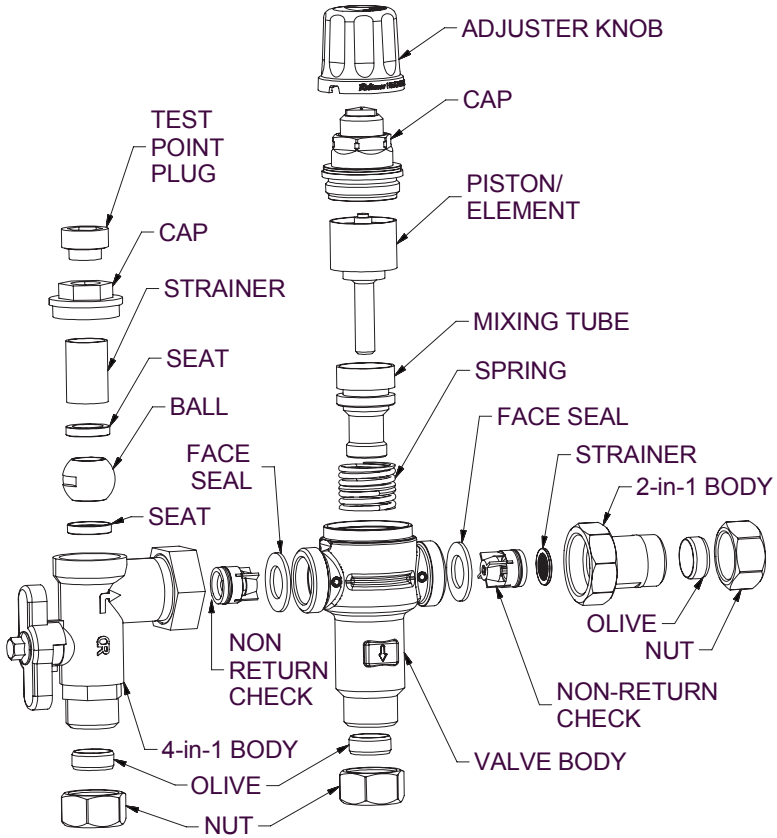
Exploded Diagram



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.

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Installation and Maintenance Instructions

RELIANCE WATER CONTROLS

Heatguard Dual TMV2/3 Thermostatic Mixing Valve

A thermostatic mixing valve which has been manufactured to NHS model engineering specfication DO8 & BS 7942 as part of the TMV3 scheme, along with BSEN 1111 as part of the TMV2 scheme

WRAS APPROVED PRODUCT

TMV 2 SCHEME™

TMV 3 SCHEME®

BUILDCERT

Contents

Reliance Worldwide Corporation (UK) Ltd

Reliance Worldwide Corporation (UK) Ltd are part of the Australian based group of companies collectively known as Reliance Worldwide Corporation, with the UK brand known as Reliance Water Controls.

Reliance Worldwide Corporation (UK) Ltd is a specialist in the design, distribution and technical support for temperature and flow controls. With group offices and manufacturing plants throughout the world RWC offers a wealth of knowledge and expertise which is reflected throughout our products. Being part of many specialised trade associations and having our own UKAS accredited laboratory, makes us at the forefront of any new regulations or changes which impact the industry, and allows for continous product development and innovation, within our specialised product area.

Our core product range is related to thermostatic control, with the manufacturing undertaken at our head office in Brisbane Australia, we have an extensive range of thermostatic mixing valves, shower control valves, and taps all which use the same high quality technology to control the temperature of water, within this range we have different valves to suit various applications and working parameters, including both TMV2 and TMV3 approved controls.

RWC, are market leaders of OEM controls with a complete range of safety valves for use in G3 unvented systems and a wide range of Underfloor heating controls (UFH) to allow for safe distribution of hot water, throughout a property. This range includes; thermostatic control valves for safe hot water temperatures, manifolds to enable even distribution, complete UFH kits to allow ease of installation & commisioning, and a range of modern and stylish programmers to complement these controls.

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 water supply isolation 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 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.

2. Remove the strainers fitted in the hot and cold water inlets 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, 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 Dual TMV2/3 valve. Exercise, re-set and test the valve as laid out in the commissioning section.

7. Once the valve has been commissioned a cold water supply shut off test should be performed:
a. Isolate the cold supply. The flow should reduce to a trickle within a second or two.

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

c. Repeat the test for the hot supply

8. 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.

9. For optimum performance it is recommended that the dynamic pressure 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.

10. When the Heatguard Dual TMV2/3 valve has been set and tested re-fit the cap.

11. 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.

Maintenance

TMV3 Application:
To comply with the current NHS guidelines the Heatguard Dual 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 Heatguard Dual 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.

Installation

This installation guide is provided to give instruction on the best installation practices that should be observed to ensure the correct functioning of the Heatguard Dual TMV2/3 valve. Failure to comply with these instructions will result in the warranty becoming null and void.

Before installation of the Heatguard Dual TMV2/3 valve ensure that the designation of the valve matches the application. Flow rates, dynamic pressures, and temperature must be within the limits stated, as valves operating outside of these conditions of use, cannot be guaranteed to operate correctly, as either a type 2 or 3 valve.The valve must be installed in accordance with the Water Supply (Water fittings) Regulations 1999 and any relevant building regulations, specific to the application. Isolation valves must be fitted adjacent to the hot and cold water inlet supplies to the Heatguard Dual TMV2/3 valve, it must also be installed in an easily accessible position for commissioning and future maintenance.

Working Parameters & Specification

TMV3 Applications:

Factory temperature setting:	38°C
Temperature setting range:	38°C - 46°C
Temperature, hot supply:	52-65°C (Max. 85°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 (high), dynamic:	0.5-5.0 bar
Working pressure (Low), dynamic:	0.1-1.0 bar
Maximum pressure loss ratio:	10:1
Flow rate, minimum:	4lpm

TMV2 Applications:

Factory temperature setting:	38°C
Temperature setting range:	38°C - 46°C
Temperature, hot supply:	55-65°C (Max. 85°C)
Temperature, cold supply:	Equal to or less than 25°C
Minimum hot to mix differential temperature:	10°C
Temperature stability:	+/- 2°C
Working pressure, static:	10 bar max.
Working pressure (high), dynamic:	0.5-5.0 bar
Working pressure (Low), dynamic:	0.1-1.0 bar
Maximum pressure loss ratio:	10:1
Flow rate, minimum:	4lpm

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.

Approved Specification & Standards

Code	Operating Pressure	Application	Recommended Temperature		Maximum Temperature	
Scheme			TMV2	TMV3	TMV2	TMV3
HP-B	High pressure	Bidet	38°C	38°C	40°C	40°C
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 (22mm only)	44°C	44°C	43°C	46°C
HP-T46	High pressure	Assisted Bath (22mm only)	46°C	46°C	48°C	48°C
LP-Se	Low pressure e conomy	Shower	N/A	41°C	N/A	43°C
LP-Be	Low pressure e conomy	Bidet	N/A	38°C	N/A	40°C
LP-We	Low pressure e conomy	Washbasin	N/A	41°C	N/A	43°C

Please note:

If the water supply is fed by gravity then the supply pressure should be verified to ensure the conditions meet the minimum requirements of the valve.

For wash hand basins it is assumed washing will be under running water

- A thermostatic mixing valve having multiple designations (ie. it is capable of satisfying the requirement of this specification for more than one application) should be re-set on site to suit it's the right designations.
- The mixed water temperature must never exceed 46°C at a terminal fitting, this is the maximum water temperature from the bath, it takes into account the allowable temperature tolerances inherent in the thermostatic mixing valve and temperature losses in metal baths. It is not a safe bathing temperature for adults or children. The British Burns Association recommends 37°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.

Standards covered by this valve range include:

- NHS Model Engineering Specification D08
- BS 7942
- BS EN 1111

Commissioning

Please ensure that the commissioning of the valve is completed under normal operating conditions. The Heatguard Dual TMV2/3 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 on and the terminal fitting open, test and record the hot and cold inlet temperatures. Then adjust the temperature to the required setting, using the adjuster cap (Fig 2).

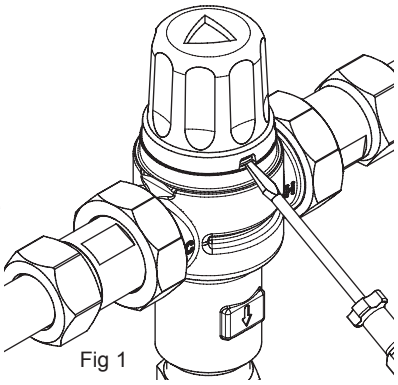

Fig 1

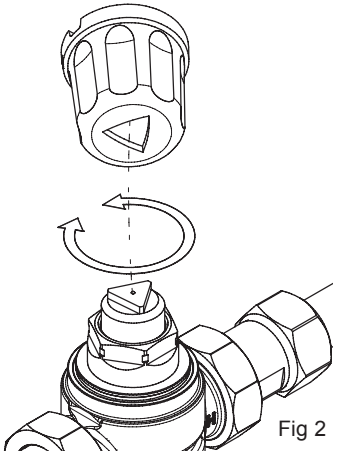

Fig 2

3. Turn the adjuster cap clockwise to decrease or anti-clockwise to increase the temperature.

4. 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	44°C
Bidet	38°C

5. Once the correct outlet temperature has been achieved the valve's temperature stability should be checked firstly at a high flow rate then at a low flow rate (please ensure this is no less than the valve's minimum flow rate of 4lpm).

6. 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 it's 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.