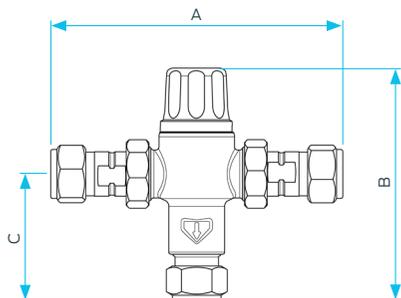


Dimensions

Model	A	B	C
TVX1502	141	112	61
TVX2002	158	112	61



Valve Specifications

Cold water supply temperature	5°C – 30°C
Hot water supply temperature	60°C – 99°C ¹
Optimum outlet temperature range	40°C – 50°C ²
Set temperature	Must be commissioned on site to achieve desired outlet temperature
Accuracy of outlet temperature	±3°C – tested to AS 4032.2 between 40°C – 50°C
Minimum temperature differential (between hot supply and outlet temperature)	10°C ³
Static supply pressure	1600kPa maximum
Dynamic supply pressure imbalance (at time of commissioning)	2:1 maximum ⁴
Maximum permitted pressure variation in either supply, in order to control outlet temperature to ±3°C (from supply pressure at commissioning)	±10% ^{5,6}
Minimum flow rate	4 L/min

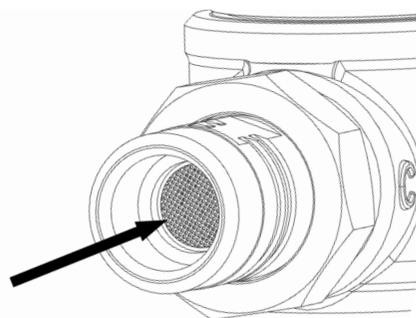
Notes:

- AS/NZS 3500.4 requires the minimum hot water storage temperature to be 60°C.
- For applications outside the requirements of AS/NZS 3500 and AS 4032.2, it is possible to set the valve as high as 55°C or as low as 35°C, depending on site conditions.
- This is the minimum difference required to ensure shut-off of outlet flow in the event of cold supply failure in accordance with AS 4032.2, providing the valve is set between 40°C and 50°C.
- The maximum permitted ratio of supply pressures, under dynamic (flow) conditions. For optimum performance it is recommended that the hot and cold pressures at commissioning are as close as possible to equal.
- The maximum permitted variation in either supply pressure from the pressure at commissioning in order to control the outlet temperature to ±3°C.
- Note that rapid changes in supply pressure can result in a spike in the outlet temperature beyond ±3°C. Following a rapid change in supply pressure it may take a number of seconds for the temperature to return within a ±3°C limit. Steps should be taken on-site to eliminate any cause of rapid supply pressure variation.

Maintenance

- We recommend that the valve is checked annually to ensure its continued function. For installations with poor or unknown water quality, or otherwise adverse supply conditions, it may be necessary to check the valve more frequently.
- The temperature should be checked at the same outlet as was used for commissioning in the first instance (refer to the installation sticker). If the temperature is more than 2°C from the commissioning temperature or outside the requirements of AS/NZS 3500.4, refer to **Troubleshooting** section.
- Clean the front of the strainers if debris has built up as shown in **Diagram 5**.
- The valve itself cannot be serviced. If the valve fails it must be replaced. Do not disassemble the valve other than to remove the snap-on cap.

Diagram 5 – Strainer



Warranty

Reliance Worldwide Corporation reserves the right to modify designs and specifications and to withdraw and introduce products at any time without notice.

Installation is subject to the requirements of the applicable regulatory authority, the National Construction Code Volume Three – Plumbing Code of Australia, associated reference standards as applicable at the time and AS/NZS 3500. This product is compliant to the Lead Free requirements of the National Construction Code Volume Three. For further Scope of Use, please visit www.rmc.com.au/resources.

Reliance Worldwide Corporation (Aust.) Pty. Ltd. (RWC) will either replace or repair any defective goods where the defect arose as a result of manufacture for two (2) years (see website for more details). You may contact RWC at the phone number, address or e-mail shown and will be required to return the goods for evaluation. Should the defect be found to be one of our manufacture we will send you a replacement product to your stated address at our expense. Our goods come with guarantees that cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.

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IS3041 REV A



Lead Free

AS 4032.2
WMKA 1593



Installation Instructions

HeatGuard® Ultra TVX1502 and TVX2002

15mm / 20mm Tempering Valve – Orange Cap



Do not use any HeatGuard® model on steam-supplied systems. TVX1502 and TVX2002 are NOT suitable for low pressure systems but ARE suitable for instantaneous systems, uncontrolled heat sources and solar systems.

Failure to comply with all aspects of these instructions may result in unsafe performance. All installations must comply with AS/NZS 3500 and any state or local authority requirements.

Visit rwc.com.au for full instructions in our HeatGuard® Installation Manual.

About Supply Pressures

Tempering valves provide optimum performance when installed with hot and cold supplies of equal dynamic pressure, i.e. pressure under flow conditions. (The static supply pressures often present NO indication of the dynamic supply pressures). It is recommended that the hot and cold supplies to each tempering valve be delivered via pressure control valves. In most domestic installations it should be possible to fit one control valve at the property boundary to control pressure to the whole site. For commercial installations it is recommended to fit a pressure control valve on each inlet to the tempering valve.

Checking Site Parameters

Check site parameters against the specifications of the chosen valve. If the site conditions are outside those specified for the valve, they must be rectified prior to installing the valve.

How to Install the Valve

It is recommended that the valve be installed as close as possible to the hot water system, however it may be fitted anywhere on the hot water supply pipe if necessary.

Insulation is provided with this valve. Insulation must be fitted in situations where freezing is a possibility, or as required by any state or local authority requirements.

Step 1 – Flush the system thoroughly before fitting HeatGuard®. It is CRITICAL that all debris is flushed from the pipework prior to installing the valve. Not flushing the system properly is the most common cause of difficulties.

Step 2 – If the water supply is of poor quality so that the valve's strainers will continue to block, fit an additional filter or strainer to the system.

Step 3 – Install HeatGuard® in accordance with **Diagrams 2 to 4**. Do not use excess thread sealant as this may cause the valve to fail.

Step 4 – Set the valve at the desired temperature as instructed in section **How to Set the Desired Temperature**.

Step 5 – Enter installation details on the sticker provided, and affix near system.

The valve MUST NOT be subjected to heat during installation as this may damage the valve internals.

It is recommended that isolating valves be fitted to allow easy access to the valve if the strainers need to be cleaned.

How to Set the Desired Temperature

Every valve must be commissioned on-site and verified with a thermometer to ensure correct delivery of the desired mixed water temperature, as installation conditions can vary from site to site.

Prior to commissioning the valve, the hot water system must be switched on and delivering hot water at a minimum of 60°C.

Step 1 – Locate the nearest outlet being supplied by the valve.

Step 2 – Open the outlet to allow a flow rate of at least four (4) litres / minute.

Step 3 – Allow the water to run for at least one minute to ensure the mixed water temperature has settled.

Step 4 – Using a thermometer, check the mixed water temperature. Is the desired temperature achieved?

- » Yes? – go to Step 7.
- » No? – go to Step 5.

Step 5 – Adjust the valve as shown in **Diagram 1** until the desired mixed outlet temperature is achieved.

Step 6 – Repeat Steps 1 to 4.

Step 7 – Replace the cap.

Diagram 1 – Temperature Adjustment

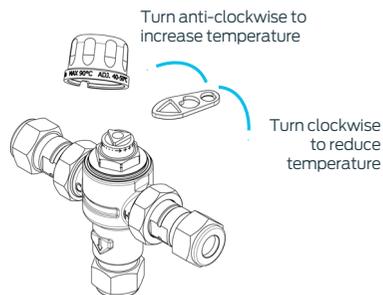


Diagram 2 – Typical HeatGuard® Ultra Tempering Valve Installation (with Primary Temperature Control Valve)

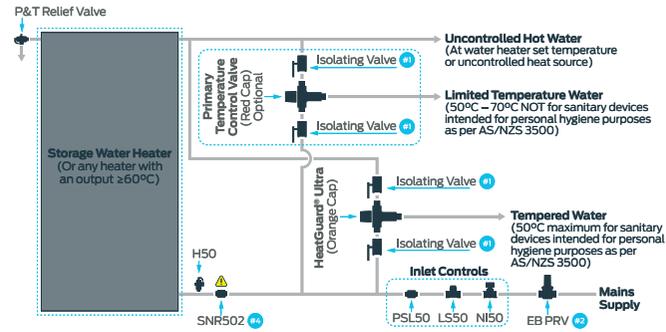


Diagram 3 – For Pumped Supplied, Multiple Valves: Commercial Building (Or Remote from Heater Installation)

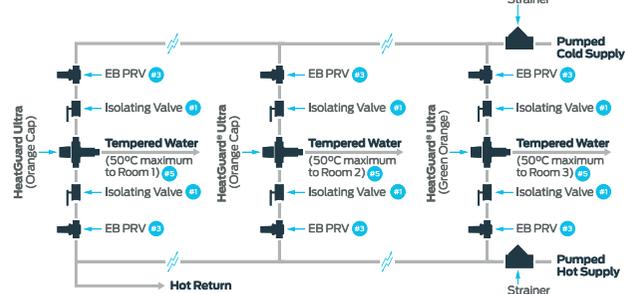


Diagram 4 – For Instantaneous Water Heater

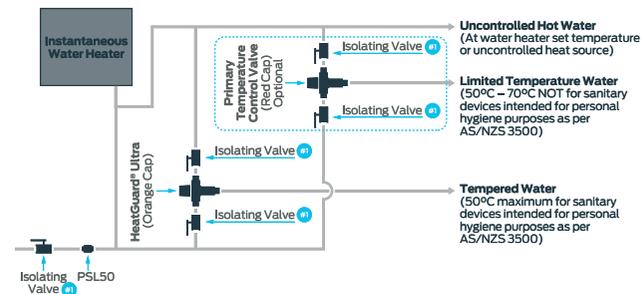


Diagram Notes

- #1 Optional, recommended for ease of maintenance, should be a full flow ball valve.
- #2 Installing a PRV at the boundary is recommended to regulate downstream pressure and it mandated in some states. Consult local water authorities for further information.
- #3 It is recommended that Pressure Reducing Valves are installed for each tempering valve to ensure any pressure fluctuations from the pumped supply or other source are minimised prior to supplying water to the tempering valves.
- #4 A high temperature non-return valve should be installed. Consult your water heater manufacturer for further information.
- #5 Outlet to a maximum of 50°C for sanitary devices intended for personal purposes as per AS/NZS 3500.

Diagram 2 Note

Heater Systems to be plumbed as per AS/NZS 3500 and manufacturer's instructions. Drain lines where required by AS/NZS 3500 must comply with AS/NZS 3500.

Diagram 3 Note

There MUST be non-return valves fitted to BOTH hot and cold inlets for this type of installation. Easily accessed, fully serviceable strainers (in addition to the strainers supplied with the Tempering Valve) should be installed on each floor or circuit.

Troubleshooting

If desired mixed water temperature cannot be obtained or valve is difficult to set:

Possible Cause	Solution
Inlet temperatures are not within specified limits	Ensure inlet temperatures are within the specified limits for the valve
Hot and cold supplies are reversed	Refit the valve with Hot/Cold supplies fitted to the correct connections
Valve contains debris	Flush water through valve and clean strainers
Strainers contain debris	Clean strainers, ensuring debris is removed

If the mix temperature is unstable or changing over time:

Possible Cause	Solution
Fluctuating supply pressures	Install pressure reducing valves
Strainers contain debris	Clean strainers, ensuring debris is removed
Inlet temperatures may have altered due to seasonal temperature variations	Reset valve (refer section How to Set the Desired Temperature)

If either full hot or full cold water is flowing from outlet fixture:

Possible Cause	Solution
Hot and cold supplies are reversed	Refit the valve with Hot/Cold supplies fitted to the correct connections
Hot/Cold water has migrated to other inlet. Refer also point 1.	Check non-return valve is not fouled. Flush as necessary

If there is no flow from the valve outlet:

Possible Cause	Solution
Hot or cold water supply failure	Restore inlet supplies and check mix temperature
Strainers are blocked by debris	Clean strainers, ensuring debris is removed

If the flow rate is reduced or fluctuating:

Possible Cause	Solution
Inlets fouled by debris	Check valve and fittings for blockages – clean or flush as necessary
Fluctuating supply pressures	Install pressure reducing valves

If mixed water temperature does not change when temperature adjuster is altered:

Possible Cause	Solution
Hot and cold supplies are reversed	Refit the valve with Hot/Cold supplies fitted to the correct connections

If hot water flows into the cold water system or vice versa:

Possible Cause	Solution
Non-return valves fouled by debris	Flush water through valve and clean strainers

If the valve is noisy:

Possible Cause	Solution
Water velocity above velocity requirements of AS/NZS 3500.1	Reduce water velocity (best achieved by fitting a pressure reducing valve)