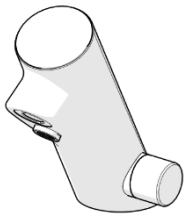
CliniMix® CP-BS Lead Safe™ Hob Mounted Thermostatic Basin Mixer - Electronic



PRODUCT CODES:

- **100.00.79.00**

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1.0 INTRODUCTION

The CliniMix® Lead Safe™ Hob Mounted Thermostatic Basin Mixer is a high-performance thermostatic mixing valve suitable for a wide range of applications. The valve is designed to comply with 'AS4032. Thermostatic Mixing Valves - Materials, Design and Performance Requirements'. The mixing valve has the following features:

- Complies with the requirements of AS4032.4 – Thermostatic Mixing Valves.
- Provides high stability of mixed water temperature even under changing inlet conditions.
- Ensures rapid shut down of mixed outlet flow in the event of hot or cold water supply failure.
- Designed for quick and simple in-situ servicing.
- Fitted with tamper resistant temperature adjustment mechanism.
- Round smooth design to facilitate easy cleaning.
- Hot water disinfection is available without removing tap.

The CliniMix® Lead Safe™ Hob Mounted Thermostatic Basin Mixer is manufactured from Lead Safe* DR Brass.

**Our Lead Safe™ product range is compliant with the Lead-Free Requirements of the NCC 2022 Vol. Three, Clause A5G4(2) and NSF/ANSI 372*

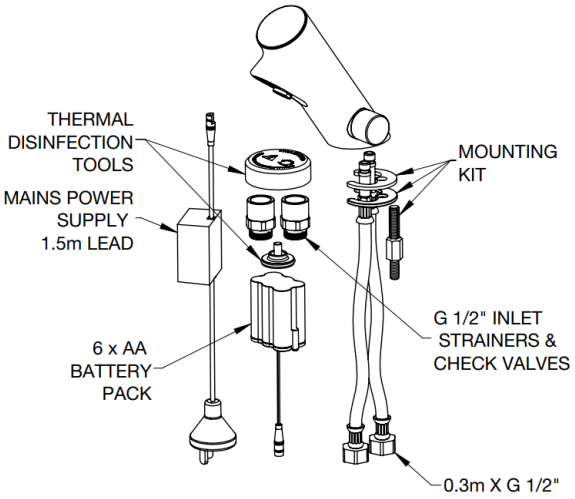
WARNINGS: Special attention to be paid to notes, photos, images, or drawings of assembly steps marked with the warning symbol.

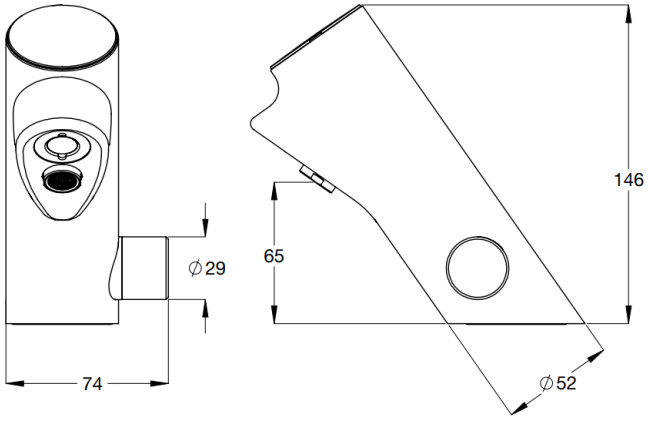
2.0 SAFETY

The CliniMix® Thermostatic Basin Mixer is a high-performance valve designed to give stable and dependable operation, provided it is installed, commissioned, operated and maintained as per the recommendations outlined in this manual. It should be noted however that this valve should not be considered as an alternative to adequate supervision and duty of care during its use and operation.

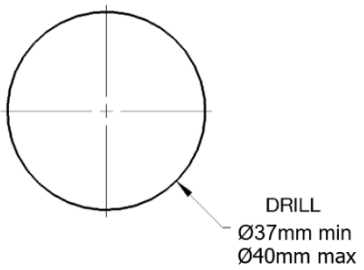
Note: The mixing valve, inlet controls, pipe work and the surrounding area may become hot when installed which may cause burn injuries. Precautions should be taken to ensure that these surfaces cannot cause such injuries.

3.0 DIMENSIONS





If the mounting hole does not already exist, mark out and drill the hole in the bench/trough, as shown in rough-in dimensions.



4.0 TECHNICAL DATA

Inlet		½" BSP – Flexible hoses
Outlet		Aerator
Headwork		Thermostatic mixing valve
Working Pressure Range (kPa)	Min	20
	Max	500
Working Temperature Range (°C)	Min	5
	Max	80
Adjustable Temperature Range (°C)	Min	35
	Max	42
Permitted Supply Pressure Variation		5:1
Minimum Temperature Differential (between the supply and the outlet temperature) (°C)		10
Factory Set Thermostatic Temp. (°C)		38
Maximum Static Pressure (kPa)		1000
Minimum Flow Rate for Stable Outlet Temperature (LPM)		2
Nominal Flow Rate (LPM)		8
Mains Powered (VAC)		100-240V
Battery Powered		6 x AA
Sensor Detection Type		Proximity
Finish		Chrome
NOTE: *Galvin Engineering continually strive to improve their products. Specifications may change without notice.*		

5.0 WATER SUPPLY CONDITIONS

INTRODUCTION

This CliniMix® Lead Safe™ Hob Mounted Thermostatic Basin Mixer is manufactured to the highest standards. When installed the supply conditions detailed below must be observed.

SUPPLY REQUIREMENTS

This mixer is designed to be installed on all types of plumbing systems.

Hot and cold water supply pressures should be reasonably balanced; however, the mixer will function within specification on unequal pressures up to 5:1.

The minimum pressure for the correct thermal operation is 20kPa. However, to achieve an acceptable flow performance at very low pressures it may be necessary to remove the combined check valve and flow regulators and replace them with simple check valves.

*Tapware must be installed in accordance with the provisions of AS/NZS 3500. Installations not complying with AS/NZS 3500 may void the product and performance warranty provisions.

6.0 INSTALLATION

The CliniMix® Thermostatic Progressive Mixing Valves must be installed using the appropriate Standard, Code of Practice and legislation application to each state and following the details outlined in this section.

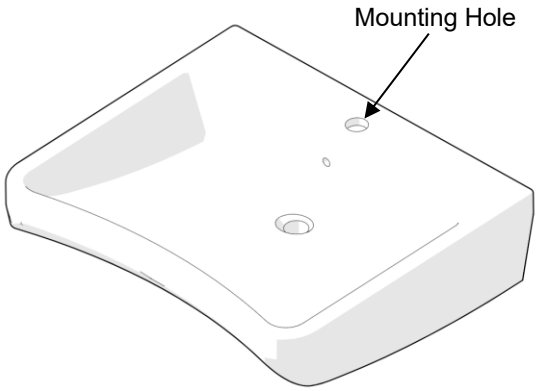
The CliniMix® Thermostatic Progressive Mixing Valves must be installed by a licensed plumber, or where applicable, a licensed plumber who has undertaken T.A.F.E. training in Thermostatic Mixing Valves.

If the valve is not installed correctly then it will not function correctly and may put the user in danger. It may also void the warranty of the valve.

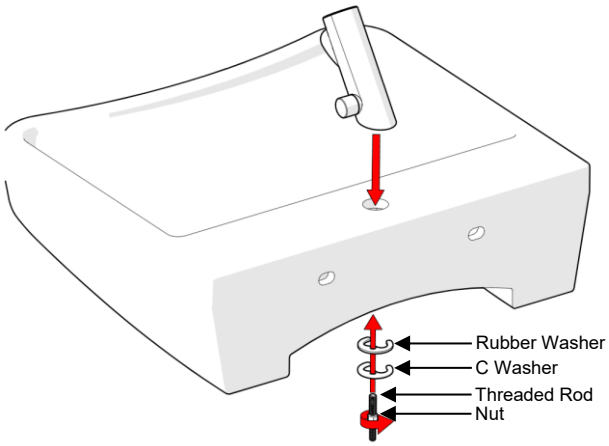
Prior to the installation of the valve, the system must be checked to ensure that the system operating conditions fall within the recommended operating range of CliniMix® Progressive Thermostatic Mixing Valve. If the hot water supply temperature is greater than 80° Celsius, the valve may be damaged. If the temperature of the hot water will rise above 80° Celsius a suitable temperature limiting valve must be fitted to the hot water supply, prior to the inlet fittings. This temperature limiting valve must be installed as per the manufacturer's instructions. It is important that both inlet dynamic supply pressures are 500kPa or less. If either supply pressure exceeds 500kPa then a suitable pressure reducing valve must be fitted prior to the inlet control valve to reduce the pressure to an acceptable limit.

***INSTALLATION COMPLIANCE**: Galvin Engineering products must be installed in accordance with these installation instructions and in accordance with AS/NZS 3500, the PCA and your local regulatory requirements. Water and/or electrical supply conditions must also comply to the applicable national and/or state standards. Failing to comply with these provisions shall void the product warranty and may affect the performance of the product.*

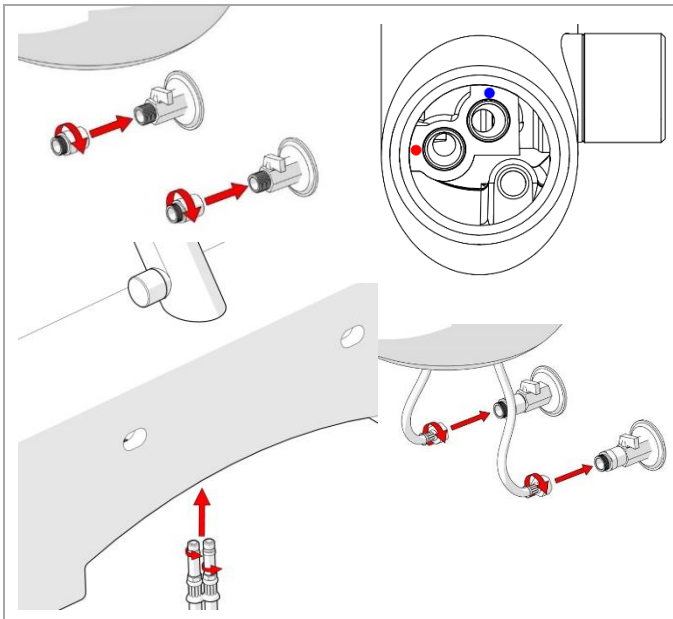
6.1 MOUNTING DETAILS



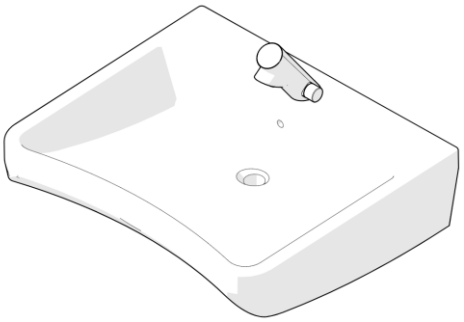
1. If the mounting hole does not already exist, mark out and cut the hole in the bench/trough.



2. Fit the tap to the basin and attach using the 'C' washer and nut. Ensure the rubber washer is fitted between the 'C' washer and bench. Adjust the tap to the correct position and fully tighten the nut. Make sure the O-ring in the base has not dropped out and is in contact with basin top.

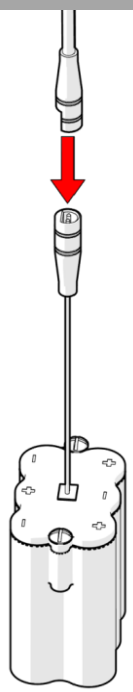


3. Install supplied non-return valves/strainers to wall spouts. Attach flexible hoses to the tap and connect to hot and cold water supply, ensuring they correspond to the markings on the bottom of the tap as shown.

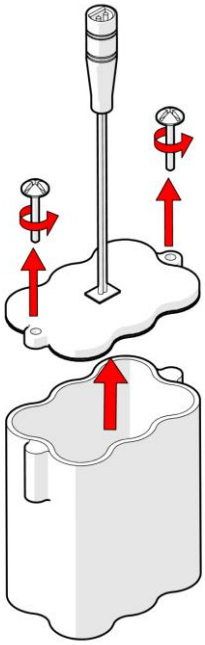


4. Turn the mixer on and test operation. Commission as per instruction.

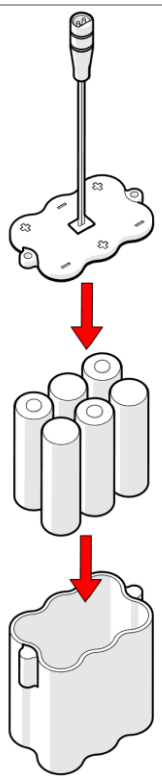
7.0 INSTALLING BATTERIES



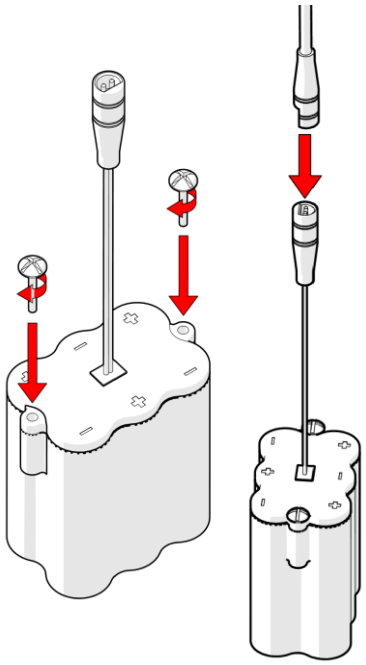
1. **Disconnect battery pack from tap**



2. **Open battery pack shown.**



3. **Install AA batteries as shown ensuring correct polarity**



4. **Refit battery cover as shown ensuring correct polarity then reconnect tap. Test for correct operation.**

8.0 COMMISSIONING

Initial Test for Correct Operation

The following must be checked to ensure the correct performance of the progressive thermostatic mixer:

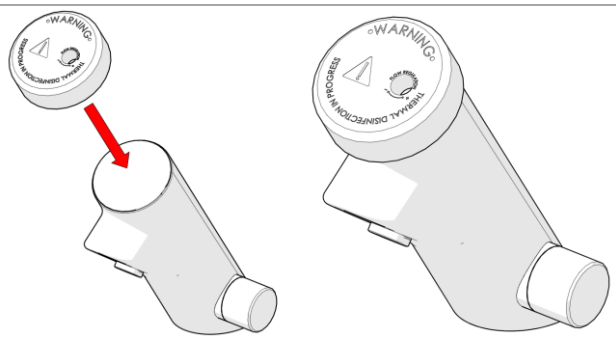
- the supply pressures and temperatures are within the range of operating pressures and temperatures for the thermostatic valve.
- the supply temperatures are within the range permitted for the unit.

Please record the testing done during the commissioning and record the temperature of the hot and cold-water supplies and the temperature of the mixed water at the full hot setting.

A calibrated digital thermometer having rapid response time with maximum temperature hold will be required to check and set the outlet mixed temperature of the mixer.

To Commission

To test the temperature, place hand in front of sensor and, whilst running, fit the included cap as shown below. Allow the mixed heated water to flow for at least 30 to 60 seconds so the temperature can stabilise before taking a temperature reading at the outlet with a digital thermometer. The flow rate should be at least 2L/min.



The temperature should be taken close to the mixer's outlet and if the outlet temperature requires adjustment then follow the temperature adjustment in the installation instructions.

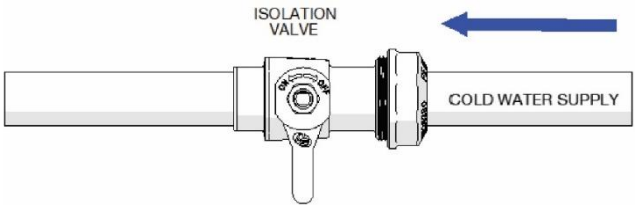
Shut Down Test

Once the correct outlet temperature has been achieved, the valves internal mechanism should be exercised at least 3 times by alternately shutting off the hot and cold supplies while the mixer is set in the full hot position.

Cold Water Isolation Test 1

With the outlet running and with both supplies turned on, allow the mixed water temperature to stabilise for at least 15 seconds and note the outlet temperature. While holding a digital thermometer in the outlet flow, quickly isolate the cold-water supply to the valve.

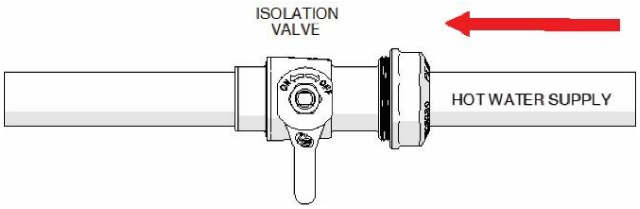
The outlet temperature should not exceed the temperature rises and durations set out in the applicable standard AS 4032.1 or code of practice for each state.



Restore the cold-water supply to the valve. After the mixed water temperature has stabilised note the outlet temperature ensuring the outlet temperature has re-established. The time taken to stabilise the temperature should not exceed the maximum time set out in the applicable standard or code of practice for each state.

Hot Water Isolation Test

With the outlet still running and with both supplies turned on, allow the flow to stabilise for at least 15 seconds and record the temperature. Quickly isolate the hot water supply to the valve.



The amount of water discharged following the isolation should not exceed 0.75L in the period of 5 seconds to 35 seconds as set out in AS4032.1 or code of practice for each state.

Restore the hot water supply to the valve and measure and record the outlet temperature after the mixed water temperature has stabilised. The time taken to stabilise the temperature should not exceed the maximum time set out in the applicable standard or code of practice for each state.

Ensure that all details of the Commissioning Report are completed, and a copy is kept with the installer and owner of the premises.

The valve is now commissioned, and it can be used within the technical limits of operation.

To ensure that the mixing valve operates correctly, it is necessary that the pipe-work is thoroughly flushed with clean water before the valve is installed. This will remove any physical contaminants from the pipe-work, ensuring trouble-free operation. During the flushing procedure, care should be taken to prevent water damage occurring to the surrounding area.

It is a requirement of AS3500.4.2 that “Each thermostatic mixing valve shall have an isolating stop tap/valve, line strainer and non-return valve fitted to the hot and cold water supply lines”. The inlet fittings supplied with each TMV will ensure this requirement is met. If the CliniMix® Progressive Thermostatic Mixing Valve is to be installed without the supplied inlet control valves then it will be necessary to install a separate isolating valve, non-return valve and strainer to both inlets to the valve.

Strainers must be fitted to prevent any particulate contamination from entering the valve. These strainers should be 60 mesh stainless steel (0.250mm). Isolating valves are required so that the water supply to the valve can be isolated when servicing is required. Non-return devices must also be fitted to both the hot and cold inlets to prevent cross-contamination.

Ensure that the test plugs in the top of the inlet fittings are tight.

The valve should be installed so it can be easily accessed for maintenance or servicing.

During installation or servicing, heat must not be applied near the mixing valve or inlet fittings, as this will damage the valve and inlet fittings internals. Failure to comply with this requirement will damage the valve and fittings. It will put the user at risk and it will void the warranty of the valve.

9.0 OPERATION

Water flow begins when a user places their hand under the tap. The delivered water is factory set to approximately 38°C.

10.0 SERVICING

The need for servicing is normally identified as a result of the regular performance testing.

Application	Maximum mixed water temperature during normal operation	Permitted maximum temperature rise recorded during site testing
Washbasin	41°C	45°C

A guide to maximum temperature sets. Please refer to AS/NZS 3500 for temperature settings

10.1 Frequency of Regular Servicing

The purpose of servicing regularly is to monitor any changes in performance due to changes in either the system or the product. This may highlight the need to adjust either the supply system or the product. These products should be checked at 6 to 8 weeks and again at 12 to 15 weeks after commissioning. The results are to be compared against original commissioning settings.
If there are no significant changes at the mixed temperature outlet then a 6 monthly servicing cycle may be adopted. Otherwise, servicing checks should be carried out more frequently (e.g. every 4 months).

During servicing, note the following:

1. Repeat the procedure of recording and checking supply temperatures. (The same type of measuring equipment should be used)
2. If the temperature has changed significantly from the previously recorded valves, the following should be checked:
   a. All in-line or integral valve filters are clear of obstruction.
   b. All in-line or integral check valves are clean and working properly to prevent backflow.
   c. Any isolating valves are fully open.
   d. The thermostat is free of debris
3. When satisfied with the mixed outlet temperatures re-record the temperatures.

10.2 General Servicing

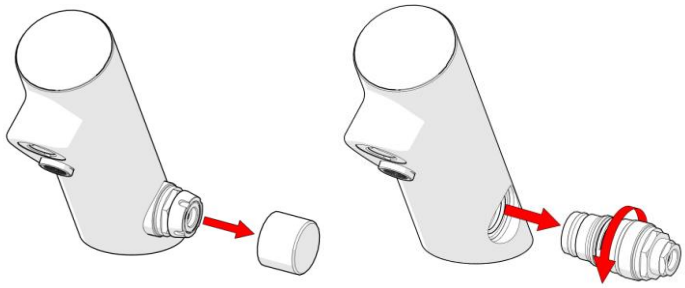
Prior to servicing the mixer, turn off both the hot and cold water supply.

- Ensure both the hot and cold water supplies have been isolated. Open the mixer to ensure water supplies have been isolated correctly and no water flows.

Servicing - Strainer and Non-Return Valves

- Ensure both the hot and cold water supplies have been isolated.
- Unscrew the flexible hoses from the brass non-return/strainer body and detach the bodies from isolation valves. Using circlip pliers, remove clips from the brass fittings. Remove non-return valves and strainers.
- The strainers and non-return valves should be cleaned with a dilute water solution of suitable de-scaling solvent (such as CLR), checked for physical damage and then thoroughly rinsed with clean water.
- Replace any broken filters or faulty non-return valves.

Removal and inspection of cartridge



1. After checking that supply conditions are within the specified parameters, if the fitting malfunctions or should the test results fail to fall within the specified limits consider replacing the cartridge with a new one.
2. Isolate the fitting by turning off the isolating valves.
3. Remove the protective cap then unscrew the cartridge from the body. Clean all components thoroughly and inspect cartridge for damage. If the components are damaged, the cartridge must be replaced.
4. The cleaned cartridge (or a new cartridge, if this is required) can now be re-installed, by screwing into the mixer body until it reaches a firm stop and tightened.
5. Re-fit protective cap and reinstate the water supplies.
6. After fitting the new cartridge, perform the commissioning procedure.

When service is complete, slowly open the cold water isolation valve and inspect mixer body for leaks. Repeat with hot water isolation valves. Run the mixer and check operation and flow. Commence commissioning process.

Annual Maintenance Procedure

- Every 12 months the thermostatic mixer must be inspected & tested. The valve should be inspected for leaks or water damage and appropriate action taken if required.
- Carry out the general servicing of the valve as set out in this document
- A thermal shut down test is performed (Shut Down Test 1 and 2 as set out in this document), and the temperature is reset as required.
- If the valve fails to shut down or fails to maintain its set temperature, then refer to Troubleshooting section.

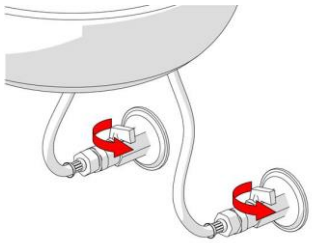
5 Year Maintenance Procedure

- Every five years the thermostatic mixer needs to have a full service carried out. This service consists of the same procedure as the ‘Annual Maintenance Procedure’ listed plus the thermostatic mixer cartridge must be replaced.
- After replacing the thermostatic mixer cartridge, a thermal shut down test is performed, and the temperature re-set as required. If the valve fails to shut down or fails to maintain its set temperature, then refer to the troubleshooting section.
- Once the 5 yearly maintenance procedure is complete, the thermostatic mixer should then be commissioned as per instructions.

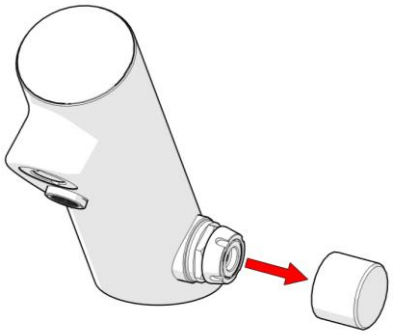
11.0 MAINTENANCE

When installed as an AS/NZS 4032.4 application it is a requirement that the commissioning and maintenance procedures in are carried out before use.

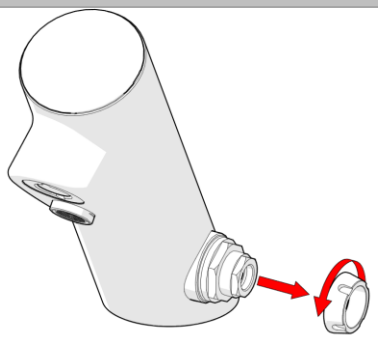
11.1 Adjustment of the mix temperature



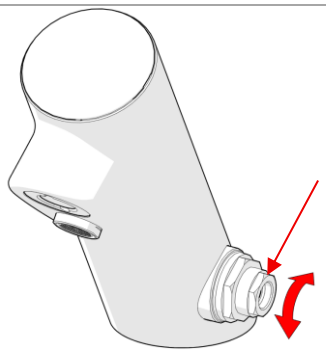
1. Isolate the tap from mains water.



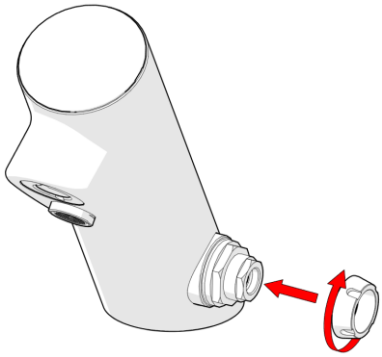
2. Remove the cap as shown.



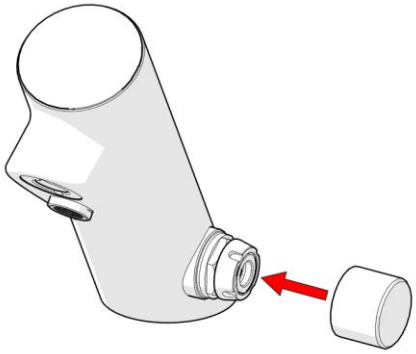
3. Unscrew and remove temperature lock ring.



4. Adjust the smaller hex fitting as shown using a spanner. Screw clockwise to decrease and anti-clockwise to increase the temperature.



5. Re-fit and tighten locking ring.



6. Re-fit the protective cap, turn mains water to tap on and test for correct temperature and operation.

11.2 Important notes on debris

Although this product is protected by built-in filters, debris can still find its way to the thermostat housing area. This can happen during servicing for example. Remove cartridge and carry out an inspection.

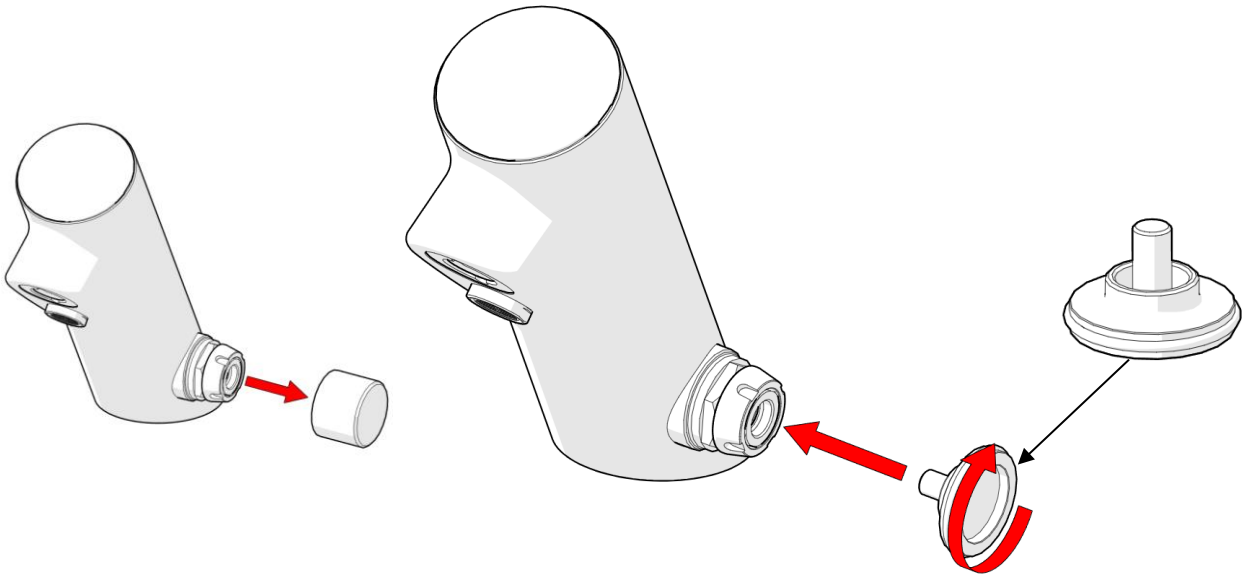
11.3 Maintenance cleaning

On a regular basis the outlet should be inspected and cleaned if necessary. This should be done immediately before sterilising is carried out.

In areas where lime scale build-up is prevalent this will have to be removed. An inhibited proprietary scale solvent can be used such as a kettle descaling solvent, but it is important to follow the manufacturer's guidelines. After descaling it is important to rinse the parts thoroughly in clean water. Clean carefully and do not use abrasive materials or scrapers.

12.0 DISINFECTION

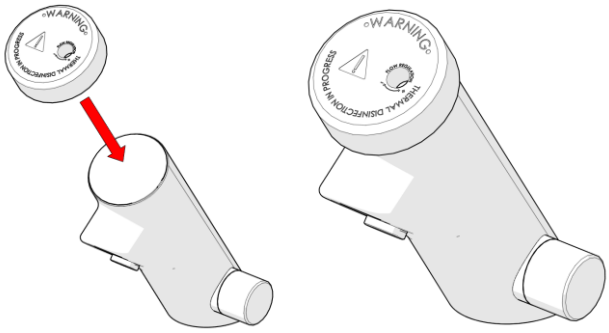
Safety Note: Care should be taken when carrying out the following procedure to avoid contact with hot water and hot surfaces. We recommend the use of protective hand wear.



1. Remove protective cap

2. Fit disinfection tool

- Fit the disinfection tool as shown by hand. Screw in until it stops.



3. Run the tap

- Place hand in front of sensor and, whilst running, fit the included cap as shown below.

4. Disinfection Process

- The tap will now run continuosly until the the cap is removed.
- Run water for the correct disinfection time as shown in table below.

Temperature	Disinfection
60 degrees	30 Minutes
65 degrees	15 Minutes
70 degrees	10 Minutes

⚠ **To avoid scalding/burning, keep clear of the mixed outlet.**

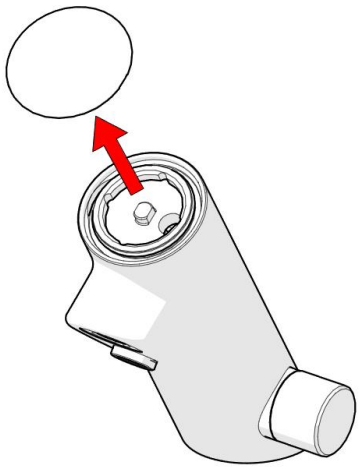
5. Cool Down Unit

⚠ **This unit becomes very hot during operation.**

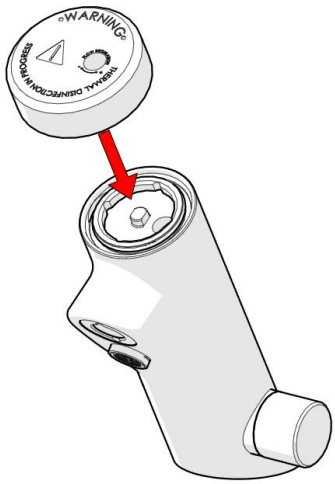
⚠ **Ensure the unit is cool to touch before reassembly.**

- Once disinfection is complete, remove the cap to stop water flow.
- Unscrew disinfection tool and re-fit protective cap.
- Test the tap ensuring correct operation.

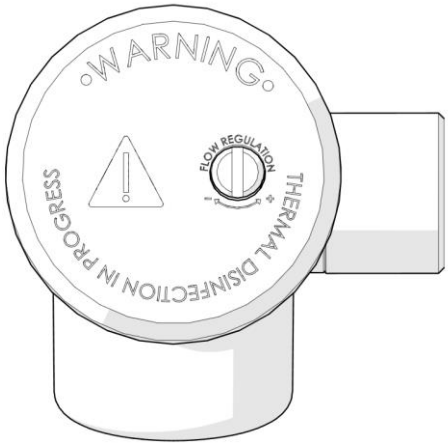
13.0 FLOW RATE ADJUSTMENT



- Carefully remove chrome cover off the top of the tap as shown.



- Place hand in front of sensor and, whilst running, fit the included cap as shown below.



- With the cap aligned as shown, adjust the flow rate as required using a screwdriver whilst the water is flowing.

- Remove cap to stop the water flow. Re-fit chrome cover to the top of the tap and check for correct operation.

14.0 TROUBLESHOOTING

PROBLEM	CAUSE	RECTIFICATION
The desired mixed water temperature cannot be obtained, or valve is difficult to set.	– Hot and cold supplies are fitted to the wrong connections – Thermostatic cartridge contains debris or is damaged – Strainers contain debris – Non-return devices are damaged	– Refit the hoses with Hot/Cold supplies fitted to the correct connections – Clean the Cartridge ensuring that all debris is removed, and components are not damaged. Replace if necessary – Clean strainers ensuring debris is removed – Check non-return device is not jammed. Clean or replace if necessary – Check for airlocks in the water supply
The thermostatic mixing valve will not shut down during testing.	– The hot to mix temperature differential is not 10°C or greater – Thermostatic cartridge contains debris or is damaged – Non-return devices are damaged	– Raise hot water temperature – Clean the cartridge ensuring that all debris is not jammed. Clean if necessary
Mix temperature unstable	– Flow rate below 2L/min – Thermostatic cartridge contains debris or is damaged – Strainers contain debris – Non-return devices are damaged	– Rectify any pressure deterioration – Clean the cartridge ensuring that all debris is removed and components are not damaged. Replace if necessary – Clean strainers ensuring debris is removed – Check non-return device is not jammed. Clean or replace if necessary
Mix temperature changing over time	– Strainers contain debris	– Clean strainers ensuring debris is removed
Either full hot or cold flowing from outlet fixture	– No flow from Hot and Cold supplies – damaged check valves	– Re-set temperature to between 35-42°C as required – Replace faulty check valves
Water is not flowing from outlet	– Hot or cold water failure – Thermostatic cartridge contains debris or damage – Strainers contain debris	– Restore inlet supplies and check mix temperature – Clean the cartridge ensuring that all debris is removed and components are not damaged. Replace if necessary – Clean strainers

15.0 WARRANTY

Galvin Engineering products are covered under our Manufacturer's Warranty. Galvin Engineering products must be installed in accordance with the installation instructions and in accordance with AS/NZS 3500 and NCC Volume Three, relevant Australian Standards and local authorities applicable to product being installed. Water and electrical supply conditions must also comply to the applicable national and/or state standards, failing to comply with these provisions may void the product warranty and affect performance of the product.

Please visit www.galvinengineering.com.au to view the full warranty, our Installation Compliance and Maintenance & Cleaning information as well as any other additional information.

16.0 APPENDIX

Galvin Engineering Thermostatic Mixing Valve

Commissioning Report and/or Maintenance Report

Note:
1. Please use a separate form for each valve.
2. The original copy of the report is to be given to the owner/occupier and retained on site for a minimum of 7 years.

Cross off appropriate box ☐

Thermostatic Mixing Valve ☐

Commissioning Report ☐ Maintenance Report ☐

Name of Establishment: _____

Address of Establishment: _____

Phone Number: _____ Date: _____ Work Order #: _____

Contact Person: _____ Make & Model of Hot Water System:_____ _____

Temperature of Hot Water to the Valve: _____ Temperature of Cold Water to the Valve: _____

Hot Water Pressure: _____kPa Cold Water Pressure: _____kPa

Make of Mixing Valve: _____ Model No: _____ Size: _____

Valve Location/Building: _____

Valve Identification No: _____

Total No of Valves on the Site/Building: _____

No of Outlets Serviced by this Valve: Baths ( ) Basins ( ) Showers ( )

Other Outlets - Details _____

Valves Installed to the requirements of:

The NSW Code of Practice Plumbing and Drainage	Yes	No
The HOSPLAN Code of Practice for Thermostatic Mixing Valves in Health Care Facilities	Yes	No
The Valves manufacturers requirements	Yes	No
AS4032.3	Yes	No
The specifications and drawings for the project	Yes	No
The Local Water Supply or Authority	Yes	No

If No, give details and actions taken:

_____

_____

_____

Galvin Engineering Thermostatic Mixing Valve Commissioning Report and/or Maintenance Report

Test Results

Valve considered satisfactory for use: Yes ☐ No ☐

If No, state the reason and action taken:

_____

_____

_____

Commissioning Work

It is hereby certified that all the commissioning work has been carried out by the undersigned in accordance with the requirements of the Codes of Practice indicated prior.

Date of Valve Commissioned: _____

Name of Licensed Plumber: _____ License/Cert No: _____

License Plumbers Signature: _____

Telephone No. _____

Owner/occupiers signature: _____Date: _____

Date of Initial Service Due: _____

Galvin Engineering Thermostatic Mixing Valve Commissioning Report

Valve Location/Building : _____

Room or Area: _____

Work Order No.: _____

Warm Water Outlet Fixture No.	*Name/Type/Size and location of Outlet Fixture (Bath, Shower, Basin, Other)	Flow rate of Design Water (LPS)		Temp of Warm Water (C)	
		One Outlet in Use	**All Req'd Outlets in Use	One Outlet in Use	**All Req'd Outlets in Use
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					

*Give details of brand and model designation.

** Commensurate with the design flow rate for the mixing valve.

Note: An accurate digital thermometer is necessary for the temperature measurements

Prescribed temperature range for warm water _____ C to _____C

Thermal shutdown at both minimum and maximum design flow rates

(Passed/Failed) Yes ☐ No ☐ Name of Plumber: _____

License/Cert No. _____

Licensee's Signature: _____ Date: _____

Telephone Number: _____

Galvin Engineering Thermostatic Mixing Valve Commissioning/Maintenance Report

The following information is to be provided by the site manager/owner/occupier.

Valve size and installation recommended by : _____

Valves supplied by: _____

Date of Installation: _____ Drawing No. _____

Service Manual on Site: Yes ☐ No ☐

Commissioning Tests for new installation or valve replacement. Yes ☐

This set of testing procedures and report received and witnessed by (Print Name): _____

_____

Temperature setting at completion of commissioning _____ C

Position: _____Signature: _____
Date:_____

Maintenance Tests. Yes ☐

Date of Previous Service: _____

Previous Service carried out by: _____

Reason for Maintenance Tests: _____

This Test and report Witnessed by: _____

The valve has been operating/performing satisfactorily for the previous 12 months: Yes ☐ No ☐

Comment on monthly Temperature Tests carried out by the owner_____

_____

Temperature setting at time of completion: _____C

Current Report received and witnessed by:

Name: _____

Position: _____

Signature: _____ Date: _____