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ZINS530002_004_11-15

Installation and Maintenance Instructions



Heatguard[®] Planar Thermostatic Mixing Valves



Thermostatic mixing valve for use in group mixing applications.

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Notes

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 continuous 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 & commissioning, and a range of modern and stylish programmers to complement these controls.

General Information

Please read these instructions carefully and ensure that the mixing valve is installed to Local Authority Regulations. The Heatguard® Planar thermostatic mixing valves are suitable for use on low pressure hot and cold water supplies down to a minimum of 0.2 Bar dynamic pressure (2 metre head) when used with the appropriate low pressure shower heads. For best performance the recommended dynamic pressure range is 0.5 - 2.0 Bar (5 - 20 metres head) with a pressure loss ratio of no more than 2:1. The thermostatic shower is factory preset to 41°C ± 3°C with a balanced flow pressure of 2 bar. If the maximum temperature setting is affected due to special installation conditions, the thermostat can be adjusted on site to compensate.

Specification

	Planar 230	Planar 330	Planar 430	Planar 530
Minimum flow pressure:	0.2 Bar	0.2 Bar	0.2 Bar	0.2 Bar
Test pressure static:	16 Bar	16 Bar	16 Bar	16 Bar
Working pressure:	3.5 Bar	3.5 Bar	6 Bar	6 Bar
Maximum pressure loss ratio:	2:1	2:1	2:1	2:1
Maximum hot water temperature at the inlet:	85°C	85°C	85°C	85°C
Recommended stored temperature:	60°C	60°C	60°C	60°C
Minimum hot/blend temperature difference to ensure shut-off on cold supply failure:	15°C	15°C	15°C	15°C
Factory setting at 2 bar equal pressures:	41°C ± 3°C	41°C ± 3°C	41°C ± 3°C	41°C ± 3°C
Minimum flow rate:	5 LPM	6 LPM	8 LPM	8 LPM
Flow rate at 2.5 Bar:	50 LPM	79 LPM	120 LPM	170 LPM

At flow pressures of over 3.5 Bar, or when the differential is >2:1, it is recommended that a Reliance pressure reducing valve be fitted in the supply line(s).

Troubleshooting

I can only get hot or cold water from the outlet

Check that the valve is connected up correctly, with the hot and cold supplies connected the corresponding fittings on the valve.

Check that the supplies are both working correctly.

Check non-return valves and strainers in inlet fittings for blockages and clean if necessary.

Check that supply conditions are within those stated in the working parameters at the beginning of this booklet.

I am getting fluctuating mixed outlet temperature

Debris is fouling the valve causing it to become sluggish. Service valve as per maintenance instructions.

Check non-return valves and strainers in inlet fittings for blockages and clean if necessary.

I am getting fluctuating and/or poor flow rates

Check non-return valves and strainers in inlet fittings for blockages and clean if necessary.

Check isolation valves are fully open.

Check that supply conditions are within those stated in the working parameters at the beginning of this booklet.

I am getting cross flow of hot water into the cold water supply or vice versa

Check non-return valves and strainers in inlet fittings for blockages and clean if necessary.

Check that supply conditions are within those stated in the working parameters at the beginning of this booklet.

The valve will not shut down

Check that the hot supply to mix temperature differential is a minimum of that stated in the working parameters.

Debris is fouling the valve causing it to stick. Service valve as per maintenance instructions.

Spares

Description

Full internal service kit for Planar 230:
Full internal service kit for Planar 330:
Full internal service kit for Planar 430/530:
Planar 230/330 4 in 1 adaptor service kit:
Planar 430/530 4 in 1 adaptor service kit:
Hot 4 in 1 service fitting for Planar 230:
Cold 4 in 1 service fitting for Planar 230:
Hot 4 in 1 service fitting for Planar 330:
Cold 4 in 1 service fitting for Planar 330:

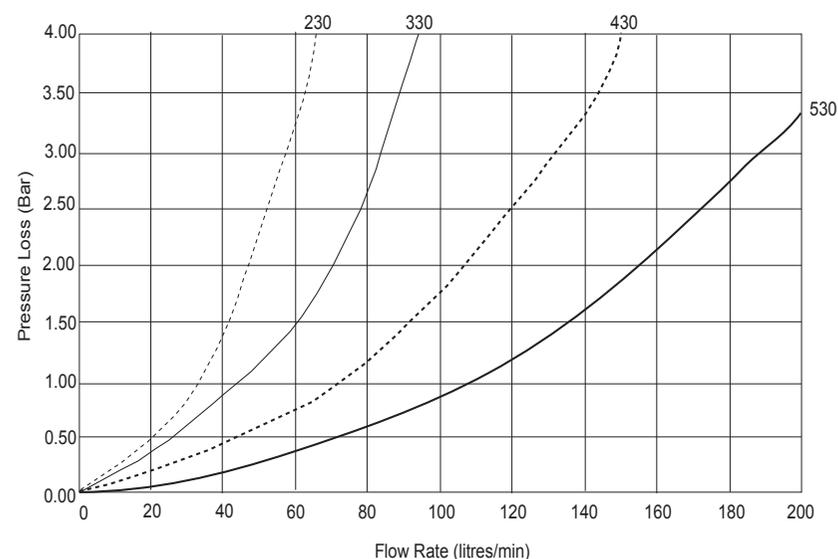
Product Code

SKIT230100
SKIT330100
SKIT430001
SKIT300020
SKIT300016
ZSER271007
ZSER271008
ZSER271003
ZSER271004

Care Instructions

Care must be taken when cleaning the valve. Do not use any cleaning products on the mixing valve as over time this will have an adverse effect on the finish. Instead, wipe clean regularly with a soft cloth to prevent lime scale build up and to remove dirt and dust.

Flow Rates

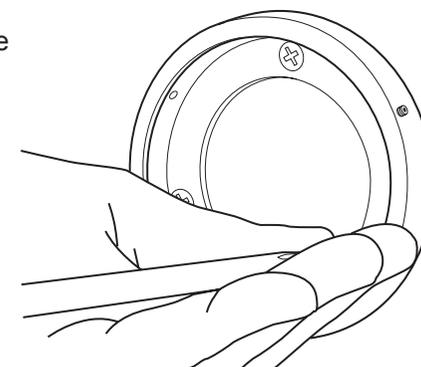


Installation

Offer up the valve to the system and mark out where it is to be fitted. With the smaller of the provided allen keys loosen the grub screws securing the fixing ring to the back of the valve and remove it.

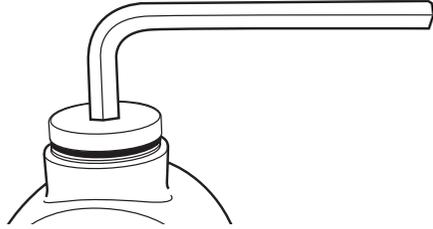
Mark out, drill, rawl plug the fixing holes and secure the fixing ring to the wall (the mounting surface must be strong enough to take the weight of the valve).

Fit the valve to the fixing ring and tighten the grub screws evenly.



Flush out pipes - It is important that both supply pipes are flushed thoroughly before connecting the thermostatic valve to ensure that no pipe work or plumbing debris enters the valve. It is possible to use the ¼" BSP fitting on the inlet connections with an appropriate pipe to do this. Under no circumstances should the system be flushed through the valve.

The main valve connections are colour coded as well as the 4 in 1 connections. The outlet connection can be altered to change the configuration of the valve. This must be done with care using tools of the correct size to avoid damage to the surface finish of the valve.



Commissioning

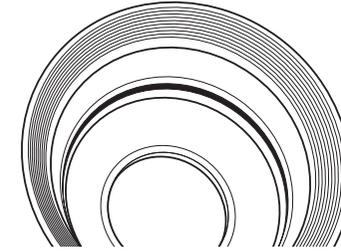
The Heatguard® Planar thermostatic mixing valves are supplied factory set at 41°C with 2 Bar equal pressures in a non adjustable form. There are three forms in which these valves can be commissioned:

- 1 They can be commissioned at any fixed non-adjustable temperature between 35°C and 50°C.
- 2 They can be commissioned in an adjustable form with a set maximum temperature.
- 3 They can be commissioned in an adjustable form with no preset maximum temperature.

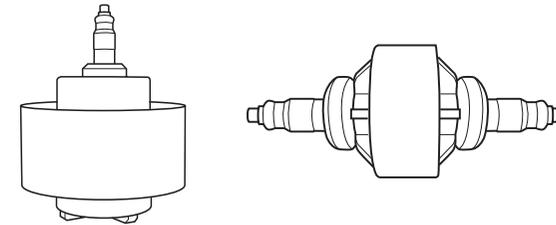
General

Ensure that both water supplies are turned on and that the hot water temperature is 60°C minimum. Check that the dynamic water pressure on both hot and cold supplies is within the working parameters of the valve at the installations maximum and minimum flow rates. If the hot and cold water pressure differential is greater than 2 : 1 then pressure reducing valves may be required.

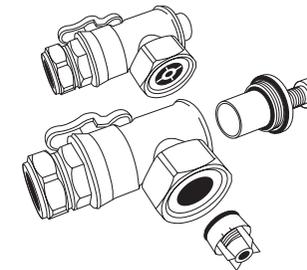
6. With the spring removed the main o-ring seal can be seen. This should be inspected, cleaned and re-greased. If the o-ring is damaged it must be replaced.



7. The piston assembly should be inspected paying particular attention to the area which the main o-ring seals and the top and bottom edges of the piston. If there is any damage the damaged component must be replaced.

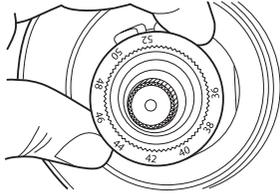


8. The 4 in 1 fitting can be stripped down with the exception of the check valve cartridge which, if removed, has to be replaced with a new cartridge.

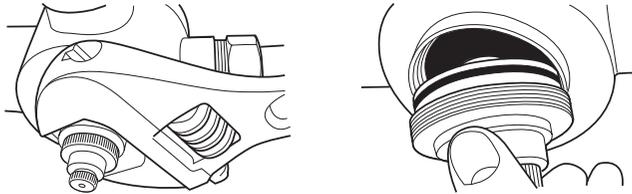


Once the valve is accessible for servicing, proceed as follows:

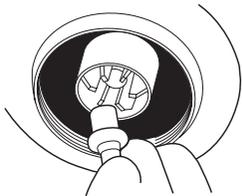
1. Access has to be gained to the thermostatic mechanism. To do this remove the control knob and temperature cam.



2. Remove the head work using a spanner. If an adjustable spanner is used make sure it is correctly adjusted to avoid damage to the head.



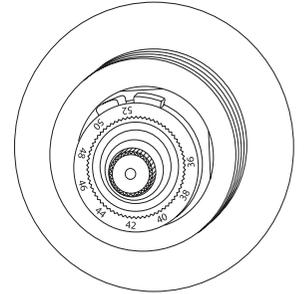
3. The first thermostatic element can now be removed.



4. Followed by the piston which can be lifted out. This will reveal the return spring which can also be removed.

Setting the pre-set temperature in the non-adjustable form.

Remove the cap and the cam. Refit the cap and, at approx. 50% flow rate, adjust the temperature to the required preset temperature. Remove the cap and refit the cam so that the index mark on the body is between the two lugs on the cam. Refit the cap with the index mark on the body between the Max and Min markings on the cap and check the temperature at the maximum and minimum flow rates. There should be no more than a 3°C difference from the nominal temperature setting and the cap should be locked in position.

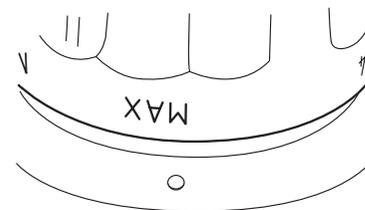


Setting the maximum temperature in the adjustable form with a maximum pre-set temperature.

Remove the cap and the cam. Refit the cap and, at approx. 50% flow rate, adjust the temperature to the required maximum temperature. Remove the cap and refit the cam with the figures indicating the preset temperature lined up with the index mark on the body. Refit the cap with the maximum temperature figure aligned with the index mark. The cap should not be able to rotate anti-clockwise. Check the maximum temperature is correct.

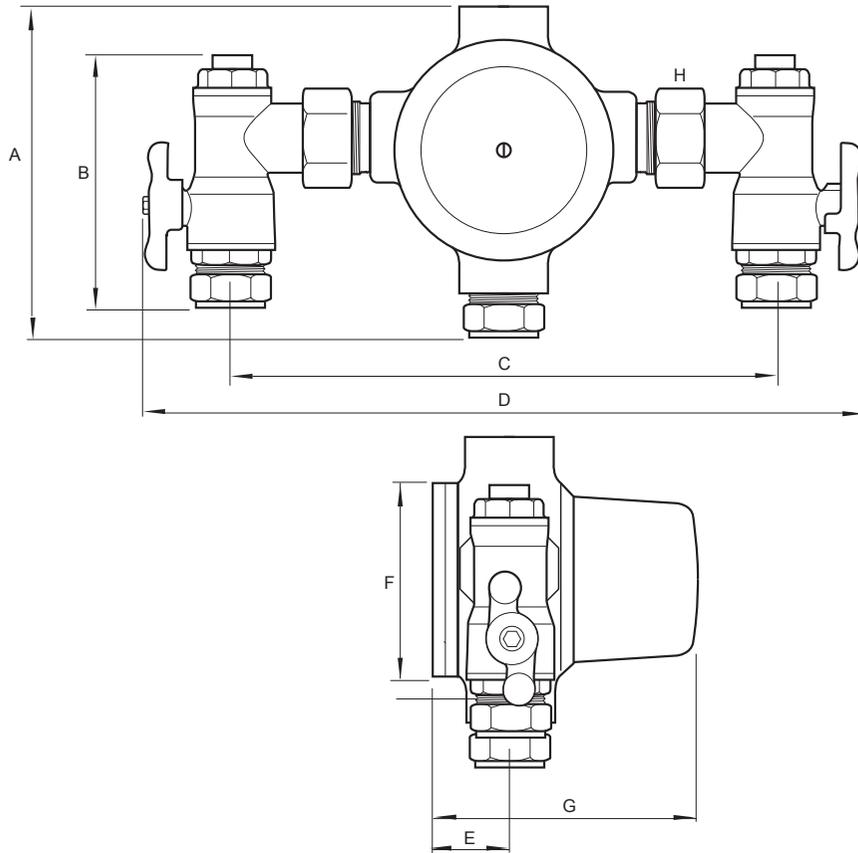
Commissioning in an adjustable form with no pre-set maximum temperature.

Remove the cap and the cam. Refit the cap and, at approx. 50% flow rate, adjust the temperature to 52°C. Remove the cap and refit the cam so that the index mark on the body is between the two lugs on the cam. Refit the cap with the MAX marking lining up with the index mark on the body. Check that the cap does not move anti-clockwise but does move clockwise.



Record the system conditions and valve settings so that they can be used during valve maintenance.

Dimensions



	A	B	C	D	E	F	G	H
HEAT230100	100	85	185	250	25	70	125	3/4" BSP
HEAT330100	135	105	245	320	30	95	127	1" BSP
HEAT430100	170	125	275	355	40	105	127	1.1/4" BSP
HEAT530100	180	125	275	355	40	105	127	1.1/4" BSP

All dimensions in mm unless otherwise stated

Maintenance

If the performance of the thermostatic valve has deteriorated over time, the valve will require maintenance.

1. First isolate the hot and cold supplies via the service valves and thoroughly flush the line strainers in the 4 in 1 fittings. The system should be checked and any additional strainers in the supply should also be flushed.
2. Ensure that the shower heads / outlets are clean and free from limescale.
3. Turn the hot and cold supplies back on and then carry out the following checks:
 - 3.1. Check if the flow performance has returned to normal.
 - 3.2. Check that the temperature setting (pre-set, pre-set maximum or maximum temperature) has been retained at maximum and minimum flow rates.
 - 3.3. Check that the thermostatic valve fails safe when the cold water fails (N.B. before carrying out this test ensure the valve mechanism is exercised by turning off and on the hot and cold supplies alternately a minimum of 3 times). Turn off the cold water supply - the water flow from the shower should reduce to a residual flow within 3-4 seconds.

If any of the above are not as specified, check that supply conditions have not changed. If system conditions (pressure, temperature, etc.) have altered since the valve was commissioned a check should be made to verify that they are still within the valves working parameters.

Temperature - Slower shut-off times may indicate that the hot water is not 15°C hotter than the blended water.

Pressure - Lower flow rates may indicate reduced supply pressure, blocked strainers or lime scale build up.

The Heatguard® Planar 430 and 530 thermostatic mixing valves are constructed from high quality materials and the shuttle is resistant to lime scale build up; however, if the supply conditions are as specified and the valve is sluggish in operation the unit can be serviced.

Remove the valve from the installed position by first turning off the service valves and then disconnecting at the 4 in 1 union connections.