



Reliance Worldwide Corporation (UK) Ltd  
Worcester Road,  
Evesham,  
Worcester,  
WR11 4RA

Tel: +44(0)1386 712 400

Fax: +44(0)1386 712 401

[www.rwc.co.uk](http://www.rwc.co.uk)

## Installation and Maintenance Instructions



### Harron Valve Combined Thermal Balancing & Pressure Reducing Valve



Designed to combine the functionality of a thermal balancing valve which regulates water within a hot water circulation system, with the functions of a pressure reducing valve which reduces a high inlet pressure to a lower outlet pressure.

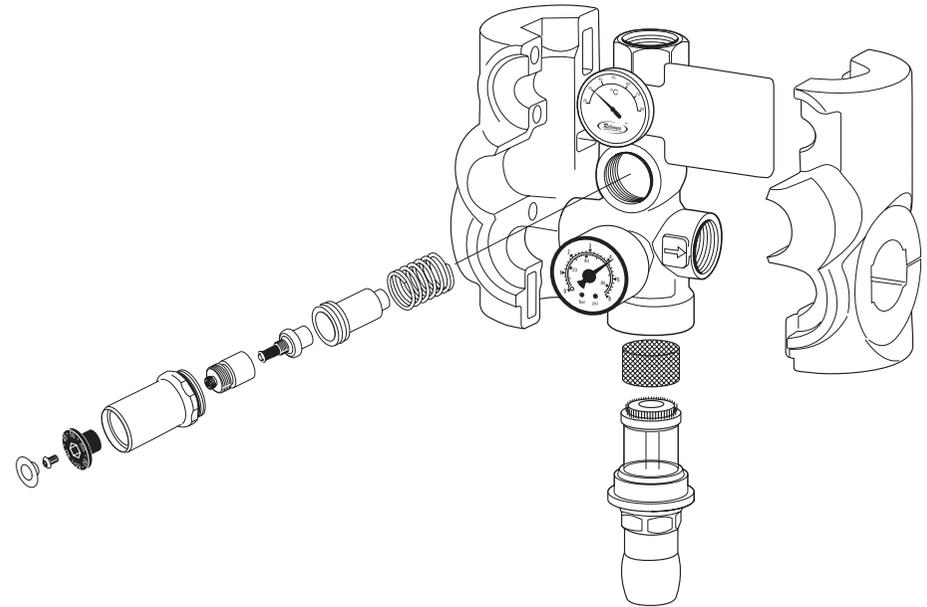
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## Exploded Diagram

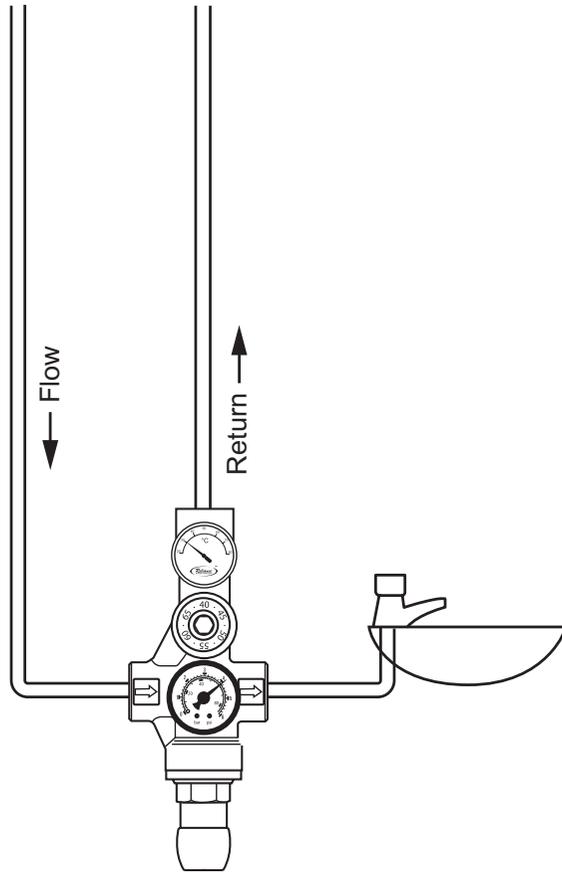


## Spares

Part code	Description
GAGE100060	Temperature Gauge 37mm Dial
SKIT100060	TBV Internal Service Kit
INSU200001	Insulation Case 1/2"
INSU200002	Insulation Case 3/4"
REDC320002	One Piece PRV Cartridge
GAGE250017	Pressure Gauge

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## Typical Installation Diagram



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## 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.

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## General Function

The Reliance Harron Valve is designed to combine the functionality of both a Thermal Balancing Valve which regulates water within a hot water circulating system, with the technology of a pressure reducing valve which takes a high inlet pressure and reduces in to a lower outlet pressure.

The thermal balancing valve uses a thermostatic element which adjusts the flow rate depending on the temperature the valve is set at and the temperature of the water flowing through it.

As the water temperature increases towards the set point the thermal balancing valve reacts to close off and restrict the flow of circulating water maintaining the temperature and forcing the water to other parts of the system that are at lower temperatures.

The thermal balancing valve from Reliance also includes an automatic function to aid in the thermal disinfection of hot water systems. The design of the thermal balancing valve reduces flow rate as temperatures increase but if the water system temperature is increased to 70°C a bypass port is opened within the valve which allows an increased flow rate through the circuit to disinfect the hot water system.

The pressure reducing function of the Harron Valve is based on the same design as the Reliance 320 Easiset PRV. The 320 Easiset range incorporates our patented one piece cartridge type construction and the valve is suitable for temperatures up to 80°C. The pull and twist adjustment mechanism eliminates the need for cover caps and difficult to get to adjustment screws. When the cap is pulled up and turned the pressure is adjusted when finished the cap is pushed back down and automatically locks in position.

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## Maintenance

The Harron valve requires very minimal ongoing maintenance but if a deterioration in performance is noticed then the following actions can be taken:

### Thermal Balancing Cartridge

To clean the piston and thermostat assembly:

To access the piston and thermostat remove the valve headwork and pull out the piston and thermostat assembly, Wipe the piston clean using a diluted WRAS approved de-scaling solution and then lightly re-grease the outer surface of the piston using a WRAS approved silicone based waterproof grease. Re-assemble the valve as per the exploded diagram, and then re-commission as laid out in the commissioning section.

### Pressure Reducing Cartridge

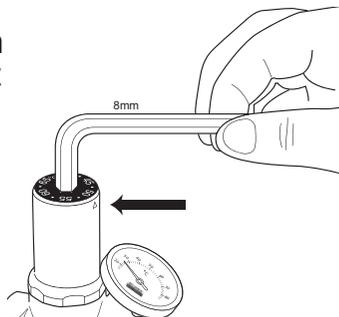
To service the integral strainer:

1. Isolate the water upstream and downstream of the pressure reducing valve
2. Use a spanner on the base of the cartridge to unscrew it. Once loose, you can remove the cartridge from the brass body.
3. The strainer can be found at the base of the cartridge, it can easily be removed by sliding it off the end of the cartridge
4. Rinse the strainer under clean running water, until any debris has been washed away
5. Replace the strainer onto the end of the cartridge
6. Re-insert the pressure reducing valve cartridge into the brass body
7. Using a spanner, screw the cartridge back into the valve body.

## Commissioning

### Thermal Balancing Cartridge

To set the desired circulating temperature first remove the silicone plug that covers the adjustment mechanism. Next insert an 8mm Allen key into the top of the valve, turn the adjustment mechanism until the desired system temperature lines up with the red datum mark on the valve. The valve is now set at this temperature and will maintain this to within +/- 2°C when the system is running normally. Once the valve is set the identity tag can be marked with a serial number or other identifying feature.

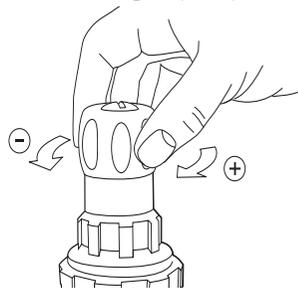


### Pressure Reducing Cartridge

Please note: the valve should only be adjusted when under no flow conditions. Pre-set pressure is 4bar.

To adjust and set the pressure on the valve:

1. Lift the cap of the pressure reducing valve cartridge (red) so it is in the adjustable position.
2. Twist the cap anti-clockwise to decrease the pressure down to its minimum setting.
3. Open a tap downstream of the pressure reducing valve to relieve the excess pressure for a couple of seconds.
4. Twist the cap clockwise to increase the pressure to the desired setting (a pressure gauge is provided to read the downstream pressure from the valve).
5. Once the desired pressure is reached push down the cap to lock it in position.



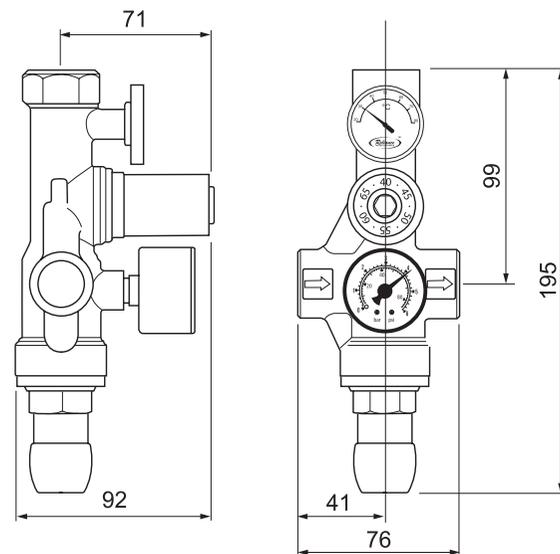
The minimum pipe length downstream of the PRV, before any elbow is fitted must be no less than 5 times the pipe size. E.g. DN25 would equal 5" distance. This is to protect against noise and to ensure a laminar flow.

## Specification

Temperature supply range	5-80°C
Maximum supply pressure:	16 Bar
Temperature set range:	40°C-65°C
Factory pre-set temperature:	58°C
Temperature range for thermal disinfection:	> 70°C
Maximum TBV flow rate:	1.5m <sup>3</sup> /h
Restricted TBV flow rate:	0.15m <sup>3</sup> /h
Accuracy:	+/-2°C
Temperature gauge:	15-85 °C
Pressure gauge:	1-6 Bar
PRV outlet adjustment range:	1-6 Bar
Maximum PRV adjustment ratio:	10:1
PRV flow rate:	2.3m <sup>3</sup> /h
PRV factory set pressure:	4 Bar

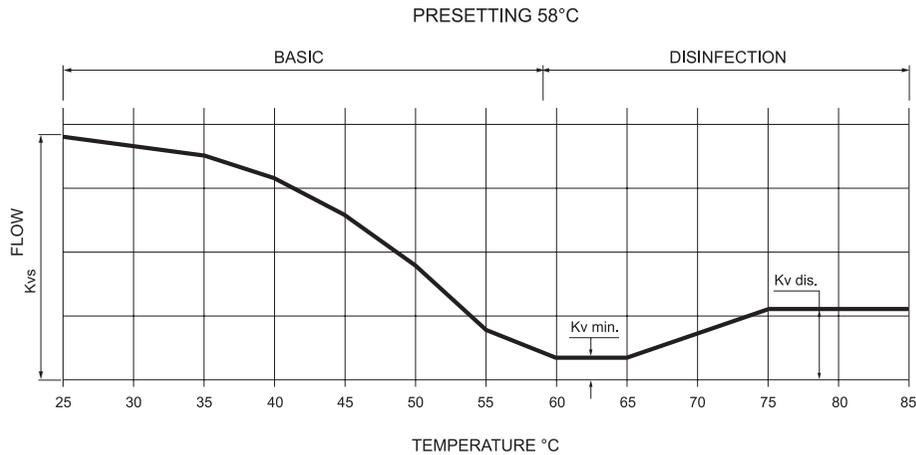
## Dimensions

All dimensions in mm unless otherwise stated



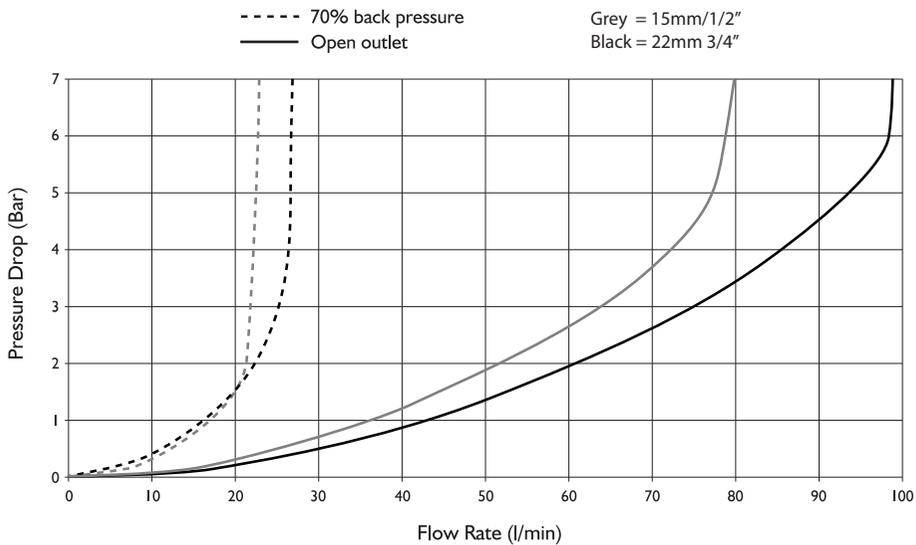
# Flow Rates

Temperature Graph



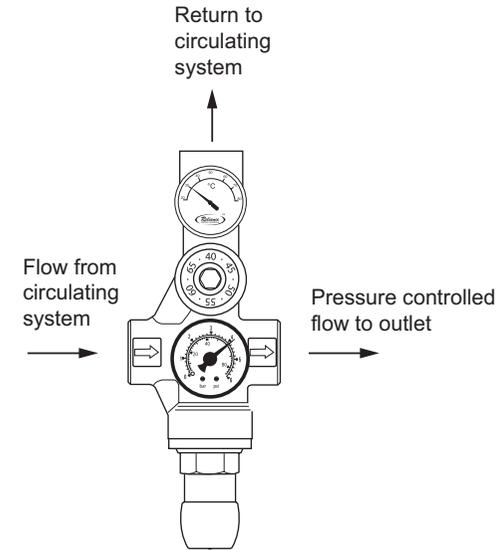
Kv min.=0.15 m3/h min. flow.

Pressure Graph



# Installation

The Reliance Harron Valve is available in FBSP connections and in SharkBite push-fit connections. The combined TBV & PRV have been designed to be installed on the circulating loop of a hot water system, and where the PRV sits allows for the supply to branch off to feed a particular zone or individual outlet.



To install the Harron valve first remove the insulation jacket by splitting the two halves. If using the FBSP valve thread in appropriate pipe fittings to suit the pipe system being used, (hemp and jointing compounds that are not WRAS approved for potable water should not be used).

Once the appropriate fittings are tightened install the valve in the return pipework, making sure that the direction of flow arrows are in the correct orientation. Once installed insert the thermometer into the brass pocket on the outlet of the valve and replace the two halves of the insulation jacket.

The valve is supplied with an identity tag, which includes basic valve details, contact details for Reliance and a space for an installer to add serial numbers or other relevant information.