

i+PLUS

THERMOSTATIC SHOWER
MIXER AND RISER RAIL

DUAL CONTROL THERMOSTATIC SHOWER VALVE'S

INSTALLATION, OPERATING AND MAINTENANCE
GUIDE FOR EXPOSED AND CONCEALED MODELS
CONTEMPORARY AND MODERN

PLEASE LEAVE THESE INSTRUCTIONS WITH THE USER

INTRODUCTION

These instructions cover the installation, operation and maintenance of the thermostatic shower valves. Please read the enclosed instructions before commencing the installation of this product, please note;

WE RECOMMEND THAT THE INSTALLATION OF ANY INTA PRODUCT IS CARRIED OUT BY AN APPROVED INSTALLER

The installation must be carried out strictly in accordance with the Water Supply (Water Fitting) Regulations 1999 and any local authority regulation.

If in any doubt, we would recommend that you contact either your local water authority. The secretary of the Water Regulations Committee at WRc on Tel: 01495 248454 or Institute of Plumbing on Tel: 01708 472791

IMPORTANT

When installing the product, care must be taken not to damage/affect the finish of this product. To ensure the finish of this product is maintained, we recommend that this product be cleaned periodically with a soft cloth and mild detergent. The use of any type of abrasive or solvent-based cleaners is not recommended.

All shower valves **MUST** be re-commissioned to suit site conditions to ensure optimum performance levels of the product are obtained

TECHNICAL DATA

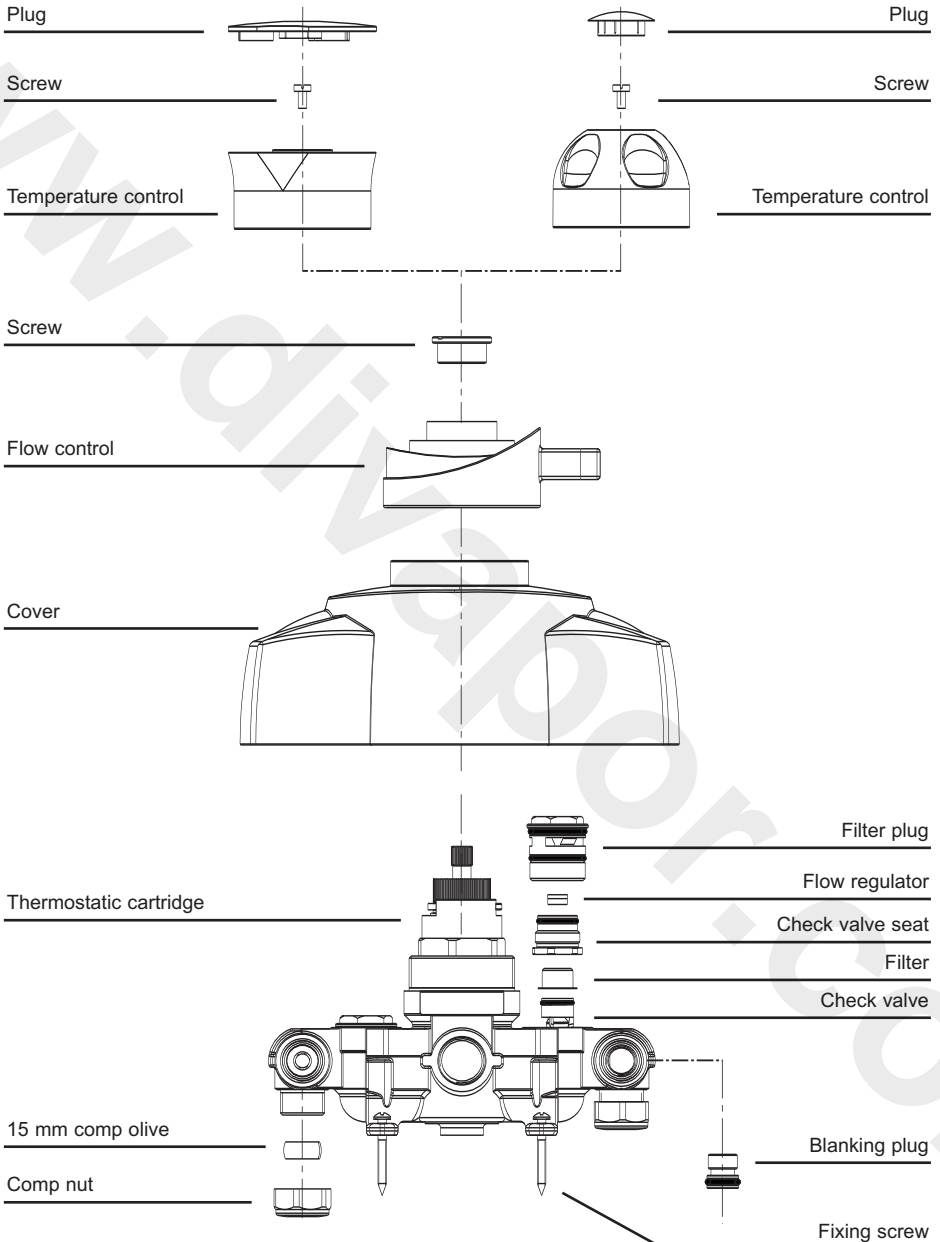
These thermostatic shower valves are suitable for installation on all types of plumbing systems, including gravity supplies, fully pumped, modulating combination boiler, unvented water heater and unbalanced supplies i.e. Cold Mains & Tank Fed Hot. They are not suitable for non-modulating combination boilers.

Max Dynamic Pressure	5 Bar	Min Operating Pressure	0.1 Bar
Max Static Pressure	12 Bar	Min Inlet Temperature	10°C
Max Inlet Temperature	85°C	Temperature Stability	± 2°C
Pre Set Factory Temp Setting	43°C	Min Temp Differential	10°C
Max Unbalanced Pressure Ratio (With Flow Regulators)	15:1	to ensure fail-safe between hot and cold supplies	
Max Unbalanced Pressure Ratio (Without Flow Regulators)	5:1		

EXPOSED SHOWER VALVE - COMPONENTS

CONTEMPORARY HANDLES

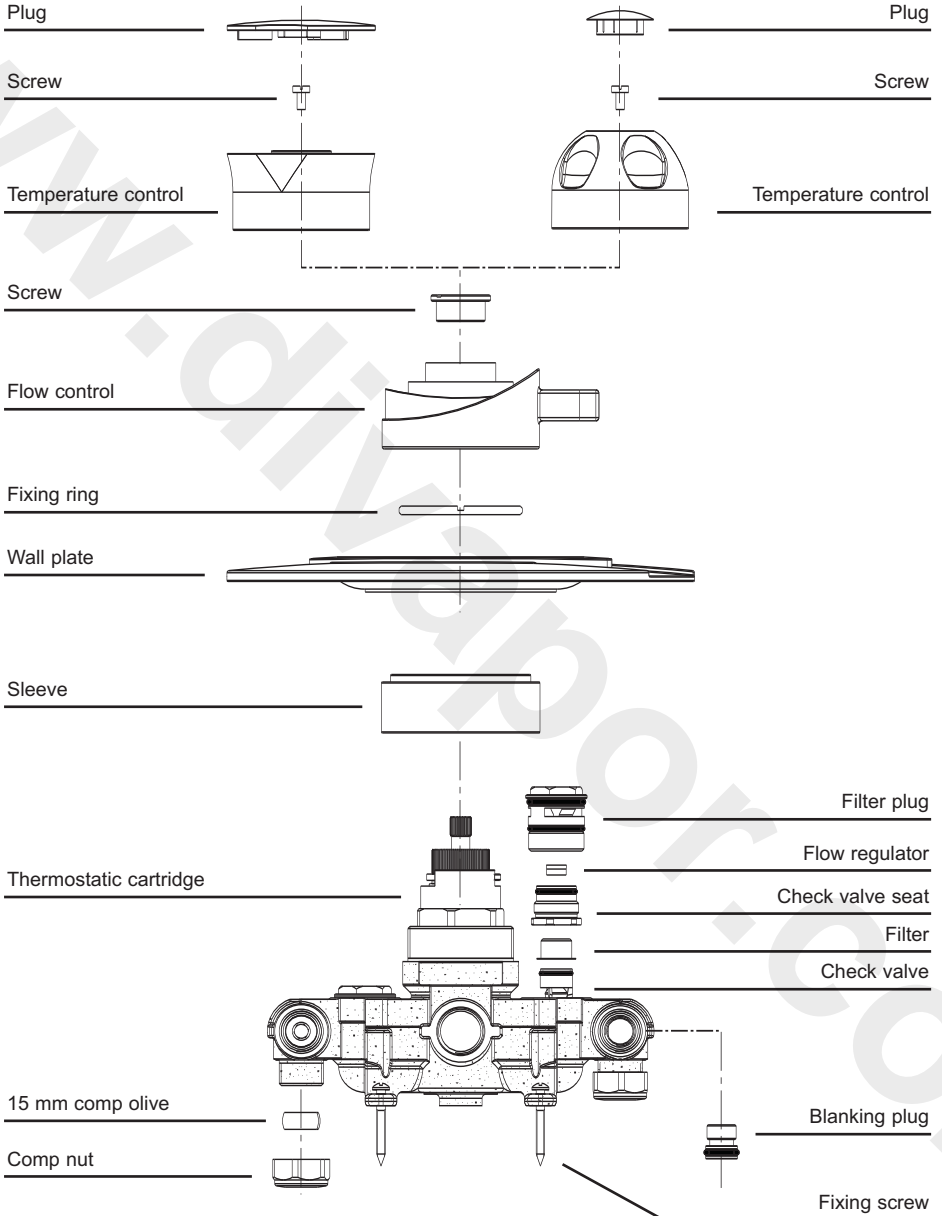
MODERN HANDLES



CONCEALED SHOWER VALVE - COMPONENTS

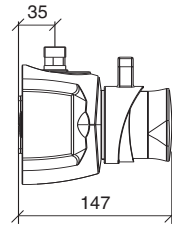
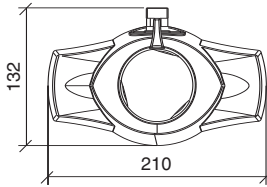
CONTEMPORARY HANDLES

MODERN HANDLES

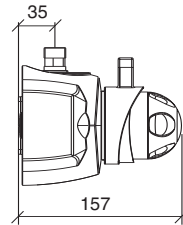
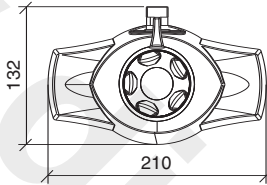


EXPOSED SHOWER VALVE - DIMENSIONS

CONTEMPORARY HANDLES

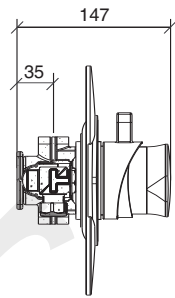
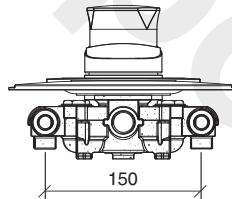
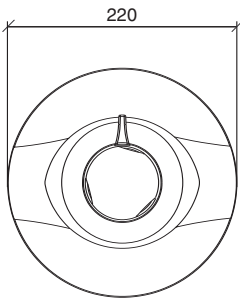


MODERN HANDLES

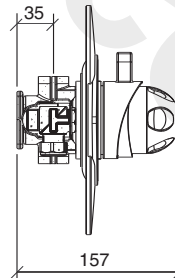
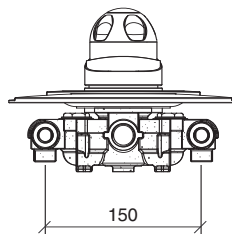
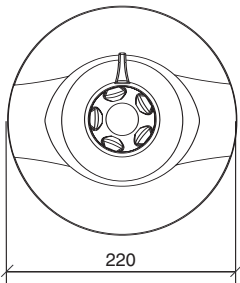


CONCEALED SHOWER VALVE - DIMENSIONS

CONTEMPORARY HANDLES



MODERN HANDLES



INSTALLATION INSTRUCTIONS

Please check that all the components are in the box prior to the installation of this product

Before starting the installation of this product, ensure that the site conditions are suitable for installation with this product. The hot water supply is connected to the left hand side of the valve when viewed from the front and the cold supply to the right as indicated on the valve body by the red and blue marker.

We recommend that independent filters, isolation and check valves be fitted in an accessible position in conjunction with this product for servicing purposes (Not Supplied)

When installing the concealed versions of this shower valve consideration must be made for the accessibility to all connections and fittings used in conjunction with this product.

All the Intra range of thermostatic shower valves are suitable for installation on all types of plumbing systems, including gravity supplies, fully pumped, fully modulating combination boiler, unvented water heater and unbalanced supplies i.e. Cold Mains & Tank Fed Hot. They are not suitable for non-modulating combination boilers. For optimum performance we recommend balanced pressures.

Each shower valve is supplied with integral non return valves in the hot and cold inlet tail pieces to prevent cross flow and cross contamination of the water supplies. Additional check valves maybe necessary in certain circumstances to comply with the Water Regulations. On flexible hose kits, where the hand spray is capable of falling within 25mm of the top of the bath or tray, additional backflow prevention devices maybe required.

Where possible we recommend that 22mm hot and cold supplies be used as close to the valve as possible and pipework runs are kept to a minimum to maintain flow rate on low-pressure installations. Note: The concealed/exposed models are supplied with 15mm compression inlets

IMPORTANT

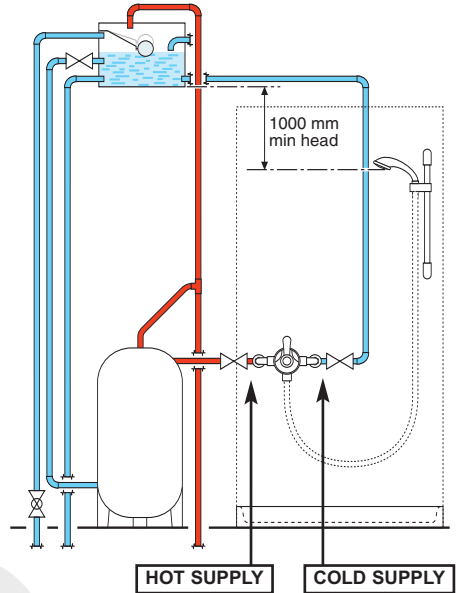
Ensure that the hot & cold water supplies are thoroughly flushed before installation of the shower to prevent blockages of filters and check valves. Flow Regulators are supplied with the valve, where inlet pressures exceed 1.0 bar. The following flow regulators are supplied and should be fitted on the hot and cold inlets.

2 Nos. - 6 Litre per minute

TYPICAL INSTALLATION DETAILS

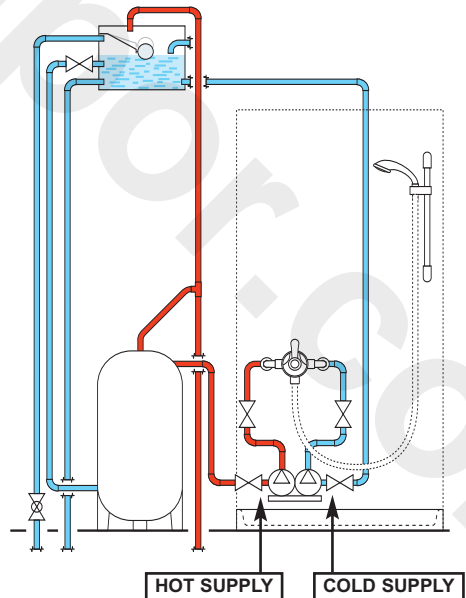
Gravity Supplies

The shower must be fed from the cold-water tank and from the hot water cylinder via a Surrey or Essex type flange or a separate connection from the hot water draw off, as close as practically possible to the top of the cylinder. Note the distance between the bottom of the cold-water tank and the shower head **MUST** be at least 1000mm (0.1 Bar). **Gravity Hot & Mains Cold** - The cold water supply to the shower may be taken directly from the rising main. Under these conditions the 6 litre regulator must be fitted to the cold inlet elbow of the valve.



Fully Pumped:

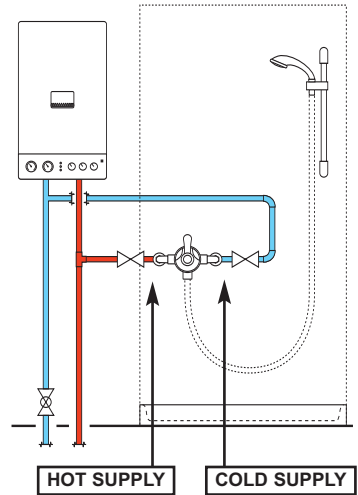
Ensure that the performance of the pump is matched to the shower valve. Ensure that the hot and cold-water capacities are sufficient to supply the shower and any other draw off points. The shower valve can be used on a gravity fed pumped system. The use of a Surrey or Essex type connection onto the hot water cylinder will prevent air being pulled into the system. Please refer to the pump manufacturers details regarding the location of the pump and connections.



TYPICAL INSTALLATION DETAILS

Fully Modulating Combi Boiler/Instantaneous water heaters:

A combi boiler will produce a constant flow of water at a temperature within its operating range. However we recommend that the system should not supply hot water in excess of 65°C. The hot water flow rates will be dependant on the type of boiler/heater being used and the temperature rise required to heat the cold water. To ensure that the shower valve is supplied with a relatively balanced flow rate, we recommend that the 6-litre flow regulator, as supplied be fitted in the cold water inlet connection to the valve.

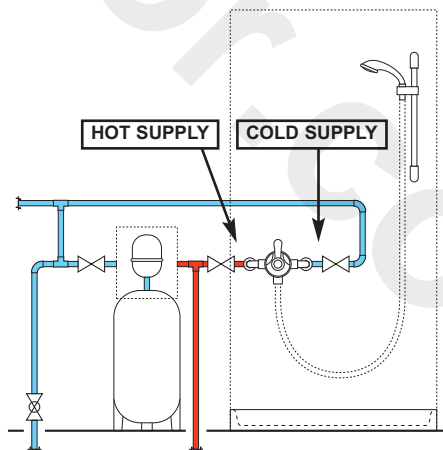


Unvented Water Heater:

This type of installation must be carried out in accordance with part G of the building regulations. Whilst pressure is theoretically equal (balanced) most unvented hot systems have a pressure-reducing valve on the incoming cold water prior to the hot water storage. This means that the hot and cold pressures can be significantly different. Most unvented systems use an inlet manifold located directly after the pressure-reducing valve. It is recommended that the cold water

supply to the shower is an independent supply. For systems with no manifold unit after the pressure reducing valve, where the cold water supply pressure is significantly higher than the hot water supply., we recommend that a separate pressure reducing valve is fitted to the cold water supply as close as possible to the shower valve, with no draw off points between the pressure reducing valve and the shower. Flow regulators are required in instances where no PRV is fitted to ensure simultaneous demand is accounted for.

Please refer to unit manufacturer requirements for showers regarding mini expansion vessels and pressure reducing valves.

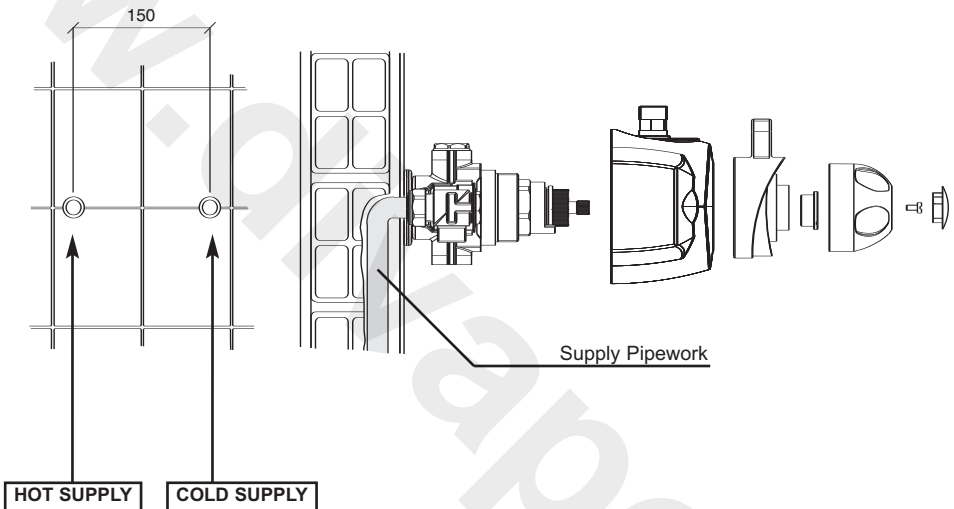


EXPOSED VALVE - PREPARATION

Ensure hot & cold supplies are positioned correctly to connect to the shower valve and accessible for service.

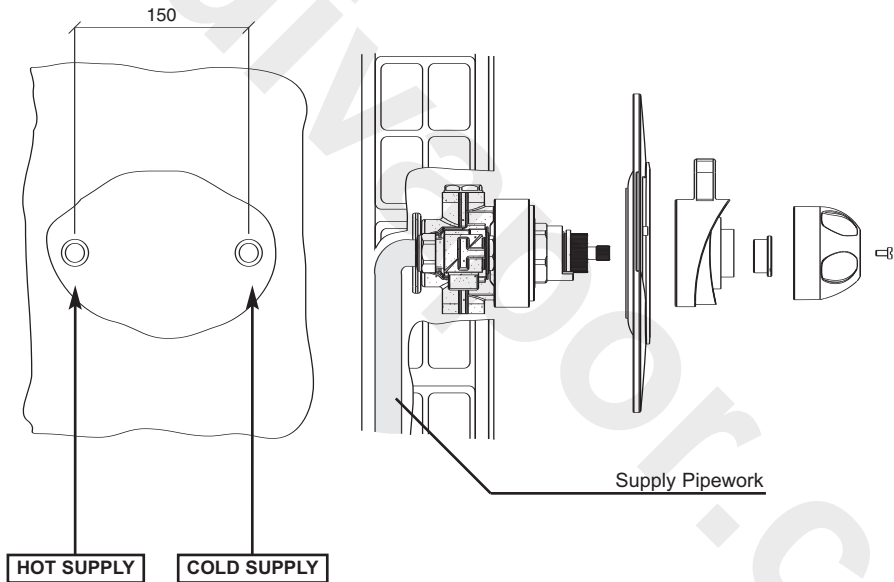
Ensure the valve is positioned to allow the kit to be installed, at the required height to suit the tallest user

Fix the mounting back plate to the wall in the required position using a suitable fixing method to suit the wall type.



CONCEALED VALVE - PREPARATION

Prepare the cavity to receive the valve, ensure hot & cold supplies are positioned correctly to connect to the shower valve ensure isolating valves are fitted. Fit the back plate to the wall. Under certain circumstances it may be necessary to provide a batten within the wall to support the valve body. Ensure the valve is positioned to allow the kit to be installed, at the required height to suit the tallest user. When determining the position of the valve, please allow the thickness of the finished wall surface to ensure that the valve is not recessed too deeply. Fix the mounting back plate to the wall in the required position. Depth of Cavity min 62 - max 79 to finished wall surface. Ensure second outlet is blank off if not used.



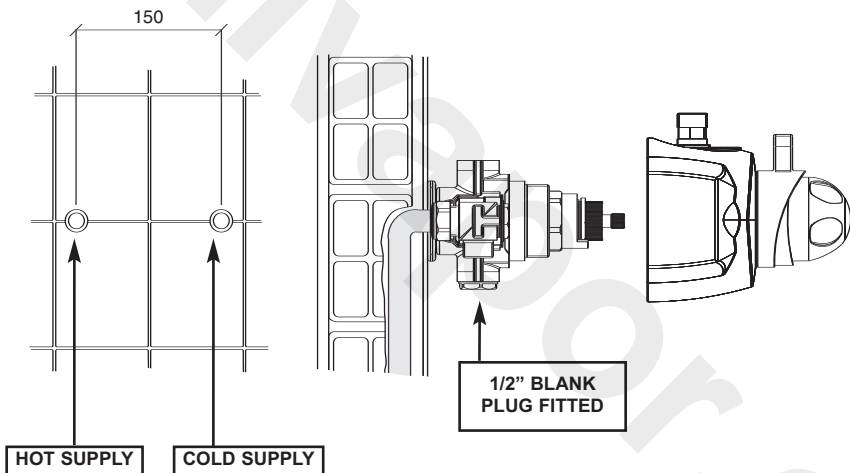
Optional wall elbow available on request for concealed installation with flexible hose kits.

EXPOSED VALVE - CONNECTIONS

Fit the valve body to the wall and secure in situ, having first fitted any flow regulators as required.

Connect the hot & cold supplies to the valve using the 15mm compression joints provided. Connect the required adaptor to the shower valve body to suit the kit used (1/2" nipple supplied with the valve is for the flexible hose kit). The valve has the flexibility that the top or bottom connection maybe used to connect to the different kit types. Fit the covering plate to the valve body.

Ensure that the second outlet not used is sealed and water tight using the blanking plug provided. Apply a bead of mastic sealant to the joint between the finished wall and the valve and wall mounting plate/wall flanges, if required.



CONCEALED VALVE - CONNECTIONS

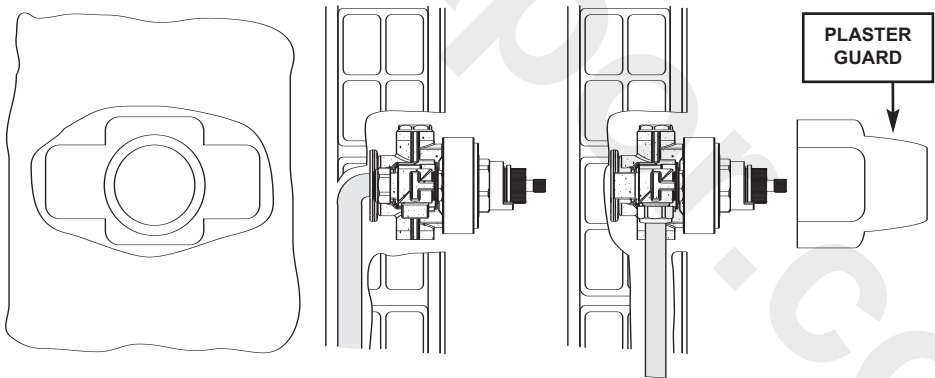
Fit the valve body to the wall and secure in situ provided, having first fitted any flow regulators in the couplers as required.

Connect the hot & cold supplies to the valve using the compression joints provided. The couplers are designed to allow access to the filters and check valves without the need to disconnect the valve from the pipework.

Connect the required adaptor to the shower valve body to suit the kit being used. The valve has the flexibility that the top or bottom connection can be used to connect to the kit.

A plaster guard is included to protect the valve whilst the wall surface is finished. Simply fit the guard over the valve and remove when wall surface is finished.

Ensure that the second outlet not used is sealed and water tight using the blanking plug provided - turn on the water supplies and check for leaks.



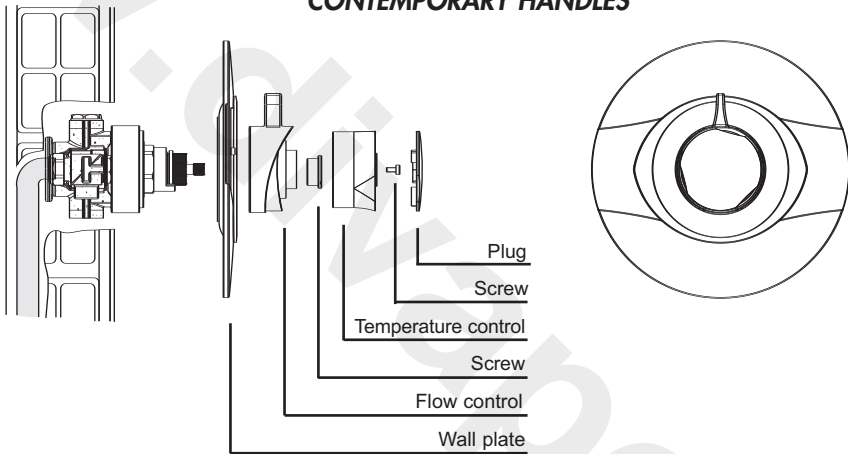
CONCEALED VALVE - FITTING THE PLATE

Once the valve has been securely fixed to the back plate and the connections have all been made and checked and the wall surface has been finished slide the concealing plate over the valve body

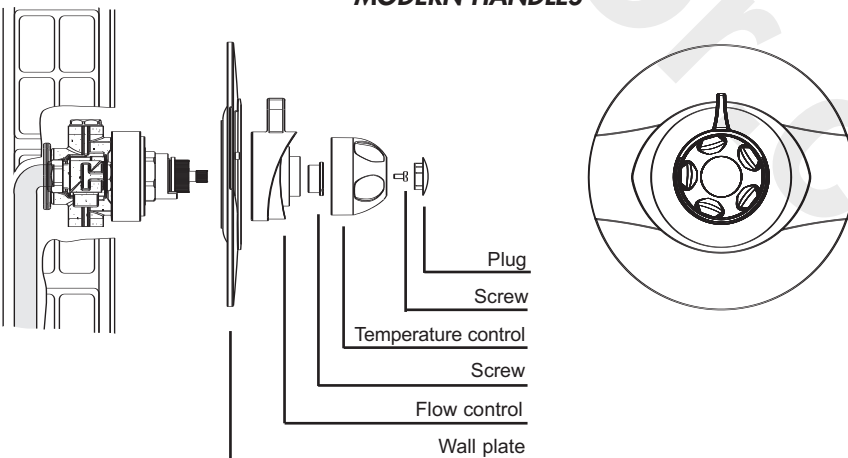
Apply a bead of mastic to the outer edges of the plate on the back surface to prevent the ingress of water into the cavity

It may be necessary to lubricate the seal in the centre of the plate with a mild soapy solution.

CONTEMPORARY HANDLES



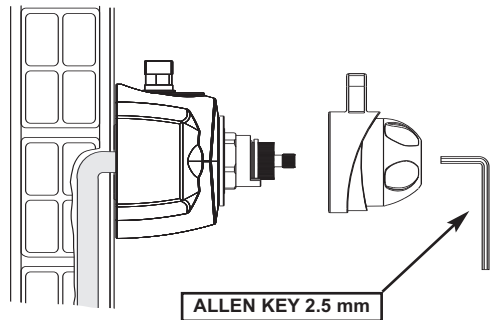
MODERN HANDLES



EXPOSED & CONCEALED VALVE - FINAL ASSEMBLY

Check the function of the valve. The maximum temperature should not exceed 43°C - The valve must be calibrated to suit site conditions using allen key supplied.

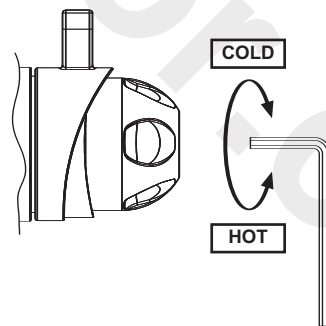
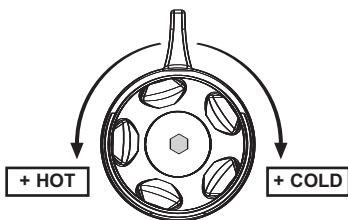
Clean all exposed surfaces.



ON SITE CALIBRATION

The factory outlet temperature setting of 43°C of the Inta shower valve this can be altered to suit the site conditions, care should be taken when altering the setting as INCORRECT CALIBRATION CAN CAUSE INJURY.

- Remove the indice from the front of the shower valve
- Fully-open the flow control to establish a stable flow of water and rotate the temperature control to the maximum hot setting.
- Taking care not to damage the valve body, using a suitably sized screw driver, hold the temperature control handle in position and rotate the temperature adjustment screw clockwise by 90° to decrease the temperature by 1°C. To increase the temperature rotate the temperature adjustment screw anti-clockwise by 90° to increase the temperature by 1°C.



Turn the temperature control back to the maximum hot setting and measure the outlet temperature, when stabilised with a calibrated thermometer.

- Repeat procedure until the desired maximum hot temperature is reached.

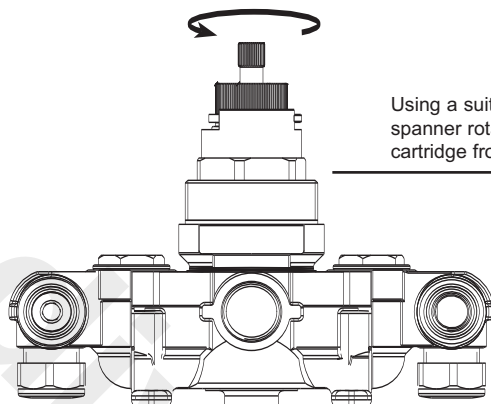
FAULT FINDING

Fault	Diagnosis
Showering temperature is not hot enough	Ensure the hot water supply is at constant temperature above 60 deg C. Check for airlocks in the pipework
The water goes cold during a shower	insufficient stored hot water supply. Ensure that the boiler is still firing for combi boilers. Adjust the boiler control to a minimum setting of 65 deg C not necessarily the best flow rate
When the water is set at cold, the showering temperature is too hot	Hot and cold supply connections have been made in reverse
Max showering temperature is too hot or when set to hot water runs cold	Check the commissioned maximum temperature of the valve. Check connections to the valve are not reversed
Flow of water through the valve is low	Check the filters are clean and supply pressure is above 0.1 bar
No Flow of water	Ensure the valve has not fail-safed, and check that there is water flow to the valve and the check valves are not closed - see exploded drawing

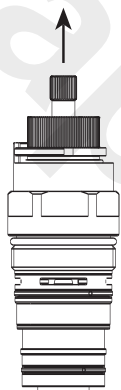
AFTERCARE INSTRUCTIONS

- With all highly polished items, care should be taken not to damage any of the external surfaces.
- We recommend that to ensure the physical appearance of the shower valve and component parts is maintained that periodically, the valve should be cleaned with a soft damp cloth and a mild detergent. The use of abrasive or solvent cleaners will damage the finish of the product.
- We recommend periodically that the shower handset/shower head is cleaned using a suitable de-scaling solvent. Check first it does not affect the plated surface.
- Periodically the filter and check valve housing should be removed and cleaned to remove any system debris, which may have collected. Ensure free operation of the check valve.
- We recommend that the shower valve is serviced at least annually.
- Only use genuine Inta spares full list available on request.

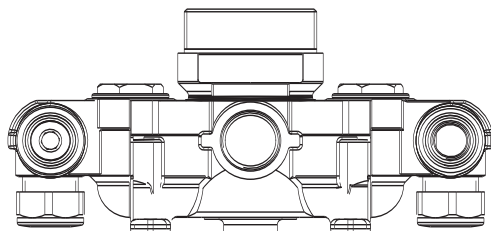
REMOVING CARTRIDGE



Using a suitably sized
spanner rotate the
cartridge from the body.



Thermostatic
Cartridge



THE FOLLOWING INSTRUCTIONS APPLY WHEN THIS PRODUCT IS USED IN A TMV2 APPLICATION

Thermostatic Mixing Valve (PN 10) - General Technical Specification and BS EN 1287: 1999 "Sanitary tapware. Low pressure thermostatic mixing valves BS EN 1111:1999. General technical specifications.

INTRODUCTION

This thermostatic shower valve has been specifically designed and manufactured to meet the requirements of BS EN 1111: 1999 and BS EN 1287: 1999 and TMV2 Type Scheme. The valve has been independently tested and approved as a TYPE 2 valve under the Buildcert TMV2 scheme by the WRc Testing & Evaluation Centre.

TECHNICAL SPECIFICATION

Temperature Stability	$\pm 2^{\circ}\text{C}$	
Inlet Temperature Range	$55^{\circ}\text{C} \sim 65^{\circ}\text{C}$:	Hot Supply
	$\leq 25^{\circ}\text{C}$:	Cold Supply
BS EN 1111 Working Pressure Ranges	0.5 ~ 5.0	High Pressure
BS EN 1287 Working Pressure Ranges	0.1 ~ 1.0	Low Pressure
Min Temp Differential (Mix to Hot) for fail-safe	10°C	
Max. Pressure Inlet Differential	5:1	

NOTE:

Valves operating outside these conditions cannot be guaranteed by the Scheme to operate as Type 2 valves.

APPROVALS

TMV2 / Buildcert Scheme Approval Number	Details Available on Request
WRAs Scheme Approval Number	Details Available on Request

APPLICATION

This thermostatic shower valve has been Independently tested by WRc and certified as meeting the requirements of the BS EN 1111:1999 and BS EN 1287: 1999 under the TMV2 Scheme as being suitable for use on the following designations.

NOTE - Applies to HP Installations Only

If a water supply is fed by gravity then the supply pressure should be verified to ensure the conditions of use are appropriate for the valve. The installation of thermostatic mixing valves must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999.

RECOMMENDED OUTLET TEMPERATURES

The following temperatures are recommended for all premises and should never exceed 46°C

Application	Recommended Set Mixed Water Temperature
Wash Hand Basin	41°C
Shower	41°C
Bidet	38°C
Bath Fill	44°C

INSTALLATION

IMPORTANT- The following instructions must be read prior to the installation of this thermostatic shower valve. The installer should also be aware of their responsibility and duty of care to ensure that all aspects of the installation comply with all current regulations and legislation.

It has been brought to our attention that flushing through water systems using certain chemicals may wholly or partially remove the lubricant from the internal workings of the valve, which may adversely affect its performance. We recommend that following flushing of the system with chemicals; valves are checked for correct operations.

The thermostatic shower valve **MUST** be installed in an accessible position to ensure that maintenance, commissioning and testing of thermostatic bath / shower mixer can be undertaken easily.

1. It is essential that before installing any of the thermostatic shower valve, ensure that the supply conditions of the system to which the valve is intended to be fitted are checked to confirm compliance with the parameters as quoted within the technical specification and conditions on which the approval is granted i.e. verify supply temperatures, supply pressures, risk assessment.
2. Consideration must be made for the possibility of multiple / simultaneous demands being made on the supply system whilst thermostatic shower valve is in use, all practical precautions must be made to ensure that the valve is not affected. Failure to make provision within the pipe sizing etc will affect the performance of the valve.
3. The supply system to which thermostatic shower valve is to be installed must be thoroughly flushed and cleaned to remove any debris, which may have accumulated during the installation. Failure to remove any debris will affect the performance and the manufacturers warranty of the product. Independent filters / check valves and isolation valves must be fitted in conjunction with the valve. In areas that are subject to aggressive water, provision must be made to treat the supplies prior to the supplies entering any product.
4. The maximum flow rate of the valve will only be achieved when the supply conditions are achieved as quoted within the technical specification, with a flow condition under 1 bar differential pressure.
5. Thermostatic shower valve has been designed to ensure that the valve can be installed in any position whether vertical or horizontal, it can be surface mounted or within a supply duct. It is essential that the access to the valve not be obstructed for any future maintenance that may be required to the valve or associated fittings.
6. We recommend that thermostatic shower valve be installed as close as practically possible to the outlet, which it is serving. In this situation attention must be paid to the maximum distance of pipework from the mixed water outlet of the valve to any terminal fitting.
7. Current guideline recommended a maximum distance of 2m from the outlet shower valve to any terminal fitting

8. The hot and cold water supplies must be connected to the valve strictly in accordance with the indications on the body of the valve i.e. hot water supply to the hot port of the valve.
9. In a situation where one or both of the water supplies are excessive, it is possible to fit a Pressure Reducing Valve to reduce the pressure(s) to within the limits as quoted previously.
10. Any thermostatic shower must be fitted with a back flow prevention device, such as check valves to prevent the cross contamination of supplies. The thermostatic shower valve is complete with integral insert check valves and strainers.
11. Each Valve must be commissioned taking into consideration any fluctuations, which may occur within the system due to simultaneous demands. It is advisable that any outlets which are connected to the same supply as the mixing valve is connected to, open during the setting of the mixed water temperature. During commissioning it is advisable to ensure that the water temperatures are established before any attempt to commission.
12. Once the supply temperatures are stable and the normal operating conditions are established, the valve can be commissioned, due to the unique design of the head - the temperature setting can be adjusted by removing the head from the valve body and reversing the head onto the temperature adjustment spindle. We suggest that the following sequence is followed when commissioning the valve;
 - 1.1 Set the mixed water temperature to the required temperature.
 - 1.2 Measure and record the temperature of the hot and cold water supplies at the connection to the valve.
 - 1.3 Measure and record the temperature of the water discharging from the valve.
 - 1.4 Isolate the cold water supply to the valve and monitor the mixed water temperature.
 - 1.5 Measure and record the maximum mixed water temperature and the final temperature. The final temperature found during the test should not exceed the values quoted.
 - 1.6 Record all the equipment used during the commissioning.
 - 1.7 The mixed water temperature at the terminal fitting must never exceed 2 deg C above set temperature.
13. Once the desired temperature is established remove the cap and secure the temperature spindle with the locking ring and replace the cap into its original position to prevent tampering by unauthorized persons. For shower and bath product refer to the relevant section of the instructions.
14. Ensure that the application, in which the valve will be used in, is appropriate for the approved designation.
15. The above information must be recorded and updated on every occasion when any work is carried out on the valve.

IN SERVICE TESTING

The shower valve should be tested against the original set temperature results once a year. When testing is due the following performance checks shall be carried out.

1. Measure the mixed water temperature at the outlet.
2. Carry out the cold fail-safe shut off test by isolating the cold water supply to the shower valve, wait for five seconds if water is still flowing check that the temperature is below 46°C for bath fill and 43°C for showering.
3. If there is no significant change to the set outlet temperature ($\pm 2^{\circ}\text{C}$ 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.
4. If the shower valve has been adjusted or serviced it must be re-commissioned and re-tested in accordance with the manufacturers' instructions.

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