Guarantee & Regestration

8.1 Guarantee

All products are manufactured to the highest standards and 5-year guarantee covers any defect in manufacture.

Any part found to be defective during the above guarantee period will be replaced without charge providing that the product has been installed in accordance with our instructions, used as intended and maintained/serviced as recommended.
In the unlikely event that any problems are encountered with this product's performance on installation, you must obtain guidance/authorisation from our Customer Service Department before any remedial action is taken and be able to supply proof and date of purchase.

The guarantee excludes damage caused by accident, misuse or neglect and does not cover the following:

- Those components subject to wear and tear such as 'O' rings and washers etc,
- Damage caused by faulty installation,
- Damage caused by any waterborne debris,
- Damage caused by improper cleaning products,
- Damage caused by the use of non-Bristan parts,
- The product being used for a purpose other than intended.

The company reserves the right, in the event of a claim not covered by the guarantee, to charge the claimant for parts and labour at current rates. This guarantee is given in addition to and does not affect your statutory rights.

In the interests of continuous product development we reserve the right to alter the specification as necessary.

8.2 Registration

To register your product with us please complete and return the enclosed registration card.

PRODUCT CODE: A SHXAR C
A SHXRR C
A SHXDIV C

TELEPHONE HELP LINE! +44 (0) 870 4425553

Bristan Ltd
Lagrange
Lichfield Road Industrial Estate
Tamworth
Staffordshire
B79 7XD
A Masco Company

Web- www.bristan.com
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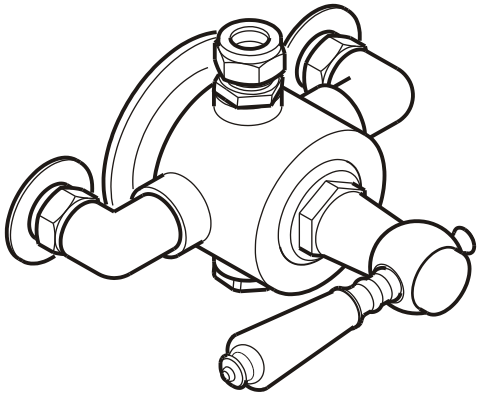
Fax- +44 (0) 870 4425554
Email- enquire@bristan.com

(FIA SHX) (D1) (AJ)

BRISTAN

Cardinal Traditional Exposed Thermostatic Shower



Fitting Instructions

Before starting any installation project please consider:

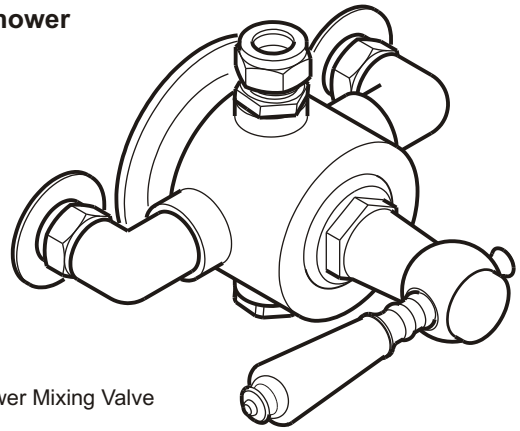
Prior to drilling into walls, check there are no hidden electrical wires, cables or water supply pipes with the aid of an electronic detector. If you use power tools do not forget:

- Wear eye protection
- Unplug equipment after use

Please keep these instructions for future reference and the request of replacement parts

Contents

Antique Exposed Shower



Shower Mixing Valve

Wall Cover Plate (x2)

Strainer (x2)

Hexagon Key

Green Limiter - 7 litre

Yellow Limiter - 5 litre

Orifice disc

Fixing Screw (x2)

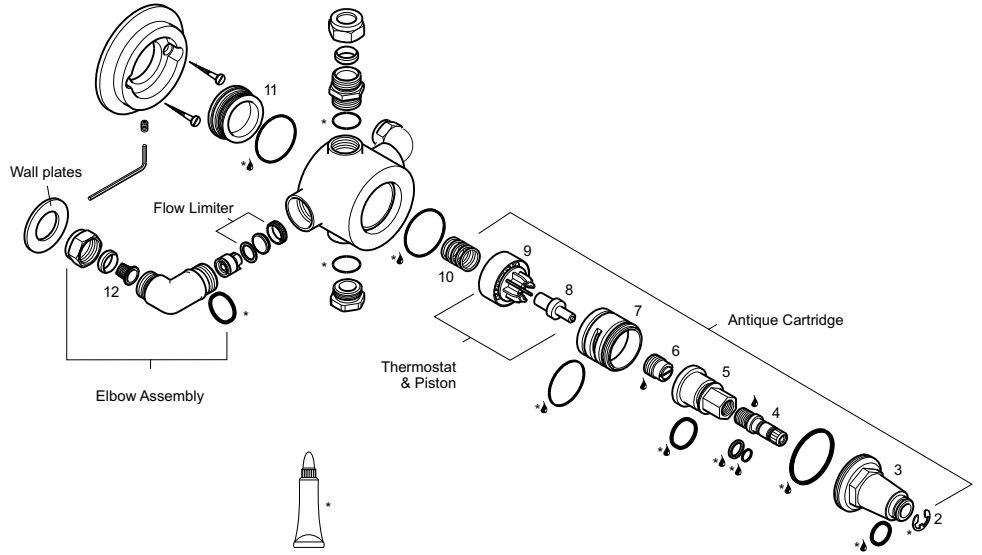
Wall Plug (x2)

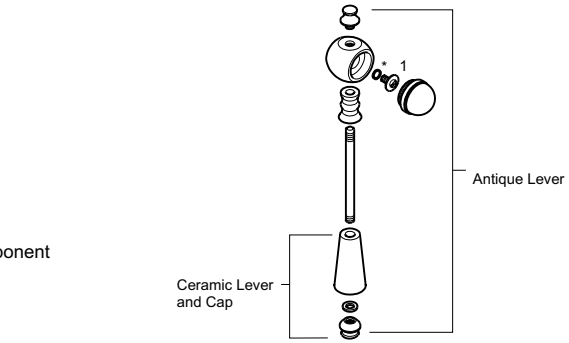
Retainer (x2)

Washer (x2)

Shower Valve Assembly

Antique Shower Valve





Denotes: grease component

Care and Maintenance

Antique Shower Valve

Cleaning

Many household cleaners contain abrasive and chemical substances, and **should not** be used for cleaning plated or plastic fittings.
These finishes should be cleaned using a mild washing up detergent or soap solution, rinsed with clean water and wiped dry with a soft cloth.

Routine Maintenance

Maximum time between routine product maintenance is 12 months.

If the shower mixer has operated satisfactorily for some time, but performance has has been degraded, please check the **Fault Finder** section to identify the problem.

Maintenance Check List

- Worn or damaged seals and washers
- Damaged seal faces
- Thread wear
- Incorrect adjustment
- Component failure
- Debris or limescale build-up

Service Guide

Note! See **Spare Parts** diagram to aid servicing.

1. Isolate hot and cold supplies.
2. Pull out and remove ceramic indice from the control lever.
3. Remove retaining screw (1) from centre of control lever, remove control lever.
4. Using a spanner 29mm A/F on the flats of the head (3), unscrew anticlockwise and remove.
5. Access to the thermostat (8), piston assembly (9) and return spring (10)is only possible once the head assembly has been removed.

Disassemble Head

1. Ensure spindle turned fully anticlockwise.
2. Using a suitable flat tool, at least 4mm thick, inserted thru slots in half cartridge (7) and a spanner 29mmA/F, unscrew parts.
3. Remove the circlip (2) and push spindle (3) from head.
4. Unscrew spindle from shut-off spindle (5).
5. Using a flat bladed screwdriver remove adjusting screw (6) from inside shut-off spindle.
6. To access the bottom cap (11) and inlet filters (12) the mixer has to be removed from the wall bracket.
7. Remove all remaining components, seals and washers and soak metal components in a kettle descalent, following descalent manufacturers instructions.
8. Replace worn or damaged seals.
9. Ensure seals are fitted to their respective components. Use only approved silicone lubricant on seals and components marked thus 3.

Important! It is recommended that Half cartridge (7) be assembled to head (3) using a thread retainer suitable for potable water up to 85°C (ie Loctite 638 or equivalents).

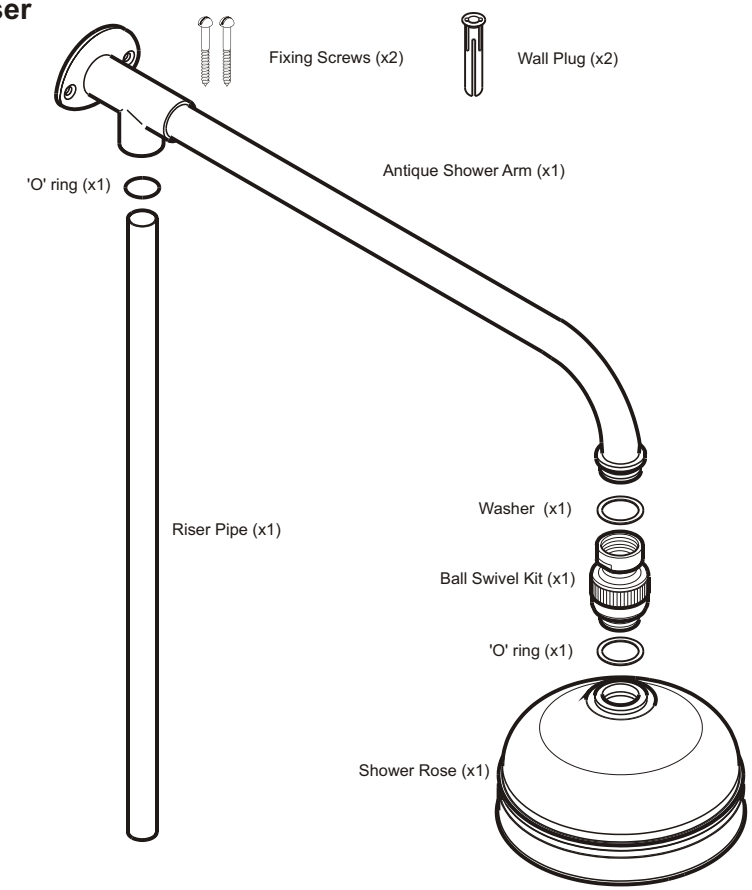
10. Reassemble the components. Assembly is reversal of the dismantling sequence.

Important! To re-set the bottom cap to factory setting, screw clockwise up to stop, mark body in-line with slot position and unscrew anti-clockwise ¾ (270°) of a turn. Check bottom cap setting in is compatible with system see **Application Selection**.

Refer to **Commissioning** section to set valve outlet temperature.

Contents

Rigid Riser



Rigid Riser with Integral Diverter

The same as the rigid riser with the additional of :

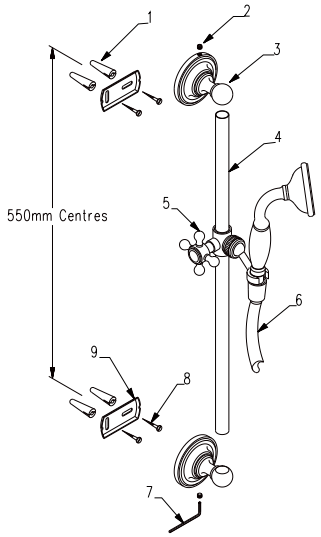
Diverter	(x1)
Compression nuts	(x2)
Compression olives	(x2)
Extesion pipe	(x1)
Handset	(x1)
Hose	(x1)
Hose Washers	(x1)

Contents

Adjustable Riser Kit

Contents

1	Wall Plugs	(x4)
2	Grub Screw	(x2)
3	Wall Plate	(x2)
4	Slide Bar	(x1)
5	Handset Bracket	(x1)
6	Hose	(x1)
7	Allen Key	(x1)
8	Screws	(x4)
9	Wall Bracket	(x2)

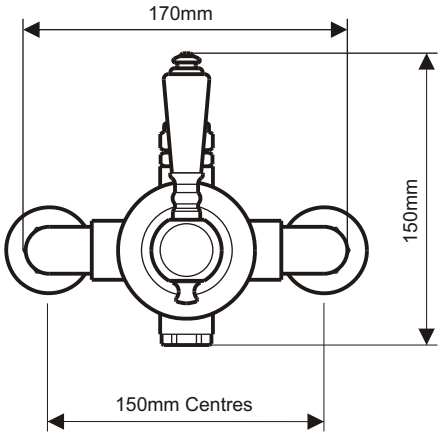


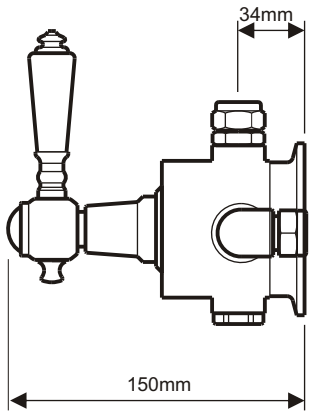
Description

The thermostatic single lever mixers incorporate a wax temperature sensing capsule which provides almost immediate response to pressure and temperature changes of the incoming water supplies to maintain the selected temperature.
The mixer has hot and cold inlet connections, with integral check valves fitted and a top or bottom outlet option for rigid or flexible shower fittings.

Dimensions

Antique Exposed Shower





Connections: G½B(½" BSP) supplied with 15mm compression fitting

Fault Finder

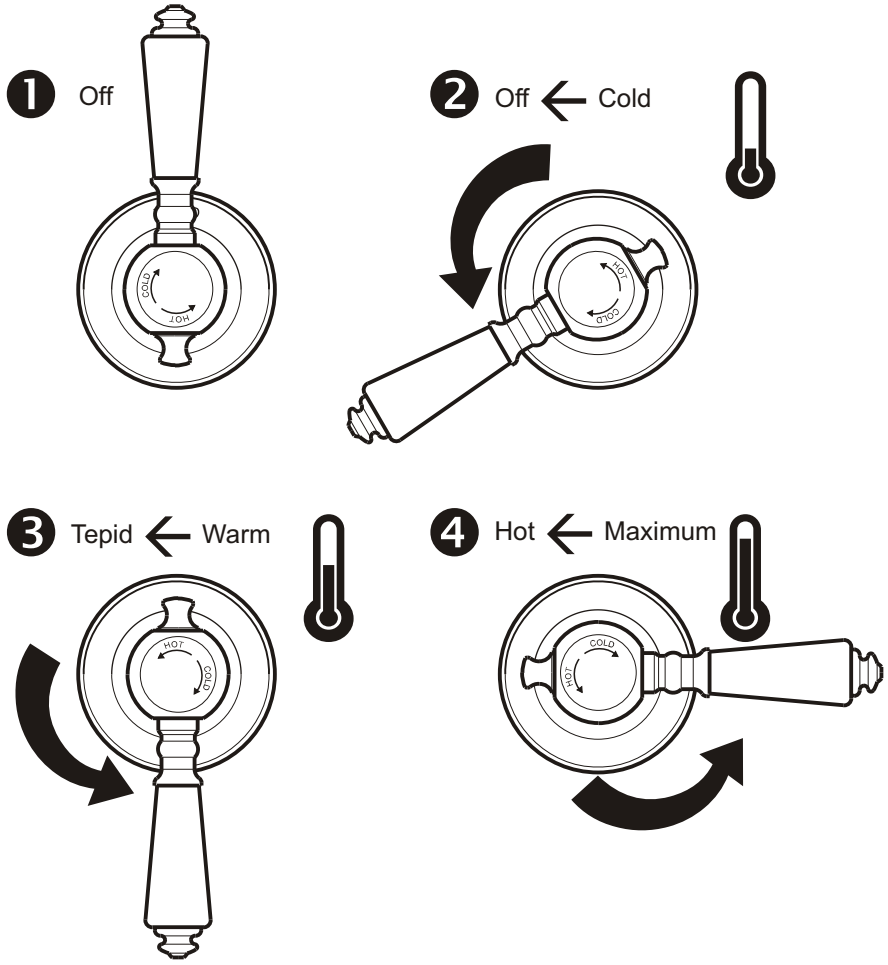
No or reduced flow and/or fluctuating temperature	* Shower head blocked * Isolating valve partially closed. * Instantaneous boiler cycling on and off as flow rate/pressure to low * Bottom cap setting incorrect * Gravity head of water below minimum required * Blockage in supplies/mixing valve * Other draw offs in use causing pressure or temperature changes * Supply pressures unequal * Flow limiters incorrectly fitted * Air lock in system * Shower cross circulating	* Clear debris from shower head * Open valve * Adjust bottom cap setting * Check boiler settings are correct * Contact boiler manufacturer * Adjust bottom cap setting * Raise tank or fit pump * Dismantle and check for debris * Flush supplies before refitting * Do not use other draw offs whilst showering * See maximum pressure differential in specifications * Check application selection * Check system requirements for correct installation method * Check non return valves and condition of seals
Maximum outlet temperature too hot or too cold.	* Maximum temperature incorrectly set	* Reset maximum temperature. Refer to instructions
Maximum outlet temperature too hot or too cold after a short time (maximum temperature set or fully adjusted)	* Hot water is less than 10°C above the outlet temperature required * Insufficient hot water supply or storage (running out of hot water) * Instantaneous boiler not igniting as water flow rate/pressure too low.	* Adjust tank temperature to 60 - 65 °C. Ensure hot water is up to temperature. * Check tank or heater capacities. Low capacity equals shorter showering time. * Adjust bottom cap setting * Increase flow through system * Increase pressure in system * Check for blockages * Contact boiler manufacturer
Outlet flow too much	* Flow limiters incorrectly fitted	* Check application selection
Only hot or cold water at outlet	* Inlet supplies reversed/backwards * Inlet supplies blocked	* Ensure supplies are connected correctly to hot and cold inlets * Clean out debris
Shower will not shut off or leaking from body	* Seal damage or wear * Scale build up inside mixer * Inlet pressures above maximum recommendations	* Renew all seals * Dismantle and check for debris * Ensure supply pressures are within specification * Fit pressure regulating valve if necessary
No thermostatic fail safe	* Inlet temperatures not within specification * Piston assembly jammed * Thermostat failure * Debris trapped in mechanism * Inlet supplies reversed	* Check inlet temperatures, hot supply should be 10°C higher than shower outlet temperature * Dismantle and check for debris * Replace thermostat * Dismantle and check for debris * Ensure supplies are connected correctly to hot and cold inlets

Operation

Antique Exposed Shower

Shower Control

The central shower control operates the shower. The flow volume can not be controlled, only the temperature. Turning the shower control anticlockwise starts the sequence below:



Specifications

General

The installation, commissioning and maintenance must be carried out in accordance with instructions supplied and be installed by qualified and competent persons.

Installations must comply with all Local and National Water Authority Regulations, and Building and Plumbing Regulations.

Temperature Control

Minimum cold water supply temperature: **5°C**
Maximum cold water supply temperature: **20°C**

Maximum hot water supply temperature: **85°C**
(a temperature of 60-65°C is recommended for ablutionary installations)

Note! A suitable hot water temperature control device should be installed to reduce temperatures exceeding the above maximum hot water supply temperature.

Minimum temperature differential between hot supply and outlet temperature: **10°C**
(eg. shower temperature 43°C: minimum hot supply 53°C)

Factory pre-set temperature: **43°C**

Thermostatic control range: **38-45°C**

Operating pressures

Minimum dynamic pressure (gravity): **0.1 bar** (10 kPa) or 1 metre head of water
Maximum dynamic pressure (mains): **5.0 bar** (500 kPa)

Maximum static pressure: **10 bar** (1000 kPa)

Maximum pressure differential: **5:1** (either supply) eg. Cold 1 bar (100 kPa): Hot 0.2 bar (20 kPa)
For optimum performance, supply pressures should be **equal.**

Note! A suitable pressure control device should be installed to reduce supply pressures exceeding the above maximum pressure specification (see **Compatible Systems**).

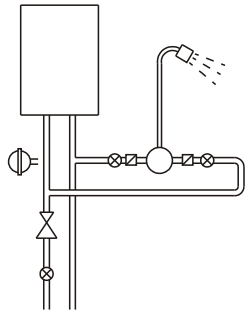
Flow Performance

Pressure Loss (bar)	0.1	0.2	0.4	0.6	0.8	1.0	2.0	3.0	4.0	5.0
Pressure Loss (kPa	10	20	40	60	80	100	200	300	400	500
Flow Rate (Litres/Min)	8.0	12	17	22	26	29	42	52	60	66

Flow rates are open outlet with equal pressures

Compatible Systems

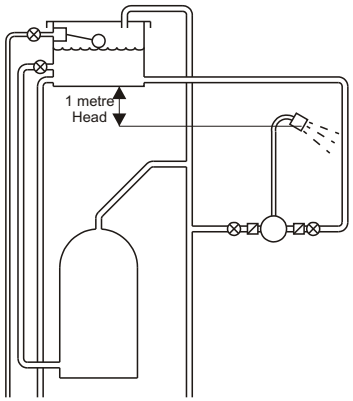
Instantaneous heated system (Gas or Electric)



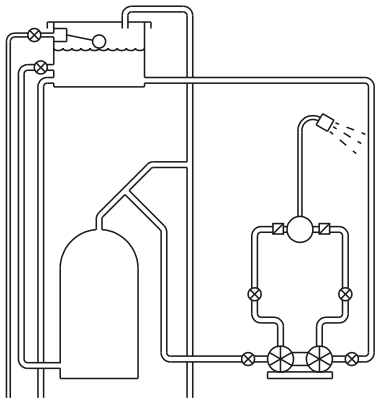
Key

- Shower inc. non-return valves
- Isolating valve
- Tempering valve
- Pressure regulating valve
- Strainer
- Expansion vessel (optional)
- Twin Impeller Pump

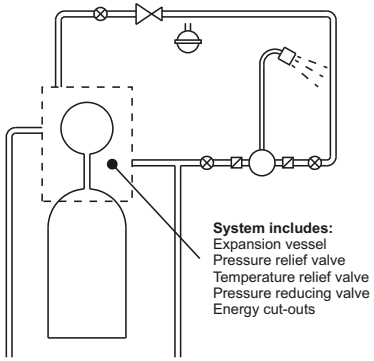
Gravity fed system



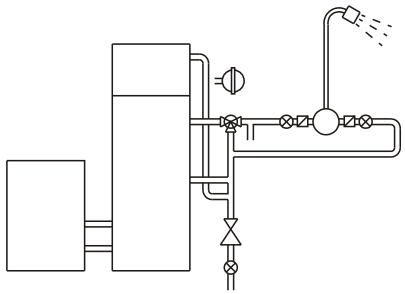
Pumped system



Unvented mains pressure system



Mains pressurised hot water system

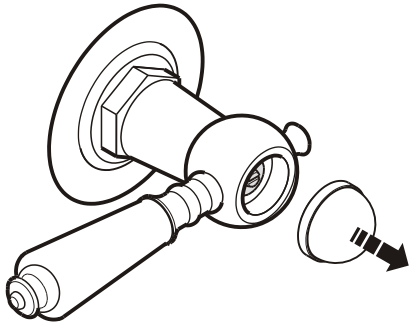


Commissioning

Antique Exposed Shower

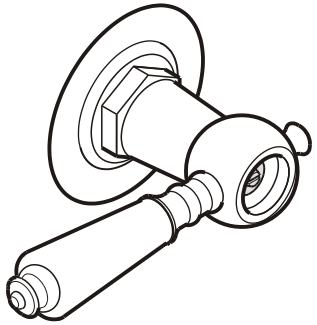
Maximum Temperature Stop

1. Pull out and remove the centre indice to reveal retaining screw.



2. Turn the shower control fully anticlockwise to the maximum temperature position.

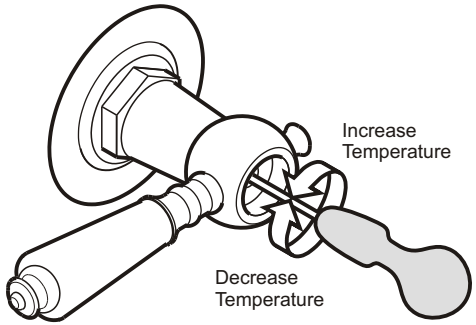
3. Remove the retaining screw and seal.



Note! water will flow from the centre hole - this is normal.

4. Using a small thin bladed screwdriver, locate the temperature adjusting screw.

5. To increase temperature turn anticlockwise. To decrease temperature turn clockwise.



6. Use a suitable temperature measuring device to set the outlet temperature within the thermostatic control range (see **Specifications** section).

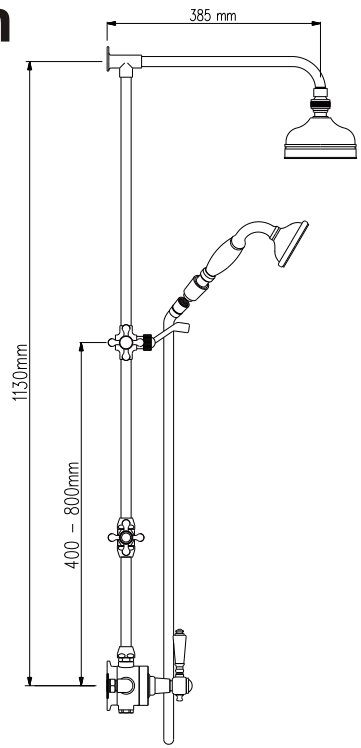
7. Turn the shower off, replace the retaining screw re-fit the centre indice.

To check thermostatic response, run the shower and isolate the cold water supply. The outlet flow should shut down to seepage within a few seconds.

Installation

Exposed Rigid kit with Diverter

For installations including the integral diver as pictured opposite then follow standard rigid riser installation but with the extra length of pipe and diverter in place prior to marking out and drilling.



Slide bar kit installation (see diagram opposite)

1. Follow valve installation.

2. In the desired position for the slide bar mark out 2 holes approximately 550mm vertically apart.

3. Drill and plug holes to suit screws (8) and wall plugs (1) provided. Affix top and bottom wall brackets (9) to wall.

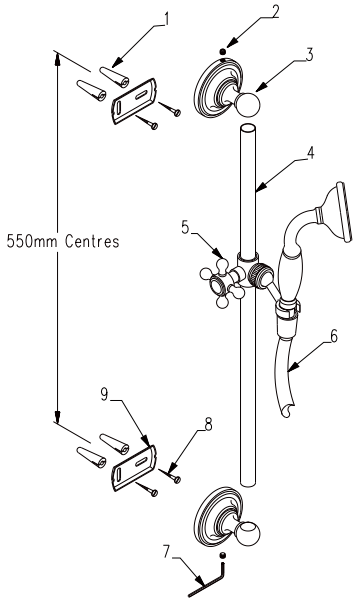
4. Align top and bottom wall brackets (9) horizontally and mark remaining 2 holes.

5. Drill and plug 2 holes. Secure wall brackets (9) in position with remaining screws (8).

6. Place bottom wall plate (3) over the wall bracket (9) and secure with grub screw (2).

7. Slide handset adjusting bracket (5) over slide bar (4) and insert slide bar into bottom wall plate (3).

8. Place top wall plate (3) over slide bar (4) and secure to wall bracket (9) with grub screw (2).

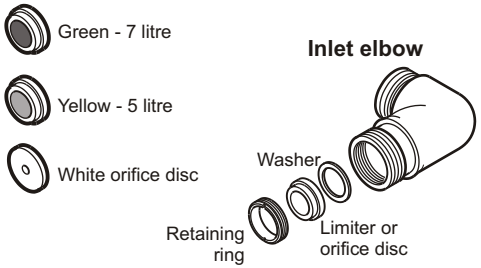


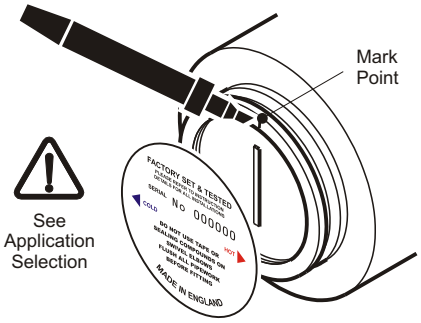
For optimum performance from the thermostatic mixing valve, use the table to match the supply system to the mixing valve. The table gives recommendations for flow limiter selection and bottom cap adjustment.

Supply System		Flow Limiter		Comments
Cold Supply	**Hot Supply**	**Cold**	**Hot**	
0.1 to 1.0 bar	0.1 to 1.0 bar	No	No	Maximum Pressure loss ratio 5:1
1 to 5 bar or pumped	1 to 5 bar or pumped	Green (7 Litre)	Yellow (5 Litre)	# Use arrangement for pumped system
Mains 1.5 to 10 bar	Graity 0.1 to 0.2 bar	White disc	No	
	Graity 0.2 to 0.5 bar	Green (7 Litre)	No	
	Graity above 0.5 bar Unvented mains Mains Pressurised	Green (7 Litre)	Yellow (5 Litre)	
	Instantaneous Gas water heater	Green (7 Litre)	Yellow (5 Litre)	** Open Bottom Cap extra 1/2 turn anti-clockwise
	*** Instantaneous Electric water heater	Green (7 Litre)	No	** Open Bottom Cap extra 1/2 turn anti-clockwise

\# Limiters can be fitted if water economy is required.
* Yellow (5 litre) limiter may not be necessary on some gas heaters.
** The bottom cap is factory set at 3/4 turn from fully closed position.
*** **IMPORTANT!** - It is a requirement of Instantaneous Electric Water Heaters that a stable flow of water passes through the heater. This requirement can be satisfied by using a flow stabiliser fitted prior to the heater and should be adjusted to give a temperature of between 45-50°C from the heater.

Fitting limiter or orifice disc and Bottom Cap adjustment





Remove wall bracket from mixing valve (see Installation). Peel off label to reveal Bottom Cap, with a marker pen, mark a point in-line with slot. Turn extra anticlockwise ½ (180°) turn using a screw driver.

Installation

The installation, commissioning and maintenance must be carried out in accordance with instructions supplied and be installed by qualified and competent persons. Installations must comply with all Local and National Water Authority

Shower Valve

1. Determine the routes of the hot and cold supply pipework. The mixer can be fed from the top, rear or bottom. See Dimensions for pipe inlet centres.

2. Install supply pipework. Accessible isolating valves are recommended for maintenance.

Note! Try fit of mixing valve to pipework, each inlet elbow can be unscrewed 1½ turns to allow for adjustment and location.

3. Remove the wall bracket from the rear of the mixer by loosening retaining grubscrew on the underside of mixer with the hexagon key.

4. Use the wall bracket to mark hole positions. Drill wall and insert suitable wall plugs for fixing screws.

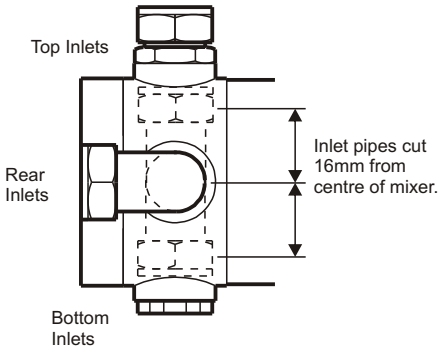
5. Fit bracket to wall using fixing screws. Ensure retaining hole for grubscrew is at the bottom.

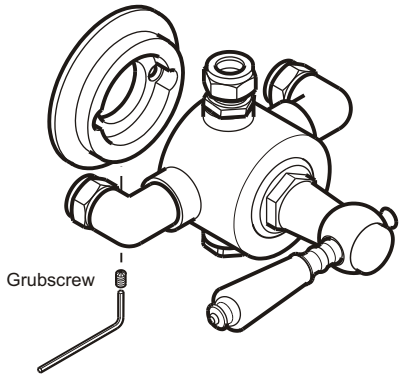
Important! Ensure supply pipework is flushed to clear debris before connecting mixer. Do not use sealing compounds on connections.

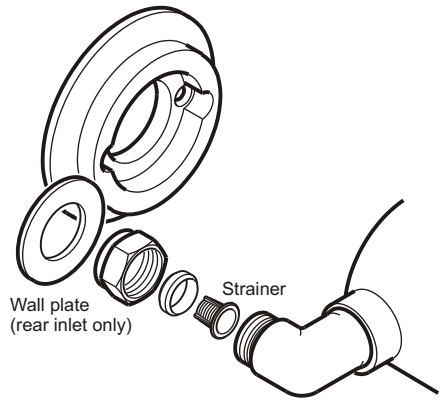
6. Offer mixing valve to pipework and tighten the wall bracket retaining screw.

7. Make connections to inlet supplies. Ensure inlet strainers supplied are fitted.

8. Fit shower kit, see separate installation guide.







Installation

Exposed Rigid Riser

1. With the shower mixing valve installed, connect the outlet pipework to the mixing valve.

Note! Ensure the shower fitting is fixed at a height suitable for all users.

2. For the Exposed Rigid Kit, fit the shower arm to the riser pipe to mark the bracket fixing positions and remove.

3. Drill and fit suitable wall plugs. Refit shower arm to riser pipe, ensure 'O' ring is fitted. Fix the bracket in position using screws provided.

4. Fit washer to ball swivel, and using a spanner screw the ball swivel to the shower arm.

5. Fit the ‘O’ ring to the thread of ball swivel, screw the shower rose on to thread.

6. Holding the serrations on the ball swivel, tighten to enable the shower head to tilt with slight resistance.

Note! Over time the shower head may become loose, use step 6 to re-tighten.