

Ideal Standard

Installation Instructions High Flow Thermostatic Bar Shower Valve



CERATHERM 100



A4813AA CERATHERM 100 High Flow Exposed Shower Mixer
A4814AA CERATHERM 100 High Flow Exposed Shower Pack

IMPORTANT
BEFORE CONNECTION, FLUSH WATER THROUGH PIPEWORK TO REMOVE ALL DEBRIS ETC. WHICH COULD DAMAGE THE VALVE MECHANISM

INSTALLER: After installation please pass this instruction booklet to user



TABLE OF CONTENT

1	INTRODUCTION.....	3
2	PRODUCT DIMENSIONS	4
3	SUPPLY CONDITIONS.....	5
4	WATER REGULATIONS	6
5	INSTALLATION GUIDE.....	7
6	OPERATION	10
7	MAXIMUM TEMPERATURE STOP	11
8	THERMOSTATIC CARTRIDGE CALIBRATION.....	11
9	MAINTENANCE	11
10	COMMISSIONING & PERIODIC CHECKS	12
11	FREQUENCY OF REGULAR SERVICING.....	12
12	COLD WATER ISOLATION (CWI) TEST	13
13	THERMOSTATIC CARTRIDGE REPLACEMENT	14
14	FLOW CARTRIDGE REPLACEMENT	15
15	CHECK VALVES REPLACEMENT	15
16	CLEANING.....	16
17	ISOLATING VALVES.....	16
18	SPARE PARTS.....	17
19	SPARE PARTS FOR SHOWERSET (A4814AA)	18

1 INTRODUCTION

The fittings covered by these instructions should be installed in accordance with the Water Regulations published in 1999*. Ideal Standard strongly recommends that these fittings are installed by a professional fitter.

*A guide to the Water Supply (Water Fittings) Regulations 1999 and the Water Byelaws 2000, Scotland is published by WRAS (Water Regulations Advisory Scheme) Unit 13, Willow Road, Pen-y-Fan Industrial Estate, Crumlin, Gwent, NP11 4EG. ISBN 0-9539708-0-9

These thermostatic shower mixers are designed to be installed on normal UK low pressure storage tank fed systems, unvented high pressure systems, modulating instantaneous water heaters or modulating combination (combi) boilers. They are suitable for all pumped applications.

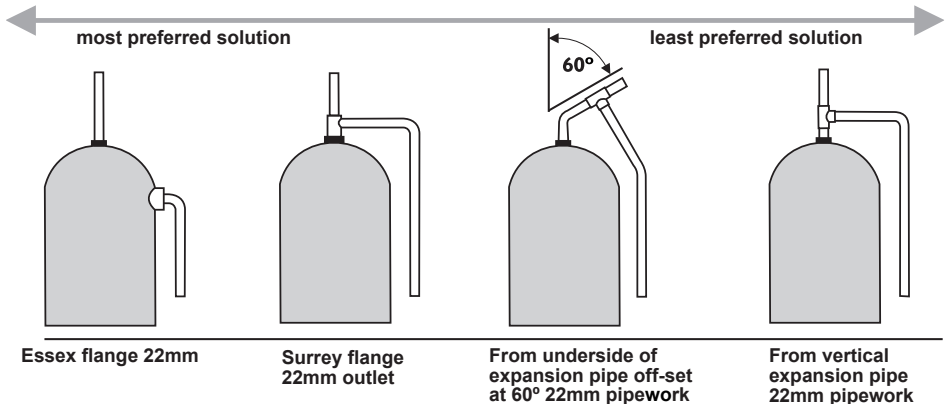
WATER REGULATIONS

Hot and cold water supply pressures must be reasonably balanced and from a common source - both from storage or both from a supply pipe. (IRN 101). The mixers will function within specification on unequal pressures up to a ratio of 5 : 1, but it is not recommended that the cold supply be connected to the rising main and hot to the tank fed supply as the pressure differential is likely to exceed the 5:1 ratio. **(See table 1)** The minimum pressure for correct operation is 0.1 bar (1m head). Pressure head is measured as the vertical distance between the bottom of the cold water storage tank which feeds the hot water system and the highest point on the shower spray plate. When installing with a shower pump the use of a secondary tapping from the cylinder is highly recommended.

Figure 1 shows the various methods of connecting the hot water pipe to the cylinder - the most preferred on the left and the least preferred on the right.

The fitting should be so installed as to be readily accessible for examination, repair, replacement or operation. (IRN 111).

The temperature of the hot water must not exceed 85°C but the installer's attention is drawn to code of practice BS 6700 which recommends that stored hot water should normally never exceed 65°C. For correct operation of the valve, a minimum of 55°C is required.



Preferred arrangements for cylinder tapping

Fig.2

In accordance to BSEN1111 & BSEN1287 the valve has approval for the following applications:

A4813AA / A4814AA	High Pressure HP-S
A4813AA / A4814AA	Low Pressure LP-S

Note: If water supply is fed by gravity then supply pressures should be verified to ensure the conditions of use are appropriate for the valve.

2 PRODUCT DIMENSIONS

A4813AA

A4814AA

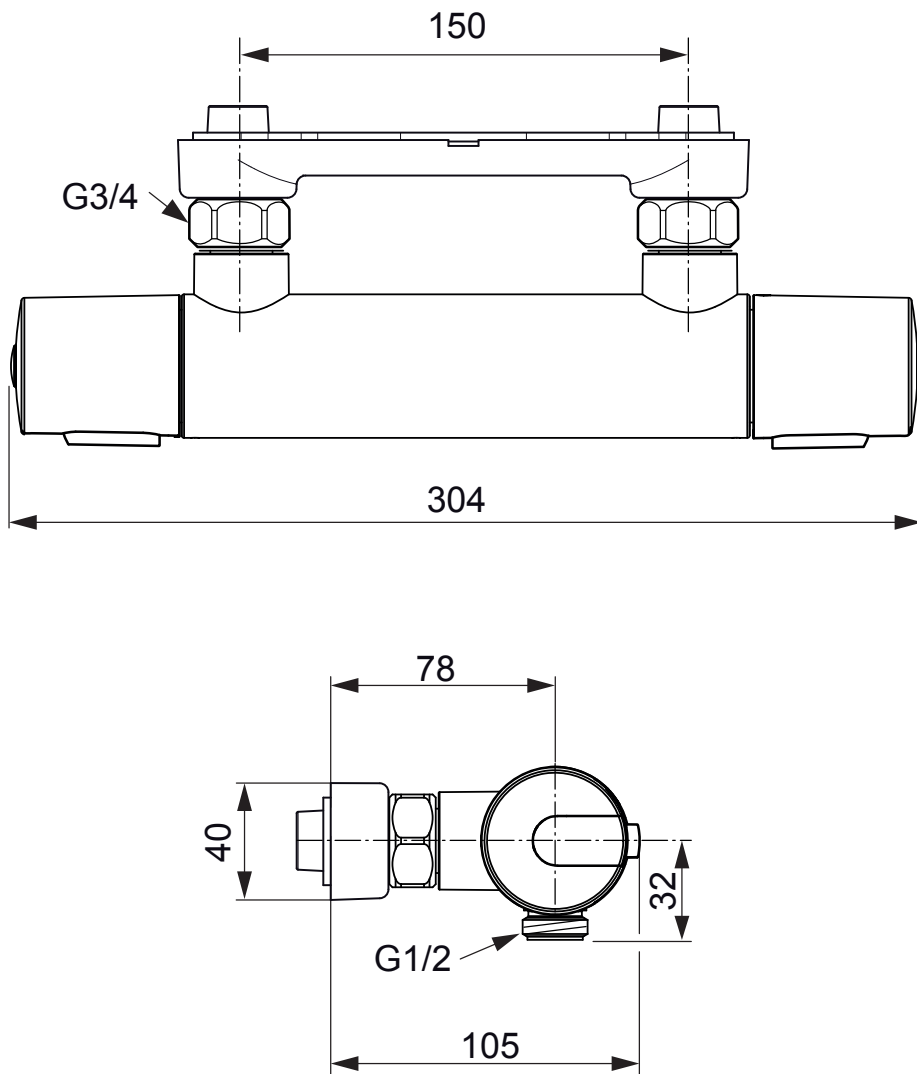


Fig.1

For guidance on how to install the shower kit, please refer to the separate instructions provided with the kit.

3 SUPPLY CONDITIONS

Table 1 Conditions of use

	BSEN1111	BSEN1287
Operating pressure range:	High Pressure	Low Pressure
Maximum static pressure	10 bar	10 bar
Flow pressure hot and cold	0.5 to 5.0 bar	0.1 to 1.0 bar
Hot supply temperature	55 to 65 °C	55 to 65 °C
Cold supply temperature	5 to 20°C	5 to 20°C
Temperature differential characteristic (TDC)	10 °C	10°C

Valves operating outside of these conditions cannot guaranteed to perform as type 2. Approval only applies when the valves are installed without the flow regulators.

MODULATING COMBI BOILER

This thermostatic shower valve is designed for use with modulating combination boilers.



**flow direction
through
flow regulator**

When installing on a modulating combination boiler it is sometimes possible for the interaction of a thermostatic valve with the combi to cause the boiler to cut out and cut in again. With the result that the water will become alternatively cold and hot. To overcome this, a 4 L/min flow regulator should be fitted upstream of the thermostatic valve.

It should be fitted in any 15mm compression fitting in the dedicated cold supply pipe.

It is important to choose a compression fitting located in a position which is accessible after installation and it must be fitted the correct way round for the direction of flow. The regulator can be fitted in either the inlet or outlet side of the compression fitting. If fitting in an outlet side, ensure the o-ring is seated fully in the visible rebate around the edge of the regulator. Use the tip of a small screwdriver or similar to achieve this. Ensure the tail of the pipe is not fouling the regulator (shorten if required) and do up the compression fitting as normal. In a minority of cases, where the boiler is of a type which stores a small quantity of very hot water, it may also be necessary to fit a 4 l/min flow regulator in the hot supply. These can be obtained from Customer Care (A962570NU).

IMPORTANT: Ensure that any old / existing thermostatic mixing valves (TMVs) that may be fitted in the supply pipes are removed

Isolation valves MUST be fitted to permit future maintenance.

These should be fitted as close as is practicable to the water supply inlets of the thermostatic shower valve. See sect.17 for more details.

Isolation valve should be installed in an easily accessible location.

4 WATER REGULATIONS

CATEGORIES OF RISK

The water regulations published in 1999* take a new approach to backflow in that they look at different categories of risk. The installer must assess the risk from the various categories of fluid in adjacent appliances before determining the level of backflow protection required for a particular installation. **Figures 3 & 4** describe the protection required in various installations.

CATEGORY 3 RISK

Water in a shower tray, basin or bathtub is considered to be a fluid category 3 risk which is a fluid which represents a slight health hazard if it were to find it's way back into the supply pipe. For this reason it must not be possible for any flexible shower head to be able to enter any adjacent washbasin, bath or shower tray unless appropriate protection is employed. **(See Figure 3)**. If it is desired to allow the hand spray to be used inside say a bathtub or a basin it is essential that double check valves be fitted to the inlet on both hot and cold supplies to the thermostatic valve. Alternatively single check

valves can be fitted at the inlets and an additional check valve should be fitted in the valve outlet. No check valves need be fitted if the hand spray is prevented from reaching closer than 25mm of the spill over level of any such fixture.

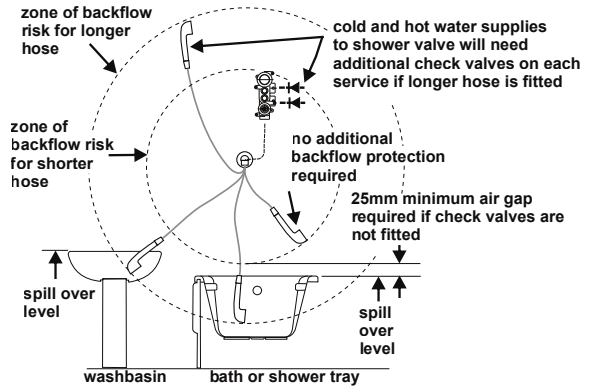


Fig. 3 Backflow risk from a fluid category 3

CATEGORY 5 RISK

Water in a Sink, WC or Bidet is considered to be a fluid category 5 risk which is a fluid which represents a serious health hazard if it were to find it's way back into the supply pipe. For this reason it must not be possible for any flexible shower head to be able to enter any adjacent Sink, WC or Bidet. If the flexible hose to be fitted could reach into any such vessel, the requirements to the system design are so onerous it is better not to fit a flexible. Rather, a fixed overhead showerhead should be considered. **(See Figure 4)**. It will also be seen that this risk could change should the hose be taken out of the restraining device or should a longer replacement hose be fitted at a later date. Installers and householders are advised to take account of these factors when fitting replacement hoses. For pumped applications the pipe supplying the pump must not in addition supply an ascending spray bidet. Category 5 hose retaining instruction on page 6. **(See Figure 5)**

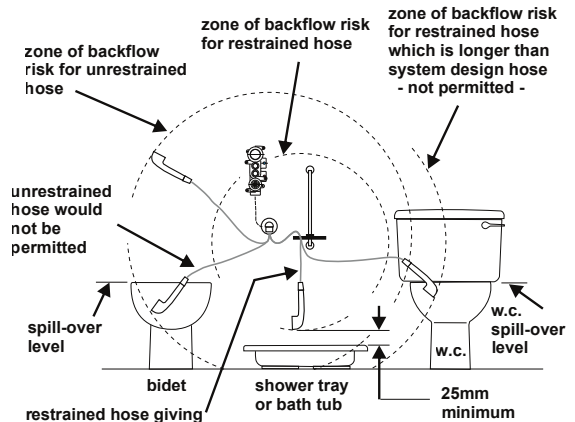
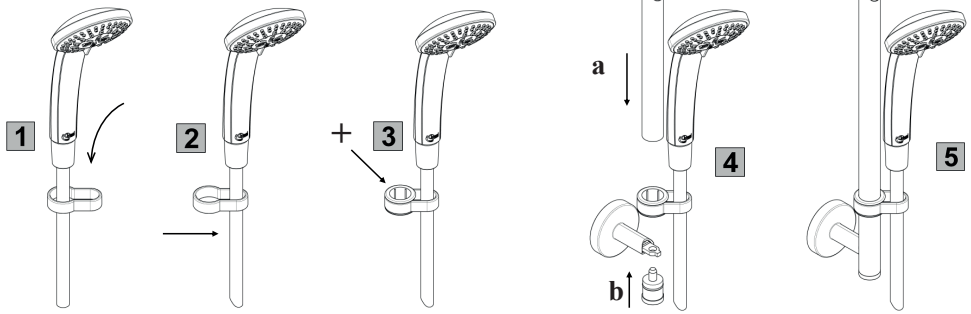


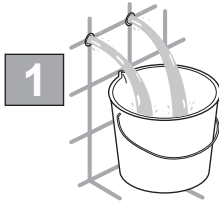
Fig. 4 Backflow risk from a fluid category 5

Fig. 5 SLIDING RAIL – CATEGORY 5 HOSE RETAINING

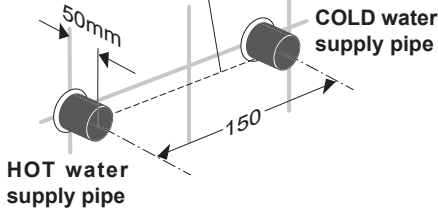
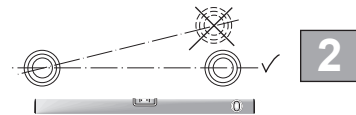


5 INSTALLATION GUIDE

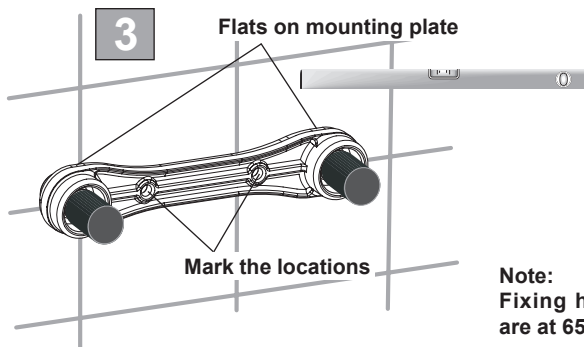
The thermostatic mixing valve must be installed in such a position that maintenance of the TMV and its valves and the commissioning and testing of the TMV can be undertaken.



IMPORTANT
BEFORE CONNECTION, FLUSH WATER
THROUGH PIPEWORK TO REMOVE ALL
DEBRIS ETC. WHICH COULD DAMAGE
THE VALVE MECHANISM



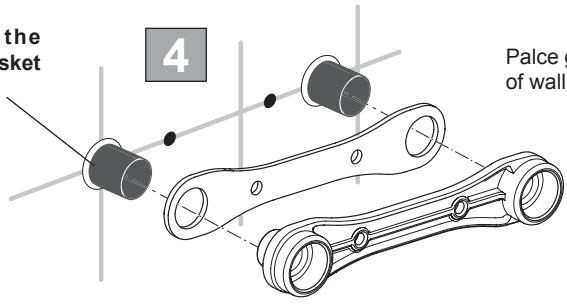
Two 15mm inlet pipes need to be run at 150mm centres which will have been identified as the location of the shower fitting and cut two holes of diameter 25-30mm in the wall board. We recommend leaving 50mm of pipe protruding at this stage.



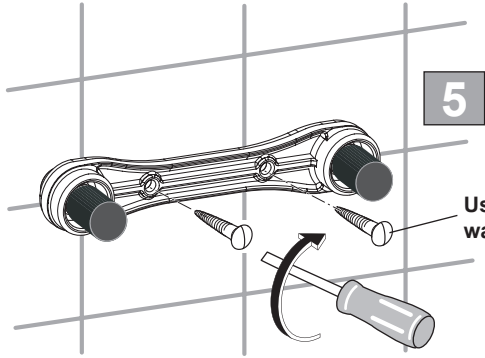
Place wall plate over pipework and onto the wall surface. A spirit level can be placed on the flats of the wall plate to ensure the level. Once at the correct position the two fixing holes can be marked. Drill two holes to suit appropriate wall fixings.

Note:
Fixing holes in bracket
are at 65mm centres.

Note:
 Tile closely to the pipe to ensure gasket effectiveness



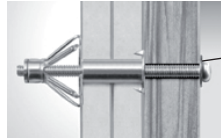
Place gasket on the rear of wall mount plate



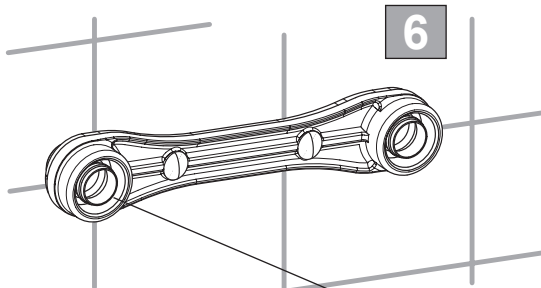
Use suitable wall fixings

Tighten up the two screws until secure.

Note:
 For plaster board duct it will be necessary to fit extra strong cavity anchor plasterboard fixings as shown.



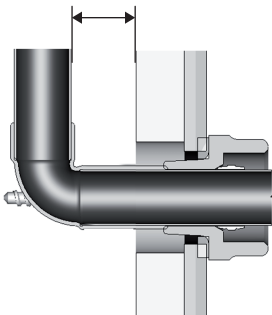
Cavity anchor plasterboard fixing



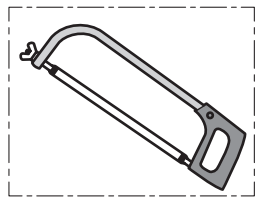
The pipes should be trimmed level to the wall bracket. If using a pipe cutter it will be necessary to mark the pipes and then remove the bracket before trimming to its correct length.

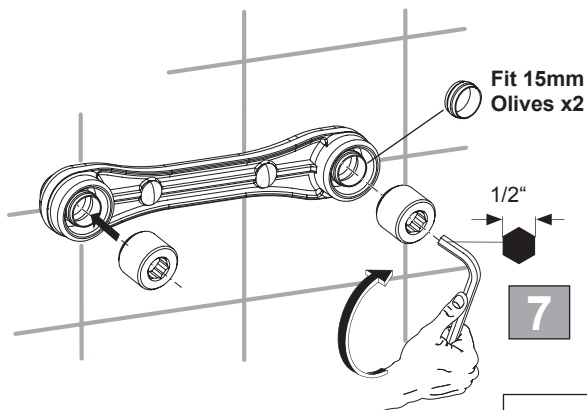
Note:
 If the wall is to be subsequently tiled ensure there is sufficient movement in the duct pipework to allow the bracket to move forward by the thickness of the tiling.

Tiling movement allowance



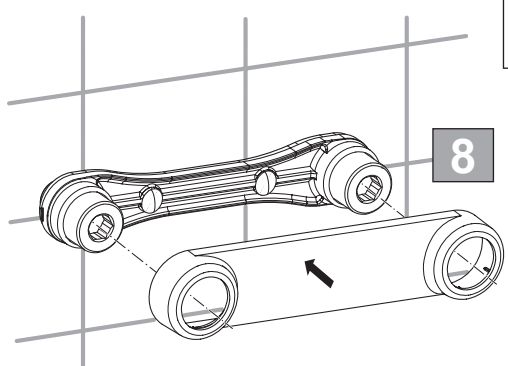
Pipe trimmed level with the wall bracket



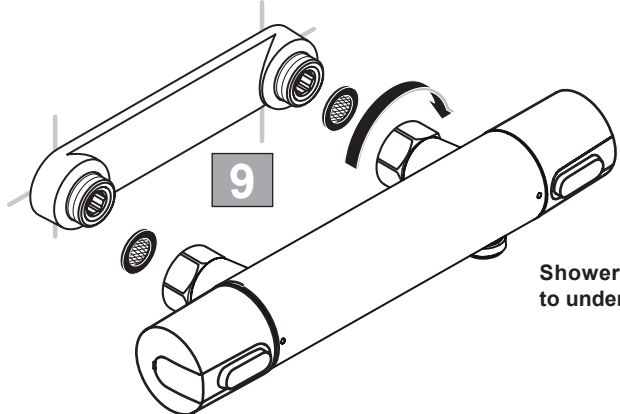


Fit the olives to the pipes prior to screwing the two 3/4" connectors into the wall mount plate using a 1/2" allen key. The connectors will have to be securely screwed in to form the necessary compression joint between the olive, wall plate and connector.

NOTE FOR IRELAND: 15mm olives are supplied with this product. Use 1/2" olives if 1/2" supply pipes are fitted.



Shroud can now be fitted to wall plate and should be positioned with the slot at the bottom



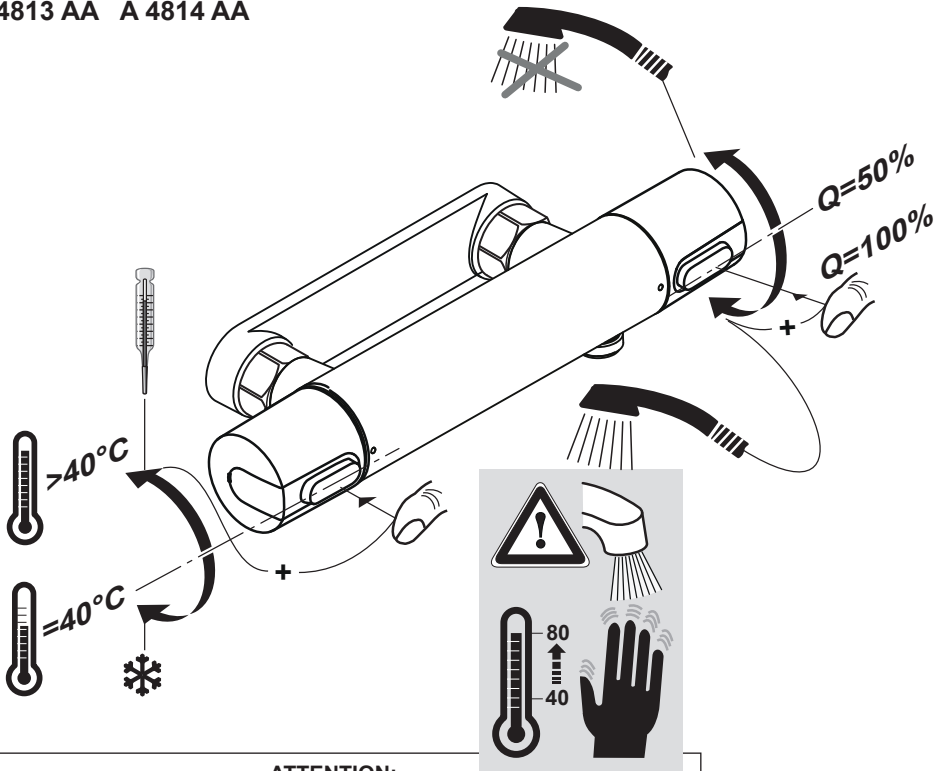
Use 30mm A/F spanner.
CAUTION: Take care not to damage chromed surfaces.

Ensure the sealing washers are within the captive nuts of the shower valve. Fit the shower valve to the wall bracket as shown. Turn on the water supplies & check for leaks.

For guidance on how to install the shower kit, please refer to the separate instructions provided with the kit.

6 OPERATION

A 4813 AA A 4814 AA



ATTENTION:
TEMPERATURES HIGHER 40°C CAN BE HARMFUL TO YOUR HEALTH.

Right handle controls water flow rate.

- This handle is shown above parked in the off position.
- Rotating this handle downwards commences water flow. By rotating the handle 90° from the off position the user will encounter economy flow “stop” delivering about 50% of the maximum flow rate achievable through this product.
- To obtain greater flow rate, press the right button and rotate this handle further downwards. The handle will rotate a further 90° from the economy stop to the maximum flow.

Left handle controls water temperature.

- This handle is shown above parked in the 40°C temperature “stop” position.
- At this temperature “stop” position mixed water is delivered up-to about 40°C.
- To obtain cooler water rotate handle downwards.
- To obtain higher water temperature, press the left button and then rotate this handle upwards.

**DO NOT FORCE HANDLES BEYOND THE DESCRIBED MOVEMENT RANGES
OTHERWISE THIS MAY RESULT IN DAMAGE TO BOTH VALVES AND HANDLES.**

7 MAXIMUM TEMPERATURE STOP

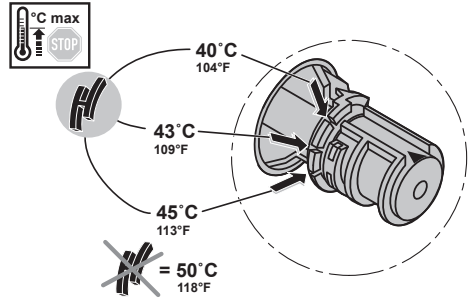
The maximum mixed water temperature is factory set at 40°C.

To change this temperature, remove the temperature control handle (see sect.13).

Remove the temperature limit stop (black H-shaped plastic part) and reinsert it in the appropriate recess on the handle carrier.

Four different settings are possible:
40°C, 43°C, 45°C & 50°C

At last refit the temperature handle again.



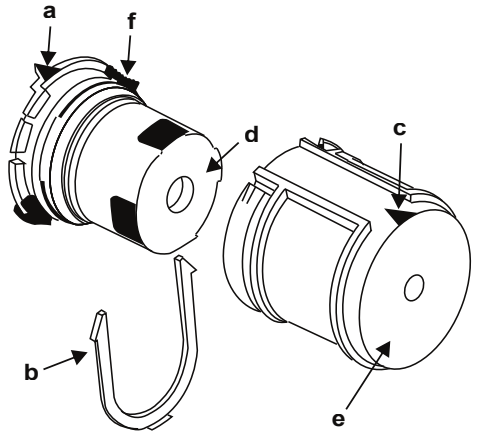
Removal of limit stop is not recommended

IMPORTANT NOTE. Settings of 45°C & 50°C are not recommended for showering.
See section 10 for safe & comfortable bathing temperatures

8 THERMOSTATIC CARTRIDGE CALIBRATION

In the event of the thermostatic cartridge requiring re-calibration the following procedure should undertaken.

1. Remove the temperature control handle (see sect.13).
2. Slide out the red "U" piece (b) exposing temperature control mechanism (d).
3. Turn on the shower, position a thermometer in the running water and when the temperature settles, rotate the temperature control mechanism until 40°C is achieved.
4. Reconnect the handle carrier (e) ensuring the arrow guide (c) is at 12 o'clock and refit the red "U" piece (b).
5. Reconnect the Handle.



9 MAINTENANCE

The fitting of isolation valves and strainers is required as close as is practicable to the water supply inlets of the thermostatic mixing valve. The thermostatic cartridge seldom fails and the possibility of blocked filters should be investigated before contemplating replacing it. Small particles of debris may still find their way past the strainers and onto the filter screens on the thermostatic cartridge. These should be cleaned and re-fitted. See section on cartridge replacement.

10 COMMISSIONING & PERIODIC CHECKS

The following procedures should be carried out after installation and every 12 months after to ensure that the valve is functioning correctly.

Check that:

1. The application of the thermostatic valve matches the approved designation.
2. The supply pressures are within the recommended range for the application.
3. The supply temperatures are within the permitted range for the application and comply with the guidance for prevention of Legionella.
4. The mixed temperature is as required for the application.

Record:

5. Each hot and cold supply. (Make a note of the measuring device used).
6. The mixed water temperature at the outlet device.

Isolate:

7. The cold supply to the mixing valve and record the mixed water temperature after about 5 seconds. The temperature should not exceed the value given in table (2) below.

Table 2 A guide to maximum temperature sets

Application	Mixed water temperature	Permitted maximum temperature rise during site testing
Shower	41°C	43°C

Note: 46°C is the maximum mixed water temperature from a bath tap. The maximum temperature takes account of the allowable temperature tolerances inherent thermostatic mixing valves and temperature loss in metal baths. **It is not a safe bathing temperature for adults and children.**

The British Burns Association recommends 37°C-37.5°C as a comfortable bathing temperature for Children.

In premises covered by the Care Standards Act 2000, the maximum mixed water temperature is 43°C

11 FREQUENCY OF REGULAR SERVICING

The purpose of servicing regularly is to monitor the performance of changes in system and valve set up. This may require the need to adjust either the supply system or the valve. The product should be checked and tested 12 months after commissioning.

Firstly measure the water temperature at the shower outlet.

Carry out the cold water supply isolation test by isolating the cold water supply to the TMV, wait for 5 seconds if water is still flowing check that the temperature is below 46C. If there is no significant change to the set outlet temperature (+/-2°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.

Notes:

A residual flow is permitted during the commissioning or the annual verification (cold water supply isolation test), then this is acceptable providing the water temperature is no more than 2°C above the designated outlet temperature.

Temperature readings should be taken at the normal flow rate after allowing for the system to stabilize.

The sensing part of the thermometer probe must be fully submerged in the water that is to be tested.

Any TMV that has been adjusted or serviced must be re-commissioned and retested in accordance with the instructions detailed above.

12 COLD WATER ISOLATION (CWI) TEST

CWI test is a guide to showing the performance of the thermostat.

Prior to CWI test:

- Make sure that the Black H Clip is positioned in the 40°C slot on the temperature adjustment carrier (see section 7) Remove temperature handle to check. If this has been removed then the fail-safe will not work.

- Make sure the supply temperatures are within the ranges 55 to 65°C for hot, & 5 to 20°C for cold.

To perform a CWI test:

- Turn the product on using the flow handle, override the 50% economy flow stop on the handle & rotate handle to max, giving 100% flow.

- The temperature handle button should be positioned at the front (parked at the 40°C nominal stop).

1. Record the steady state temperature of both hot and cold water supplies. Note the Δt .

2. Record the temperature of the mixed water at the outlet (preferably unscrew the shower hand set) should be within range $40 \pm 1^\circ\text{C}$.

3. Isolate the cold water supply

If the flow ceases, CWI test passed. An ongoing reduced fine flow of water (pencil stream) from the mixed water outlet is also acceptable as a pass.

Restore the cold supply & recheck the temperature at the mixed water outlet once stabilised.

If the flow has not reduced, the product has failed the CWI test. Product requires maintenance, cartridge should be removed, cleaned & retested.

Additionally, clean all filters, ensure check valves are working, and make sure all isolating valves are fully open.

NOTE: In order to isolate the cold water & to perform the CWI test, service valves must be fitted (as close as practicable to the mixer's inlets).

Volumetric guidance in the case of "ongoing reduced discharge of water" during CWI test

Acceptance criteria is as follows, isolate the cold water supply then:

- 1) Collect the water discharged from the shower outlet for 5 seconds.
- 2) Continue to collect the water discharged from the shower outlet in a second vessel for a further period of 30 seconds.

The volume collected in the first period of 5 s shall not exceed 200 ml.

The volume collected in the second period of 30 s shall not exceed an additional 300 ml.

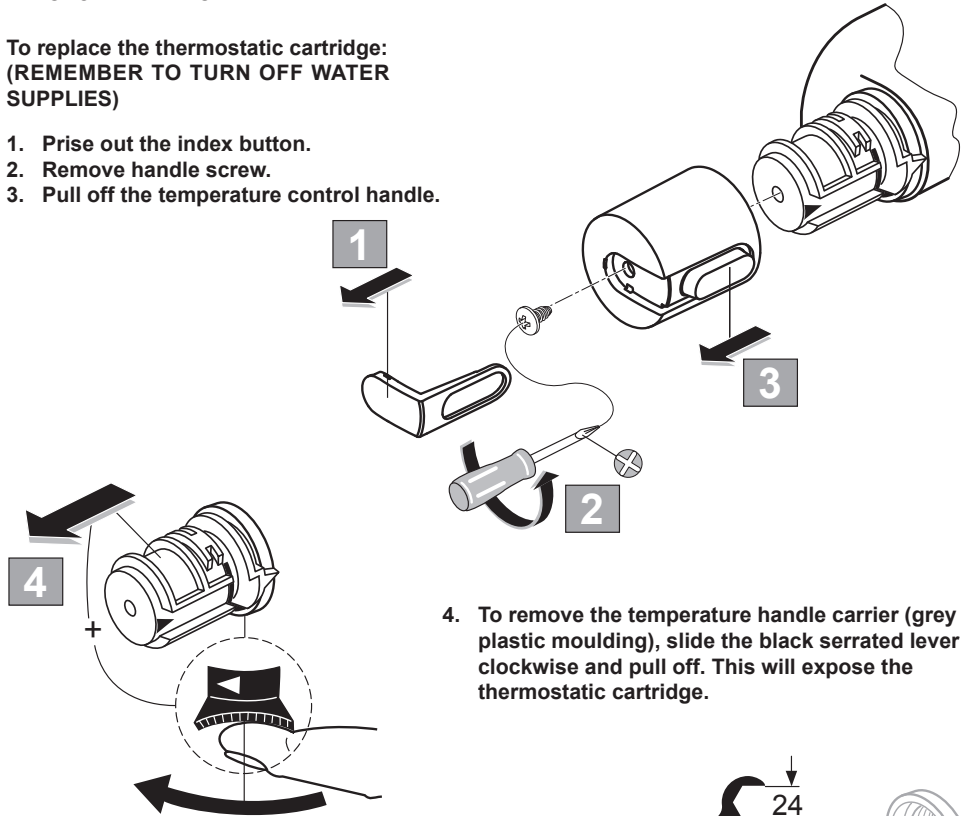
After restoration of the cold water supply (30 s) the mixed water outlet temperature shall not differ by more than 2°C from the initial set mixed water temperature.

13 THERMOSTATIC CARTRIDGE REPLACEMENT

A 4813 AA A 4814 AA

To replace the thermostatic cartridge:
(REMEMBER TO TURN OFF WATER SUPPLIES)

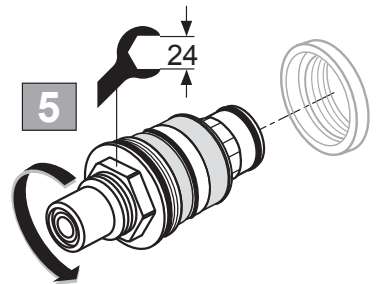
1. Prise out the index button.
2. Remove handle screw.
3. Pull off the temperature control handle.



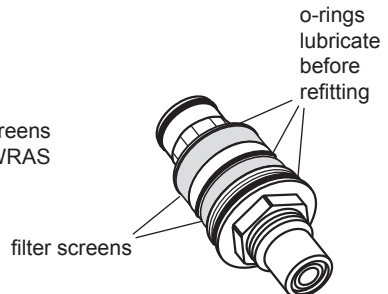
4. To remove the temperature handle carrier (grey plastic moulding), slide the black serrated lever clockwise and pull off. This will expose the thermostatic cartridge.

5. Unscrew cartridge with 24mm A/F spanner and replace if necessary.

ENSURE PARTS ARE REASSEMBLED IN THE CORRECT SEQUENCE.



To clean the screens remove the o-rings shown
The screens will then slide off. When clean replace the screens
then the o-rings which should be lightly greased with a WRAS
approved silicone grease (e.g. Klueber Unisilikon GBU2).



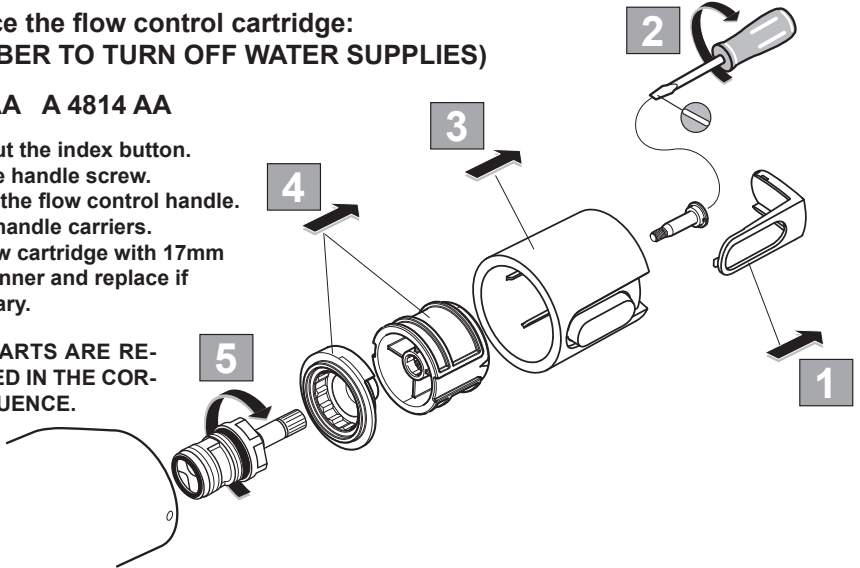
14 FLOW CARTRIDGE REPLACEMENT

To replace the flow control cartridge:
(REMEMBER TO TURN OFF WATER SUPPLIES)

A 4813 AA A 4814 AA

1. Prise out the index button.
2. Remove handle screw.
3. Pull off the flow control handle.
4. Pull off handle carriers.
5. Unscrew cartridge with 17mm A/F spanner and replace if necessary.

ENSURE PARTS ARE RE-ASSEMBLED IN THE CORRECT SEQUENCE.

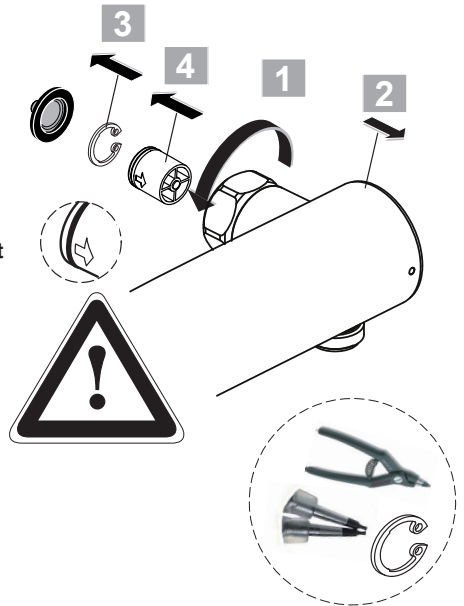


15 CHECK VALVES REPLACEMENT

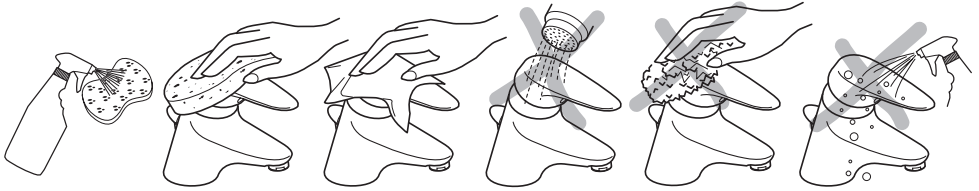
To replace the check valves cartridges:
(REMEMBER TO TURN OFF WATER SUPPLIES)

1. Separate the shower valve from the wall bracket by undoing the captive nuts. See sect.5 step 9. Use 30mm A/F spanner.
2. Remove shower valve from wall, and keep sealing washers safe.
3. The check valves are housed inside the retaining inserts within the inlet bores. Looking closely at the rear of the product, note circlips hold the check valves in place. Using circlip pliers, squeeze the circlip & lift it away from the bore.
4. Gently pull out the check valves: check & clean or replace if necessary. Observe the flow direction arrow on the body of the check valve. Refit the circlips.

ENSURE PARTS ARE REASSEMBLED IN THE CORRECT SEQUENCE.



16 CLEANING



When cleaning chromed products use only a mild detergent, rinse & wipe dry with a soft cloth. Ideally clean after each use to maintain appearance.

Never use abrasive, scouring powders or scrapers. Never use cleaning agents containing alcohol, ammonia, hydrochloric acid, sulphuric acid, nitric acid, phosphoric acid or organic solvents. Use of incorrect cleaning products / methods may result in chrome damage which is not covered by the manufacturer's guarantee.

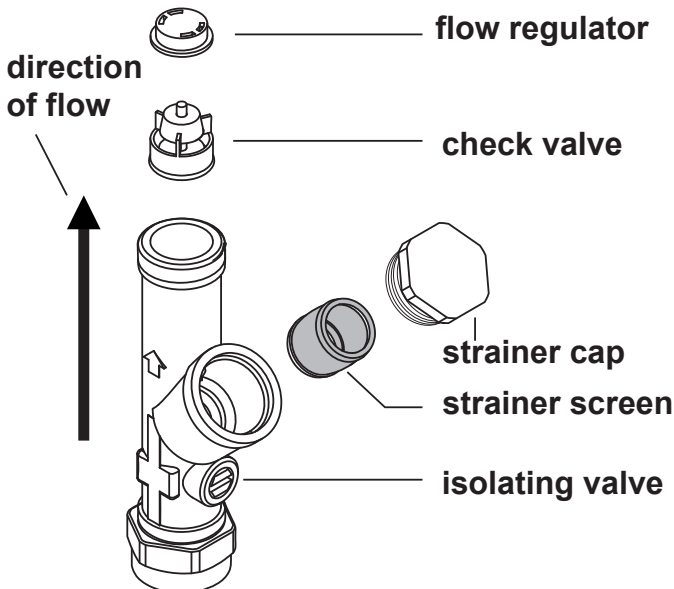
17 ISOLATING VALVES

Isolation valves (not supplied with this product) **MUST** be fitted to permit future maintenance. Fitting of strainers (filters) is also recommended.

These should be fitted as close as is practicable to the water supply inlets of the thermostatic shower valve.

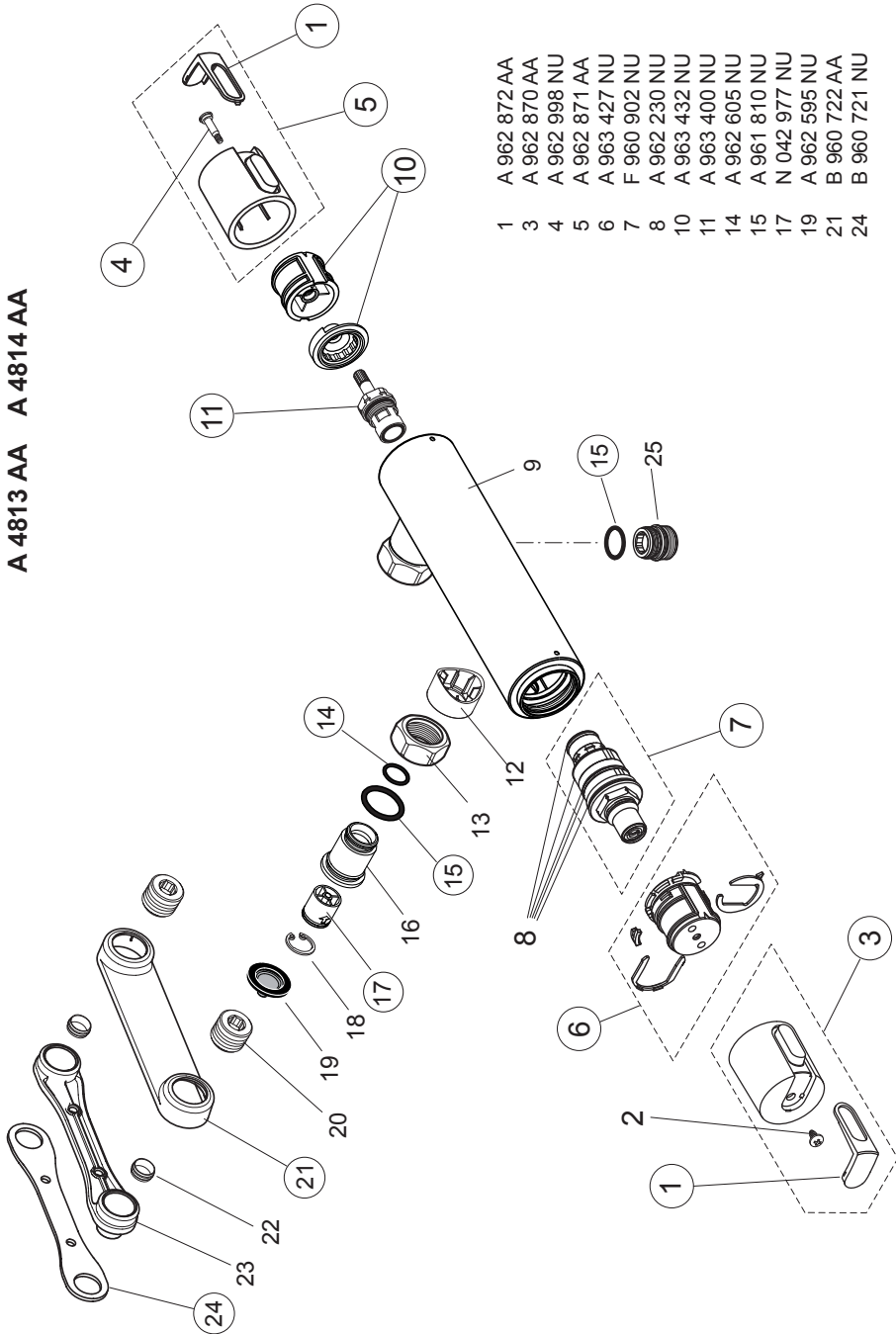
Both isolation valves & strainers should be installed in an easily accessible location.

An in-line combined isolating valve (shown below) can be purchased by contacting Customer Care. Spares code E960613NU contains a pair of these valves. This valve also contains a flow regulator and check valve (which can be removed if not required).



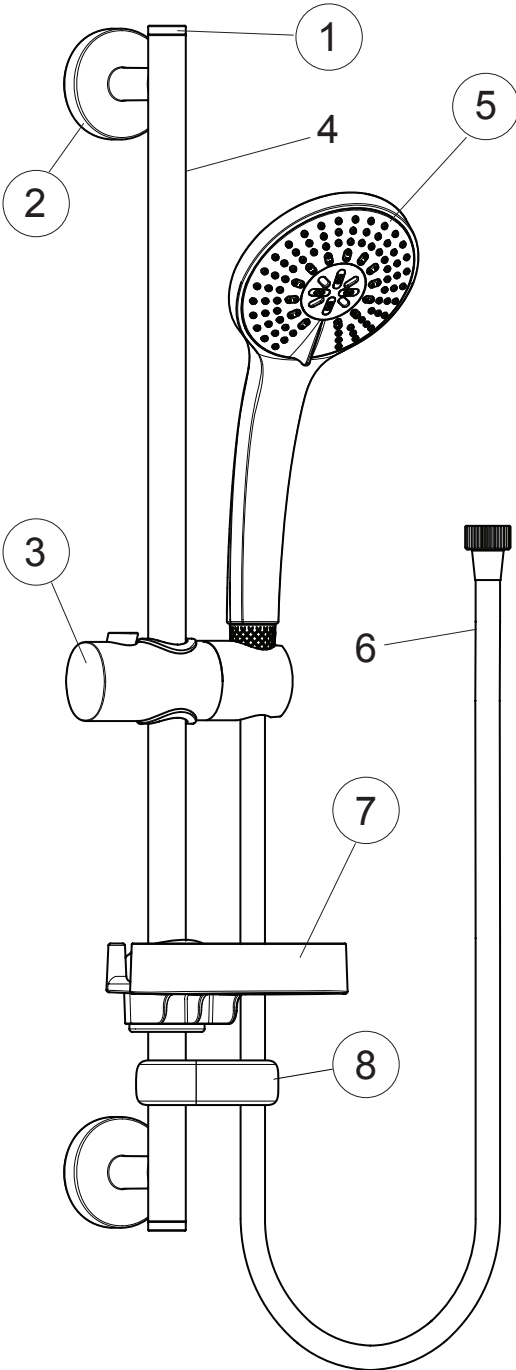
18 SPARE PARTS

A 4813 AA A 4814 AA



- 1 A 962 872 AA
- 3 A 962 870 AA
- 4 A 962 998 NU
- 5 A 962 871 AA
- 6 A 963 427 NU
- 7 F 960 902 NU
- 8 A 962 230 NU
- 10 A 963 432 NU
- 11 A 963 400 NU
- 14 A 962 605 NU
- 15 A 961 810 NU
- 17 N 042 977 NU
- 19 A 962 595 NU
- 21 B 960 722AA
- 24 B 960 721 NU

19 SPARE PARTS FOR SHOWERSET (A4814AA)



Pos.	Part No.
1	B 961 060 AA
2	B 960 973 AA
3	B 960 976 AA
5	B 9403 AA
7	B 960 917 NU
8	B 961 055 AA

SAMPLE TMV RECORD SHEET FOR ON SITE TEST OF A4813/4AA

Test Date:

Valve Reference:		Location
Mixed water temperature:	°C	Installation Date
Designation of use: HP/LP shower:		Test frequency
Valve min temperature differential:	°C	Engineers Name

Remedial actions required:

COMMISSIONING & IN-SERVICE TEST READINGS & RESULTS

Supply Conditions and isolation test details	Result	Observation/comment
Hot Supply Temperature	°C	
Cold Supply Temperature	°C	
Hot Supply Pressure	bar	
Cold Supply Pressure	bar	
Initial stable mixed water temp at normal Flow	°C	
Isolate the cold water supply		
Volume of water collected up to 5s*	ml	
Volume of water collected 5s to 35s**	ml	
Mixed Water Temperature after supply restored	°C	
Deviation from initial stable mixed water temp***	°C	

* If the volume of water collected is > 200ml for the shower outlet then re-check the supply conditions or re-adjust the valve according these installation instructions and re-commission/test.

** If the volume of water collected is 300ml for the shower outlet then re-check the supply conditions or re-adjust the valve according to these installation instructions and re-commission/test.

*** If the deviation is greater than 2°C then service or adjust or adjust the valve in line with these installation instructions and then re-commission and re-test

Next In-Service Test date:	
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