

Ideal Standard

**Ceratherm C100 Exposed
Thermostatic Bar Shower Mixers**

**INSTALLATION
INSTRUCTIONS**



A7537AA Ceratherm 100 Exposed Thermostatic Bar Shower Mixer – supplied with 600 shower kit

A7543AA Ceratherm C100 Exposed Thermostatic Bar Shower Mixer – supplied over-head shower & handset kit

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

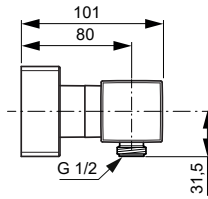
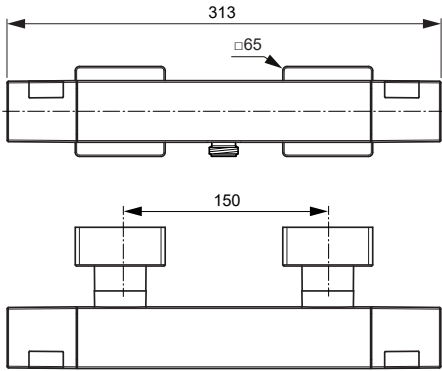
INSTALLER: After installation please pass this instruction booklet to user



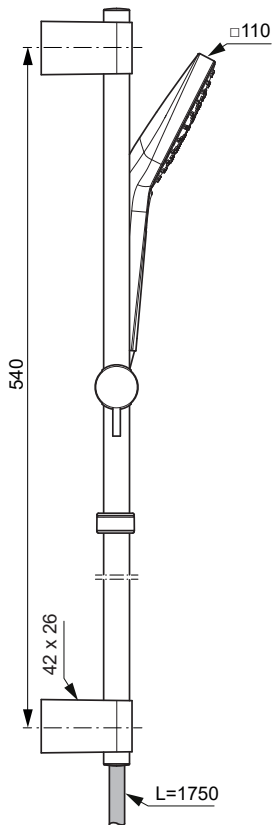
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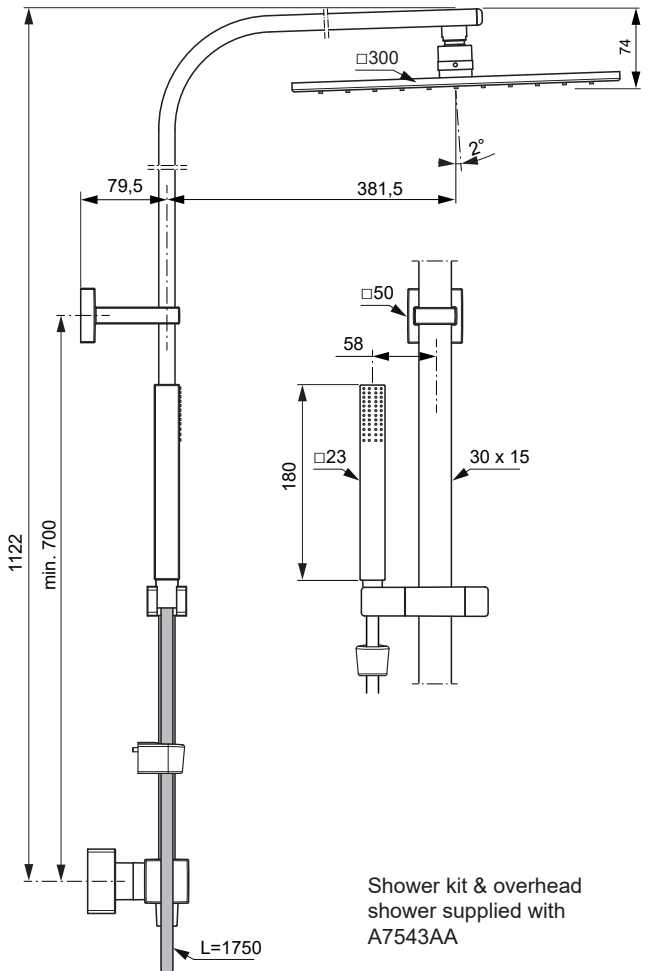
1 DIMENSIONS



Basic shower valve dimensions shown with mounting brackets assembled

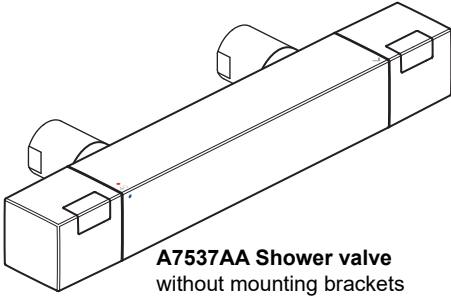


600 Shower kit supplied with A7537AA



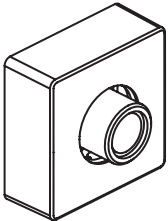
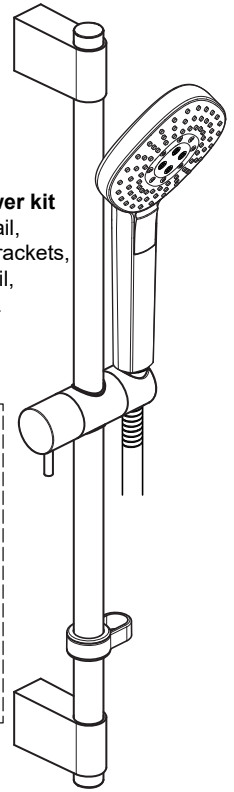
Shower kit & overhead shower supplied with A7543AA

2 PRODUCT BOX CONTENTS



A7537AA Shower valve
without mounting brackets

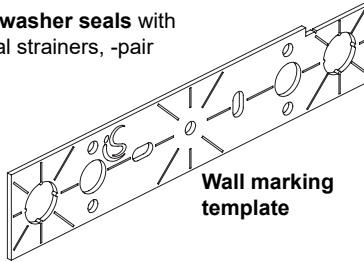
A7537AA 600 Shower kit
includes: 600 riser rail,
a pair of mounting brackets,
sliding bracket for rail,
1750 shower hose &
shower hand set.



Wall mounting bracket
assemblies -pair

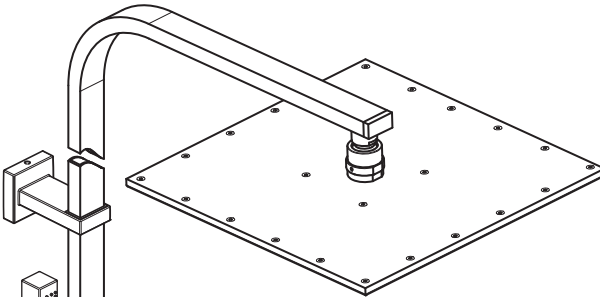


Fibre washer seals with
integral strainers, -pair

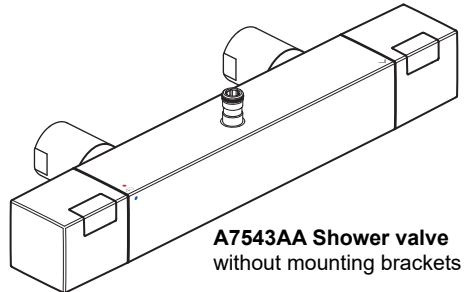


Wall marking
template

NOTE: This wall mount kit is supplied with both products



A7543AA WBWS Shower kit
includes: 1100 overhead riser
rail, a mounting bracket,
sliding bracket for rail,
300 square overhead shower plate,
1750 shower hose &
slim shower hand set.



A7543AA Shower valve
without mounting brackets

NOTE: Shower kits have to be carefully assembled during installation, chrome parts are packaged individually to prevent damage.
The shower kit for A7537AA is supplied with a separate fitting instruction.

3 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

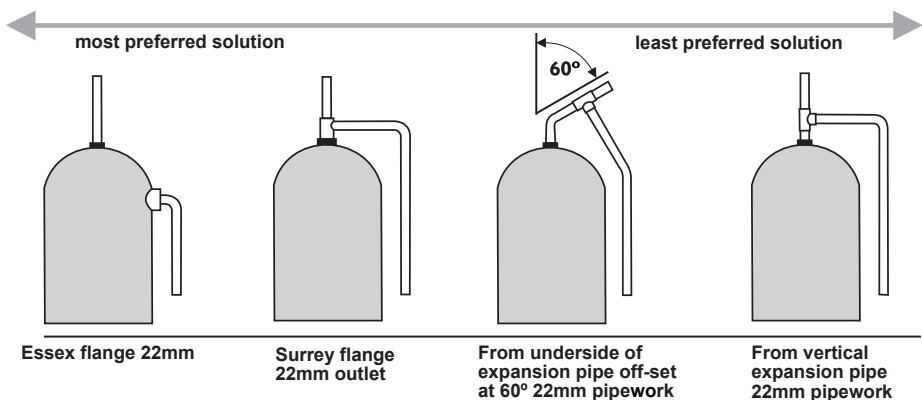
WATER REGULATIONS

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 1.0 bar. 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.

The picture below 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

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.

4 WATER SUPPLY CONDITIONS

Introduction

These thermostatic shower mixers are manufactured to the highest standards. The mixer is intended to be installed on high pressure systems (1.0 bar or greater). The mixer has safety features such as cool body technology and temperature limit stop. To make installation easier, fast fix wall mounts are supplied. Ø15mm water supply pipes should be installed at 150mm horizontal centres in the wall, behind a shower panel or tiled duct wall.

Table 1 Conditions of use

	BSEN1111
Operating pressure range:	High Pressure
Maximum static pressure	10 bar
Flow pressure hot and cold	1.0 to 5.0 bar
Hot supply temperature	55 to 65 °C
Cold supply temperature	5 to 20 °C max

MODULATING COMBI BOILER

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

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.



**flow direction
through
flow regulator**

These regulators, spares code A962570NU, can be obtained by contacting Ideal Standard Customer Care or www.idealstandard.co.uk

Excessive flowrate

To remedy an excessive flowrate issue, where the above inlet regulators have not been fitted, we recommend the use of a “shower outlet flow regulator”. This is suitable for installations which exceed 2 bar dynamic pressure.

A 9 litres per minute outlet regulator is available, quote spares code L6749AA.

This regulator can be easily fitted between the shower valve outlet and the shower hose

- A pair of service valves (for isolating both water supplies) **MUST** be fitted below the bath to permit future maintenance of this product, **see sect 23**. These should be fitted as close as practicable to the water supply inlets of the mixer & in an easily accessible location.
- The mixers include mesh filters (strainer-washers) and check valves are fitted inside the inlets of these products, **see section 20**.

5 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.

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.

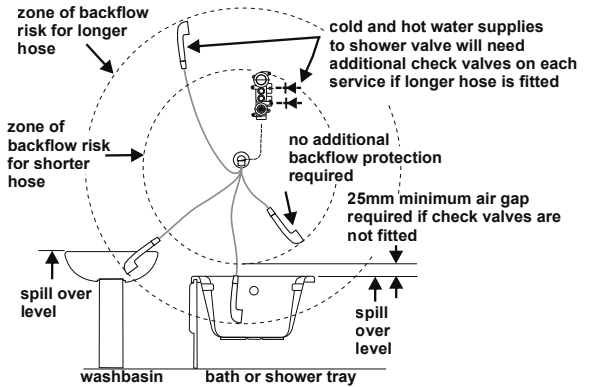


Fig. 3 Backflow risk from a fluid category 3

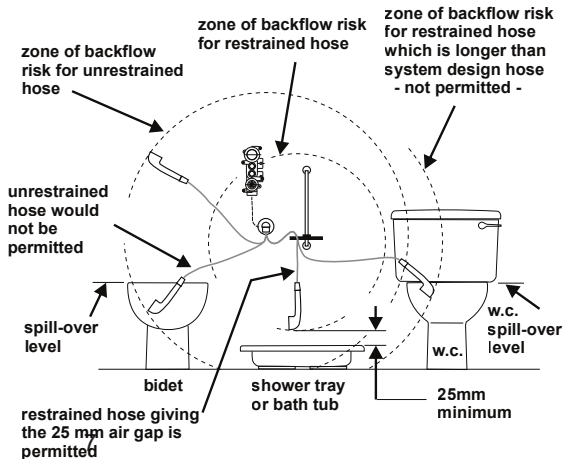


Fig. 4 Backflow risk from a fluid category 5

6 PRE-INSTALLATION NOTES



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

Ceratherm C100 is an exposed two hole thermostatically controlled shower mixer. This product is designed to provide water from ambient cold up to a safe maximum temperature for bathing.

Mounting. Product are supplied with a pair of wall mount escutcheons. Mixer is intended to be installed on a wall or panel arrangement.

Flow regulation. There are no flow regulators fitted inside these products.

Mesh filters (strainers) integral to the inlet seals are intended to protect the check valves from water borne debris. These are fitted inside the inlets of the product, **see section 20.**

Thermostatic cartridge. Additional mesh filters (strainers) are fitted to the thermostatic cartridge to protect it from water borne debris, **see section 17.**

Product dimensions. Check the dimensions shown in **section 1**, ensuring the mixer will fit on the intended bath. Plan position of proposed shower kit.

Product box contents. Ensure you have all the parts shown in **section 2.**

Service Valves. A pair of service valves (for isolating both water supplies) **MUST** be fitted to permit future maintenance of this product. These should be fitted as close as practicable to the water supply inlets of the mixer & in an easily accessible location. NOTE: service valves are not supplied with these products, **see section 23.**

Shower Kit. Each product is supplied with its own style of shower kit. The flexible shower hose from the shower kit can be screwed onto the G1/2" shower outlet nipple located on the underside of the mixer body. Ensure adequate steps are taken to secure the shower hand set and the arrangements comply with water regulations.

Shower hose retainer. Both products are supplied with a bracket to restrain the flexible shower hose & prevent the hand shower head from falling into appliances such as the bath tub or shower tray. The hose can be restrained by a bracket on the shower riser rail or separate wall bracket.

Mixer Controls. The mixers have dual control handles, the left handle allows temperature adjustment of the water. For A7537AA, the right handle permits flow control of the mixed water. For A7543AA, the right handle diverts water between the overhead shower & the shower hand set.

Water Supply Pipes. Both hot & cold water supply pipes should be securely attached to a wall using suitable fixing clips. Supply pipes must Ø15 to fit inside the wall mount brackets.



DO NOT apply heat near this product. Heat generated by soldering could damage plastic parts and seals



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

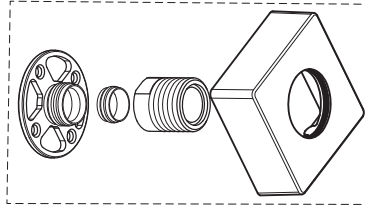
7 INSTALLATION



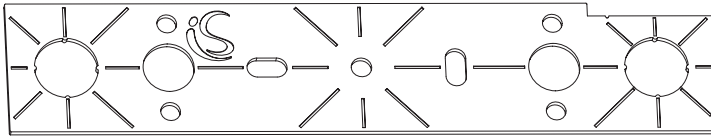
IMPORTANT
BEFORE CONNECTION, FLUSH WATER THROUGH PIPEWORK TO REMOVE ALL DEBRIS ETC. WHICH COULD DAMAGE THE VALVE MECHANISM

7.1 Wall mount mixers A7537AA & A7543AA

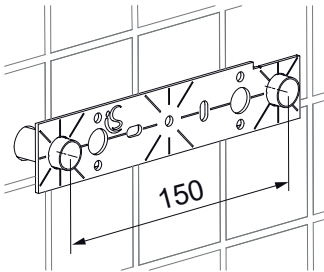
WALL MOUNTING BRACKETS



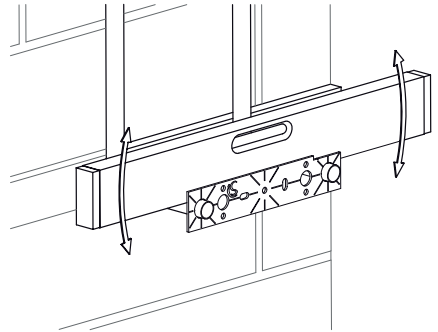
Pair of wall brackets with connectors & escutcheons



Template x1

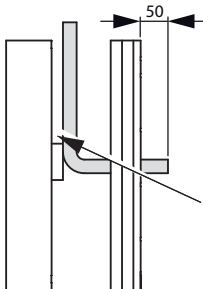


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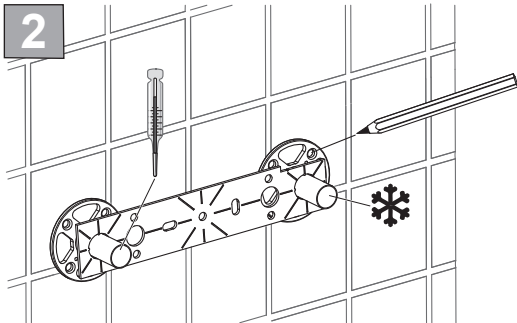
Ø15mm copper supply pipes should be run within the wall cavity.
Hot supply pipe should be on the left hand side and the cold on the right.

Ensure that the hot and cold pipes are positioned 150mm apart and are level.
Use the template provided to obtain the correct spacing.



We recommend leaving 50mm of pipe protruding at this stage.

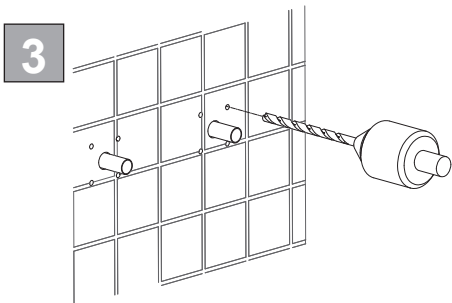
Pipework should be supported in the cavity



Place the brackets over the exposed pipes and use the template provided to position them 150mm apart.

Mark the hole positions for the fixings onto the mounting surface.

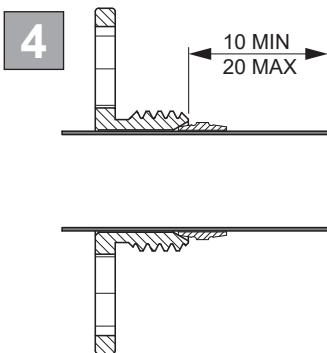
Ensure that the positions of the holes will not result in damage to the pipework inside the wall cavity during drilling.



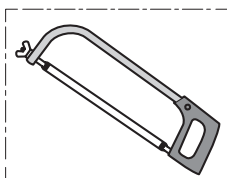
Drill holes appropriate for your choice of fixings into the wall.

We recommend a minimum of two fixings per bracket diametrically opposed.

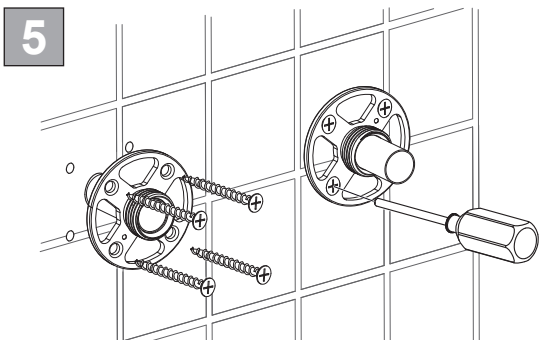
Drill carefully to avoid damaging concealed pipework.



With the wall brackets in position, the supply pipes should be trimmed as shown. The pipes should project from the front face of the brackets by between 10 to 20mm.



If using a pipe cutter, it may be necessary to mark the pipes & then remove the brackets before trimming the pipes to their correct length.



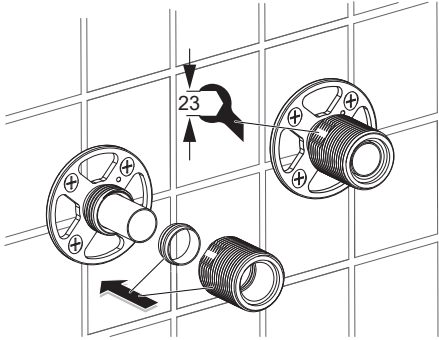
Apply a smear of silicone sealant to the rear of the assembled brackets and push them over the pipework.

Screw both brackets to the wall.

The template can be used to check that the correct pipe spacing of 150mm has been maintained.

Clean off excess sealant and flush the pipes to remove any trapped debris.

6



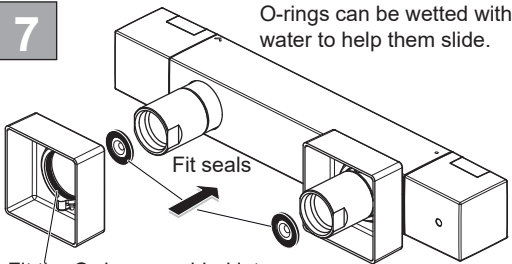
Slide the olives onto the pipes. Screw the two connectors onto the wall brackets by hand until they stop against the olives.

Use a 23mm A/F spanner (or adjustable) on the connectors to tighten.

The connectors will have to be securely tightened to form the necessary compression joint between the olive, wall bracket & connector.

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

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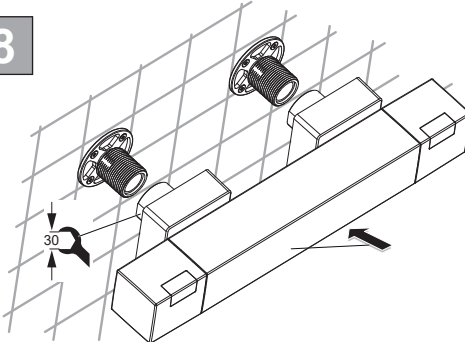
O-rings can be wetted with water to help them slide.

Fit the O-rings provided into the grooves of the escutcheon

Fit the O-rings into both escutcheons as shown. Slide the escutcheons onto the mixer's inlets right up to the rear face of the mixer.

Fit the washer seals (with integral strainers) into both inlet bores, ensuring the domed area of the strainer is pointing outwards (not into the mixer).

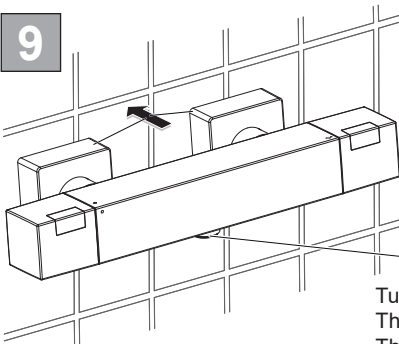
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Align the mixer's inlet legs with the wall brackets & start screwing the coupling nuts onto the threads. Screw a couple of threads of each nut & then alternate to ensure mixer remains parallel to the wall.

Tighten the coupling nuts as far as possible by hand & then use a 30mm spanner to just put enough squeeze on the washers to make a good seal.

9



Slide the escutcheons along the inlet legs until they are pressed against the wall. If necessary, rotate the escutcheons to ensure they look parallel with the mixer body.

The hose from the shower kit should be connected to the shower outlet located on the underside mixer body. Ensure hose seal is in place.

Turn on the water supplies, ensure that there are no leaks. The mixer installation is complete. The shower kits are supplied with their own fitting instructions, next step is to position & install the appropriate shower kit.

7.2 Installation of Shower kit for A7543AA

Once the shower valve has been securely fitted, work can commence on the installing the shower kit.

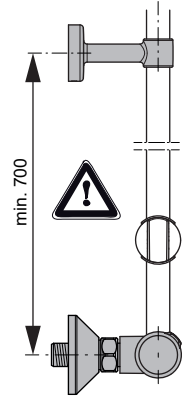
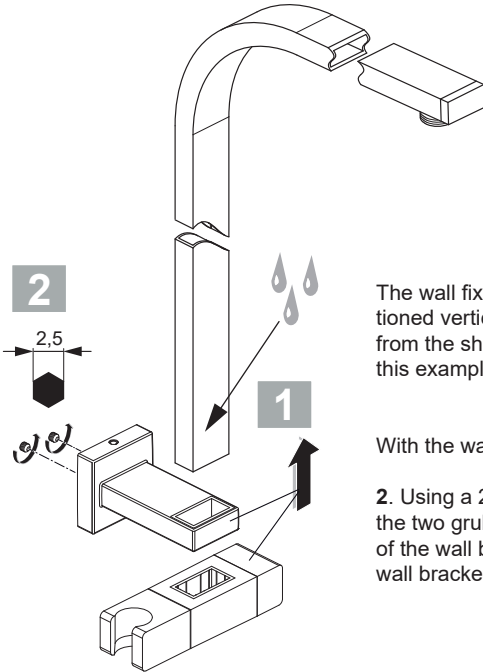
Start by assembling the shower rail parts together:

1. Slide the wall fixing bracket onto the shower riser rail, orientated as shown. Next slide the handset bracket onto the riser rail also orientated as shown. Ensure this bracket is "unlocked", rotate the knob to check.

The wall fixing bracket should be positioned vertically at least 700mm away from the shower valve, as shown here in this example:

With the wall bracket positioned correctly:

2. Using a 2.5mm hexagonal key, tighten the two grub screws visible from the rear of the wall bracket. This will secure the wall bracket to the riser rail



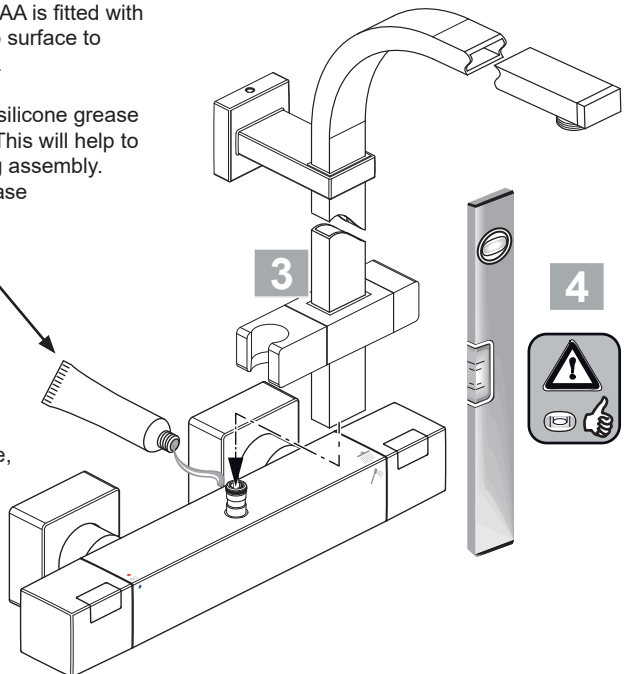
Note: the mixer supplied with A7543AA is fitted with an additional outlet nipple on the top surface to connect the over head shower plate.

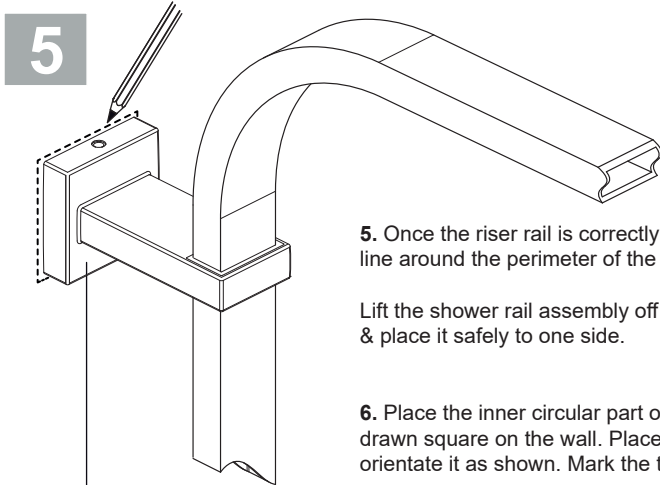
Smear a small amount of approved silicone grease onto the O-ring fitted on the nipple. This will help to prevent damage to the O-ring during assembly. Use a WRAS approved silicone grease (eg: Klueber Unisilikon L250L).

3. This assembly of the shower rail parts together, can now be located onto the nipple on the top surface of the shower valve as shown. Be careful to hold this assembly in place, otherwise it will topple over & get damaged.

Take care not to damage the O-ring fitted to the nipple during assembly.

4. Use a spirit level to ensure the shower riser rail is vertical.



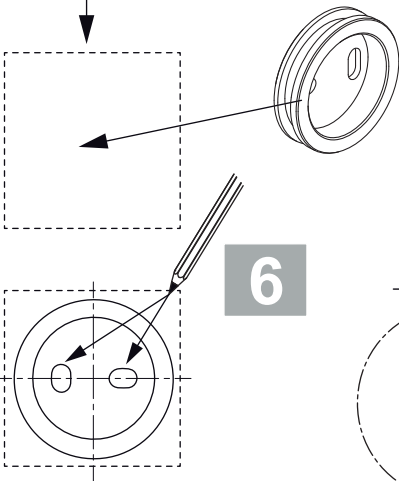


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5. Once the riser rail is correctly positioned & is vertical, draw a line around the perimeter of the bracket onto the wall surface.

Lift the shower rail assembly off the nipple on the shower valve & place it safely to one side.

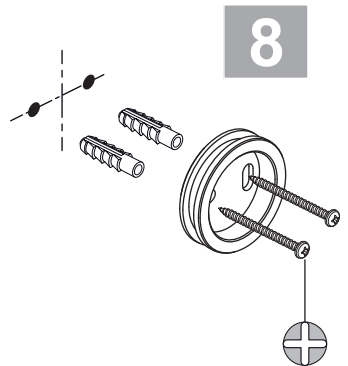
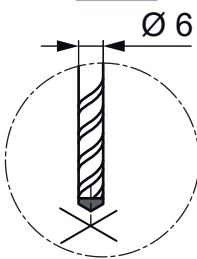
6. Place the inner circular part of the wall bracket onto the drawn square on the wall. Place it centrally within the square & orientate it as shown. Mark the two slot positions on the wall.



6

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Ø 6

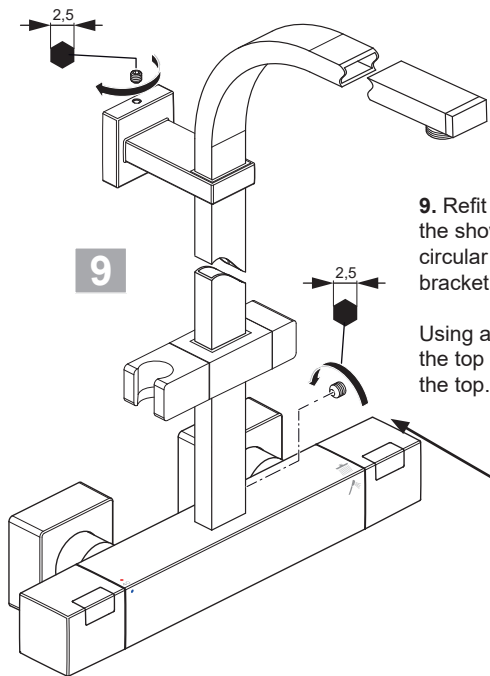


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7. Drill two 6mm holes into the wall at the centre of the marked slots.

8. Tap two wall plugs into the two drilled holes. Using a “posi” screw driver, & the two screws provided, securely fix the circular bracket to the wall.

IMPORTANT NOTE: The wall plugs & screws provided are intended for a solid wall. Check & ensure these plugs & screws are suitable for the type of installation wall. Otherwise purchase & use wall fixings appropriate to the wall type.



9. Refit the shower rail assembly back onto the nipple on the shower valve. Align the bracket on shower rail to the circular bracket fitted to the wall. Press firmly to ensure the bracket on the shower rail makes contact with the wall.

Using a 2.5mm hexagonal key, tighten the grub screw on the top of the bracket to secure the riser rail assembly at the top.

At the bottom of the riser rail, tighten a second grub screw into the nipple (that was on top of the shower valve).

10. One side of the flexible shower hose can be screwed onto the outlet nipple on the underside of the shower valve. The other side can be screwed onto the shower handset.

The flexible shower hose has integral seals at both ends.

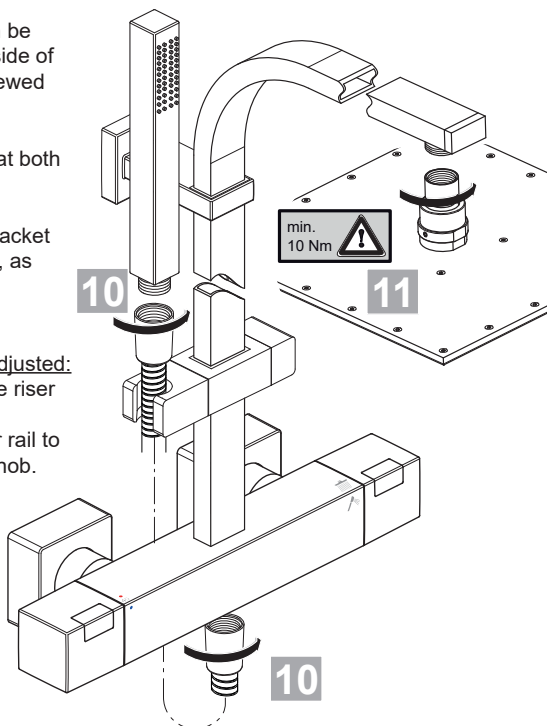
The shower handset can be parked in the bracket using the conical portion of the shower hose, as shown.

The shower parking bracket height can be adjusted:

- Use the knob to unlock the bracket from the riser rail.
- Slide the bracket up & down along the riser rail to the desired position, then relock it with the knob.

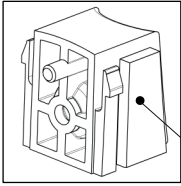
11. Finally, the overhead shower plate can be screwed onto the end of the shower rail. Observe the 10Nm torque shown, but do not use excessive force.

Operate the fitting, check all joints for leaks. Rotate the diverter handle & check both shower outlets.



Wall bracket for Category-5 shower hose retaining applications

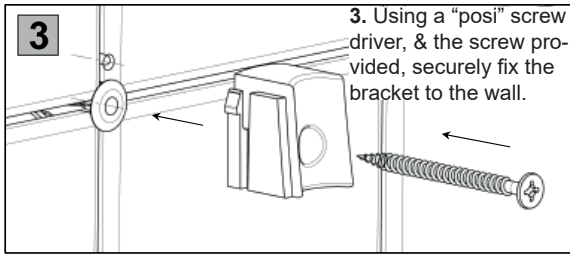
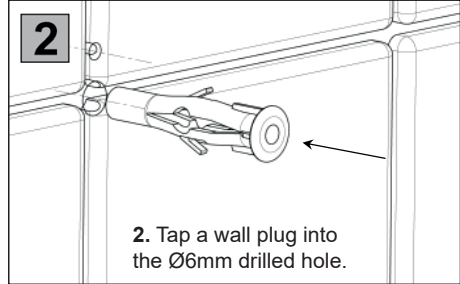
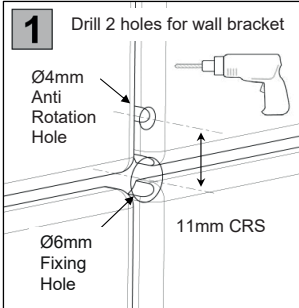
Product A7543AA includes a small “shower hose” retaining bracket, which should be fitted to ensure the installation complies with water regulations, see section 5 for more details.



Wall bracket

Select a suitable location on the wall that will prevent the flexible shower handset from entering any adjacent appliances, such as sink, washbasin, toilet, bath, bidet, or shower tray.

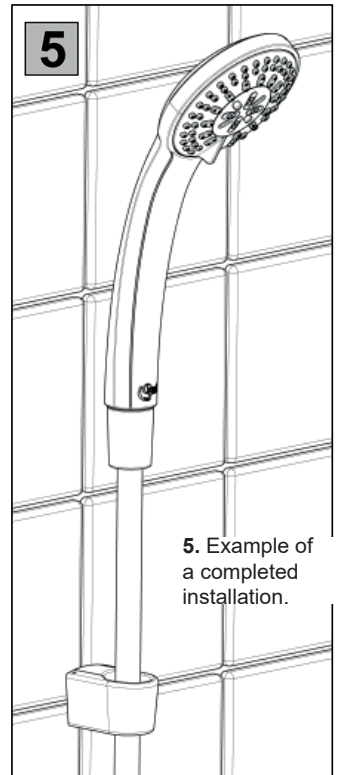
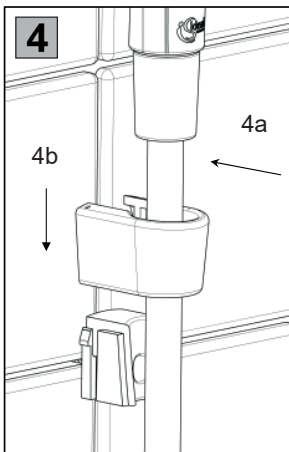
The two-piece bracket comprises of the wall bracket which is fixed to the wall & a snap on cover, which conceals the wall bracket.



4a. Ensure the shower hose is trapped between the two parts of the bracket as shown.

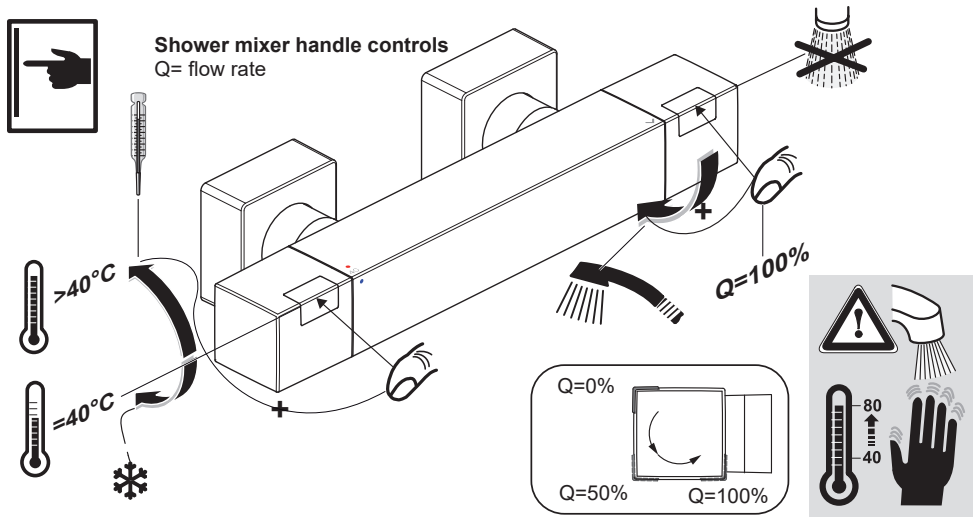
4b. Slide the cover downwards onto the wall bracket until it snaps into position.

Note: This bracket has robust design, but is likely to break if becomes necessary to remove the shower hose in the future. A new bracket should be fitted if the shower hose is replaced.



IMPORTANT NOTE: The wall plug & screw provided are intended for a solid wall. Check & ensure this plug & screw are suitable for the type of installation wall. Otherwise purchase & use wall fixings appropriate to the wall type.

8 OPERATING PRODUCT



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

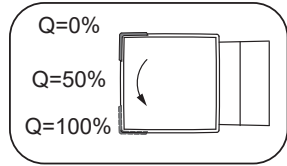
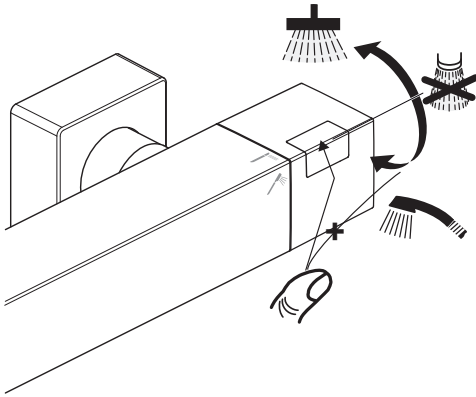
Right handle controls water flow rate & outlet device

- This handle is shown above parked in the off position (giving no flow at this position).
- Rotating this handle downwards from the parked position 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 (& hold) the right button & rotate this handle further downwards. The handle will rotate a further 90° from the economy stop to the maximum flow.
- This product has one outlet at the bottom of the mixer so water will be discharged to the shower handset.

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 from the parked position.
- To obtain higher water temperature, press the left button (& hold) & then rotate this handle upwards from the parked position.

REMEMBER, BE CAREFUL: TEMPERATURES HIGHER THAN 40°C CAN BE HARMFUL.

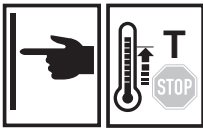


Right handle controls the 3 function diverter (for product A7543AA only):

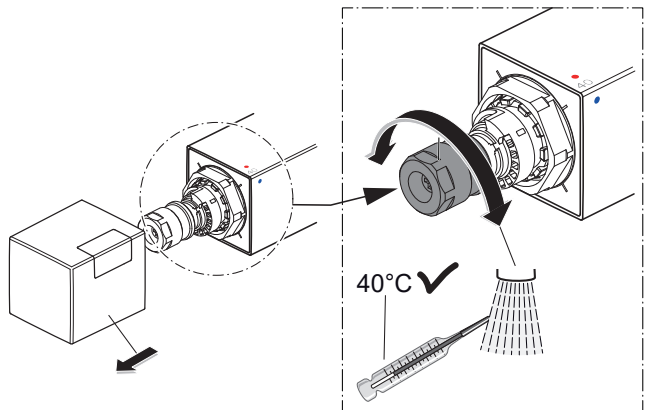
- This handle is shown above parked in the off position (giving no flow at this position).
- Rotating this handle downwards from the parked position, commences water flow & will direct water to the bottom outlet of the mixer. Thus activating the shower hand set only.
- By rotating the handle 45° from 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 (& hold) the right button & rotate this handle further downwards. The handle will rotate further to the maximum flow stop.
- Rotating this handle upwards from the parked position, commences water flow & will direct water to the top outlet. This will activate the large overhead shower plate.
- At each position the user can feel a soft click to indicate position. Total handle rotation is about 180°.
- The diverter permits one outlet to be opened at any one time, simultaneously closing the second outlet.

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

9 TEMPERATURE ADJUSTMENT



If the mixer is not discharging 40°C water when the temperature handle is parked & aligned with the body, then (if desired) this can be adjusted as follows:



1. First remove the temperature control handle (left side) as detailed in section 16, steps 1 to 3.
2. Turn on the shower, position a thermometer in the running water & when the temperature settles rotate the drive bush on the spindle of the thermostat until 40°C is achieved.
3. Without disturbing the drive bush position, refit the handle.

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 one of the outlets (bath fill or shower).

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 45°C. 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 temperature handle is aligned in the 40°C position.
- Make sure the supply temperatures are within the ranges 55 to 65°C for hot, & 5 to 20°C for cold.
- Unscrew the shower hand set from the flexible hose, & direct the water to be discharged into a suitable vessel.

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 40°C nominal stop (parked).
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, 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. See guidance below.

Additionally, clean all filters, ensure check valves are working, and make sure all isolating valves are fully open. Refit the shower handset to the flexible hose upon completion of the test.

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 MAINTENANCE NOTES

The fitting of isolation valves and strainers is required as close as is practicable to the water supply inlets of the thermostatic 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 cartridge replacement.

THERMOSTATIC CARTRIDGE AGEING

Following many years of normal service you may notice the following:

1. The need to carry out more frequent adjustment of mixed temperature.
2. The thermostatic element may not pass the CWI test.

These issues could be due to the ageing of the thermostat which loses some expansion capability over time.

These are the principle objectives of testing, as they serve to indicate to maintenance staff the declining performance capability of the thermostatic cartridge.

For this reason the audit testing flow chart highlights that 2nd Instance CWI test failure or 2nd instance mixed deviation even with stable 'as commissioned' supply conditions and correct inlet supply Δt 's, is potentially the first indication of the need to replace the cartridge.

14 DISASSEMBLY SEQUENCE OF MAINTENANCE



Disassembling sequence to access cartridges & demount the mixer:

1. Isolate both HOT & COLD water supplies first. Use inline service valves if fitted.
2. Fully open the flow or diverter handle, to confirm water is switched off. Unscrew the shower hose from the underside of the mixer. This will permit some of the trapped water to drain down & release water pressure from the outlet.
3. To access cartridges, it will be necessary to remove handles first.
See section 16.
4. Ensure parts are re-assembled in the correct 'reverse' sequence.
5. Restore both water supplies. Refit the shower hose.
6. Check all joints for leaks upon completion.
7. Run water through the mixer for a few seconds to purge-out any trapped air.

General advice:

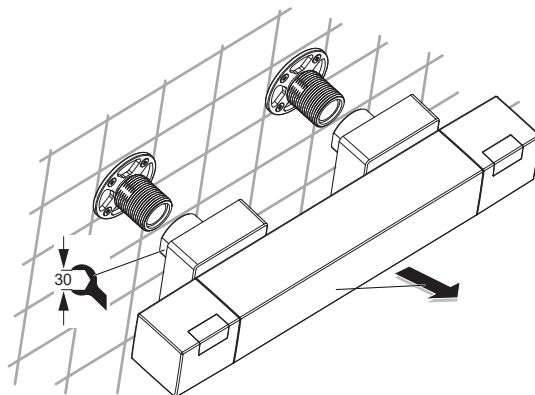
1. Use correct size tools. Avoid damaging chromed surfaces, use a strap wrench if possible.
2. When unscrewing cartridges or demounting the mixer, expect some trapped water to escape from within the mixer body.
3. Wash all parts (strainer meshes etc....) in clean water before re-assembly.
4. Observe torque settings, where specified.

15 DEMOUNTING THE MIXER FOR DISINFECTION



In response to the new requirements of HTM 04-01 Addendum, the design of this product permits easy demounting of the mixer from the inlets.

This design permits quick & easy removal of the mixer for cleaning, disinfection and maintenance purposes.



Method for demounting mixer:

1. Observe disassembling sequence, as detailed in **section 14, steps 1 & 2.**
2. Remove the overhead shower assembly, if fitted (A7543AA only).
3. Slide back both escutcheons away from the wall towards the mixer body. Undo the two coupling nuts located at the rear of the mixer (see fig above). Take care not to lose the two sealing /strainer washers.
4. Lift the mixer body off from the wall mount brackets, by gently pulling away as shown.
5. The mixer body can be further dismantled for cleaning protocols. Do not leave the wall mount brackets uncovered for long periods, protect from environmental contamination.
6. To refit the mixer body; reverse this procedure. Tighten the nuts at the rear of the mixer securely.

Avoid damaging the inlet seals. See sections 21 & 22 for replacement strainer washers.

Disinfection method

Disinfection by full immersion in an appropriate bactericidal solution is recommended for this assembly. Prior to immersion, the mixer body should be clean and dismantled to a level that prevents air locking.

The level of dismantling should be established as a result of practice and will be largely dependent upon the water quality and service life. As a minimum we recommend removal both handles, thermostatic cartridge & flow-control (or diverter) cartridge. Cleaning the cartridge strainer screens is important. All components can be immersed together unassembled.

Disinfected mixers should be promptly replaced or stored using an appropriate method until required.

Disinfection frequency

The frequency of such disinfection actions will be derived from regular sampling carried out under the regime of the Responsible Person (Water). We would not expect to need greater than 6 monthly frequencies, hopefully considerably less.

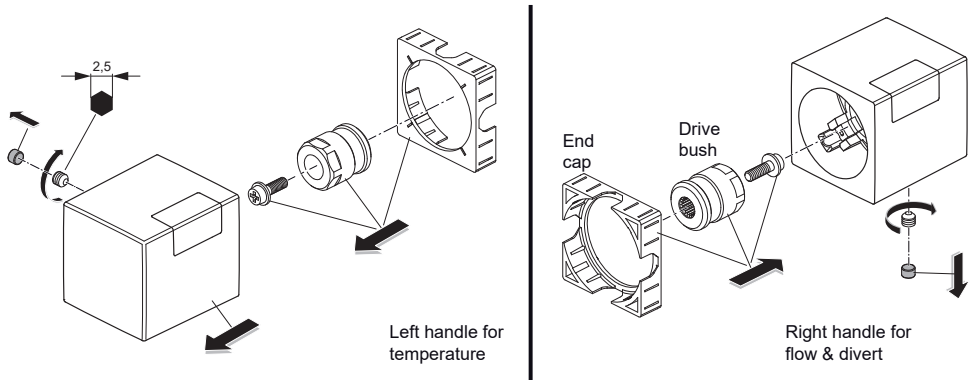
The need for excessive use of this procedure would be indicative of the need for some root cause analysis as there could be some system or behavioural problems that need addressing.

Recommended Disinfection Solutions

For immersion we recommend the use of a 70% Ethanol solution for 10 minutes.

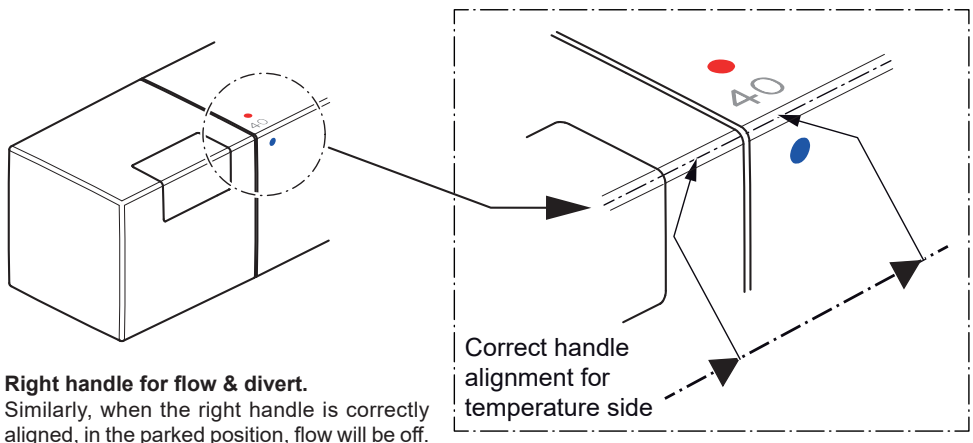
NB: counter intuitively, **greater than recommended concentrations are less effective** not more effective; take care to get the recommended concentration in line with the manufactures recommendation. **DO NOT USE SOLUTIONS CONTAINING AMMONIA.**

16 HANDLE REMOVAL FOR CARTRIDGE ACCESS

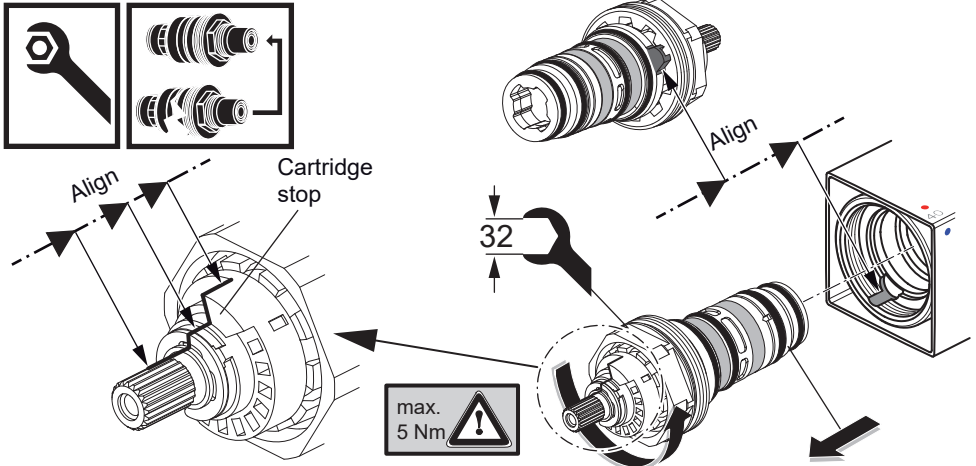


To gain access to either the thermostatic, flow or diverter cartridges, it will be necessary to remove the appropriate handle.

1. Carefully prise out the rubber plug fitted either at the rear of the handle (left side) or the underside of the handle (right side). A sharp blade can be used, take care not to damage the chromed surface.
2. Use a 2.5mm hexagonal key on the grub screw located inside the handle, undo sufficiently to loosen handle as complete removal of the grub screw is not necessary.
3. Carefully pull the handle off the drive bush.
4. The drive bush can be removed if necessary by undoing the Phillips screw shown, using a suitable screw driver.
5. If necessary, the square end caps fitted at each end of the mixer body can be removed. They can be carefully prised out. Then just pushed back in after completing the maintenance work. Cartridge can still be removed with the end caps left in place.
6. Reverse this sequence & refit the handles.
7. Align the handles as shown below. Rotate the handle on the bush until alignment is achieved then tighten the grub screw.



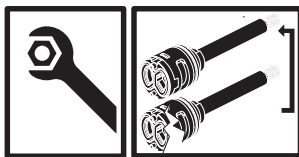
17 THERMOSTATIC CARTRIDGE REPLACEMENT



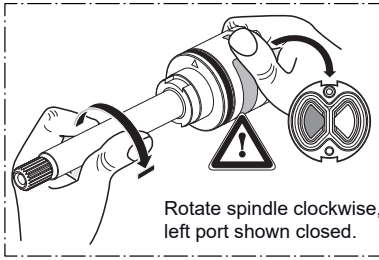
Use the following method to inspect or replace the thermostatic cartridge:

1. Observe the disassembling sequence, **see section 14, steps 1 to 3.**
2. Remove the temperature control handle (left side) as detailed in **section 16.** Remove also the drive bush fitted to the spindle of the thermostat. Note: the square end cap can remain inside the mixer body.
3. Using a 32mm spanner or socket, undo the large nut retaining the thermostatic cartridge.
The cartridge should now slide out of the mixer's bore. Note: the nut is captivated onto the cartridge & will rotate freely.
4. If necessary, replace the cartridge with a new one. Alternatively, if the cartridge is functioning correctly, clean it thoroughly & reuse it.
5. When fitting the cartridge into the bore, ensure the lug on the cartridge is orientated into the cut out in the mixer's bore, as illustration above.
6. Make sure the marking on the spline of the cartridge spindle is aligned with the edge of the „stop“ as illustration above. Correct the alignment if necessary.
7. With the cartridge located back in the mixer bore, screw the cartridge nut into the mixer body by hand & then tighten with a spanner or socket. Do not exceed 5 Nm torque.
8. Reverse the sequence to refit the drive bush & handle. Check & adjust the 40°C position as shown in section 8. Ensure correct alignment of the handle as detailed in section 16.

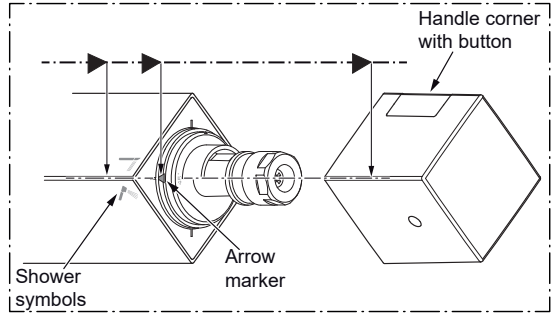
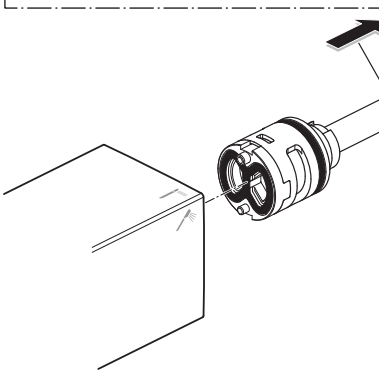
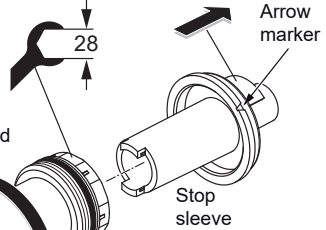
18 DIVERTER REPLACEMENT OF A7543AA



1. Observe disassembling sequence, as detailed in **section 14, steps 1 to 3.**
2. Remove the flow diverter handle (right side) as detailed in **section 16.** Remove also the drive bush fitted to the spindle of the diverter cartridge. Note: the square end cap can remain inside the mixer body.
3. Slide off the stop sleeve.
4. Using a 28mm spanner or socket, undo the threaded collar & slide out. The diverter cartridge should now slide out of the mixer's bore complete with O-ring.
5. If necessary, replace the cartridge with a new one. Alternatively, if the cartridge is functioning correctly, clean it thoroughly & reuse it.
6. Rotate the diverter cartridge spindle fully clockwise until it stops. Looking at the cartridge from the underside, the left port should be closed as illustrated. Maintain this orientation of the diverter & slide it into the mixer body. Note: the two locator pins on the front face of the diverter cartridge are different sizes to prevent incorrect installation. Ensure these pins are correctly located into the plastic moulding inside the mixer body.

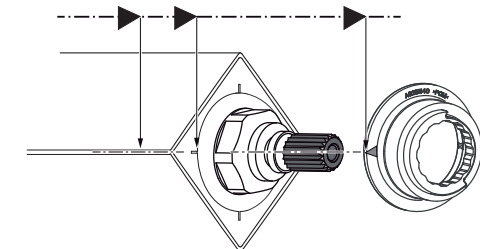
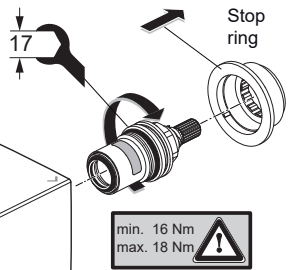
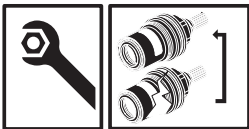


min. 4 Nm
max. 5 Nm



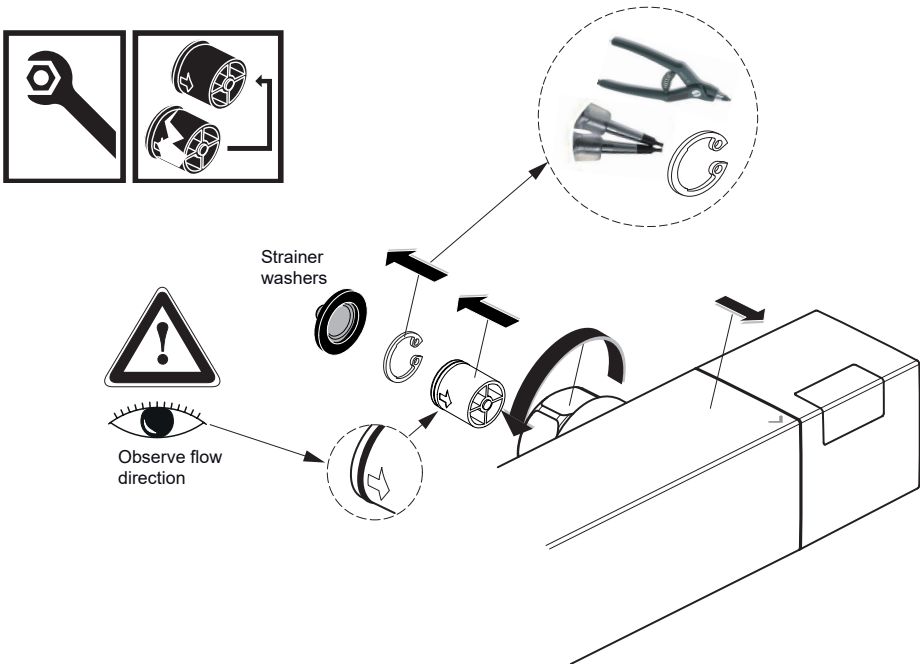
7. With the cartridge located back in the mixer bore, screw the threaded collar into the mixer body by hand first & then tighten with a spanner or socket. Ideally torque to 4Nm min to 5Nm max.
8. Refit the stop sleeve as illustrated above. Align the marked arrow on the stop sleeve to the front top corner of the mixer body or use the marker on the square end cap as guidance.
9. Reverse the sequence to refit the drive bush & handle. Align the button edge of the handle to the rear edge of the mixer body (overhead shower fully open), fit screw, rotate handle 90° back to the off position (anti-clockwise). Check & adjust the off position as shown in section 8. Ensure correct alignment of the handle as detailed in section 16.

19 FLOW CARTRIDGE REPLACEMENT A7537AA



1. Remove the flow control handle (right side) as detailed in **section 16**. Remove also the drive bush fitted to the spindle of the flow cartridge. Note: the square end cap can remain inside the mixer body.
2. Slide off the stop ring.
3. Using a 17mm spanner or socket, undo the flow cartridge. The cartridge should now slide out of the mixer's bore.
4. If necessary, replace the cartridge with a new one. Alternatively, if the cartridge is functioning correctly, clean it thoroughly & reuse it.
5. With the cartridge located back in the mixer bore, screw the cartridge into the mixer body by hand & then tighten with a spanner or socket. Ideally torque to 16Nm min to 18Nm max.
6. Refit the stop ring as illustrated above. Align the marked arrow on the stop ring to the front top corner of the mixer body or use the marker on the square end cap as guidance.
7. Rotate the cartridge spindle fully clockwise until it stops.
8. Reverse the sequence to refit the drive bush & handle. Check & adjust the off position as shown in **section 8**. Ensure correct alignment of the handle as detailed in **section 16**.

20 CHECK-VALVE REPLACEMENT



1. Demount the mixer body from the wall, as detailed in section 15, follow steps 1 to 4.
2. Locate the sealing washers (with integral strainers) from inside the mixer's inlet bores & keep them in a safe location.
3. The check valves are housed inside the retaining inserts within the inlet bores. Look closely at the rear of the mixer body.
4. Note: circlips hold the check valves in position. Using circlip pliers, squeeze the circlip & lift it away from the bore.
5. Gently pull out the check valves: inspect & clean or replace if necessary. Observe the flow direction arrow on the body of the check valve as shown above. Refit the circlips.
6. To refit the mixer to the wall reverse this procedure (remember to fit the sealing washers).

IMPORTANT: Although the check valves can be replaced, they **must not be removed** completely. Do not operate the mixer without BOTH the check valves correctly fitted.

21 SPARE PARTS A7537AA

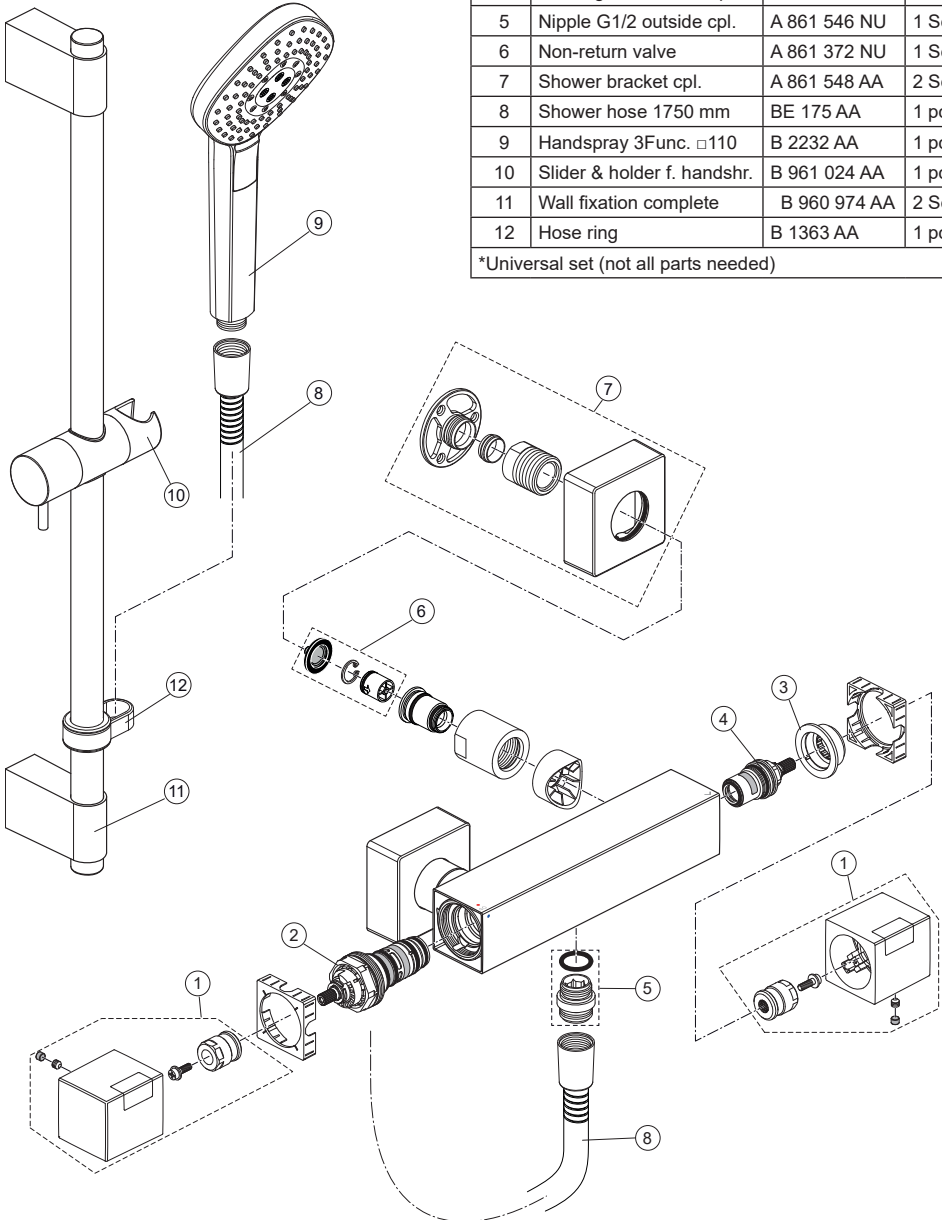


A7537AA

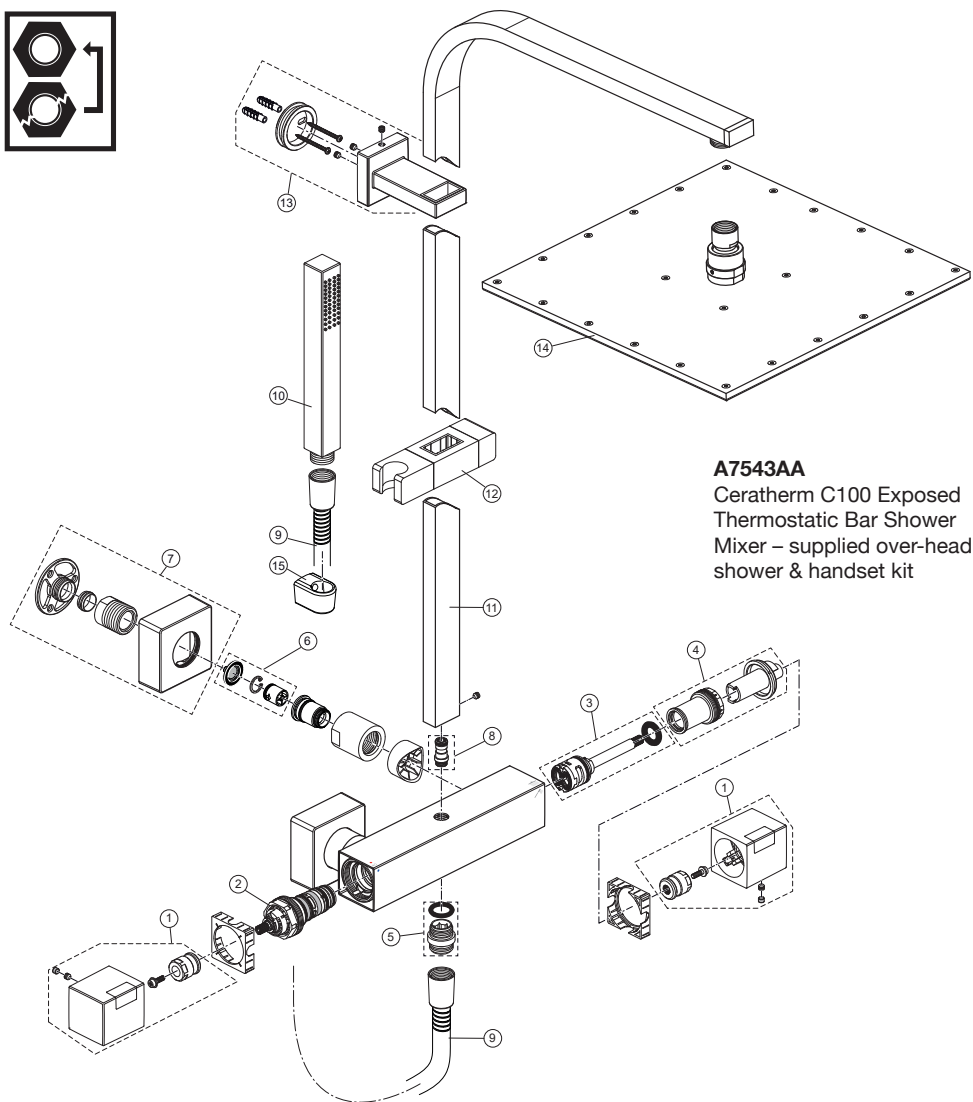
Ceratherm C100 Exposed
Thermostatic Bar Shower
Mixer – supplied with 600
shower kit

Pos.	Description	Part No.	Qty.
1	Handle cpl.	A 861 545 AA	1 Set
2	Thermostatic Cartridge	A 861 371 NU	1 pcs
3	Stopping	A 861 373 NU	1 pcs
4	Cartridge G1/2 180° cpl.	A 861 245 NU*	1 Set
5	Nipple G1/2 outside cpl.	A 861 546 NU	1 Set
6	Non-return valve	A 861 372 NU	1 Set
7	Shower bracket cpl.	A 861 548 AA	2 Set
8	Shower hose 1750 mm	BE 175 AA	1 pcs
9	Handspray 3Func. □110	B 2232 AA	1 pcs
10	Slider & holder f. handshr.	B 961 024 AA	1 pcs
11	Wall fixation complete	B 960 974 AA	2 Set
12	Hose ring	B 1363 AA	1 pcs

*Universal set (not all parts needed)



22 SPART PARTS A7543AA

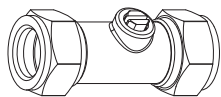


A7543AA
Ceratherm C100 Exposed
Thermostatic Bar Shower
Mixer – supplied over-head
shower & handset kit

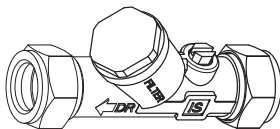
Pos.	Description	Part No.	Qty.	9	Shower hose 1750 mm	BE 175 AA	1 pcs
1	Handle cpl.	A 861 545 AA	1 Set	10	Handspray 1Func.	BD 320 AA	1 pcs
2	Thermostatic Cartridge	A 861 371 NU	1 pcs	11	Shower bar 1100 mm	A 861 552 AA	1 pcs
3	Stop valve with diverter	A 861 375 NU	1 Set	12	Slider & holder f. handshr.	A 860 870 AA	1 Set
4	Thread ring + stopring cpl.	A 861 376 NU	1 Set	13	Wall fixation complete	A 861 553 AA	1 Set
5	Nipple G1/2 outside cpl.	A 861 546 NU	1 Set	14	Headshower □300 mm	A 5805 AA	1 pcs
6	Non-return valve	A 861 372 NU	1 Set	15	Shower hose bracket	B 1364 AA	1 Set
7	Shower bracket cpl.	A 861 548 AA	2 Set				
8	Connection nipple cpl.	A 861 550 NU	1 Set				

23 INLINE SERVICE VALVES

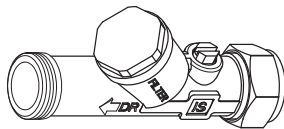
Inline service valves (**not supplied with this product**) **MUST** be fitted to permit future maintenance of the cartridges. They also facilitate the cold water isolation test. These should be fitted as close as is practicable to the water supply inlets of the thermostatic shower valve. Service valves should be installed in an easily accessible location.



Basic valve with isolating only feature is available under spares code **S9005AA**. 15mm compression fittings at both ends & plated finish.

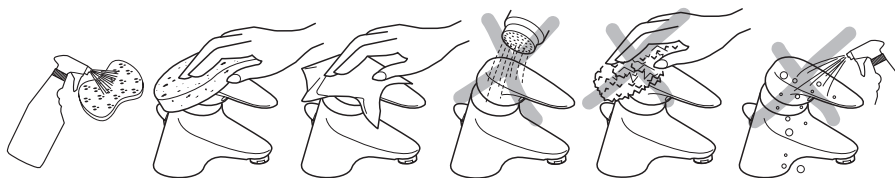


E960086NU. Brass valve with isolating & filter only features. 15mm compression fittings at both ends. Supplied in pairs.



Spares code **E960613NU** contains a pair of combined service valves. Include a flow regulator, check valve, strainer mesh (filter) & isolating valve. The flow regulator and check valve can be removed if not required.

24 CLEANING CHROME SURFACES



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.



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