

# HEATRAE SADIA

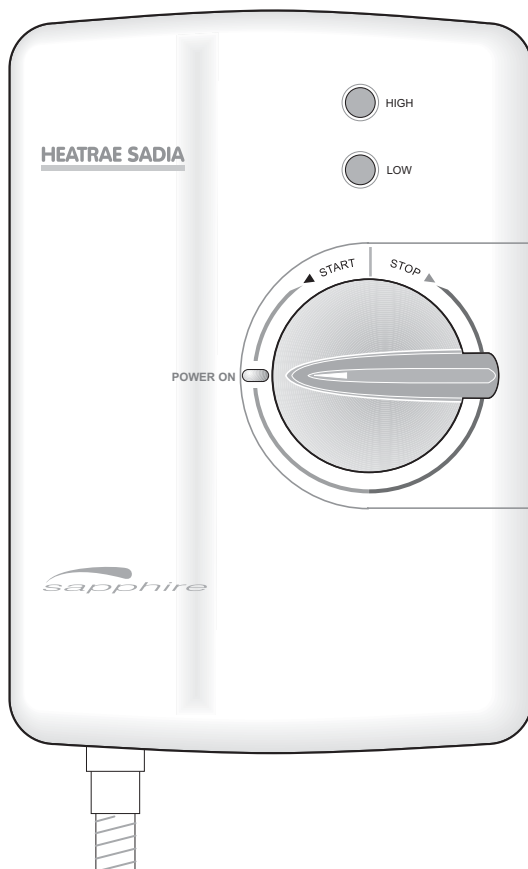
The quality name in water heating

## *Sapphire*

ELECTRIC SHOWER

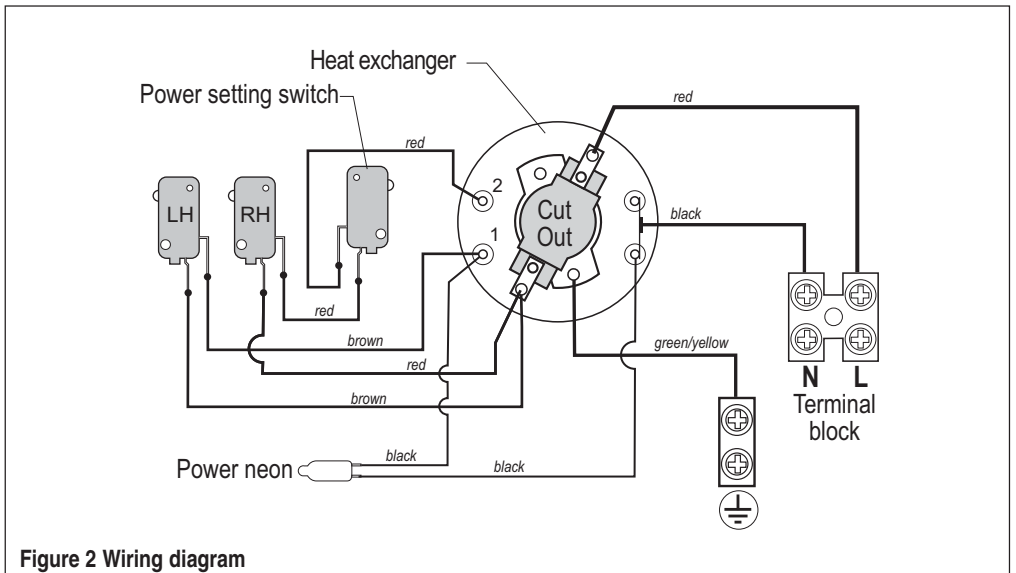
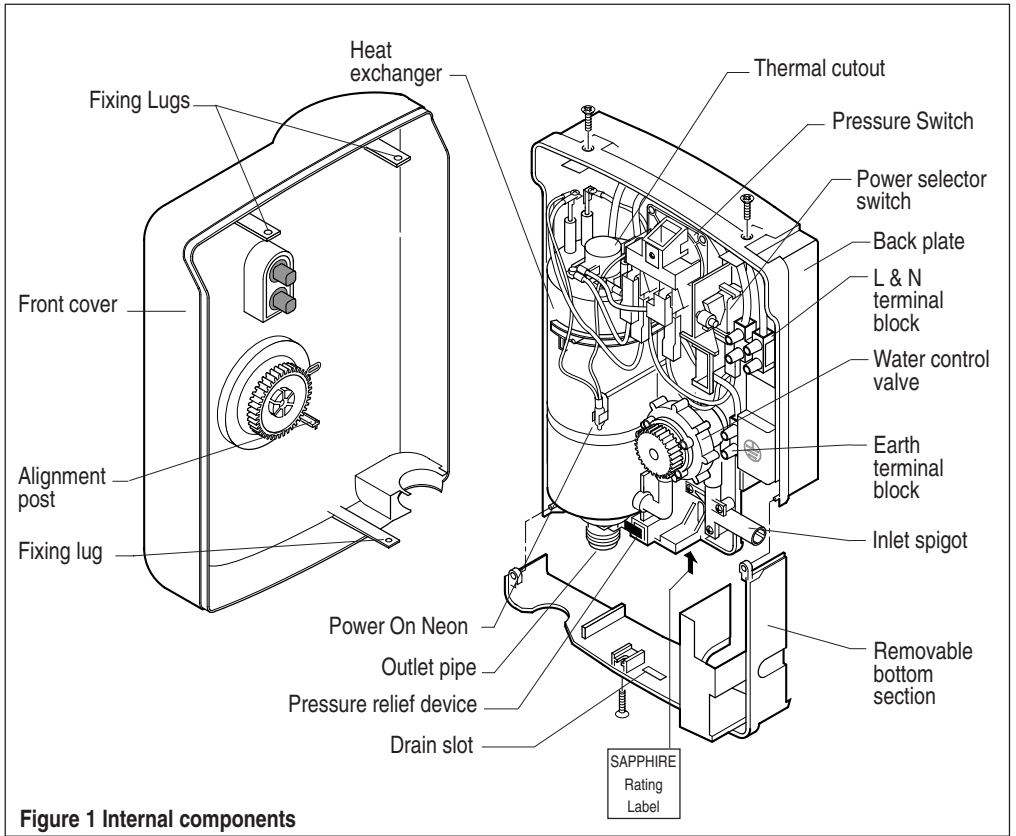
### INSTALLATION and USER INSTRUCTIONS

ref. 3600 5639 issue 3



**PLEASE READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE  
COMMENCING INSTALLATION**

**PLEASE LEAVE THESE INSTRUCTIONS WITH THE USER**



## CONTENTS

Internal components .....	p2
Wiring diagram .....	p2
TECHNICAL SPECIFICATIONS .....	p3
IMPORTANT INFORMATION .....	p4
How an instant electric shower works	p5
SITING AND PLUMBING .....	p6
Things you must do .....	p6
Things you must not do .....	p7
ELECTRICAL INSTALLATION .....	p8
CONNECTING TO SERVICES .....	p8
Preparation .....	p8
Cable entry .....	p9
Pipe entry .....	p9
Plumbing .....	p10
Electrics .....	p11
Fitting the front cover .....	p11
Commissioning .....	p12
USER INFORMATION .....	p12
Maintenance .....	p13
Inspection .....	p13
FAULT FINDING .....	p14 - p15
GUARANTEE & SERVICE POLICY	p16
ENVIRONMENTAL INFORMATION	p16
Approved Spares Stockists .....	p16
Address and phone numbers.....	p16

## 1 TECHNICAL SPECIFICATIONS

### 1.1 CONNECTIONS

Inlet connection -15mm ext. diameter spigot for compression fitting.

Water entry point - Top, bottom, rear and right hand side.

Cable entry point - Top, bottom and rear.

### 1.2 ELECTRICAL

#### Nominal Power Rating

Model	Power rating @ 240V	Power rating @ 230V
95 021 517	7.2kW (30A)	6.6kW (29A)
95 021 638	8.5kW (35A)	7.8kW (34A)

### 1.3 MATERIALS

Backplate, cover and control knob - ABS

Elements - Copper sheathed rod type

### 1.4 DIMENSIONS

Height - 262mm

Width - 185mm

Depth - 112mm

### 1.5 STANDARDS AND APPROVALS

Complies with the requirements of EN 60335-2-35.

British Electrotechnical Approvals Board (BEAB) approved.

Complies with European Community Directives (CE).

## 2 IMPORTANT INFORMATION

**2.1** Your shower is designed and tested to the very highest standards and complies fully with all of the relevant national/international standards for safety and reliability. The shower is manufactured in a BS EN ISO 9001:2000 -registered factory - your assurance of a quality product.

**2.2** To ensure correct use and maintenance of the shower, please read and adhere to the following warnings and guidelines.

### FOR INSTALLERS

**2.3** The Installation must comply with the Building Regulations Part P and the Water Regulations. Where there is a new installation, or a replacement product is not identical to the one being replaced, the cable sizes, circuit protective devices, bonding and other requirements of the Building Regulations must be assessed by a (registered) qualified and competent electrician, who should carry out the installation taking into account the site conditions.

**2.4 WARNING:** THIS APPLIANCE MUST BE EARTHED.

**2.5** Before removing your shower heater cover always ensure your shower heater is isolated from the electrical mains.

**2.6** This product is splash-proof and is approved for use in shower cubicles and over baths. However, **do not install the shower heater in a position where the handset, in its normally-parked position, will consistently direct the spray over it.**

**2.7** To comply with the Water Regulations a servicing valve must be

fitted in the pipework to the shower, in an accessible place. This will be of great benefit if any maintenance work or complete replacement of the shower is required later on.

**2.8** This shower is designed for domestic use and is not vandal-resistant. If it is installed in an institutional or commercial situation, frequent inspection may be necessary, and our guarantee may be affected.

### FOR USERS

**2.9** If water emerges from anywhere other than the spray head outlets, do not use your shower, **TURN OFF ELECTRICITY** and refer to the Fault Finding section.

**2.10 IT IS IMPORTANT TO CLEAN THE SPRAY PLATE REGULARLY, particularly in hard water areas, where this may be necessary as often as once a week. Failure to do so will affect the performance of the shower and in extreme cases may cause the pressure relief device (PRD) to operate - see Fig. 1 and Fault Finding (p14 & 15).**

Refer to the handset user instructions for handset maintenance information.

**2.11 The shower heater outlet, hose and handset act as a vent. They must not be blocked, obstructed, or have connected to them any fitting not approved by the manufacturers.** The use of unapproved accessories may invalidate the guarantee and affect the performance and safety of the unit.

**2.12 WARNING! DO NOT USE the shower if the HOSE IS DAMAGED** in any way; for instance if the outer covering has parted to reveal the inner tube.

A damaged hose can suddenly restrict the

flow and result in extremely hot water being emitted from the spray head.

A damaged hose could completely block the outlet of the shower; the resulting increase in pressure could burst a weakened or damaged hose.

**2.13** Do not install the shower in a situation where the water in it could freeze. Any damage caused by freezing will not be covered by the guarantee.

**WARNING.** If you suspect your shower is frozen, **DO NOT SWITCH ON.** If you have switched on, **SWITCH OFF IMMEDIATELY.** Refer to Fault Finding (p14 & 15).

**2.14** Do not leave the infirm, disabled users, or young children unattended in the shower.

**2.15** Before stepping into the shower, always test the temperature of the spray with your hand.

**2.16** Switch off at the isolating switch after use. This is a safety procedure recommended with ALL electrical appliances.

**2.17** As with all electrical appliances, it is advisable to have your shower and installation checked at least every two years by a competent electrician, to ensure that there is no deterioration due to age and usage.

**2.18** Shampoo and shower gel should be stored using the gel hook and soap dish (where provided) and **must not be placed on top of the shower unit.**

## HOW AN INSTANT ELECTRIC SHOWER WORKS

**2.19** When the user starts the shower by turning the water control knob, the flow control lets in the water. If there is sufficient water pressure, the pressure switch will turn on the heating elements.

**2.20** The element in the tank will start to heat the water and this takes typically 10-20 seconds.

**2.21** By controlling the flow rate of water over the heating elements, it will be warmed up to the correct temperature. Reducing the flow rate will increase the water temperature and vice versa.

**2.22** The shower has high and low settings that give further control of temperature.

**2.23** The temperature of the incoming water varies, mains water can be as low as 5°C in the winter and as high as 20°C in the summer. This affects the output temperature of the shower which is only able to raise the temperature of the water by a given amount, depending upon the flow rate and power setting.

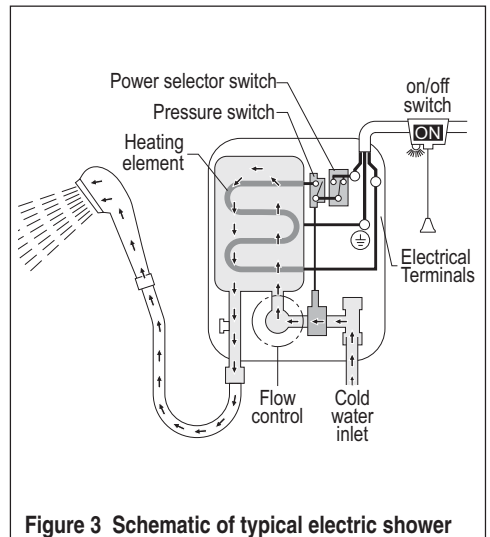


Figure 3 Schematic of typical electric shower

## 3 SITING AND PLUMBING

**3.1** Spend some time planning exactly where to site the shower heater and riser rail. Bear in mind the height of people who will be using it.

### THINGS YOU MUST DO

**3.2** Check that the water pressure to the shower is adequate. If in doubt, consult a competent plumber.

**Maximum and minimum pressures are:-**

**Maximum - 1 MPa**

**Minimum**

**- up to and including 9.5kW: 0.09 MPa**

**Running pressure with at least 5 l/min flow rate**

The use of other services connected to the water pipe supplying the shower heater may cause the water pressure to drop below the minimum. Therefore this should be taken into account.

*The following conversions may be useful:*

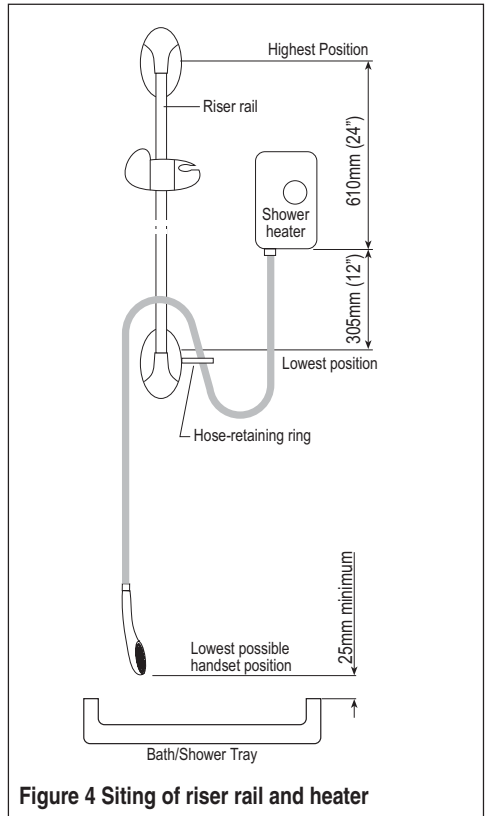
1 bar = 14.5 lbf/in<sup>2</sup>  
= 33.3 ft head of water.  
= 10m head of water  
= 0.1 MPa

1 lbf/in<sup>2</sup> = 2.3 ft head.

**3.3** Electric shower heaters are normally plumbed into the mains water (except for special low pressure versions). However, the shower heater may be fed from a storage tank as long as there is a sufficient head of water.

**3.4** Mount the shower heater on a flat vertical wall with the outlet, to which the hose is connected, pointing downwards, using three suitable wall plugs and screws.

**3.5** DO NOT place the shower heater where it will be in the direct spray from a normally-parked handset.



**Figure 4** Siting of riser rail and heater

**3.6** Allow room around the shower heater for removal of the front cover.

**3.7** Position the riser rail close to the heater, not necessarily on the same wall (but bear in mind paragraph 3.5) so that in its highest parked position, the handset is not more than 610mm (24") above the bottom of the heater, and in its lowest position it is no lower than 305mm (12") below the heater - see Fig. 4.

**3.8** If the handset can reach to within 25mm (1") of the spillover level of the bath, shower tray, wash basin, WC or bidet, then to prevent the possibility of back-siphonage of used water (Water Regulations Guide G15.14/R15.14) you must either:-

1. Fit a hose-restraining ring - see Fig. 4.

2. Fit a double-check valve in the pipework to the shower.

**3.9** Decide from which direction your inlet pipe will enter the shower heater. There is a choice of entry from top, bottom, right hand side or rear - see Fig. 9.

**3.10** Ensure there are no services such as gas, water pipes, electrical or telephone cables beneath the surface of the wall before drilling.

**3.11** The water connection to the shower heater should be made using standard 15mm outside diameter copper pipe or a stainless steel pipe. The ends of the pipe should be cut square and be free from internal and external burrs and deep scratches.

**3.12** Cut all necessary pipework to length with a pipe cutter and not a hacksaw, to minimise swarf - see Fig. 5.

**3.13** Before making the final water

connections to the shower heater, the pipework **MUST BE FLUSHED THOROUGHLY** to remove brick dust, swarf etc. which could severely damage the shower itself - see Fig. 6.

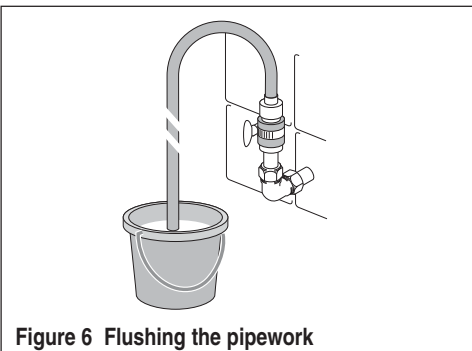
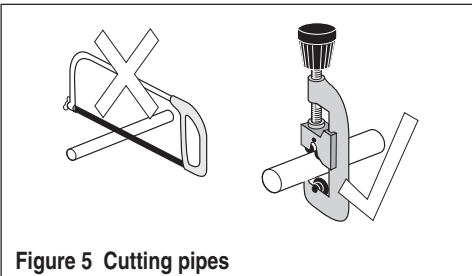
**3.14** A Water Regulations Advisory Service listed servicing valve should be fitted in the water supply pipe to the shower. This is to allow the shower heater to be serviced without turning off the water supply to other appliances.

### THINGS YOU MUST NOT DO

**3.15** DO NOT use plumber's paste on any joints as this may damage the shower.

**3.16** DO NOT use a blow-torch or other form of heat close to the shower heater as this may damage the nonmetallic parts.

**3.17** DO NOT use excessive force, but do ensure adequate support, when making connections.



## 4 ELECTRICAL INSTALLATION

### WARNING

#### 4.1 This appliance must be earthed.

**4.2** The installation must comply with the Building Regulations Part P. Where there is a new installation, or a replacement product is not identical to the one being replaced, the cable sizes, circuit protective devices, bonding and other requirements of the Building Regulations must be assessed by a (registered) qualified and competent electrician, who should carry out the installation taking into account the site conditions.

The following notes are for guidance only:

**4.3** The shower heater must only be connected to a 230/240V ac supply.

**4.4 Before making any electrical connections within the installation, make sure that no terminal is live.** If in doubt, SWITCH OFF the whole installation at the consumer unit or switch fuse (where fitted).

**4.5** It is strongly recommended that a 30mA rcd is incorporated in the circuit, even if it is not required to comply with BS 7671.

**4.6** A double-pole isolating switch with a contact separation of at least 3mm in each pole, must be incorporated in the circuit. This must have a mechanical indicator showing when the switch is in the OFF position. A neon lamp alone is not sufficient.

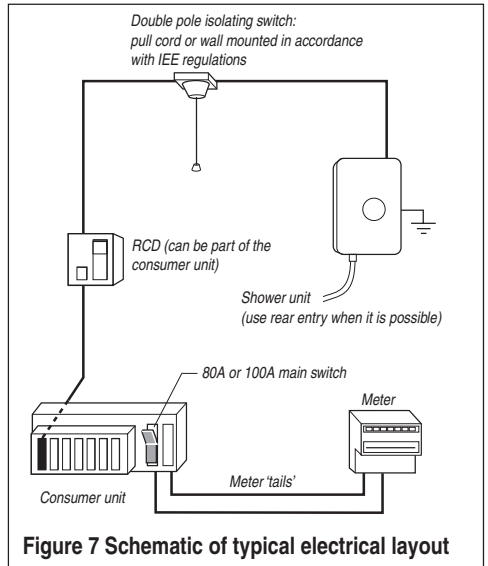


Figure 7 Schematic of typical electrical layout

## 5 CONNECTING TO SERVICES

### PREPARATION

**5.1** Remove the three fixing screws which hold the front cover onto the backplate. Note that the lower screw is longer than the upper two.

**5.2** Carefully remove the cover which holds the control knob by pulling directly away from the backplate.

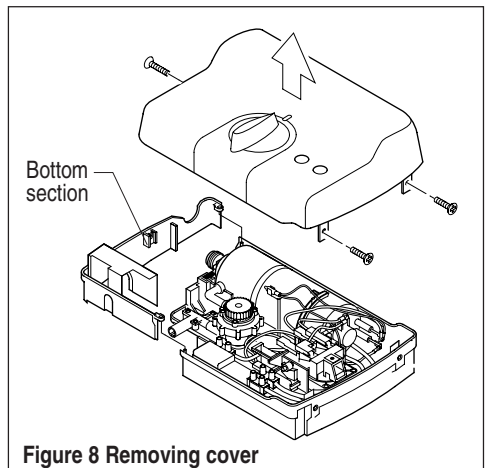


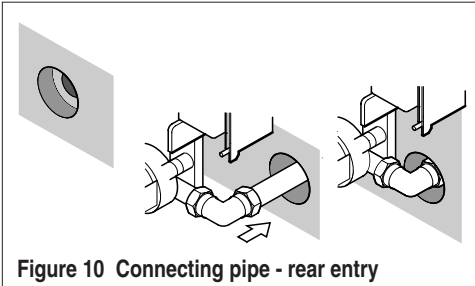
Figure 8 Removing cover



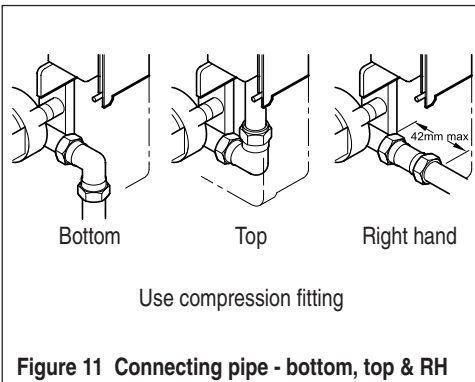


**5.11 Rear Entry.** If the pipework is to enter from the rear, you must cut away the wall from around the pipe to allow room for the nut on the compression elbow to be recessed into the wall - see Fig. 10. The pipework must be connected to the elbow **BEFORE** the shower is fitted to the wall; if you were to fix the pipe in place first, you would not be able to get a spanner onto the compression nut.

**5.12** Depending on the type of compression elbow used, you may need to remove a small part of the bottom section of the backplate in order for it to fit over the elbow nut.



**Figure 10** Connecting pipe - rear entry



**Figure 11** Connecting pipe - bottom, top & RH

**5.13 Top Entry.** You must connect the **ELBOW** to the **INLET SPIGOT** first; if you were to connect the elbow to the pipe first, there would not be enough room within the pipe channel in the shower to manoeuvre the elbow onto the spigot.

**5.14 Side Entry.** You must use a straight connector with an overall length (including nuts and olives) of less than 42mm.

## PLUMBING

**5.15** Decide where to connect to the water mains for your feed to the shower. Ensure that the pipe you have selected is not a gas pipe (they can look similar) or a hot water pipe or from a cold water storage tank (unless you have sufficient head - see 3.2 & 3.3).

**5.16** Cut the necessary pipework to length, assemble and offer up to the installation before making any soldered joints. Ensure that the pipe is the correct length, as shortening it can be difficult once joints have been made.

**5.17** Carry out any cutting with pipe cutters in preference to a hacksaw, to minimise swarf. Use 15mm compression fittings, preferably with copper compression rings (olives), for the connection to the shower heater.

**5.18** Remember to incorporate a servicing valve and, if required, a double-check valve - see 3.8 & 3.14.

**5.19** Locate your stop cock and turn off the water supply. Check that the pipe you intend tapping into no longer carries water, by opening a tap that the pipe supplies.

**5.20** Make your connection to the pipe. If it is on a low-lying loop there may be some water left in the pipe, so be prepared for some flow of water. Make all joints except that to the shower heater before flushing.

**5.21** It is essential to flush the system in order to clear debris, particles of solder and swarf which could enter and damage components within the shower heater, prior to connecting to

**the shower - see Fig. 6.** It may be best to take the shower off the wall to do this.

**5.22** Turn the water off after flushing, either at the stop cock or by using your servicing valve.

**5.23** Remount the shower firmly and make the final water connection to it. Turn the water on again.

**5.24** Water will flow from the shower outlet if the control valve is on.

**5.25** Check for leaks in all pipework, and rectify as necessary.

**5.26** When the shower fitting is complete the riser rail and accessories can be fitted, please refer to separate instructions in accessory box.

## ELECTRICS

**5.27** Design your system as outlined in Section Three. Lay the cable in your chosen route, ensuring that you have ample length.

**5.28** Leave the connection to the consumer unit or switch-fuse until last.

**5.29 Remember, when working on electrical components, ensure they are not live.** If in any doubt, switch off at your main switch at the fuse board or consumer unit.


**5.30** If you find it necessary to increase access for fitting the cable, the shower can be unplumbed at its inlet pipe and temporarily removed from the wall.

**5.31** Feed the cable through the opening in the backplate below the terminal block.

**5.32** Make sure that you route the cable so that the bottom section of the backplate will fit in place.

**5.33** Ensure that all three screws hold the shower backplate to the wall firmly.

**5.34** Strip the outer insulation sheath back as required.

**5.35** Strip the insulation from the cores and make connections to the LIVE (L) (brown or red), NEUTRAL (N) (blue or black) and EARTH  terminal block. The earth wire must be sleeved green/yellow. Make sure that the cores of the cable lie tidily and do not touch any metallic part of the shower. They must not be under strain. There is no cable clamp.

**5.36** Ensure that the cable does not foul the area above the bottom removable section, where the knob gear will fit when the front cover is fitted into place.

**5.37** Make sure that all the terminal block screws are tightened very firmly. Replace the bottom section of the backplate.

## FITTING THE FRONT COVER

**5.38** Turn the valve fully anticlockwise (closed). Turn the water control knob in the cover so that it points vertically upwards.

**5.39** Carefully fit the cover to the backplate, ensuring that the lugs slide into their sockets. You may have to adjust the water control knob slightly to enable its gear to mesh with that of the control valve.

**NOTE:** The alignment post on the underside of the cover fits into the recess in the centre of the valve gear to aid the fitting of the cover.

**5.40** Fit the cover fixing screws. The longer one is for the lower fixing point. You may have to push the front cover firmly against the backplate seal, to enable the screws to locate properly.

## COMMISSIONING

Once the installation of the shower is complete, the following tests should be carried out to ensure the installation instructions have been correctly adhered to and the shower is functioning as it should.

**5.41** Secure the handset on the riser rail where it can spray safely. Press 'Low' button.

**5.42** Turn the water control knob fully clockwise.

**5.43** Turn the shower mains isolating switch to ON. Turn on water isolating valve (if applicable).

**5.44** Slowly turn the water control knob anticlockwise. There may be gurgling noises as water fills the heat exchanger, then water will start to flow from the handset. Press the 'High' button.

**5.45** Turn the water control knob further anticlockwise until the 'Power On' light comes ON. The elements are now heating.

**5.46** The temperature of the spray should now increase.

**5.47** Adjust the water control knob to give the desired temperature.

## 6 USER INFORMATION

### 6.1 To turn on and set temperature:

1. Turn the shower isolating switch to ON.
2. Press the 'Low' button. ('High' may be selected once flow and temperature have been established.)
3. Turn the water control knob anticlockwise. Water will flow from the handset, 'Power On' light will come ON.
4. Select either 'High' or 'Low' and adjust the water control knob to achieve preferred shower temperature.

### WARMER

#### DECREASE FLOW:-

Turn water control knob clockwise and/or select 'High' power setting.

### COOLER

#### INCREASE FLOW:-

Turn water control knob anticlockwise and/or select 'Low' power setting.

5. Make adjustments carefully. Give the shower a few seconds after each adjustment to stabilise, then check the temperature by hand before stepping into the shower.
6. The 'LOW' power setting uses less power and can be used in the warmer periods when incoming water temperature is higher. They can also be used to obtain a cooler spray without adjusting the water control knob.

A cold shower can be achieved by leaving the shower mains isolating switch OFF and adjusting the flow rate using the water control knob.

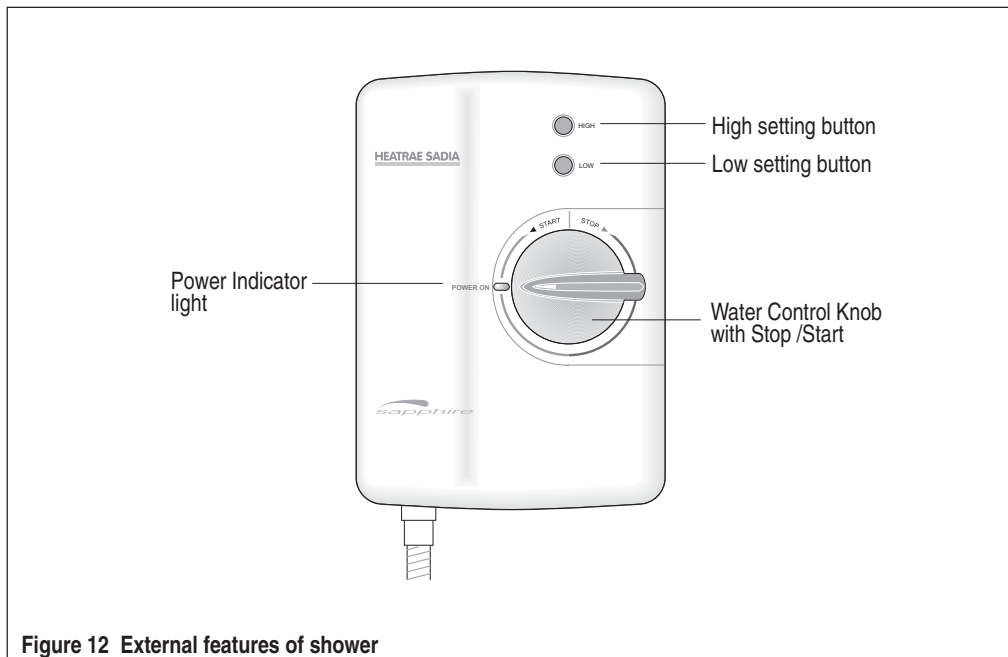


Figure 12 External features of shower

## 6.2 To turn off the shower:

1. Turn the water control knob fully clockwise.
2. Turn the shower isolating switch to 'Off'.

## 6.3 Power On Light

ON when water flow activates pressure switch (when heating).

*Please note that this shower is **not** thermostatic, it will not keep spray temperature constant whatever the change in external influence.*

## MAINTENANCE

### Cleaning the Handset

Also refer to instructions supplied with handset.

**6.4** To obtain the best performance from your shower, the handset must be cleaned regularly, maybe as often as once a week

in hard water areas.

**6.5** This is because the fine outlet holes can become blocked with scale and this will affect the pattern of the spray and cause the heater to perform poorly.

**6.6** The easiest and most effective method of cleaning your handset, regardless of which type you have with your shower, is to soak it in a proprietary descalant. For best results the handset should be left to soak overnight.

**6.7** The handset with rubber spray outlets can be cleaned by simply rubbing one's hand over them firmly to dislodge the scale.

## INSPECTION

**6.8** We recommend that in the interests of safety the shower and its electrical installation is checked by a qualified electrician at least every two years.

## 7 FAULT FINDING

In the unlikely event of a problem, consult the trouble shooting chart below.

For your particular symptom follow the suggested remedies in the order given. If you are unable to remedy the problem, **CONTACT YOUR INSTALLER IN THE FIRST INSTANCE.**

Do not attempt any electrical or plumbing work unless you are competent to do so.

SYMPTOM	POSSIBLE CAUSE	REMEDY
<b>1. No flow or not enough flow.</b>	A. Water control knob is turned fully clockwise.	A. Turn water control knob anticlockwise.
	B. Water turned off at mains or servicing valve.	B. Ensure water is fully turned on at the mains and at servicing valve in circuit.
	<b>C. SHOWER HEATER SUSPECTED OF BEING FROZEN.</b>	C. If so, <b>DO NOT USE.</b> 1. Switch off immediately at isolating switch. 2. Turn water off at servicing valve (if fitted) or at stop cock. 3. Contact our Service Department.
	D. There may be an outlet blockage.	D. Disconnect handset from hose and run the shower. 1. If water flows, then handset is blocked with scale or debris. Remember that disturbances to plumbing elsewhere in your house, or in the street, can dislodge debris which can find its way to the shower. Clean the handset and spray rings/plate thoroughly. See Maintenance, Section 6. 2. If the water does not flow, remove hose from the shower outlet. 2a If the water flows then the hose is blocked. This could be due to damage, severe kinking or even an obstruction. Replace with a new hose. 2b If the water does not flow, there is a blockage in the plumbing to the shower, or the shower itself. Contact our Service Department if the shower is considered to be the problem.
<b>2. Flow adequate but water too cold.</b>	A. Shower heater is on the 'LOW' power setting.	A. Ensure that the shower is on 'HIGH' setting, where applicable.
	B. Water flow too high.	B. Reduce the flow by turning the water control knob clockwise slowly. NOTE: If the knob is turned too far clockwise, the safety pressure switch inside the shower will turn off the heating elements. This is apparent when the 'Power On' light on the shower goes out. If this happens, turn the knob anticlockwise until the light reverts to its original state.

SYMPTOM	POSSIBLE CAUSE	REMEDY
<b>3. Water too hot.</b>	A. Water flow too low.	A. Increase the flow by turning the water control knob anticlockwise slowly.
	B. Sprayplate blocked with scale and debris.	B. Clean the handset sprayplate.
	C. Water pressure too low.	C. Switch to 'low' setting, if applicable.
<b>4. Water runs from around hose. Pressure relief device (PRD) has operated due to excess pressure build-up.</b>		Turn off isolating switch and servicing valve.
	A. Handset Blocked.	A. Clean out the sprayplate as in 'Maintenance' Section 6. Call a service engineer to remove the front cover and reset the PRD by removing the bent bracket, pushing the black outlet boss back into the heat exchanger, and refitting a new bracket.  If the fault occurs again without the hose being damaged or the handset blocked, contact our Service Department.
	B. Hose damaged or kinked.	B. Replace kinked or damaged hose and be careful not to turn water control knob too far anticlockwise. Reset as in 'A'.
<b>5. Temperature varies while showering, cycling hot/ cold.</b>	A. Thermal cut-out is operating, normally making a 'click' as it does so.	A. Increase the flow by turning the water control knob anticlockwise. Clean the handset and sprayplate.
	B. Input pressure is below the minimum required (see 3.2). Flow is unstable.	B. Ensure that your stop cock and servicing valve are fully open. If they are, ask your installer or the local water company to check that the running pressure is above the minimum required (see 3.2).
<b>6. No flow. 'Power On' indicator not lit. Isolating switch 'On' but its neon not lit.</b>	A. Cartridge fuse or miniature circuit breaker (mcb) has operated in your fusebox (or consumer unit) or switch fuse.	A. Switch off power and isolating switch. Renew fuse or reset mcb. If they operate a second time, contact a qualified electrician.
	B. Residual current device (rcd) (or earth leakage circuit breaker) has operated.	B. Follow the same procedure as above. If this has happened with a 'split load' consumer unit on initial installation, check that the neutral core of the shower feed cable is connected to the 'protected' neutral bar of the unit.

Where a fault cannot be corrected by either yourself or your installer, contact our Service Department, (address and phone number over), who will try to help over the phone. If necessary, they can arrange a visit by one of our service engineers. We find that the vast majority of problems can be solved by reference to

these fitting instructions or by discussion over the phone. In the event that our engineer is called and finds that the fault is caused by faulty installation or usage, or lack of reasonable maintenance, a call-out charge will be made.

## 8 GUARANTEE & SERVICE POLICY

This product is guaranteed against faulty materials and manufacture for a period of 2 years from the date of purchase provided that:-

**8.1** The unit has been installed in accordance with the Installation and User Instructions and all relevant Codes of Practice and Regulations in force at the time of installation and that all necessary controls and safety valves have been fitted correctly.

**8.2** Any valves and controls are of Heatrae Sadia recommended type and specification.

**8.3** The unit has not been modified or tampered with in any way and has been regularly maintained as detailed in the Installation and User Instructions.

**8.4** The unit has been used only for heating potable water.

The unit is not guaranteed against damage by frost and the inner container with integral heating element is not guaranteed against excessive scale build-up.

This guarantee in no way affects the statutory rights of the consumer.

The policy of Heatrae Sadia is one of continuous product development and, as such, we reserve the right to change specifications without notice.

## 9 ENVIRONMENTAL INFORMATION

Heatrae Sadia products are manufactured from many recyclable materials. At the end of their useful life they should be disposed of at a Local Authority Recycling Centre in order to realise the full environmental benefits.

# HEATRAE SADIA

The quality name in water heating

### APPROVED SPARES STOCKISTS

**Electric Water Heating Co.,**  
2 Horsecroft Place, Pinnacles,  
Harlow, Essex CM19 5BT  
Tel: 0845 0553811  
E-mail: sales@ewh.co.uk

**Eyre & Elliston**  
Unit 9 & 10, Chantry Gate Business Centre,  
Springfield Road, Hayes,  
Middlesex  
Tel: 020 8573 0574

**Parts Center**  
Network 65 Business Park, Bentley Wood Way,  
Burnley, Lancashire BB11 5ST  
Tel: 01282 834403  
www.partscenter.co.uk

**Newey & Eyre**  
Specialists Products Division  
Please contact your local branch.

**UK Spares Ltd.,**  
Tower Lane, Warmley,  
Bristol BS30 8XT  
Tel: 0117 961 6670

**William Wilson Ltd.,**  
Unit 3A, 780 South Street,  
Whiteinch, Glasgow G14 0SY  
Tel: 0141 4341530

*Due to continuous improvement and updating, specifications may be altered without prior notice.*

<b>Heatrae Sadia</b> Hurricane Way, Norwich, Norfolk NR6 6EA. www.heatraesadia.com	<b>Service</b> Tel: (01603) 420330 Fax: (01603) 420349 email: service@heatraesadia.com	<b>Sales</b> Tel: (01603) 420110 Fax: (01603) 420149 email: sales@heatraesadia.com
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