

## **B3/C3 M RANGE**

### **Fitting Instructions and User Guide**

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# 1.0 INTRODUCTION

Thankyou for purchasing a Heatrae Sadia B3M or C3M vented water heater. The B3M or C3M water heater is manufactured in the UK to the highest standards and has been designed to meet all the latest relevant safety specifications.

## 1.1 IMPORTANT POINTS

The B3M or C3M must be installed and commissioned by a competent person. Please read and understand these instructions before installing the B3M or C3M. Following installation and commissioning, the operation of the B3M or C3M should be explained to the user and these instructions left with them for future reference.

This appliance can be used by children aged from 8 years and above and persons with reduced physical sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Children must be supervised to ensure they do not play with the appliance.

Means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III conditions is required. The instructions shall state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

The B3M or C3M vented water heaters are designed to be wall mounted. Ideally they should be mounted close to where hot water is required most frequently. Pipe runs should be kept to a minimum.

The B3M and C3M can be installed either as an Open Outlet or Cistern Fed type unit when used with the appropriate fittings.

**Install only as an OPEN OUTLET or CISTERN FED unit, failure to do so will invalidate any guarantee and may lead to a dangerous installation.**

### OPEN OUTLET INSTALLATION

**When installed as an Open Outlet water heater the outlet acts as a vent and must not be connected to any form of tap or fitting not recommended by Heatrae Sadia. Only one outlet can be served via an Open Outlet type tapset.**

### CISTERN FED INSTALLATION

**When installed as a Cistern Fed water heater the cold water supply must be from a feed cistern complying with Water Byelaw 30.**

**A vent pipe must be connected to the outlet of the heater. The vent pipe must rise continuously and be arranged to discharge into the cold water feed cistern.**

**The vent pipe must have a minimum bore of 19mm.**

**More than one conventional tap can be supplied.**

### 1.2 PACK CONTENTS

Before commencing installation check that all the following components have been supplied in the Installation Kit :

- Open Outlet Spout
- Inlet Valve
- White 15mm Push Fit Spout Adaptor
- White 15mm Push Fit Cap
- White 15 x 22mm Push Fit Straight Connector
- Wall mounting bracket set
- Self adhesive Levelling Feet (2 off)
- Moulded plastic Spacer
- White 15mm Push Fit blanking cap

## 2.0 TECHNICAL SPECIFICATION

Electrical rating .....	2.75/3kW @ 230/240V ~
Capacities .....	B3M - 30 litres
.....	C3M - 50 litres
Weight (full) .....	B3M - 42.5kg
.....	C3M - 69.3kg
Rated pressure (Open Outlet) .....	0MPa (0 bar)
Rated pressure (Max, head pressure Cistern Fed) ..	0.2MPa (2 bar) (20 metres)
Minimum recommended supply pressure .....	0.04MPa (0.4 bar) (4 metres)

<b>Direct</b>		
Supplier's name or trade mark	B3M/C3M	
Supplier's model identifier	B3	C3
Storage volume V in litres	30.0	50.0
Mixed water at 40 °C V40 in litres	50	77
The declared load profile	S	M
The water heating energy efficiency class of the model	D	D
The water heating energy efficiency in %	30.6	34.5
The annual electricity consumption in kWh	603	1489
Daily fuel consumption Q fuel in kWh	2.940	7.060
The thermostat temperature settings of the water heater, as placed on the market by the supplier	60°C	
Specific precautions that shall be taken when the water heater is assembled, installed or maintained and disposed of at end of life	See section 2 to 6	

Table: Technical parameters in accordance with European Commission regulations 814/2013 and 812/2013

### 3.0 INSTALLATION

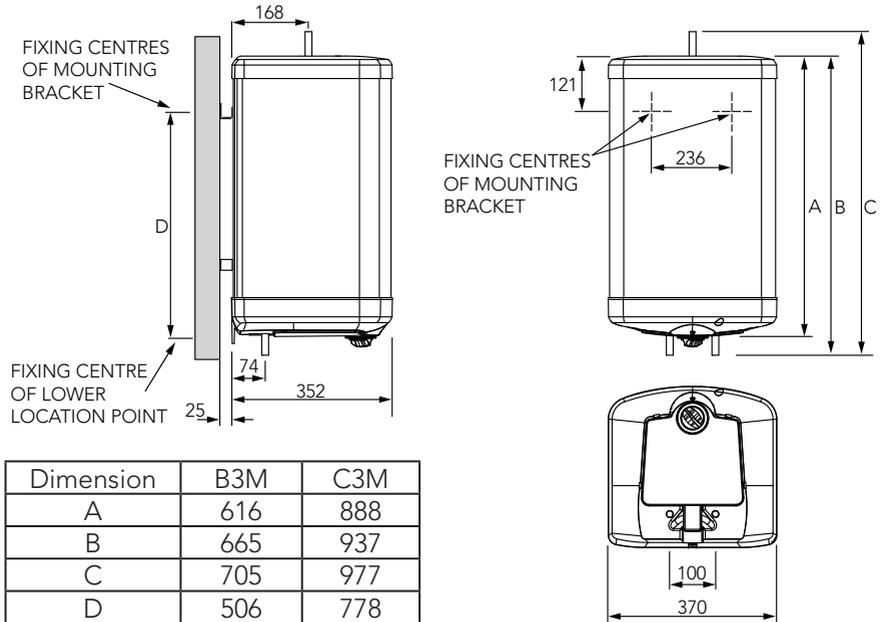
**Warning: this appliance must be earthed. It is suitable for a.c. supply only. Electrical installation must be carried out by a competent electrician and be in accordance with the latest IEE wiring regulations**

**Warning: Do not connect any pressure-relief device to the vent pipe of this water heater.**

**Warning: The outlet acts as a vent and must only be connected to a fitting recommended by the manufacturer. It must not be connected to a tap.**

1. National Wiring rules may contain restrictions concerning the installation of these units in bathrooms.
2. The unit should be vertically wall mounted using the wall bracket and levelling feet supplied (see Section 3.1 INSTALLATION - WALL MOUNTING). The inlet and outlet water connections must always be on the bottom of the unit.
3. Enough space should be left below and at the top above the unit for pipe connections. Refer to Diagram 1 and the Dimensions Table to determine a suitable position for the heater.
4. NOTE: Ensure that the wall can support the full weight of the unit (see TECHNICAL SPECIFICATIONS) and that there are no hidden services (electricity, gas, or water) below the surface of the wall.
5. DO NOT install where the unit may freeze.
6. Refer to the section IMPORTANT INSTALLATION POINTS to determine which valves and accessories are required.
7. The water connections are 15mm diameter copper tubes suitable for compression fittings. Do not use solder joints as this will damage the heater.
8. The INLET is marked BLUE, the OUTLET is marked RED. It is recommended that a WRAS Listed isolating valve be fitted on the cold water supply to the heater.
9. Plumbers Paste must not be used as it can impair the operation of components.

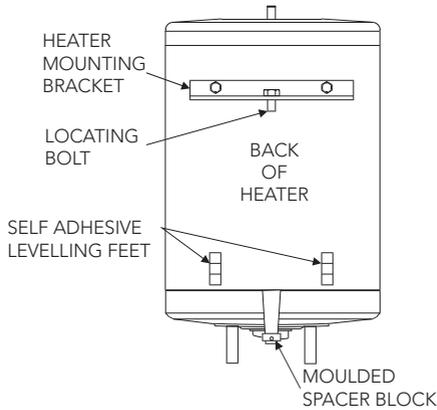
FIGURE 01: DIMENSIONS



### 3.1 INSTALLATION - WALL MOUNTING

- Using Figure 1 and the Dimensions Table as a guide mark the position of the wall mounting bracket and lower location point. Drill and plug the wall with suitable fixings, fix the wall bracket to the wall.
- Fit the heater wall bracket to the rear of the unit using the screws provided ensuring the central location bolt is pointing towards the bottom of the unit.
- Remove the backing paper from the self adhesive pads of the Levelling Feet and affix them to the lower back of the unit in the approximate positions shown on Figure 2.
- Hang the unit on the wall mounting bracket ensuring the location bolt locates in the hole in the wall bracket. Position the moulded spacer block between the tab on the bottom cover moulding and the wall. Insert a No. 10 x 2 1/2" long screw through the tab and spacer block and tighten into wall plug.

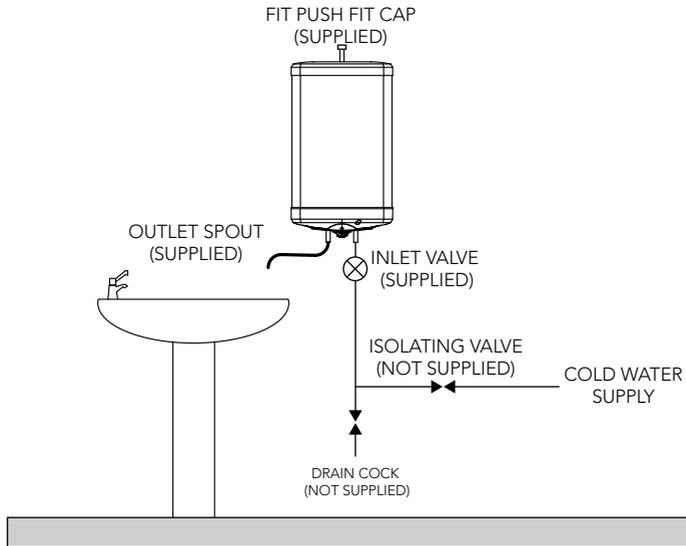
FIGURE 02: BRACKET & LEVELLING FEET POSITIONS



### 3.2 PLUMBING - OPEN OUTLET

1. When installed as an Open Outlet water heater the outlet acts as a vent and must not be connected to any form of tap or fitting not recommended by Heatrae Sadia.
2. Only one outlet can be served. The fittings supplied include an inlet Tap, 300mm Open Outlet Spout, a 15mm straight Push Fit connector and a 15mm Push Fit cap. The heater should be sited so that the spout can discharge into a suitable sink or basin.
3. Streamline option packs K, Q, Y, J, M, W, R, P, X, or S/T can be used in place of the spout to provide a single tap outlet. Flow rates will be at a reduced rate. Note: item 3.2.7
4. The cold water supply may be taken from the cold water mains or from a cold water feed cistern complying with Water Byelaw 30 with a minimum recommended pressure of 0.4 bar (4 metres head). A drain cock should be incorporated in the supply to facilitate draining the heater for maintenance.
5. The inlet tap should be fitted to the INLET pipe of the heater. **The inlet must not be connected directly to the cold water mains supply.** The Outlet Spout should be fitted to the OUTLET pipe using the 15mm straight push fit connector supplied in the fittings kit.
6. The 15mm Push Fit Cap, with tamperproof collet, must be fitted to the Vent Pipe on the top of the heater.
7. In an Open Outlet installation it is normal for the spout to drip during heating. This is due to expansion of water as it is heated within the unit, it does not indicate a fault. DO NOT attempt to stop this dripping by over-tightening the inlet tap as damage to the sealing washers or internal operating mechanism will occur.

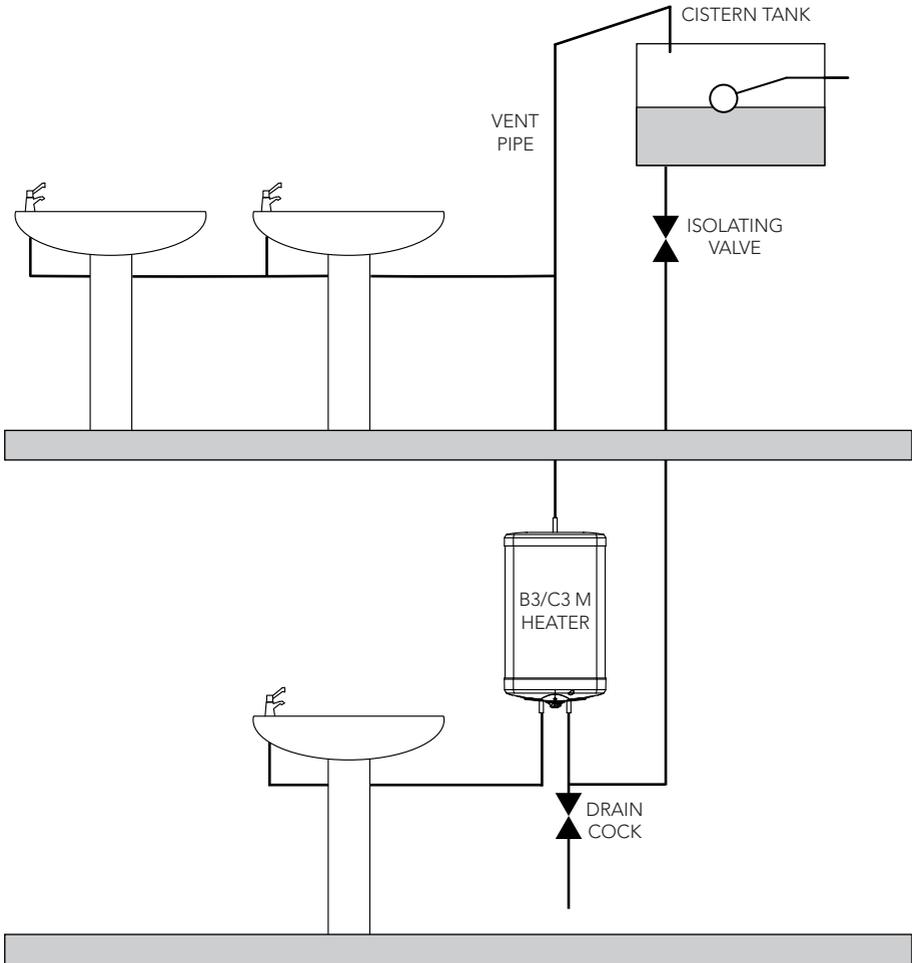
FIGURE 03: TYPICAL OPEN OUTLET INSTALLATION



### 3.3 PLUMBING - CISTERN FED

1. This method of installation must be used if the outlet is to be connected to one or more conventional taps. It is not recommended for supplying a shower. Individual site demands should be considered when choosing the number of outlets to be served.
2. A vent pipe must be connected to the outlet connection of the heater.
3. The vent pipe must have a minimum internal diameter of 19mm.
4. The vent pipe must be unobstructed, rise continuously and be arranged to discharge over the cold water feed cistern. DO NOT connect any pressure relief device to the vent pipe of this water heater.
5. The cold water supply must be from a cold water feed cistern complying with Byelaw 30. The maximum head pressure must not exceed 20 metres.
6. It is recommended that an WRC Listed isolating valve is fitted on the cold water supply to the heater. A drain cock should be fitted on the inlet pipe to the heater at a level lower than the unit to allow draining for maintenance.
7. The inlet must not be connected directly to the cold water mains supply.
8. The Vent Pipe should be connected to the top of the heater using the 15 x 22mm Push Fit Straight Connector supplied.

FIGURE 04: TYPICAL CISTERN FED INSTALLATION



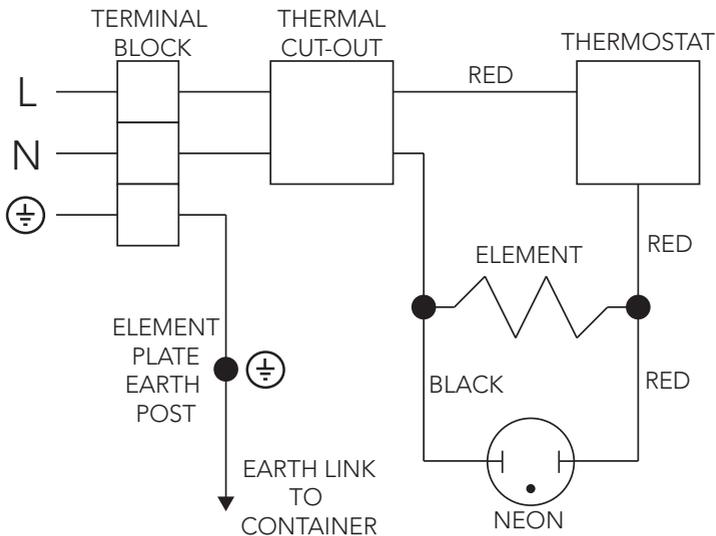
### 3.4 INSTALLATION - ELECTRICAL REQUIREMENTS

WARNING: THIS APPLIANCE MUST BE EARTHED. IT IS SUITABLE FOR A.C. SUPPLY ONLY. DISCONNECT THE ELECTRICAL SUPPLY BEFORE REMOVING THE TERMINAL COVER. INSTALLATION MUST BE IN ACCORDANCE WITH THE CURRENT IEE WIRING REGULATIONS.

1. The unit is supplied fitted with a 1.0m 3 core 1.5mm<sup>2</sup> flexible cable. The electricity supply should be fused 13 Amp for a 3kW model and be via a double pole isolating switch with a contact separation of at least 3mm in both poles. Refer to the schematic wiring diagram below.
2. The wires are colour coded as follows:

Green and Yellow	EARTH	⊕
Brown	LIVE	(L)
Blue	NEUTRAL	(N)

FIGURE 05: WIRING DIAGRAM



## 4.0 COMMISSIONING

DO NOT SWITCH ON THE ELECTRICAL SUPPLY UNTIL THE UNIT HAS BEEN FILLED WITH WATER AND CHECKED FOR LEAKS.

### 4.1 PLUMBING

1. Check that all installation, electrical and discharge pipe requirements have been met.
2. Check that all water and electrical connections are tight.
3. Open a hot water tap, turn on mains water supply to the heater.
4. Allow unit to fill and leave hot tap running for a short while to purge any air and flush out the pipework. Close the hot tap and check the system for leaks.

### 4.2 ELECTRICAL

1. Switch on the electrical supply. The indicator light will illuminate during heating. When the set temperature is reached the indicator light will go out.
2. The set temperature can be adjusted by rotating the knob located in the terminal cover. It is possible to lock the thermostat knob in either the mid-range or a "hot" position by following the procedures in 4.2.3 or 4.2.4 below. Always switch off the electrical supply before removing the terminal cover.
3. Setting the "mid-range" position:  
Rotate the thermostat knob to the mid position. Remove the terminal cover by using a large flat bladed screwdriver to depress the four snap lugs located in the four rectangular depressions on the bottom cover. Holding the thermostat knob in position turn the terminal cover over and remove the backing disc from the underside of the cover. Turn the backing disc over and refit to the knob ensuring the notch locates with the boss on the underside of the cover. Refit the terminal cover, the thermostat will now be locked in the "mid-range" position.
4. Setting the "hot" position:  
Rotate the thermostat knob to mid way through the hot graduated range (red graphic). Follow the procedure detailed above, however in this case the knob should be held in the "hot" position previously set. When the terminal cover has been refitted the thermostat will be locked in the "hot" position. This position is recommended when using the heater in conjunction with a thermostatic blending valve.

## 5.0 EXPLANATION TO USER

Following Installation and Commissioning of the water heater, the operation should be fully explained to the user.

### 5.1 HOT WATER

1. Indicate the location of the water heater and identify the outlets to which it is connected.
2. Explain how the temperature is set and how the B3M and C3M vented water heaters store water at the temperature set on the adjustable thermostat. This can be set to give temperatures in the range of 10 to 75°C.
3. Explain that to avoid any risk of freezing when the heater is not in use for long periods during the winter months, the electrical supply should be left on & the thermostat set to its minimum position. This will protect the heater, but not the system pipework.
4. Show how the thermostat can be locked in either the mid range or "hot" position and recommend that this procedure is carried out by a qualified electrician.
5. Show that the indicator light will be illuminated when the unit is heating.
6. Recommend that to ensure the heater continues to operate at its optimum performance it should be periodically maintained in accordance with the instructions given under the Sections headed MAINTENANCE.

### 5.2 SYSTEM MALFUNCTION

1. Explain how to isolate electrical and water supplies in case of a fault.
2. Explain that a qualified plumber and/or electrician should be contacted if there is a fault.
3. Explain how to identify/check basic faults.
4. Explain the necessity to carry out regular maintenance of the water heater to ensure its continued safe and efficient operation.

### 5.3 LITERATURE

Hand over the Installation and User Instructions.

#### 5.4 IMPORTANT NOTES TO USERS OF OPEN OUTLET INSTALLATIONS

When installed as an Open Outlet water heater the outlet acts as a vent and must not be connected to any form of tap or fitting not recommended by Heatrae Sadia.

The outlet of the tap must not be restricted or blocked in any way.

In an Open Outlet installation it is normal for the hot outlet to drip during heating. This is due to the expansion of water as it is heated within the unit, it does not indicate a fault with the unit.

**DO NOT** attempt to stop this dripping by over-tightening the inlet tap as damage to the sealing washers or the operating mechanism will occur.

## 6.0 MAINTENANCE

WARNING: DISCONNECT FROM ALL ELECTRICAL SUPPLIES BEFORE BEGINNING ANY WORK ON THE B3M OR C3M WATER HEATER. FLUID CONTAINED IN THE WATER HEATER MAY BE VERY HOT!

To ensure the continued safe and efficient operation of the unit, it should be regularly maintained.

Maintenance should be carried out by a competent person and any replacement parts used should be authorised Heatrae Sadia spare parts.

It is recommended that maintenance carried out annually and should include the checks detailed in the section below.

Little maintenance is required, however in hard water areas the unit will require periodic descaling to ensure efficient operation. To descale the unit:

1. Switch off and disconnect the electrical supply. Turn off the water supply to the unit.
2. Open a hot tap to relieve any system pressure. Empty unit by opening the drain cock in the inlet pipework.
3. Remove the terminal cover by using a large flat bladed screwdriver to depress the 4 snap lugs located in the 4 rectangular depressions on the bottom cover.
4. Disconnect the electrical terminations to the element. Disconnect earth links to the earthing stud. Withdraw the thermostat and thermal cut-out capillary tubes from the pocket on the element plate.
5. Remove the element plate assembly by unscrewing the five securing screws, tapped jacking holes are provided (NOTE: a quantity of water may still be present in the container, it is recommended that a container be placed under the unit to collect any spillage). Remove any loose scale from the container. Carefully clean off any scale from the element and thermostat pocket. DO NOT clean scale from interior container walls.
6. Re-assemble the element plate assembly fitting a new sealing gasket. Rewire the unit with reference to the Wiring Diagrams.
7. Re-commission the unit following the INSTALLATION and COMMISSIONING instructions.

## 7.0 FAULT FINDING

WARNING: DISCONNECT FROM ALL ELECTRICAL SUPPLIES BEFORE BEGINNING ANY WORK ON THE B3M OR C3M WATER HEATER. FLUID CONTAINED IN THE WATER HEATER MAY BE VERY HOT!

The B3M & C3M unit should give trouble free operation, however should a problem occur, the tables below should enable most faults to be identified with ease.

Fault Finding should be carried out by a competent person and any replacement parts used should be authorised Heatrae Sadia spare parts.

FAULT	POSSIBLE CAUSES	ACTION
Water not heating	Electrical supply fault.	Check electrical supply.
	Thermal cut-out tripped.	Check cut-out, if operated reset and check thermostat operation. If necessary replace.
	Thermostat fault.	Check thermostat operation, replace if necessary.
	Element fault.	Check element for circuit continuity and insulation resistance. If faulty replace.
No water flow - General	Cold water supply not turned on.	Check mains water supply is on.
	Blockage in cold water supply.	Check for obstructions.
No water flow - Open Outlet installations	Open outlet tapset not correctly installed.	Check water connections to tapset.
	Blockage in tapset.	Check for obstructions.
No water flow - Cistern Fed installations	Blockage in tapset.	Check for obstructions.
	Cistern tank empty.	Check water supply to cistern tank is turned on. Check operation of cistern float valve.
Water flows gradually reduces - Cistern Fed installations	Cistern not filling as fast as outlet flow rate.	Check water supply to cistern tank is turned on and that the inlet flow rate is equal to outlet flow rate. Check operation of cistern float valve.
	Vent pipe blockage.	check vent pipe for obstructions, clear as necessary.

## 8.0 SPARE PARTS

The following comprehensive list of spare parts is available for your B3M or C3M water heater. Please refer to the Rating Label on the side of your heater before ordering to ensure the correct spare part is obtained.

DO NOT REPLACE WITH PARTS NOT RECOMMENDED BY HEATRAE SADIA - THIS WILL INVALIDATE YOUR GUARANTEE AND MAY RENDER THE INSTALLATION DANGEROUS.

DESCRIPTION	CODE NO.
Element plate assembly - 30/50 litre 3kW .....	95 606 926
Thermostat.....	95 612 667
Thermal cut-out .....	95 612 666
Indicator light .....	95 607 995
Element plate gasket .....	95 611 811
Terminal cover c/w thermostat knob.....	95 614 184
15mm Push Fit Cap Nut.....	95 607 996
Spout and adaptor .....	95 604 212

## 9.0 ACCESSORIES

The heater can be used to supply only one outlet when used in an open outlet installation. More outlets can be supplied in a cystem fed installation. It is not recommended for supplying a shower. Individual site demands should be considered when choosing capacity and the number of outlets to be served.

Tap option packs J, K, M, P, Q, R or S can be used in place of the spout to provide a single tap outlet. Flow rates will be at a reduced rate.

Note: In an Open Outlet installation it is normal for the spout to drip during heating. This is due to expansion of water as it is heated within the unit, it does not indicate a fault. DO NOT attempt to stop this dripping by over-tightening the inlet tap as damage to the sealing washers or internal operating mechanism will occur.

## 10.0 GUARANTEE

This water heater is guaranteed for a period of five years from the date of purchase with the exception of the element and thermal controls which are guaranteed for a period of two years provided:

1. The unit has been installed in accordance with these instructions and all necessary inlet controls and safety valves have been fitted correctly.
2. Any valves or controls are of Heatrae Sadia recommended type.
3. The unit has not been tampered with and has been regularly maintained as detailed in these instructions.
4. The unit has been used only for heating potable water.
5. Within 60 days of installation, the user completes and return certificate supplied along with proof of purchase to register the product.

The unit is not guaranteed against damage by frost and the immersion heater is not guaranteed against excessive scale build up. This guarantee does not affect the statutory rights of the consumer.

## 11.0 ENVIRONMENTAL INFORMATION

The Waste Electrical and Electronic Equipment (Producer Responsibility) Regulation 2004.

This product is outside of the scope of the European Waste Electrical & Electronic Equipment Directive as interpreted within the UK.

In the UK this product can therefore be disposed of through commercial non-WEEE waste facilities.

Heatrae Sadia does not accept any liability under the WEEE directive.

This product is manufactured from many recyclable materials. At the end of its useful life it should be disposed of at a Local Authority Recycling Centre to realise the full environmental benefits.

Insulation of the domestic hot water cylinder is by means of an approved CFC/HCFC free polyurethane foam with an ozone depletion factor of zero and Global Warming Potential (GWP) of 3.1.

The B3M/C3M does not contain and substances harmful to health; it does not contain any asbestos.

## 12.0 COMMISSIONING RECORD

Installation Date: \_\_\_\_\_

Model and Serial Number: \_\_\_\_\_

Installer (Plumbing): \_\_\_\_\_

Contact Details: \_\_\_\_\_

Competency Scheme & ID Number: \_\_\_\_\_

Installer (Electrical): \_\_\_\_\_

Contact Details: \_\_\_\_\_

Competency Scheme & ID Number: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Mains supply pressure and flow rate	
Isolation valve fitted	
Pipework checked for leaks	
Pipework bonded	
Electrical connections checked	
Thermostat locked	
Thermostat setting	
Water Temperature	

## 13.0 SERVICE RECORD

Service Date: \_\_\_\_\_  
Engineer: \_\_\_\_\_  
Contact Details: \_\_\_\_\_  
Competency Scheme & ID Number: \_\_\_\_\_  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Service Date: \_\_\_\_\_  
Engineer: \_\_\_\_\_  
Contact Details: \_\_\_\_\_  
Competency Scheme & ID Number: \_\_\_\_\_  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Service Date: \_\_\_\_\_  
Engineer: \_\_\_\_\_  
Contact Details: \_\_\_\_\_  
Competency Scheme & ID Number: \_\_\_\_\_  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Service Date: \_\_\_\_\_  
Engineer: \_\_\_\_\_  
Contact Details: \_\_\_\_\_  
Competency Scheme & ID Number: \_\_\_\_\_  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 14.0 SPARES STOCKISTS

For the fast and efficient supply of spares, please contact the stockists listed below:

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

SPD  
Units 9 & 10 Hexagon Business Centre  
Springfield Road, Hayes, Middlesex, UB40 0TY  
Tel: 020 8606 3567

Parts Centre  
Tel: 0344 292 7057  
www.partscentre.co.uk

Newey & Eyre  
Unit 3-5 Wassage Way  
Hampton Lovett Ind. Estate  
Droitwich, Worcestershire, WR9 0NX  
Tel: 01905 791500  
Fax: 01905 791501

UK Spares Ltd.  
Unit 1155 Aztec West  
Almondsbury, Bristol, BS32 4TF  
Tel: 01454 620500

Alternatively contact your local supplying merchant or wholesale branch or use our online stockist finder at [www.interpartspares.co.uk](http://www.interpartspares.co.uk)

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## HEATRAE SADIA

**The quality name in water heating**

Heatrae Sadia Heating  
Hurricane Way Norwich NR6 6EA  
[www.heatraesadia.com](http://www.heatraesadia.com)

SPECIFICATION ADVICE HOTLINE

t| 01603 420220

e| [specifier@heatraesadia.com](mailto:specifier@heatraesadia.com)

AFTER SALE SERVICE

t| 0344 8711530

e| [customer.support@heatraesadia.com](mailto:customer.support@heatraesadia.com)