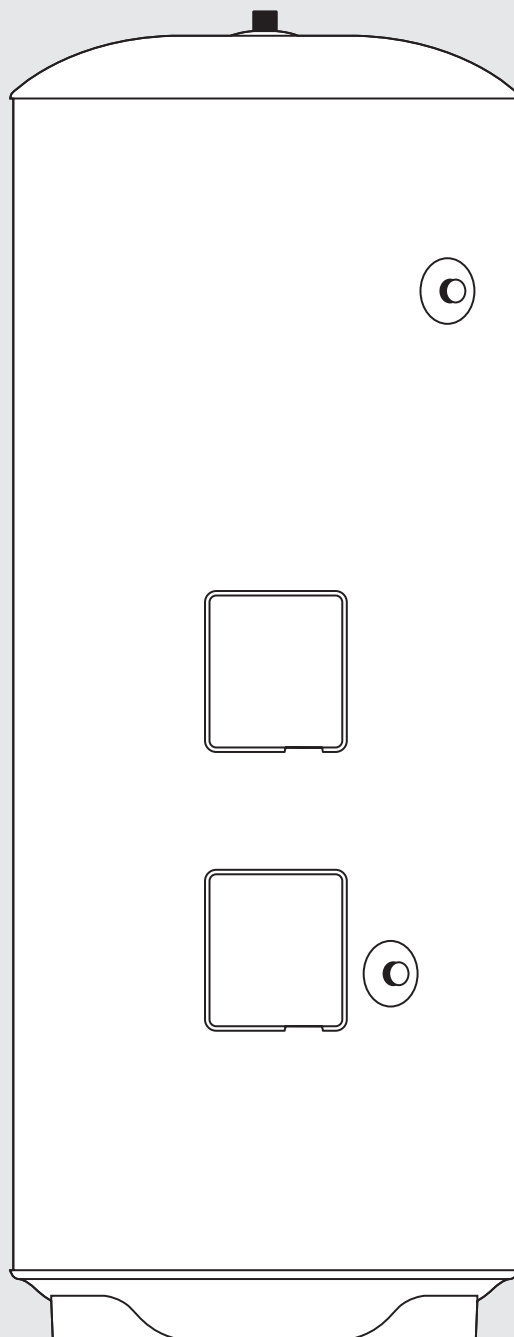


# HEATRAESADIA

SMARTER | CLEANER | WARMER

## Megalife Vented Cistern Fed Water Heater Installation manual



### **IMPORTANT**

Please read & understand all these instructions before commencing installation.  
Please leave this manual with the customer for future reference.

# Contents

Section	Page
1	Introduction..... 2
2	General requirements ..... 4
3	Installation - general..... 5
4	Installation - direct units ..... 7
5	Installation - indirect units..... 8
6	Commissioning ..... 11
7	User Instructions ..... 12
8	Maintenance ..... 13
9	Fault Finding & Servicing ..... 14
10	Dimensions & Specifications ..... 16
11	Guarantee..... 19
12	Contacts ..... 20

## 1: Introduction

Thank you for your purchase of a Heatrae Sadia Megalife cistern fed vented water heater. The Megalife is manufactured in the UK from top quality materials and meets all the latest relevant safety and constructional standards. The high grade Duplex stainless steel cylinder offers exceptional strength and corrosion resistance and is backed by a 25 year cylinder guarantee. Its performance and insulation levels meet the latest requirements of Building Regulation Part L.

The Megalife vented water heater must be fed from a cold water feed cistern located above the water heater and hot outlets to be served. The unit must have a suitable vent pipe installed on the outlet that is arranged to discharge over the cold water feed cistern.

Direct units are supplied with two electric immersion heaters (depending on model), which incorporate an adjustable thermostat and an over-temperature thermal cut-out.

Indirect units are supplied fitted with a thermostat and over-temperature thermal cut-out for the control of the primary heat input to the Megalife from the boiler selected. All indirect models are also supplied with one electric immersion heater for use as a back up heat source should the primary heat source be switched off.

### G3 Requirements (extracts taken from G3 regulations)

(2) A hot water system, including any cistern or other vessel that supplies water to or receives expansion water from a hot water system, shall be designed, constructed and installed so as to resist the effects temperature and pressure that may occur either in normal use or in the event of such malfunctions as may reasonably be anticipated, and must be adequately supported.

(3) A hot water system that has a hot water storage vessel shall incorporate precautions to:

- (a) prevent the temperature of the water stored in the vessel at any time exceeding 100°C: and
- (b) ensure that any discharge from safety devices is safely conveyed to where it is visible but will not cause a danger to persons in or about the building.

In the Secretary of State's view Requirement G3(3) will be met for a **hot water storage system** that has a vented storage vessel if:

- a. the storage vessel has a suitable vent pipe connecting the top of the vessel to a point open to the atmosphere above the level of the water in the cold water storage cistern and over it; and,
- b. in addition to any thermostat, either the heat source, or the storage vessel is fitted with a device that will prevent the temperature of the stored water at any time exceeding 100°C; and,
- c. the hot water system has pipework that incorporates a provision for the discharge of hot water from the safety devices to an appropriate place open to atmosphere where it will cause no danger to persons in or about the building.

#### Vented hot water storage systems

**3.12** Vented **hot water storage systems** should incorporate a vent pipe of an adequate size, but not less than 19mm internal diameter, connecting the top of the hot water storage vessel to a point open to the atmosphere above and over the level of the water in the cold water storage system.

**3.13** In addition to the vent pipe referred to in 3.12 and any thermostat provided to control the temperature of the stored water to a desired temperature, vented **hot water storage systems** should incorporate either:

- a. for all direct heated sources, a non-self-resetting energy cut-out to disconnect the supply of heat to the storage vessel in the event of the storage system overheating: and,  
for all indirect heat sources, an overheat cut-out to disconnect the supply of heat to the storage vessel in the event of the stored water overheating so that the temperature of the stored water does not exceed 100°C.

**3.14** Vent pipes should discharge over a cold water storage cistern conforming to BS 417-2:1987. Specification for galvanized low carbon steel cisterns, cistern lids, tanks and cylinders. Metric units; or BS 4213:2004 Cisterns for domestic use. Cold water storage and combined feed and expansion (thermoplastic) cisterns up to 500 litres. Specification; as appropriate.

**3.15** The cold water storage cistern into which the vent pipe discharges should be supported on a flat, level, rigid platform which is capable of safely withstanding the weight of the cistern when filled with water to the rim and fully supporting the bottom of the cistern over the whole of its area. The platform should extend a minimum of 150mm in all directions beyond the edge of the maximum of the cistern.

Note: When an existing metal cistern is replaced, or a plastic cistern is replaced by one with larger dimensions, the existing support should be upgraded, as necessary, with one in accordance the paragraph 3.15.

**3.16** The cistern should be accessible for maintenance, cleaning and replacement.

## 2: General Requirements

**IMPORTANT : PLEASE READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING THE MEGALIFE WATER HEATER. INCORRECT INSTALLATION MAY INVALIDATE YOUR GUARANTEE.**

**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 SUPERVISORY 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.**

**WARNING: Do not switch on if there is a possibility that the water in the heater is frozen.**

**THE MEGALIFE MUST BE FED FROM A COLD WATER FEED CISTERN. A SUITABLE VENT PIPE MUST BE INSTALLED.**

### 2.1 Siting the Megalife (see Fig. 01, below)

The Megalife range of water heaters must only be installed as CISTERN FED VENTED units supplied from a cold water feed cistern at an appropriate head height above the heater and outlet points. Ensure that the feed cistern height above the heater does not exceed its maximum rated pressure of 40 metres (4 bar). The feed cistern should comply with the requirements of Schedule 2 Section 7 Paragraph 16: Cold Water Services to the Water Supply (Water Fittings) Regulations 1999 (previously Water Byelaw 30).

A vent pipe **MUST** be connected to the outlet of the heater. This must rise continuously and be arranged to discharge into the feed cistern. The vent pipe must have a minimum bore diameter of 19mm.

**DO NOT** connect directly to the mains water supply.

**DO NOT** connect any pressure relief device or other valves to the vent pipe of this heater.

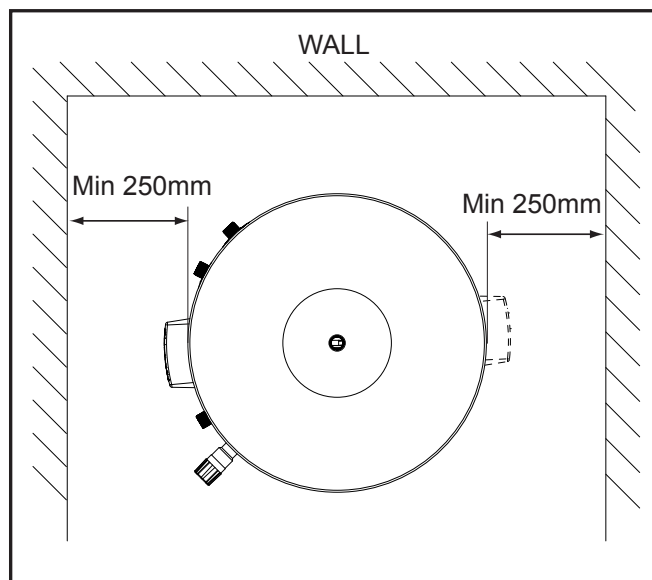
**DO NOT** install in a position where the heater is liable to be subject to frost conditions.

The Megalife unit must be vertically floor mounted or on a suitable plinth. It can be placed anywhere convenient provided the vent pipe can be correctly installed. Ensure that the floor or supporting plinth is of sufficient strength to support the "full" weight of the unit (refer to table 04 on page 17 for unit weights). Ideally the heater should be sited close to the point where hot water is required most frequently. Pipe runs should be kept as short as possible for maximum economy. Access to associated plumbing connections, immersion heaters and indirect controls should be possible for servicing and maintenance of the system. Prior to installation the unit should be stored and transported in an area free from excessive damp or humidity. The Unit should be stored in a frost free environment.

### 2.2 Outlet/Terminal Fittings (taps, etc.)

The Megalife can be used in conjunction with most types of terminal fittings. In a cistern fed system the pressure at the outlet fittings is due to the head height of the cold water feed cistern above the outlet point. When choosing suitable fittings ensure they will operate at the pressure available at the outlet point.

Fig. 01: Siting the Unit



## 3: Installation - General

### 3.1 Pipe Fittings

All pipe connections to the Megalife are made via 22mm compression fittings directly to the unit (nuts and olives supplied). The fittings are also threaded 3/4" BSP male parallel should threaded connections be required.

### 3.2 Cold Water Supply

A 22mm cold water supply is recommended from the cold water feed cistern. No other connection should be taken from this supply. A servicing valve or stop valve with a fixed washer plate should be incorporated in a convenient and accessible position in the cold feed pipe. The cold feed pipe should be connected to the heater connection marked with a BLUE collar.

### 3.3 Drain Tap

A suitable draining tap should be installed at the lowest point of the cold feed pipe between the cold water service valve and the heater to facilitate draining the heater.

### 3.4 Outlet Pipework

The outlet pipework should be connected to the heater connection marked with a RED collar in the centre of the top cover. The vent pipe must be teed into the outlet pipe (see section 3.5 below). Outlets above the heater can be teed off the vent pipe. Ideally the pipework from the heater to the outlet fittings should be in 22mm pipe with short runs of 15mm pipe to the terminal fittings. Pipe sizes may vary due to system design.

### 3.5 Vent Pipe

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 storage cistern.

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

No valves should be fitted to the vent pipe. It is not acceptable to replace the vent pipe with a pressure relief device.

The hot water distributing pipes can be teed off the vent pipe. If fitting a shower booster pump particular attention should be made to the manufacturer's instructions regarding the positioning of the hot water tapping to prevent air entrainment via the vent pipe.

### 3.6 Secondary Circulation

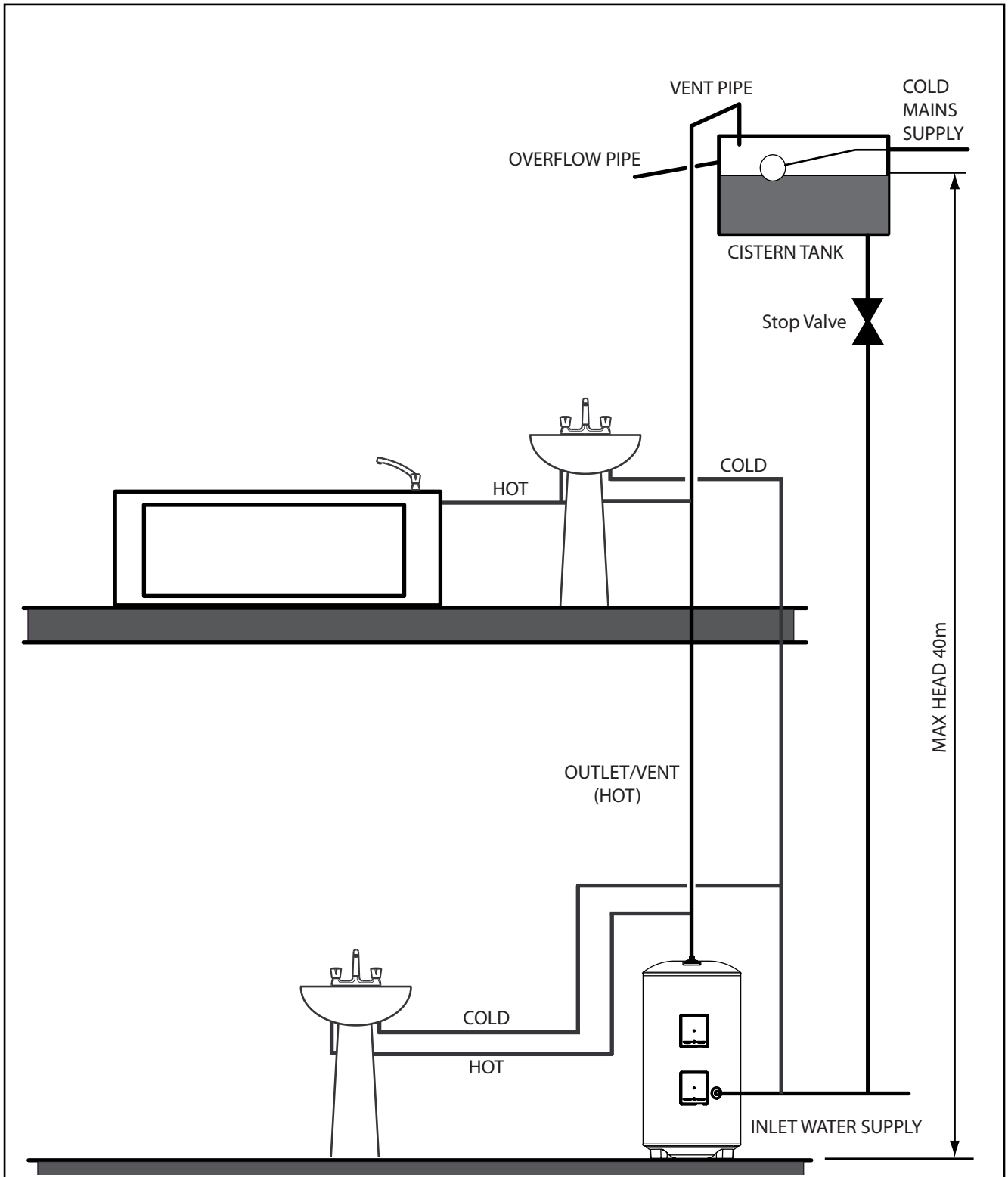
If secondary circulation is required it is recommended that it be connected to the Megalife cylinder as shown in Fig. 07, page 11. A 1/2" BSP female threaded boss is provided (supplied blanked with a 1/2" BSP plug) for the connection of a secondary circulation return pipe.

The secondary return pipe should be in 15mm pipe and incorporate a check valve to prevent backflow. A suitable WRAS approved bronze circulation pump will be required.

In direct electric installations where a secondary circulation is required particular attention should be paid by the installer to maintain the returning water temperature (guidelines state that a minimum of 55°C return temperature is advisable). Factors such as, but not limited to, secondary circulation flow rates, minimising heat loss of all secondary circuit pipework and timed operation during periods of high demand are critical to the correct operation and longevity of the heating element(s) and thermostats.

Secondary circulation is not recommended for direct electric units using off-peak tariffs where the secondary circulation is not controlled in conjunction with the heat source as performance can be affected.

Fig. 02: Typical Vented Installation - Schematic



## 4: Installation - Direct Units

### 4.1 Immersion Heater(s)

The Megalife is supplied with two factory fitted immersion heaters (120L - 210L) and one immersion heater on the 100L model. Each immersion heater is rated 3kW at 240V (2.8kW at 230V)

If both immersion heaters are not required a boss can be plugged with the aid of a blanking plug available from Heatrae Sadia (order Heatrae Sadia part no. 95 605 881).

### 4.2 Wiring (see Fig. 03, below)

All electrical wiring should be carried out by a competent electrician and be in accordance with the latest I.E.E. Wiring Regulations. Each circuit must be protected by a suitable fuse and double pole isolating switch with a contact separation of at least 3mm in both poles. The immersion heater(s) should be wired in accordance with Fig. 03, below. The immersion heater(s) **MUST** be earthed. The supply ( HOFR 1.5mm<sup>2</sup> min ) cable must be routed through the cable gland provided and the outer sheath of the cable firmly secured by tightening the screw on the cable gland. Replace the immersion heater cover(s) before operating.

**DO NOT operate the immersion heater(s) until the Megalife has been filled with water.**

### 4.3 Operation

Switch on the electrical supply to the immersion heater(s) and allow the unit to heat up. Check that the thermostat operates correctly. A storage temperature of approx. 60°C is recommended. If necessary the temperature can be adjusted by inserting a flat bladed screwdriver in the adjustment spindle on top of the immersion heater thermostat and rotating (see Fig. 04, page 9). The full adjustment represents a temperature range of between 10°C and 72°C.

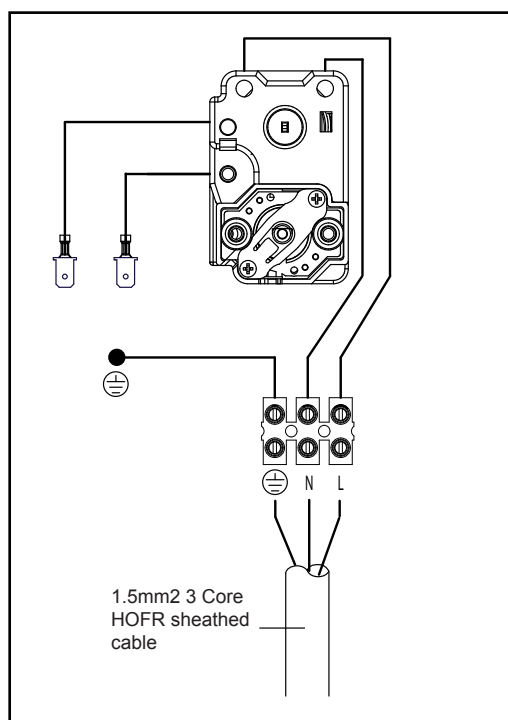
### 4.4 Safety

DO NOT BYPASS THE THERMAL CUT-OUT(S) IN ANY CIRCUMSTANCES.

DISCONNECT FROM THE MAINS SUPPLY BEFORE REMOVING ANY COVERS.

NEVER ATTEMPT TO REPLACE AN IMMERSION HEATER OTHER THAN WITH THE RECOMMENDED HEATRAE SADIA MEGALIFE SPARE PART. ( see page 14)

Fig. 03: Electrical connection (direct schematic)



# 5: Installation - Indirect Units

## 5.1 Boiler Selection

The Megalife indirect models are suitable for use with most gas, oil or electric boilers. The boiler used can either be a sealed system or open vented type. The maximum primary circuit pressure is 3.5 bar. If an open vented type boiler is used it must be fed from a separate boiler feed and expansion cistern, it **MUST NOT** be fed from the Megalife cold water feed cistern.

The primary flow from the boiler **MUST** be pumped. Gravity circulation will not work due to the special design of the primary heat exchanger. It is recommended that an air bleed point or automatic air vent is incorporated in the primary return pipework close to the Megalife unit to aid in bleeding air from the primary heating coil.

The boiler should be fitted with adequate thermal control. This will normally include a primary flow thermostat and a safety over temperature cut-out. The boiler flow temperature should usually be set to 82°C (maximum flow temperature to primary heat exchanger 90°C).

**The boiler cannot be vented through the Megalife unit.**

## 5.2 Indirect Thermal Controls

Control of the storage temperature when indirectly heated is provided by the fitted cylinder thermostat. The control is located under the white plastic cover located to the right of the indirect coil connections. If necessary the temperature can be adjusted by inserting a flat bladed screwdriver in the adjustment knob and rotating. The minimum thermostat setting is 10°C. Adjustment represents a temperature range of 10°C to 72°C (See Fig. 04, page 9). If in any doubt contact a competent electrician.

## 5.3 Wiring

All electrical wiring should be carried out by a competent electrician and be in accordance with the latest I.E.E. Wiring Regulations.

The Megalife indirect thermostat and thermal cut-out are factory pre-wired. It is recommended that these controls are wired in series with a suitable 2 or 3 port motorised valve to control the primary flow through the heater coil. Wiring to external controls is made via the terminal block fitted. The cable should be routed through the aperture in the terminal cover and secured using the cable grip provided. The indirect thermal cut-out **MUST NOT** be bypassed.

## 5.4 Heating System Controls

The controls provided with the Megalife will ensure the safe operation of the Megalife when heated by a primary heat source. Other controls will be necessary to control the space heating requirements and times that the system is required to function. Depending on the boiler selected, heating circuit design and controls used it may be beneficial to incorporate a system bypass in the auxillary heating system pipework.

The Megalife is compatible with most heating controls, examples of electrical circuits are given in Fig's 05 and 06, page 10. However, other systems may be suitable, refer to the controls manufacturers' instructions, supplied with the controls selected, for alternative system wiring schemes.

## 5.5 Immersion Heater

The Megalife indirect units are supplied with an immersion heater which can be used as an alternative heat source should the boiler supply need to be isolated from the Megalife unit. Refer to Sections 4.1 to 4.4 and Fig. 03, page 7 for details of the wiring and operation of the immersion heater.



Fig: 04 - Electrical connection (indirect schematic) and temperature adjustment

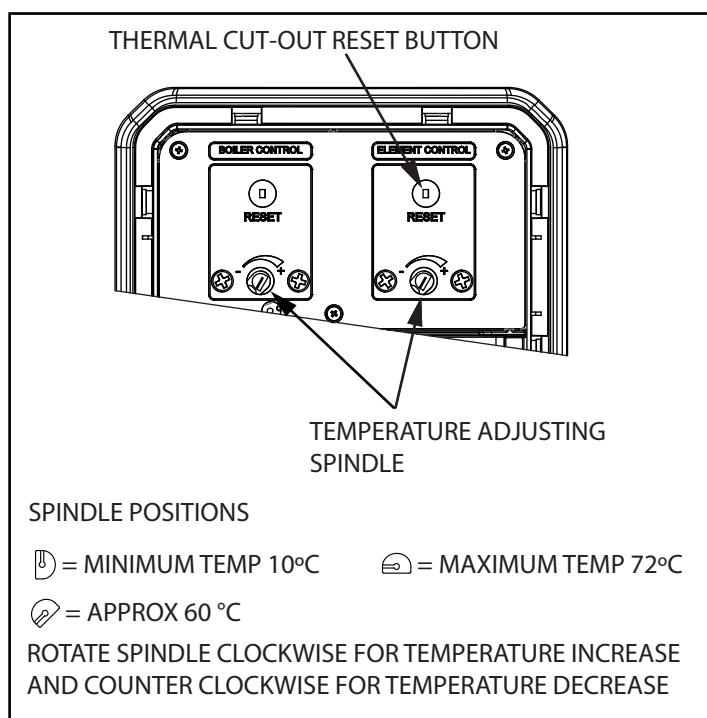
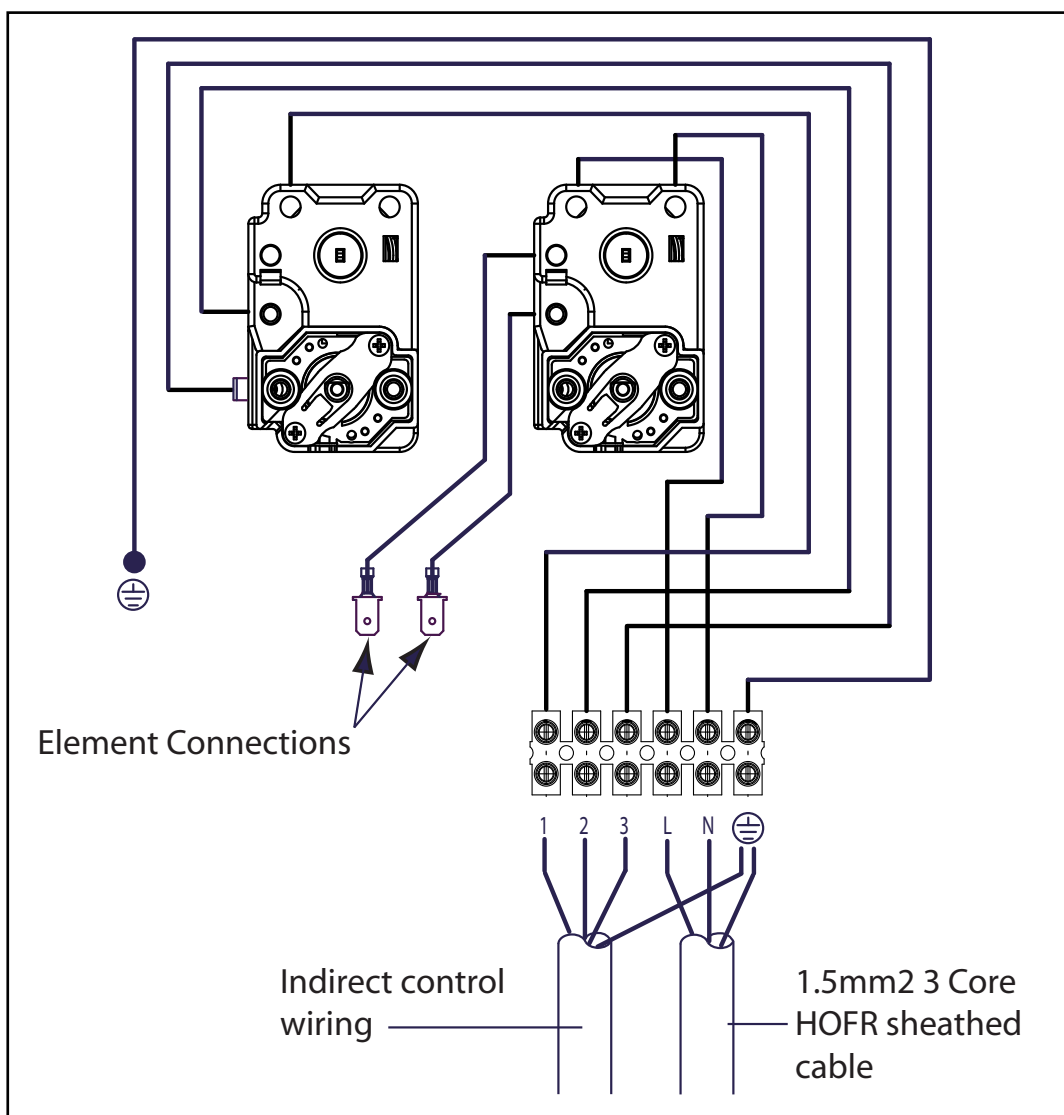


Fig: 05. Schematic Wiring Diagram - Basic 2 x 2 port valve system

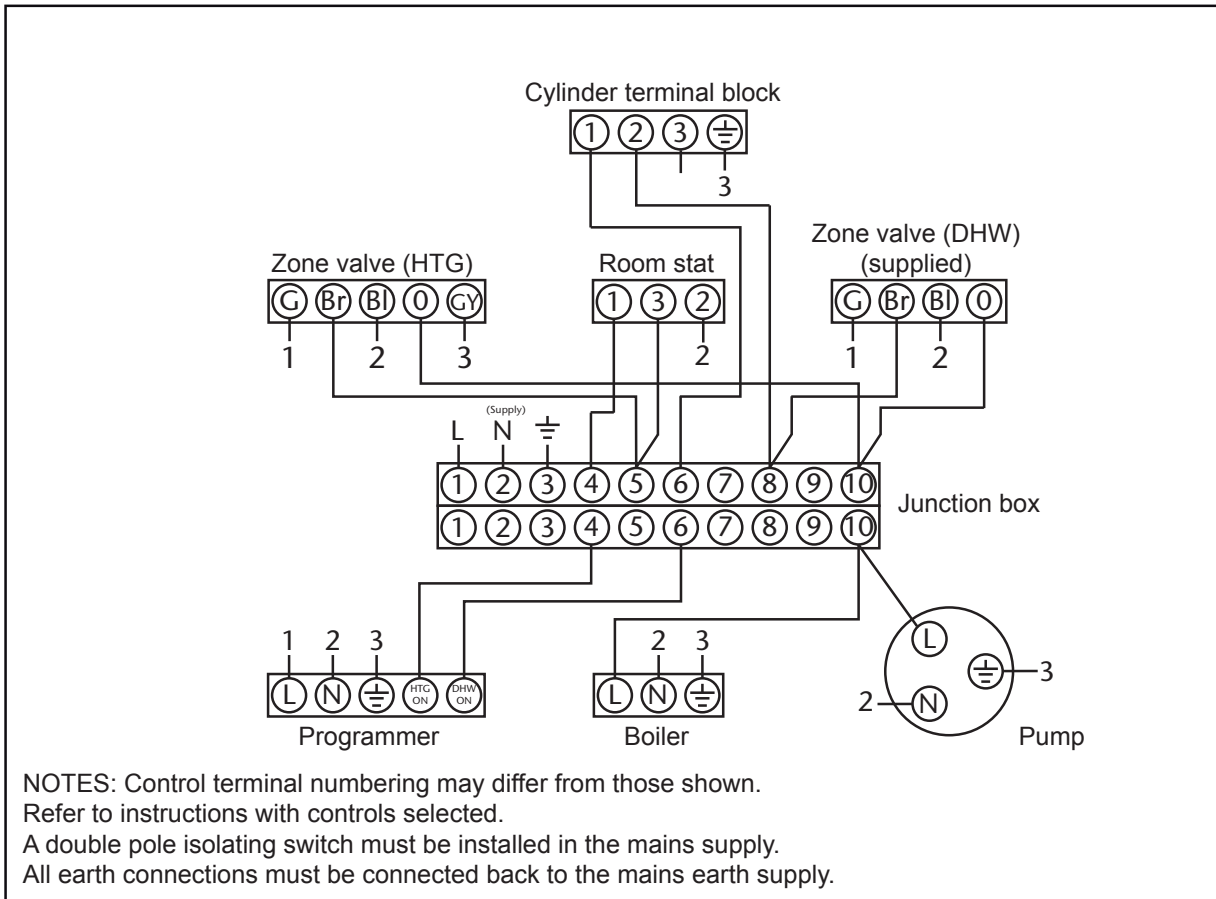
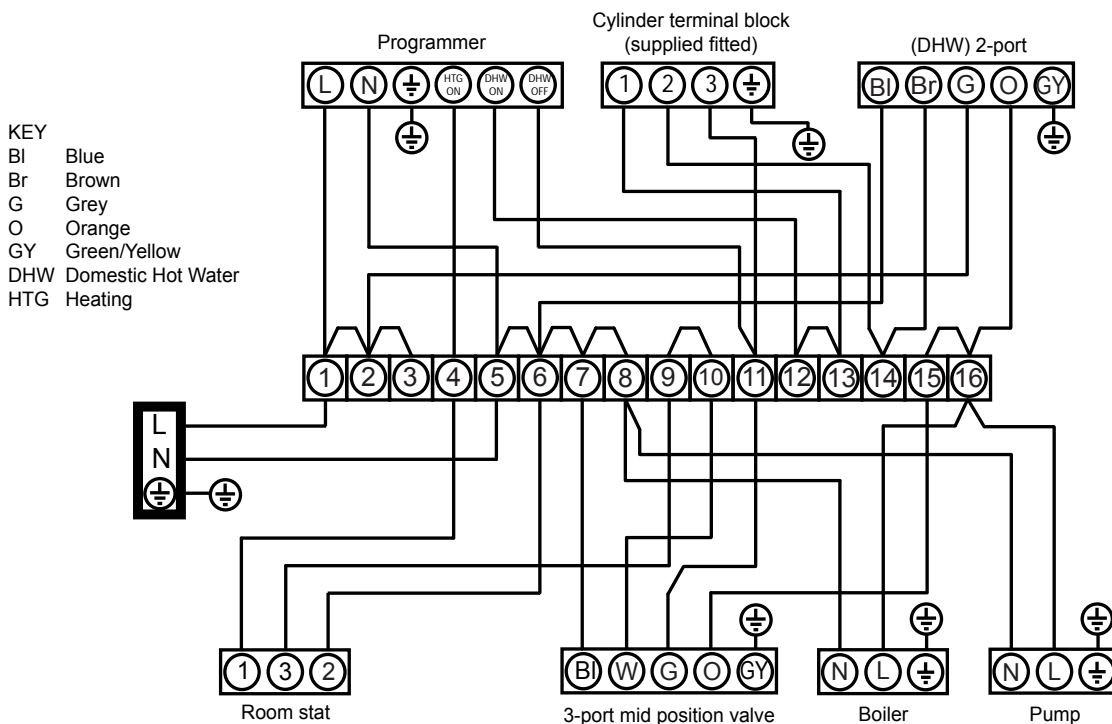


Fig: 06: Schematic Wiring Diagram - 2 port valve in conjunction with 3 port mid position valve system. (Y plan).



# 6: Installation - Commissioning

## 6.1 Filling The Unit With Water

- Ensure that all fittings and immersion heater(s) are correctly fitted and tightened.
- Open the highest hot tap in the system.
- Open the mains cold water supply to the cold water feed cistern.
- Open the service valve or stop valve fitted in the cold feed pipe to the unit. Allow the unit to fill. When water flows from the hot tap allow to run for a few minutes to flush through any dirt or swarf, then close tap.
- Allow cold water feed cistern to fill to the water line. Adjust the float valve if necessary.
- Open successive hot taps to purge any air from the system.
- Check all connections for leaks and rectify as necessary.

DO NOT SWITCH ON ANY OF THE HEAT SOURCES UNTIL THE UNIT HAS BEEN FULLY FILLED WITH WATER.

## 6.2 Direct Units

When the system is full switch on the electrical supply to the immersion heater(s) and allow the unit to heat up. Check that the thermostat operates correctly. A preset storage temperature of approx. 60°C is recommended. If necessary the temperature can be adjusted by inserting a flat bladed screwdriver in the adjustment knob and rotating. The minimum thermostat setting is 10°C. Adjustment represents a temperature range of 10°C to 72°C (see Fig. 04, page 9).

## 6.3 Indirect Units

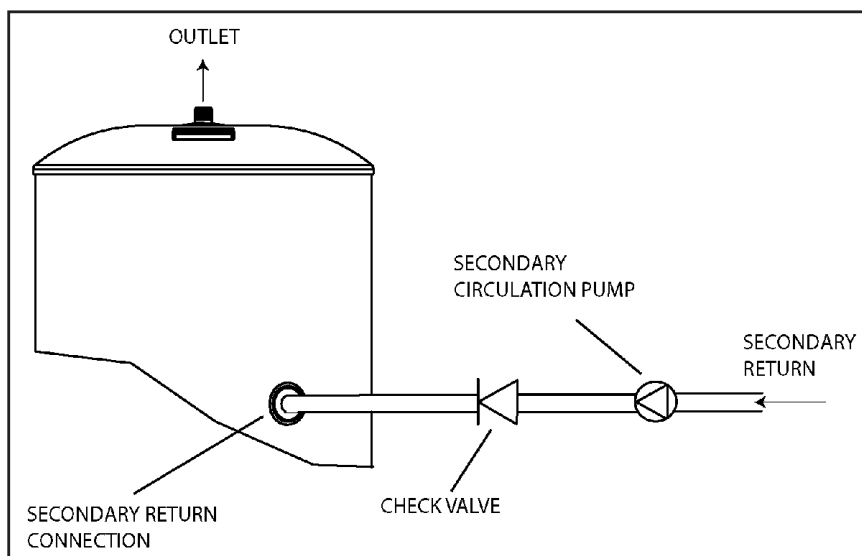
Fill the primary circuit following the boiler manufacturer's commissioning instructions. To ensure the primary heating coil in the Megalife is filled any motorised valve fitted to control the primary flow to the Megalife primary heating coil should be manually opened by moving the lever on the motor housing to the MAN OPEN setting. When the primary circuit is full return the lever to the AUTO position. Vent any air by opening the air bleed.

When the system is full switch on the boiler, ensure the programmer is set to Domestic Hot Water. Allow the Megalife unit to heat up and check that the indirect thermostat and any motorised valve connected operate correctly. A preset storage temperature of approx. 60°C is recommended. If necessary the temperature can be adjusted by inserting a flat bladed screwdriver in the adjustment spindle on the immersion heater thermostat and rotating. Adjustment represents a temperature range of 10°C to 72°C (see Fig. 04, page 9).

## 6.4 Benchmark Commissioning Certificate

On completion of installation and commissioning the Benchmark "Vented Cylinder Commissioning Certificate" should be completed and signed off by the competent installer or commissioning engineer in the relevant sections.

Fig: 07. Secondary Circulation Connection



# 7: Installation - User Instructions

## 7.1 Temperature Control

### Immersion Heaters

A combined thermostat and thermal cut-out is provided for each immersion heater. The thermostat is factory set to give a water storage temperature of approx. 60°C, however it can be set to control between 10°C and 72°C. This will usually have been done during installation. Adjustments can only be made by opening the terminal cover(s), **DO NOT remove the cover(s) without first switching off the electrical supply.** The temperature adjustment is made by inserting a flat bladed screwdriver in the slot in the spindle on top of the thermostat and rotating (see Fig. 04 page 9).

If in any doubt consult a competent electrician.

### Primary Heating Coil

Indirect units are fitted with an indirect thermostat which controls a 2-port motorised valve, hence the temperature of the water in the Megalife unit when heated using the auxiliary heating coil. The thermostat is factory set to give a water storage temperature of approx. 60°C, however it can be set to control between 10°C and 72°C, this will usually have been done during installation. Adjustments can only be made by opening the terminal cover. **DO NOT remove the cover without first switching off the electrical supply.** Temperature adjustment is made by inserting a flat bladed screwdriver in the adjustment spindle located on the front of the thermostat mounting bracket (see Fig. 04, page 9) and rotating.

If in any doubt consult a competent electrician.

**DO NOT** bypass the thermal cut-out in any circumstances.

## 7.2 Flow Performance

As with any cistern fed vented system the pressure obtained at the outlet points is due to the height (head) of the cold water fed cistern above the outlet. Outlet points with a low head may give lower flow rates than those located at a lower level within the property. When several hot outlets are opened simultaneously some loss of flow from outlets with a low head or located some distance from the Megalife may occur. This is a function of the system design and does not necessarily indicate a fault with the water heater.

## 8: Installation - Maintenance

### 8.1 Maintenance Requirements

The Megalife has been designed and manufactured to require very little maintenance. However, to ensure the continued optimum performance of the Megalife it should be periodically maintained. This is of particular importance in hard water areas where limescale can build up on hot surfaces and eventually affect the heating efficiency of either the immersion heater(s) or primary heating coil. Maintenance should be carried out by a competent person and any replacement parts used should be authorised Heatrae Sadia Megalife spare parts.

In hard water areas consideration should be given to periodically descaling the immersion heater elements. To do this the Megalife unit will need to be drained, 8.2 and 8.3 below detail how to drain the unit and remove the immersion heater(s).

### 8.2 Draining The Megalife Unit

Switch off the electrical supply to the immersion heater(s), shut down the boiler on indirect units. Turn off the cold water supply to the Megalife unit by shutting the service valve in the cold water feed pipe from the feed cistern. Attach a hosepipe to the drain cock having sufficient length to take water to a suitable discharge point below the level of the unit, at least one metre below the unit is recommended. Open drain cock.

### 8.3 Descaling Immersion Heater(s)

Open the cover(s) to the immersion heater housing(s) and disconnect wiring from immersion heater(s) thermostat(s). Remove terminal shroud. Remove thermostat capillary sensors from the pockets on the immersion heater. Unscrew immersion heater backnut(s) and remove immersion heater from the unit. A key spanner is supplied with the cylinder unit for easy removal/tightening of the immersion heater(s). Over time the immersion heater gasket may become stuck to the mating surface. To break the seal insert a round bladed screwdriver into one of the pockets on the immersion heater and gently lever up and down.

Carefully remove any scale from the surface of the element(s). **DO NOT** use a sharp implement as damage to the element surface could be caused. Ensure sealing surfaces are clean and seals are undamaged, if in doubt fit a new gasket (part number 7035165).

Replace immersion heater(s) ensuring the lower (right angled) element hangs vertically downwards towards the base of the unit. It may be helpful to support the immersion heater using a round bladed screwdriver inserted into one of the thermostat pockets whilst the backnut is tightened. Replace the terminal shroud. Replace thermostat capillaries into pocket taking care to put the curly tail capillary in first.

Rewire the immersion heater(s) in accordance with Fig. 04, page 9. Check, close and secure terminal cover.

### 8.4 Refilling System

**DO NOT** switch on the immersion heater(s) or primary boiler circuit until the system has been completely refilled.

Close the drain tap. With the highest hot tap in the system open, turn on the service valve in the cold water feed pipe. When water emits from the hot tap allow to flow for a short while to purge air and to flush through any disturbed particles. Close hot tap and then open successive hot taps in system to purge any air. The electrical supply can now be switched on.

# 9: Fault Finding and Servicing

## 9.1 Important

- i) Servicing should only be carried out by competent installers in the installation and maintenance of water heating systems.
- ii) Any spare parts used **MUST** be authorised Heatrae Sadia parts.
- iii) Disconnect the electrical supply before removing any electrical equipment covers.
- iv) **NEVER** bypass any thermal controls or operate system without the necessary safety controls.
- v) Water contained in the Megalife unit may be very hot, especially following a thermal control failure. Caution must be taken when drawing water from the unit.

## 9.2 Spare Parts

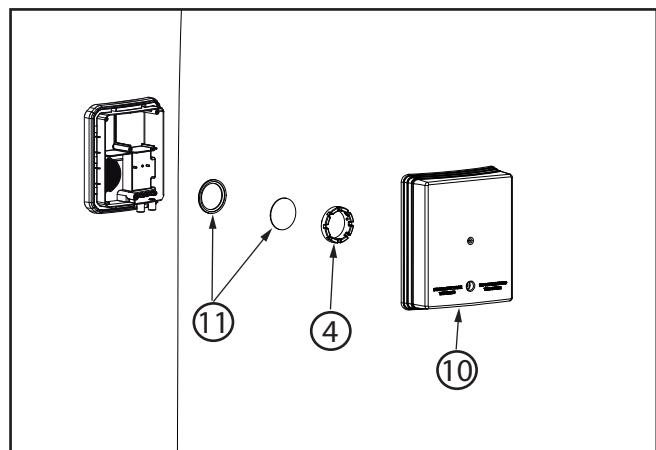
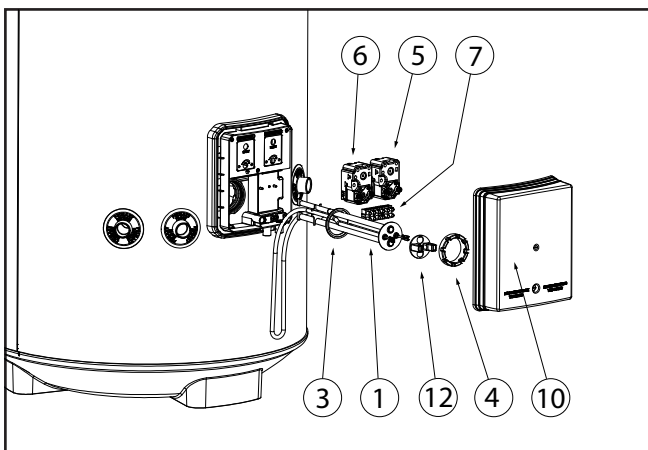
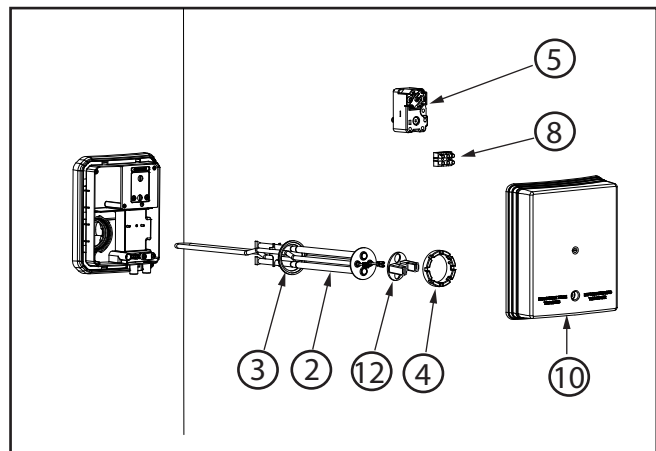
A full range of spare parts are available for the Megalife range. Refer to the technical data label on the unit to identify the model installed and ensure the correct part is ordered.

Table 01: Spares

Item	Description	Part Number
1	Immersion heater (lower)	95 606 984
2	Immersion heater (upper)	95 606 986
3	Immersion heater gasket	70 351 65
4	Immersion heater backnut	95 607 869
5	Direct combined thermostat and thermal cut-out (spade terminals including wires and terminal block).	95 612 720
	Direct combined thermostat and thermal cut-out (spade terminals NO wires or terminal block).	95 612 721
6	Indirect combined thermostat and thermal cut-out (spade terminals including wires and terminal block).	95 612 719
	Indirect combined thermostat and thermal cut-out (spade terminals NO wires or terminal block).	95 612 722

Item	Description	Part Number
7	6 way terminal block	95 607 933
8	3 way terminal block	95 607 932
9	Immersion heater key	95 607 861
10	Terminal cover	95 614 305
11	Blanking plate assembly	95 605 881
12	Terminal Shroud	95 606 993
13	Set of compression nuts, olives	95 607 838

Fig: 08. Spares



### 9.3 Fault Finding

The Fault Finding chart below will enable operational faults to be identified and their possible causes rectified. Any work carried out on the Megalife water heater and its associated controls **MUST** be carried out by a competent installer for water heating systems. In case of doubt contact the Heatrae Sadia Service Department (see back page).

Table 02: Fault Finding

FAULT	POSSIBLE CAUSE	REMEDY
No hot water flow	<ol style="list-style-type: none"> <li>1. No water in cold feed cistern</li> <li>2. Service valve in cold water feed pipe from cistern turned off</li> <li>3. Air lock in system</li> <li>4. Inadequate head between outlet and cold water feed cistern</li> </ol>	<ol style="list-style-type: none"> <li>1. Check water supply to cold feed cistern</li> <li>2. Turn on service valve</li> <li>3. Check pipework layout for possible air locking points, rectify as necessary</li> <li>4. Check minimum head requirement of outlet fitting</li> </ol>
Hot water flow gradually decreases	<ol style="list-style-type: none"> <li>1. Outlet flow rate exceeds inlet flow to cold water feed cistern</li> <li>2. Flow starvation caused by opening further outlets</li> </ol>	<ol style="list-style-type: none"> <li>1. Install higher flow float valve. Consider larger cold water cistern storage capacity</li> <li>2. Check pipe sizings and layout. Consider restricting flow rate through lower taps</li> </ol>
Water from taps is cold	<ol style="list-style-type: none"> <li>1. DIRECT immersion heater is not switched on</li> <li>2. DIRECT immersion heater thermal cut-out has operated</li> <li>3. INDIRECT programmer set to central heating only</li> <li>4. INDIRECT boiler not working</li> <li>5. INDIRECT thermal cut-out has operated</li> <li>6. INDIRECT motorised valve not connected correctly</li> </ol>	<ol style="list-style-type: none"> <li>1. Check and switch on</li> <li>2. Check, reset by pushing button (see Fig 4, page 9)</li> <li>3. Check, set to a domestic hot water programme</li> <li>4. Check boiler operation. If fault is suspected consult boiler manufacturer's instructions</li> <li>5. Check, reset by pushing button on cut-out. Check operation of indirect thermostat</li> <li>6. Check wiring and/or plumbing connections to motorised valve (see figs 5 &amp; 6, page 10)</li> </ol>

# 10: Dimensions and Specifications

Fig: 09. Dimensions

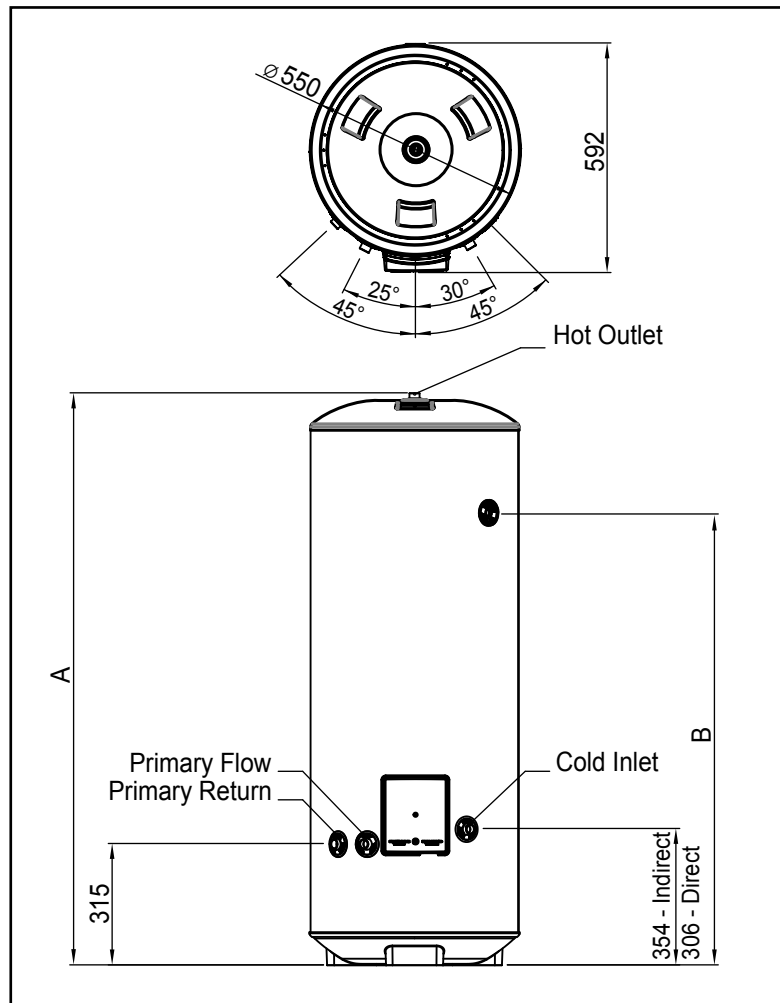


Table 03: Dimensions

Type	Model Reference	Dimensions (mm)		Primary Flow (ltrs/min @80°C +/- 2°C)	Coil Rating (kW)	Heat-up Time (mins)	Hot Water Capacity (ltrs) (volume of water drawn off >40°C)
		A	B				
Indirect	100 B	813	500	15	15.2	24	97
	120 B	930	617	15	15.4	24	108
	150 B	1114	800	15	15.9	29	135
	170 B	1240	927	15	17.3	30	157
	210 B	1498	1185	15	19.2	34	199
Direct	100 E	807	494			97	97
	120 E	930	616			116	108
	150 E	1114	800			148	135
	170 E	1240	926			164	157
	210 E	1498	1185			203	199

**Notes:**

1. Indirect cylinders tested in conformance with BS EN 12897:2016
2. Heat up time from cold through 45°C, with a primary flow rate 15ltrs/min at 80°C +/- 2°C.
3. Direct heating times assume use of lower element only, from cold, through 45°C.



Table 04: Unit weights

Type	Model Reference	Nominal Capacity (litres)	Weight of unit full (Kg)	Weight of unit (Kg)
Indirect	100 B	100	125	25
	120 B	120	147	27
	150 B	150	184	31
	170 B	170	203	34
	210 B	210	251	47
Direct	100 E	100	123	24
	120 E	120	145	26
	150 E	150	178	29
	170 E	170	199	31
	210 E	210	246	42

Table 05 - Standing Heat Loss

Standing heat losses (based on an ambient air temperature of 20°C and a stored water temperature of 65°C)  
Tested to BS EN 12897:2016

Nominal Capacity (Litres)	Standing Heat Loss Indirect	
	per day (kWh/24h)	per year (kWh/365d)
100	1.11	405
120	1.24	453
150	1.43	522
170	1.54	562
210	1.89	690

Nominal Capacity (Litres)	Standing Heat Loss Direct	
	per day (kWh/24h)	per year (kWh/365d)
100	1.09	398
120	1.27	464
150	1.44	526
170	1.63	595
210	1.91	697

Model(s)	100B	120B	150B	170B	210B
Energy efficiency class	B	B	C	C	C
Storage volumes V in Litres	100.0	125.0	150.0	170.0	210.0
Standing loss in W	46.3	51.7	59.6	64.2	78.6

Table 7: Technical parameters in accordance with European Commission regulations 814/2013 and 812/2013

Name	Megalife				
Model	100E	120E	150E	170E	210E
Volume Litres	100.0	120.0	150.0	170.0	210.0
V40	143	180	234	265	332
Load Profile	M	M	L	L	XL
Energy Efficiency Class	C	C	C	C	C
Energy Efficiency %	36.2	36.0	37.3	37.1	38.1
Annual electricity consumption kWh	1418	1424	2741	2759	4395
Daily fuel consumption kWh	6.640	6.680	12.730	12.840	20.300
Thermostat setting	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 10				

Table 7: Technical parameters in accordance with European Commission regulations 814/2013 and 812/2013

## Outline Specifications

Maximum working head	40 metres (4 bar)
Immersion heater rating (a.c. supply only)	3kW @ 240V ~ 50Hz 2.8kW @ 230V ~ 50Hz
Maximum primary circuit pressure	0.3MPa (3 bar)
Rated/Design pressure	0.2MPa (2.0 bar)
Coil volume 100L - 150L	3.08 Litres
Coil volume 170L - 210L	3.7 Litres
Pressure drop across coils	0.02MPa(0.2bar)

### Outer casing:

White textured plastic coated corrosion proofed steel

### Water container:

Duplex stainless steel (grade 1.4362 to EN10088). 100% pressure tested to 15 bar.

### Thermal insulation:

HCFC/CFC free (ODP Zero) fire retardant expanded polyurethane foam. Nominal thickness 50mm.

### Immersion heater:

Alloy 825 sheathed element and thermostat pocket in Duplex stainless steel plate. Tin plated.

### Pipe connections:

All connections accept 22mm outside diameter pipe - compression nuts and olives supplied. Thread rate is 3/4" BSP male parallel to accept standard 3/4" BSP female fittings if required. Secondary return tapping thread rate is 1/2" BSP female parallel to accept standard 1/2" BSP male fittings if required (supplied plugged).

### Safety features:

Direct units -

Manually resettable thermal cut-out on each heating element thermostat.

Indirect units -

Manually resettable thermal cut-out on heating element thermostat.

Manually resettable thermal cut-out for primary heating. Must be wired in conjunction with a suitable motorised valve located within the primary heating circuit (not supplied).

# 11: Guarantee

Goods are guaranteed and sold subject to our standard conditions of sale. A copy of these conditions will be supplied on application.

## 11.1 Guarantee Terms

Heatrae Sadia guarantee the Megalife immersion heater for a period of two years from the date of purchase, with the exception of damage due to scaling.

Electrical parts and thermal controls are guaranteed for a period of two years, from the date of purchase.

The stainless steel vessel is guaranteed for a period of 25 years against faulty manufacture or materials provided that :-

- i) It has been installed by a competent installer and as per the instructions contained in this manual and all relevant Codes of Practice and Regulations in force at the time of installation.
- ii) It has not been modified in any way other than by Heatrae Sadia Heating.
- iii) It has only been used for the storage of potable water.
- iv) It has not been installed in a location liable to be subjected to frost, nor has it been tampered with or been subjected to misuse or neglect.
- v) No factory fitted parts have been removed for unauthorised repair or replacement.
- vi) Within 60 days of purchase the user completes and returns the certificate supplied along with proof of purchase to register the product.

Evidence of purchase and date of supply must be submitted.

This guarantee is not valid for installations outside the United Kingdom and the Republic of Ireland. For installations outside these territories please contact either the Heatrae Sadia Heating Export Department (Tel: +44 1603 420191) or Baxi International (Tel: +44 1926 478323) for further details of the guarantee terms and conditions applicable.

This guarantee does not affect your statutory rights.

## Environmental Information

This product is made from many recyclable materials, therefore at the end of its useful life it should be disposed of at a Local Authority Recycling Centre in order to realise the full environmental benefits.  
Insulation is by means of an approved HCFC and CFC free polyurethane foam.

## WEEE Declaration

Disposal of Waste Equipment by Users in Private Household in the European Union.



This symbol on the product indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the company where this product was purchased.

The pace of product development is such that we reserve the right to change product specifications without notice. We do, however, strive to ensure that all information in this leaflet is accurate at the time of publication

# HEATRAESADIA

SMARTER | CLEANER | WARMER

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### OUR NATIONWIDE NETWORK OF CUSTOMER SUPPORT ENGINEERS

Heatrae Sadia has its very own dedicated nationwide network of highly trained customer support engineers so you can have peace of mind that we're always here to help.

### PRODUCT RANGE

Full specification details on all our products are available to download from our website.

To support our corporate responsibility and sustainability charters and reduce our printed material we encourage you to download product brochures from our website.

In designing these files we have taken into account the need to access data on screen.

If you would like to receive a printed copy of our full product catalogue please call our literature hotline on 01603 420127.

Heatrae Sadia Heating may introduce modifications to their products from time to time. Consequently, the details given in this brochure are subject to alteration without notice.

Please follow us online:



PN 36005907 Issue 07

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