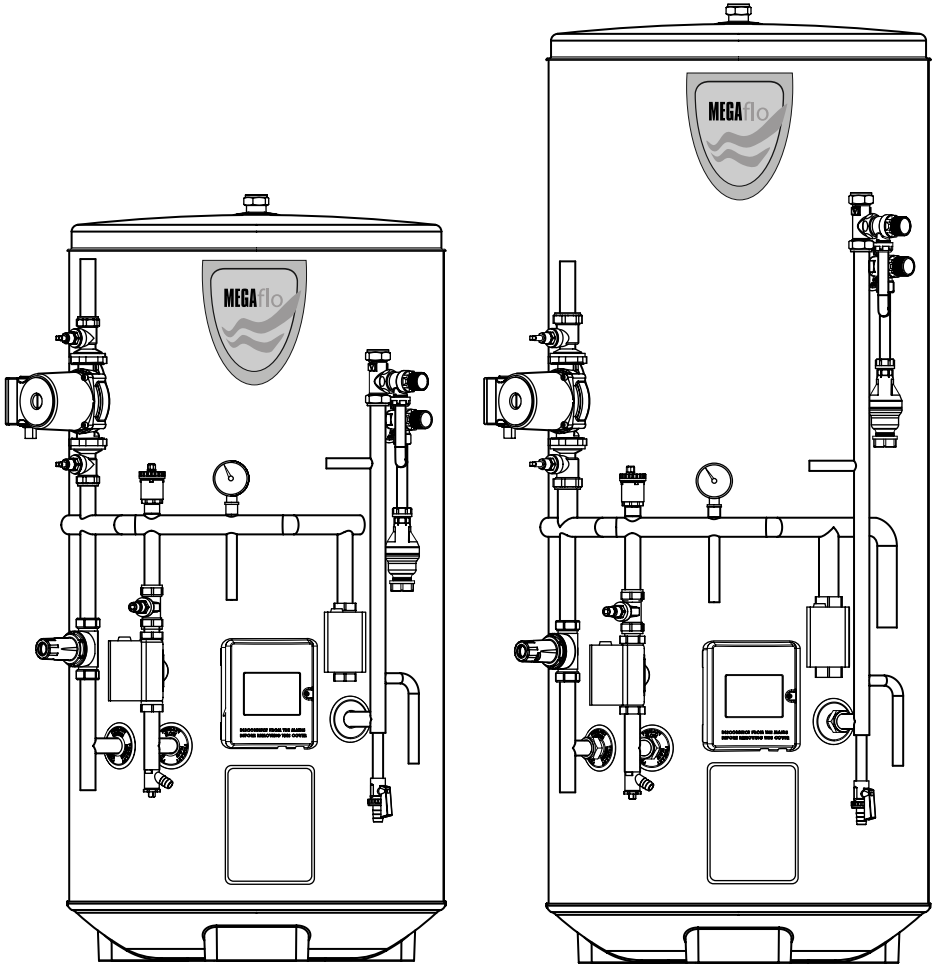




MEGAflo[®]
SYSTEMFIT
Installation Manual



Fitting and using the MEGAflo HE SystemFit
pre-plumbed unvented water heater

HEATRAE SADIA

The quality name in water heating

36005882 issue 5

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**Please read and understand these instructions before starting work.
Please leave this leaflet with the user following installation**

1 Introduction

Congratulations on your purchase of a Heatrae Sadia Megaflo HE SystemFit unvented water heater. The Megaflo HE SystemFit is a factory pre-plumbed and wired version of the Megaflo HE unvented water heater. The Megaflo HE SystemFit 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 which is backed by a 25 year guarantee. Its performance, control system and insulation levels exceed the latest requirements of Building Regulation Part L.

The Megaflo HE SystemFit unvented water heater can be fed directly from the mains supply to the property without the need for separate feed cisterns or vent pipes. It is supplied fitted with all its necessary inlet and safety controls for compliance with Building Regulations. Also fitted are a primary circulating pump, automatic bypass valve, a flow balancing valve, 2 x 2 port motorised valves, automatic air vent, primary filling loop and pressure gauge, a cylinder thermostat, thermal cut-out and wiring centre. The pump, motorised valves and thermal controls are supplied pre-wired. A heating and domestic hot water programmer, room temperature sensor, primary expansion vessel and primary expansion relief valve are supplied loose for installation at a convenient position within the property. An electric immersion heater is also fitted to enable the unit to be heated should the boiler be turned off.

The Megaflo HE SystemFit primary circuit can be connected to a variety of gas or oil fired boiler types, either open vented or sealed system. It is not recommended for use with “system” boilers as these already incorporate their own circulating pump and controls.

The Megaflo HE SystemFit requires no separate expansion vessel for the domestic hot water as any expanded water is accommodated within an internal air volume.

NOTE: if using a sealed heating system adequate provision for expansion within the primary circuit MUST be provided by fitting the primary circuit expansion vessel supplied. Primary circuit expansion cannot be accommodated within the Megaflo HE SystemFit . Ensure the Primary Circuit Expansion Relief Valve (supplied) is fitted to the Primary Circuit. The safety valves fitted to the Megaflo HE SystemFit protect the water heater only. Failure to provide adequate Primary System Pressure Relief when using a sealed heating system will invalidate the boiler manufacturer’s warranty. Consult the boiler manufacturer’s installation instructions for further advice.

System type boilers will usually have the primary circulation pump and primary expansion vessel fitted within the boiler itself, for this reason these type of boilers are not recommended for use with the Megaflo HE Systemfit as these components are also supplied with the Megaflo HE Systemfit unit.

General Requirements

IMPORTANT : PLEASE READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING THE MEGAFLO HE SYSTEMFIT WATER HEATER. INCORRECT INSTALLATION MAY INVALIDATE GUARANTEE.

THIS APPLIANCE IS NOT INTENDED FOR USE BY PERSONS (INCLUDING CHILDREN) WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES, OR LACK OF KNOWLEDGE AND EXPERIENCE, UNLESS THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION CONCERNING THE USE OF THE APPLIANCE BY A PERSON RESPONSIBLE FOR THEIR SAFETY.

THE MEGAFLO SYSTEMFIT MUST BE INSTALLED (SECTIONS 2 - 5), COMMISSIONED (SECTION 6) AND MAINTAINED (SECTIONS 8 - 9) BY A COMPETENT INSTALLER IN ACCORDANCE WITH BUILDING REGULATION G3 (ENGLAND AND WALES), TECHNICAL STANDARD P3 (SCOTLAND) OR BUILDING REGULATION P5 (NORTHERN IRELAND) AND THE WATER FITTING REGULATIONS (ENGLAND AND WALES) OR WATER BYELAWS (SCOTLAND). FOLLOWING INSTALLATION AND COMMISSIONING, THE OPERATION OF THE HEATER SHOULD BE EXPLAINED TO THE USER (SECTION 7) AND THESE INSTRUCTIONS LEFT WITH THEM FOR FUTURE REFERENCE.

2.1 COMPONENT CHECK LIST

Before commencing installation check that all the components for your Megaflo HE SystemFit unit are contained in the package. The following components are supplied :

Factory fitted:

Immersion heater and thermal controls
Expansion core unit (comprises
Expansion Valve and Check Valve)
Temperature/Pressure Relief Valve
2 x 2 Port motorised valve
Primary circulating pump
Lock-shield flow balancing valve
Automatic bypass valve
Indirect thermal controls
Wiring centre
Filling loop
Automatic air vent
Primary circuit pressure gauge
Tundish
Drain valve (with quarter turn lever)
Insulation set (T&P Relief Valve)

Supplied loose:

Cold Water Combination Valve
(comprises Isolating Valve, Pressure
Reducing Valve, Strainer, Check Valve)
CH/DHW programmer and room
temperature sensor
Primary circuit Expansion Vessel incl.
wall mounting bracket
Lifting handle
Fixing template
Primary expansion relief valve

2.2 SITING THE MEGAFLO

The Megaflo HE SystemFit unit must be vertically floor mounted. It can be placed anywhere convenient provided the discharge pipe(s) from its safety valves can be correctly installed. Areas that are subject to freezing must be avoided. Ensure that the floor is of sufficient strength to support the "full" weight of the unit (refer to Table 3 on page 31 for unit weights). Pipe runs should be kept as short as possible for maximum economy. Access to associated controls, immersion heaters and indirect controls (Note: indirect controls housing hinges open to the left hand side) should be possible for servicing and maintenance of the system.

To aid installation the Megaflo HE SystemFit is provided with lifting points located in the base moulding and a lifting handle. The lifting handle should be fully threaded onto the outlet boss before use. Once the unit is suitably positioned the lifting handle should be removed to allow connection of the outlet pipework. The weights of the units are noted in Table 3 on page 31.

If you choose to install the Megaflø HE SystemFit in the highest point in the property (e.g. loft space), it is advisable to install an additional Automatic Air vent (AAV) (not supplied- available as spare, part number 95 605 050) above the pump to enable air to be removed from the system. The addition of the AAV is not required if siting the cylinder in a lower position.

2.3 WATER SUPPLY

Bear in mind that the mains cold water supply to the property will be supplying both the hot and cold water requirements simultaneously. **It is recommended that the maximum water demand be assessed and the water supply be checked to ensure this demand can be met.**

NOTE: A high mains water pressure will not always guarantee high flow rates.

Wherever possible the main supply pipe should be in 22mm. The minimum supply requirements should be 0.15 MPa (1.5 bar) working pressure and 20 litres per minute flowrate. At these values outlet flowrates may be poor if several outlets are used simultaneously, the higher the available pressure and flowrate the better the system performance will be.

The Megaflø HE SystemFit has an operating pressure of 0.3 MPa (3 bar) which is controlled by the Cold Water Combination Valve. The Cold Water Combination Valve can be connected to a maximum mains supply pressure of 1.6 MPa (16 bar). The water supply must be of wholesome water quality (Fluid Category 1 as defined by the Water Supply Regulations 1999).

2.4 OUTLET/TERMINAL FITTINGS (TAPS, ETC.)

The Megaflø HE can be used in conjunction with most types of terminal fittings, plumbing fittings and pipework. However, the rated pressures of any fittings selected should be checked for compatibility before installation.

NOTE: Accessories, plumbing fittings and pipework should have a rated operating pressure of at least 0.8 MPa (8 bar).

Outlets situated higher than the Megaflø unit will give outlet pressures lower than that at the heater, a 10m height difference will result in a 0.1 MPa (1 bar) pressure reduction at the outlet fitting.

2.5 LIMITATIONS

The Megaflø HE unvented water heater should not be used in any of the following instances:

- Solid fuel boilers or any other boiler in which the energy input is not under effective thermostatic control unless additional and appropriate safety measures are installed.
- Steam heating plant
- Ascending spray type bidets or any other Class 5 back syphonage risk requiring that a Type AA, AB, AD or AG air gap be employed.
- Water supplies that have either inadequate pressure or where the supply may be intermittent.
- Situations where it is not possible to safely pipe away any discharge from the safety valves.
- Areas where the water consistently contains a high proportion of solids, eg. suspended matter that could block the strainer, unless adequate filtration can be ensured.
- The installation must be carried out in accordance with the relevant requirements of:
 - The appropriate Building Regulations: either The Building Regulations (England), The Building Regulations (Scotland) or Building Regulations (Northern Ireland).
 - The Water Fittings Regulations (England and Wales) or Water Byelaws (Scotland).

Installation - General

3.1 PIPE FITTINGS

The connection points to the heating system are in 22mm o/dia copper pipe on 125 and 145 litre units. On units 170 litres and above the primary flow connection is 28mm, the flow connections to central heating (CH) zones 28mm and the domestic hot water (DHW) return connection 22mm o/dia copper pipe. The use of appropriately sized COMPRESSION FITTINGS is recommended when connecting to the Megafluo HE SystemFit pipes. Solder fittings can be used, but extreme care must be taken to ensure the plastic coating of the unit casing is not damaged by heat. Push fit type fittings can be used for connection to the copper pipes.

The inlet connection to the cold water combination valve is 22mm compression. The Megafluo HE SystemFit outlet fitting is suitable for connection to 22mm o/dia pipe (compression nut and olive supplied). The outlet is also threaded 3/4" BSP male parallel should threaded pipe connections be preferred.

3.2 COLD WATER SUPPLY

A 22mm cold water supply is recommended, however, if a 15mm (1/2") supply exists which provides sufficient flow (see section 2.3) this may be used. More flow noise may be experienced from small bore pipes due to the increased water velocity through them.

The Cold Water Combination Valve supplied with the Megafluo HE SystemFit incorporates a full flow isolating valve which will enable the unit to be isolated from the mains supply for maintenance or servicing. To close the valve the black handle should be turned so that it lies at 90° to the direction of flow. To open turn the handle so that it lies parallel to the direction of flow.

3.3 COLD WATER COMBINATION VALVE (see Diagram 1)

The Cold Water Combination Valve is supplied loose, but must be plumbed in the inlet supply to the Megafluo HE SystemFit. The Cold Water Combination Valve can be sited anywhere on the cold mains supply prior to the Megafluo HE SystemFit unit. It can be located at a point where the mains supply enters the premises if this is more convenient.

The Cold Water Combination Valve is installed as a complete one-piece unit. The valve incorporates a factory set, non-adjustable Pressure Reducer/Strainer, a single Check Valve and an isolating valve.

3.4 EXPANSION CORE UNIT (see Diagram 2)

Should a balanced pressure cold water supply be required to cold water outlets, such as thermostatic shower mixer valves or combination taps, the cold water balanced draw off connection should be taken from between the Cold Water Combination Valve and the Expansion Core Unit (see Diagram 3). **Branches to cold drinking water outlets should be taken directly from the mains supply.**

Diagram 1 - Cold Water Combination Valve

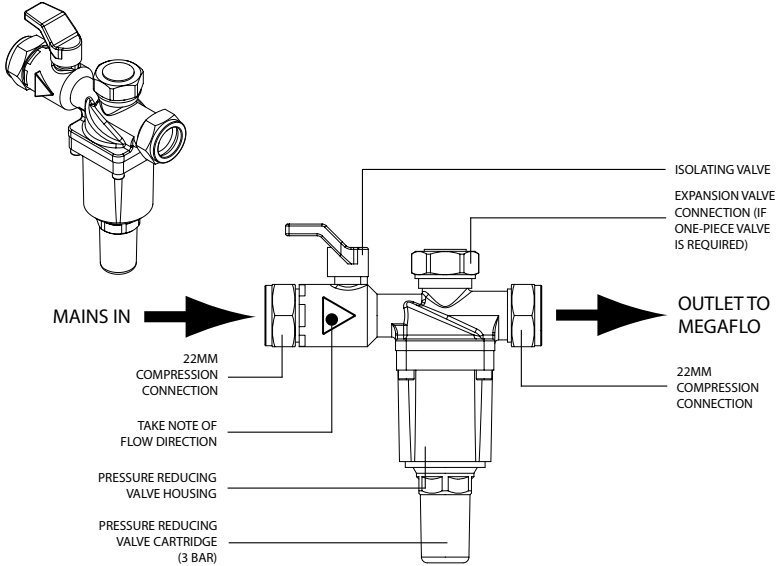


Diagram 2 - Expansion Core Unit

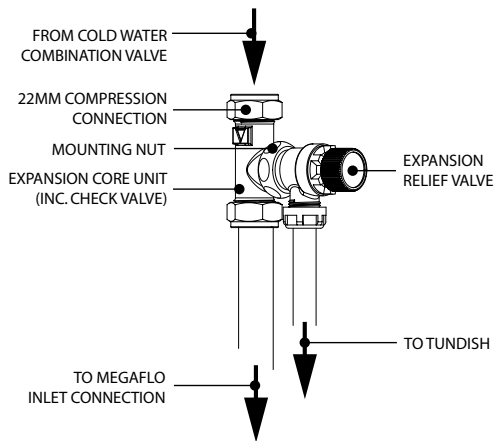
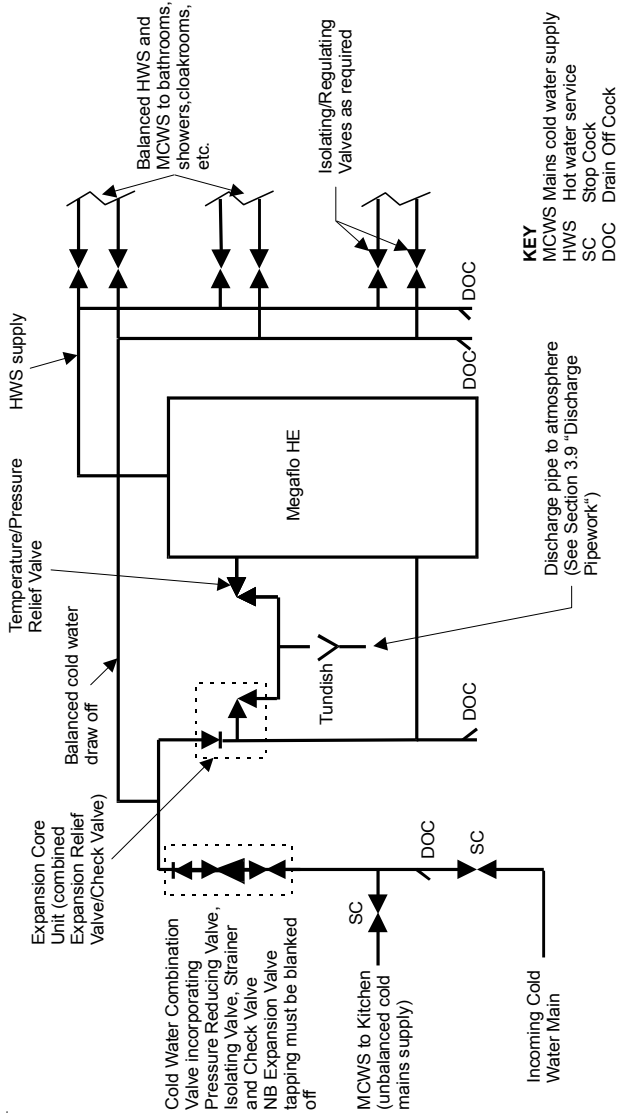


Diagram 3 - Schematic installation diagram showing Cold Water Combination Valve, Expansion Core Unit and positioning of cold balanced draw off



3.5 DRAIN TAPS

Drain taps are fitted to both the primary system pipework and to the cold water inlet to facilitate draining the unit or indirect heating circuit for maintenance purposes. It is recommended that the outlet point of the drain pipe work be at least 1 metre below the level of the heater (this can be achieved by attaching a hose pipe to the drain tap outlet spigot).

3.6 OUTLET PIPEWORK

Ideally the pipework from the Megafluo HE to the outlet fittings should be in 22mm pipe with short runs of 15mm pipe to showers and basin taps. Small bore pipe can also be used to suit some taps, but runs should be of minimum length. Pipe sizes may vary due to system design.

3.7 SECONDARY CIRCULATION

If a secondary circulation system is required it is recommended that it be connected to the Megafluo HE as shown in Diagram 4. This is supplied capped off, the cap must be removed before connection. Care must be taken if using a solder fitting to protect the plastic coated surface of the Megafluo HE SystemFit casing. 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. On large systems, due to the increase in system water content, it may be necessary to fit additional expansion volume to the system by fitting an external potable water expansion vessel to the secondary circuit. This should be done if the capacity of the secondary circuit exceeds 10 litres.

Pipe capacities (copper)

15mm o/d = 0.13 litres per metre run (10 litres = 77m)

22mm o/d = 0.38 litres per metre run (10 litres = 26m)

28mm o/d = 0.55 litres per metre run (10 litres = 18m)

3.8 T&P RELIEF VALVE INSULATION SET

An insulation set for the T&P Relief Valve is supplied fitted to this Megafluo HE (see diagram 5). It is an important feature to minimise heat loss and maximise energy savings. It can be removed by pulling gently from the bottom of the plastic cover but should only be removed if the T&P Relief Valve is faulty and needs replacing.

3.9 WARNINGS

- i) **Under no circumstances should the factory fitted Temperature/Pressure Relief Valve be removed other than by Authorised Heatrae Sadia personnel. To do so will invalidate any guarantee or claim.**
- ii) **The Cold Water Combination Valve must be fitted to the mains water supply to the Megafluo unit.**
- iii) **No control or safety valves should be tampered with.**
- iv) **The discharge pipe should not be blocked or used for any other purpose.**

Diagram 4 - Secondary circulation connection

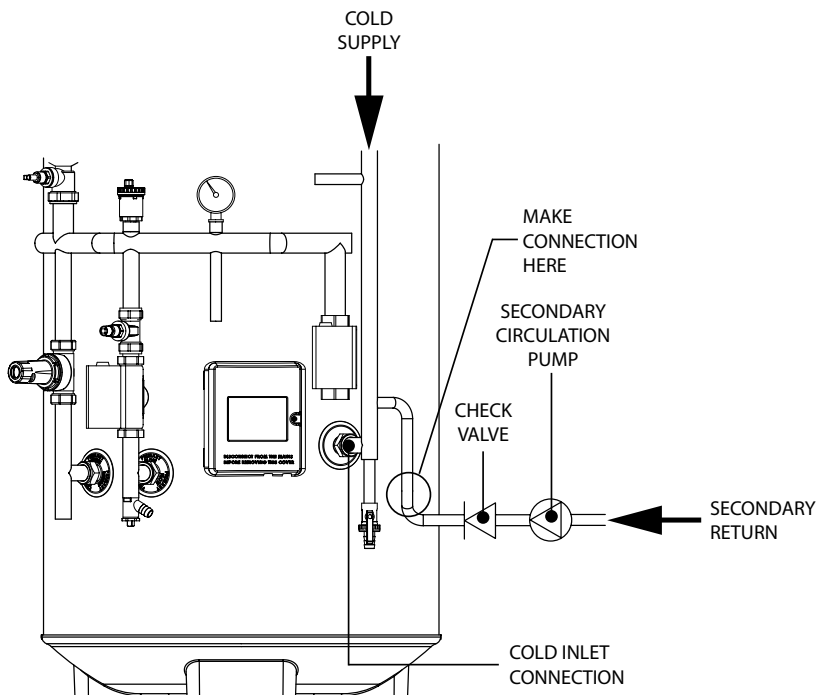
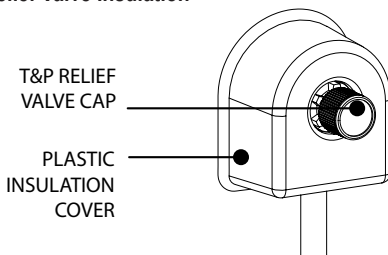


Diagram 5 - T&P Relief Valve Insulation



PIPEWORK AND OTHER VALVES
REMOVED FROM VIEW FOR CLARITY

3.10 DISCHARGE PIPEWORK

It is a requirement of Building Regulations that any discharge from an unvented system is conveyed to where it is visible, but will not cause danger to persons in or about the building. The tundish and discharge pipes should be fitted in accordance with the requirements and guidance notes of Building Regulations. Building Regulation G3 Requirements and Guidance section 3.9 are reproduced in the following sections.

Information Sheet No. 33 available from the British Board of Agrément gives further advice on discharge pipe installation. For discharge pipe arrangements not covered by G3 Guidance or BBA Info Sheet No.33 advice should be sought from your local Building Control Officer.

The discharge pipework supplied fitted to the Megafluo HE Systemfit is for the Megafluo only. A sealed system boiler installation will require its own, separate discharge pipe arrangement (refer to the boiler manufacturer's instructions for the correct installation of this).

G3 REQUIREMENT

"...there shall be precautions...to ensure that the hot water discharged from safety devices is safely conveyed to where it is visible but will not cause danger to persons in or about the building."

G3 GUIDANCE SECTION 3.9

The discharge pipe (D1) from the vessel up to and including the tundish is generally supplied by the manufacturer of the hot water storage system. Where otherwise, the installation should include the discharge pipe(s) (D1) from the safety device(s). In either case the tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible and within 500mm of the safety device e.g. the temperature relief valve.

The discharge pipe (D2) from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge, preferably be of metal and:

a. be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9m long i.e. discharge pipes between 9m and 18m equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device, between 18 and 27m at least 3 sizes larger, and so on. Bends must be taken into account in calculating the flow resistance. Refer to Diagram 5, Table 1 and the worked example.

An alternative approach for sizing discharge pipes would be to follow BS 6700:1987 *Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages*, Appendix E, section E2 and table 21.

- b. have a vertical section of pipe at least 300mm long below the tundish before any elbows or bends in the pipework.
- c. be installed with a continuous fall.
- d. have discharges visible at both the tundish and the final point of discharge, but where this is not possible or is practically difficult there should be clear visibility at one or other of these locations.

Examples of acceptable discharge arrangements are:

- i. ideally below a fixed grating and above the water seal in a trapped gully.
- ii. downward discharges at low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that where children may play or otherwise come into contact with discharges a wire cage or similar guard is positioned to prevent contact, whilst maintaining visibility.
- iii. discharges at high level; e.g. into a metal hopper and metal down pipe with the end of the discharge pipe clearly visible (tundish visible or not) or onto a roof capable of withstanding high temperature discharges of water and 3m from any plastics guttering system that would collect such discharges (tundish visible).
- iv. where a single pipe serves a number of discharges, such as in blocks of flats, the number served should be limited to not more than 6 systems so that any installation discharging can be traced reasonably easily. The single common discharge pipe should be at least one pipe size larger than the largest individual discharge pipe (D2) to be connected. If unvented hot water storage systems are installed where discharges from safety devices may not be apparent i.e. in dwellings occupied by blind, infirm or disabled people, consideration should be given to the installation of an electronically operated device to warn when discharge takes place.

Note: The discharge will consist of scalding water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges.

Worked example of discharge pipe sizing

The example below is for a G1/2 temperature relief valve with a discharge pipe (D2) having 4 No. elbows and length of 7m from the tundish to the point of discharge.

From Table 1:

Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G1/2 temperature relief valve is 9.0m.

Subtract the resistance for 4 No. 22mm elbows at 0.8m each = 3.2m

Therefore the permitted length equates to: 5.8m

5.8m is less than the actual length of 7m therefore calculate the next largest size.

Maximum resistance allowed for a straight length of 28mm pipe (D2) from a G1/2 temperature relief valve equates to 18m.

Subtract the resistance of 4 No. 28mm elbows at 1.0m each = 4.0m

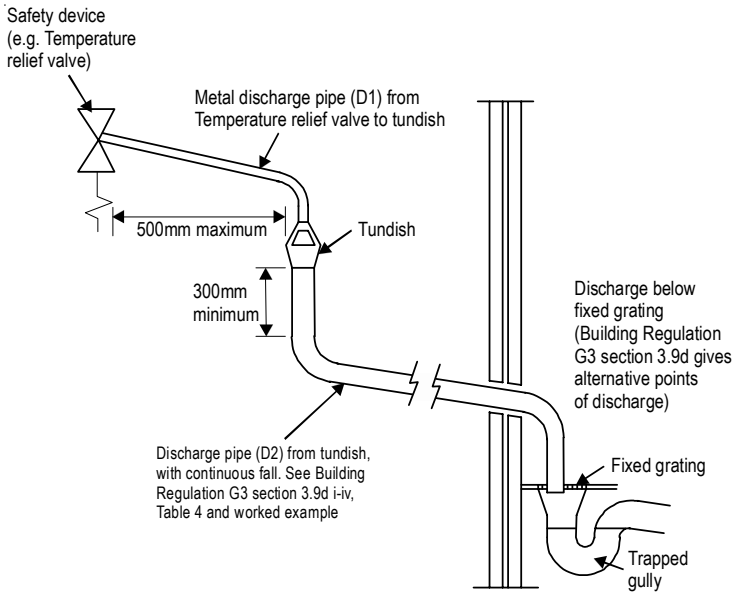
Therefore the maximum permitted length equates to: 14m

As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

Table 1 - Sizing of copper discharge pipe (D2) for common T&P relief valve sizes

Valve outlet size	Minimum size of discharge pipe D1	Minimum size of discharge pipe D2 from tundish	Maximum resistance allowed, expressed as a length of straight pipe (i.e. no elbows or bends)	Resistance created by each elbow or bend
G1/2	15mm	22mm	up to 9m	0.8m
		28mm	up to 18m	1.0m
		35mm	up to 27m	1.4m
G3/4	22mm	28mm	up to 9m	1.0m
		35mm	up to 18m	1.4m
		42mm	up to 27m	1.7m
G1	28mm	35mm	up to 9m	1.4m
		42mm	up to 18m	1.7m
		54mm	up to 27m	2.3m

Diagram 6 - Schematic discharge pipe arrangement



4 Installation - Direct Heating

4.1 IMMERSION HEATER(S)

The Megafluo HE SystemFit is supplied with a factory fitted immersion heater which can be used as an alternative heat source should the boiler supply need to be isolated from the unit. The immersion heater is located within the indirect controls housing. The immersion heater is rated 3kW at 240V (2.7kW at 230V). 210 litre models and above are supplied with a second blanked off boss which can be used for the connection of a second immersion heater should this be required.

To remove the blanking plug:

Ensure the cylinder is drained of water first. Open the cover to the upper immersion heater boss. The cover is secured by a cross-headed screw. Unscrew brass backnut using the key spanner provided with the unit. Remove the blanking plate and sealing gasket from the boss.

Fitting the additional immersion heater (where required order Part No. 95 970 510):

Insert the immersion heater and sealing gasket into the boss. Ensure that the sealing gasket is not displaced when inserting. It may be helpful to support the immersion heater using a round bladed screwdriver inserted into one of the thermostat pockets. Hand tighten the brass backnut. Secure the immersion heater in position by tightening with the key spanner provided.

4.2 WIRING (see Diagram 7)

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 Diagram 7. The Live and Neutral conductors should be connected directly to the combined thermostat/thermal cut-out to the terminals marked A and B. The immersion heaters **MUST** be earthed. The supply cable should be 1.5mm² 3 core HOFr sheathed and must be routed through either the cable grip provided (lower housing) or the cable gland provided (upper housing 210 litre units and above only) with the outer sheath of the cable firmly secured by tightening either the top bar of the cable grip or the screws on the cable gland. Replace the housing cover(s) before operating. On the upper housing (210 litre and above only) ensure that the threaded edge clip is in position to provide a suitable thread for the cover screw.

DO NOT operate the immersion heater(s) until the Megafluo HE SystemFit has been filled with water.

4.3 OPERATION

It is recommended that the immersion heater thermostats are set to between position 4 and 5 (60° - 65°C), however they can be set between 1 and 5 (10° and 70°C). The thermostat incorporates a thermal cut-out that will switch off the immersion heater in the event of a thermostat failure. The thermal cut-out reset button position is indicated on Diagram 8. **DO NOT** bypass the thermal cut-out in any circumstances.

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 MEGAFLO SPARE PART

**Diagram 7 -
Schematic wiring
diagram - Direct
immersion**

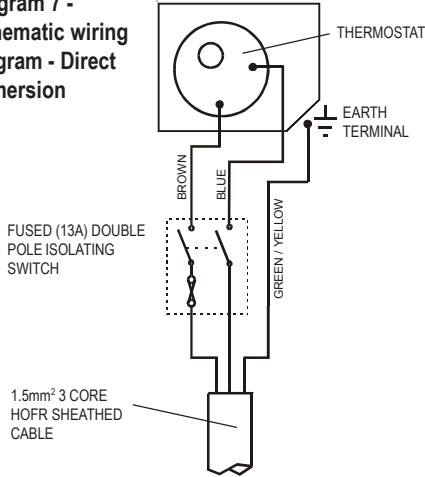
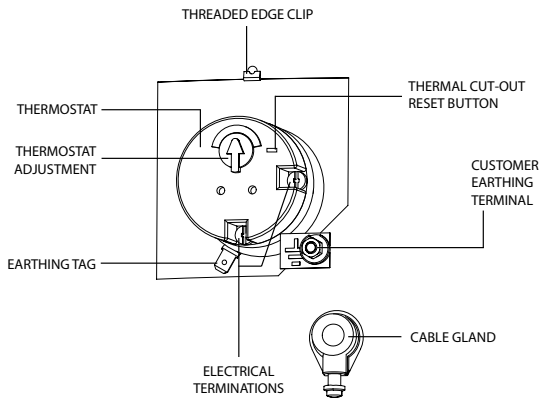


Diagram 8 - Immersion heater details



NOTE: FOR CLARITY THE EARTH LINK WIRE BETWEEN CUSTOMER EARTHING TERMINAL AND EARTHING TAG NOT SHOWN. THIS **MUST NOT** BE REMOVED!

Installation - Primary Circuit

5.1 BOILER SELECTION

The Megafluo HE SystemFit models are suitable for use with most gas or oil fired or electric boilers compatible with unvented systems i.e. fitted with a temperature control thermostat and thermal cut-out.

If in doubt consult the boiler manufacturer.

Solid fuel boilers or any other boiler in which the energy input is not under effective thermostatic control unless additional and appropriate safety measures are installed should NOT be used.

The boiler used should be suitable for either a sealed or open vented system, maximum primary circuit pressure 3 bar.

The primary flow from the boiler MUST be pumped. Gravity circulation will not work due to the special design of the primary heat exchanger.

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 Megafluo HE SystemFit unit.

5.2 INDIRECT THERMAL CUT-OUT AND 2-PART MOTORISED VALVE

To comply with Building Regulations and to prevent the Megafluo HE from overheating a 2-Port motorised valve is fitted to the primary flow to the indirect coil. This valve is factory wired in series with the indirect thermal cut-out such that the primary flow to the heating coil is interrupted should the Megafluo HE SystemFit unit overheat.

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 Megafluo HE SystemFit Indirect Thermostat and Thermal Cut-out, primary circulating pump and motorised valves are factory pre-wired. Further wiring will be required between the Wiring Centre, the Programmer, Room Temperature Sensor and the boiler (see Diagram 10). Additional controls and wiring will be required if a second CH zone is to be fitted to the installation.

The Indirect Thermal Cut-out MUST NOT be bypassed.

5.4 HEATING SYSTEM CONTROLS

The controls provided with the Megafluo HE SystemFit will ensure the safe operation of the unit within a central heating system.

Connection to the various system components is made via the Wiring Centre fitted to the front of the Megafluo HE SystemFit. Refer to Diagram 9 and the terminal identification labels within the Wiring Centre to aid in connecting the various external system components such as the mains supply, programmer and boiler. The wiring to the external components is made using flexible cable, this should be secured using the integral cable grips located in the Wiring Centre.

Provision is made for the connection of a second CH zone (connection pipe supplied blanked off). Additional controls will be necessary to control the operation of the second CH zone,

usually a second 28mm CH zone valve and a programmable room thermostat. Connection terminals are provided and identified in the Wiring Centre to enable any wiring to be connected to the same central position.

The mains supply must be via a double pole isolating switch with a contact separation of at least 3mm in both poles. The supply must be fused 3Amp. A supply cable of 1.0 to 1.5mm² cross sectional area should be used.

5.5 PROGRAMMER AND ROOM TEMPERATURE SENSOR

The Programmer and Room Temperature Sensor are supplied loose such that they can be installed at a convenient location within the property. These items are supplied with their own Installation and User Instruction leaflet which should be referred to for details of mounting, wiring and programming. **NOTE** the Room Sensor is wired directly to the Programmer **not** to the Wiring Centre. Temperature setting of the room temperature is also done at the Programmer, there is no adjustment at the Room Temperature Sensor. Temperature setting of the stored water in the Megafluo HE SystemFit is done at the indirect thermostat housed within the Indirect Terminal Housing on the front of the Megafluo HE SystemFit unit (see Diagram 9).

Basic Programmer features:

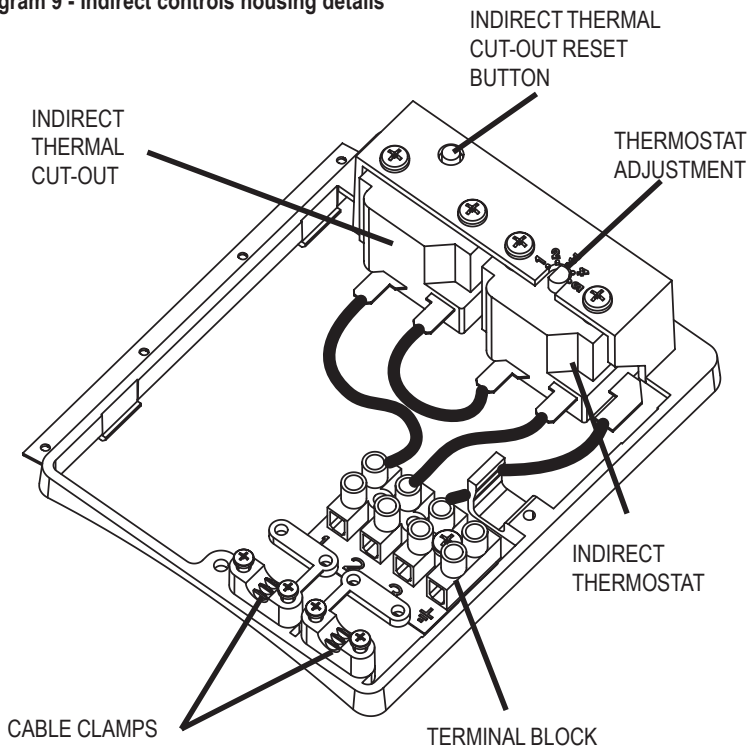
- 24 Hour or 5/2 Day operation
- Room temperature setting at Programmer
- Set temperature over-ride facility
- 1 Hour hot water boost facility
- Battery back up retains programmed information in the event of a power interruption
- Low temperature set back option for periods when the property is unoccupied, eg. holiday periods
- Independent time control of Central Heating and Domestic Hot Water (Building Regulation Part L1 compliant)

NOTE: The Programmer supplied will only provide control for one CH zone. Should a second CH zone be required additional controls will be needed (not supplied) to fulfill the requirements of Building Regulation Part L1.

5.6 PRIMARY SYSTEM PIPEWORK

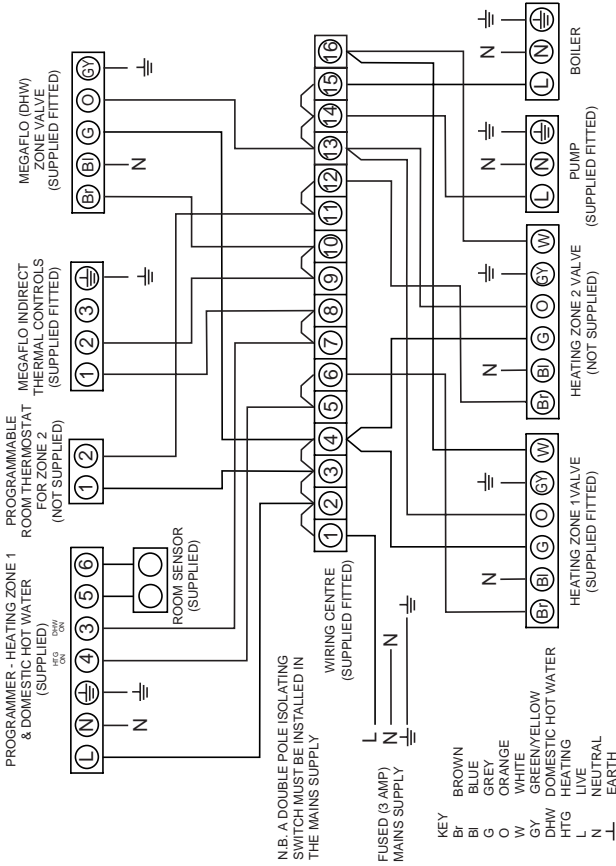
The Megafluo HE SystemFit should be incorporated into a primary heating circuit. Where the primary heating circuit is a sealed system the primary system expansion vessel and 0.3 MPa (3 bar) expansion relief valve (supplied) **MUST** be fitted. Refer to the boiler manufacturer's instructions for details of the required vessel mounting position.

Diagram 9 - Indirect controls housing details



NOTE:
THE HOUSING COVER AND ELEMENT ASSEMBLY HAVE BEEN REMOVED FROM THIS VIEW FOR CLARITY

Diagram 10 - Schematic wiring diagram - indirect circuit



NOTES

1. ALL EARTH CONNECTIONS MUST BE LINKED BACK TO THE EARTH TERMINALS IN THE WIRING CENTRE
2. ALL NEUTRAL CONNECTIONS MUST BE LINKED BACK TO THE NEUTRAL TERMINALS IN THE WIRING CENTRE
3. ASSUMES BASIC BOILER
4. THE 22MM MOTORISED VALVES DO NOT HAVE A WHITE WIRE
5. THE ABOVE DIAGRAM IS FOR GUIDANCE ONLY - HEATRAE SADIA ACCEPTS NO LIABILITY FOR ANY LOSS OR DAMAGE ARISING FROM ANY ERRORS OR OMISSIONS THAT MAY BE INADVERTENTLY CONTAINED WITHIN THIS DIAGRAM. THE VARIOUS EQUIPMENT MANUFACTURERS SHOULD BE CONSULTED TO CONFIRM THE CORRECT OPERATION OF THEIR PRODUCTS WITHIN THE SYSTEM

Commissioning

6.1 FILLING AND FLUSHING THE MEGAFLO HE SYSTEMFIT

It is possible for compression fittings to become loose in transit due to transport vibration. Ensure that all fittings and immersion heaters are correctly fitted and tightened. An immersion heater key spanner is provided to aid in tightening the immersion heater(s).

- i) Open a hot tap furthest from the MegaFlo HE SystemFit .
- ii) Open the isolating valve on the Cold Water Combination Valve by turning the black handle so that it lies parallel to the direction of flow. Open the mains stop cock to fill the unit. When water issues from the tap, allow to run for a few minutes to thoroughly flush through any residue, dirt or swarf, then close tap.
- iii) Open successive hot taps and any cold outlet supplied by a balanced take off to purge any air from the system.
- iv) Check all connections for leaks and rectify as necessary.
- v) The Strainer housed within the Cold Water Combination Valve should be cleaned to remove any debris that may have been flushed through the main supply pipe. Refer to Section 8.3 for instructions on how to do this.

6.2 CHECK THE OPERATION OF THE SAFETY VALVES

- i) Slowly manually open, for a few seconds, the Temperature and Pressure Relief Valve situated on the MegaFlo HE unit (see Diagram 12). Check water discharged runs freely away through the tundish and discharge pipework. Close valve, ensure water flow stops and valve reseats correctly.
- ii) Repeat for the Expansion Valve situated on the Expansion Core Unit (see Diagram 2).

6.3 DIRECT HEATING

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 (between graduations 4 and 5 on the thermostat). If necessary the temperature can be adjusted by inserting a flat bladed screwdriver in the adjustment knob on top of the immersion heater thermostat and rotating (see Diagram 8). The adjustment range 1 to 5 represents a temperature range of between 10° and 70°C.

Check that no water is discharged from either the Expansion Valve or Temperature and Pressure Relief Valve during the heating cycle.

6.4 INDIRECT (PRIMARY) CIRCUIT

Fill the indirect primary circuit following the boiler manufacturer's commissioning instructions. Ensure the filling loop hose is connected at both ends and is tight. Open the isolating valves at either end of the filling loop and allow to fill from the mains inlet supply. To ensure the primary heating system is correctly filled the 2-port motorised valves should be manually opened by moving the lever on the motor housings to the MAN OPEN setting. Air can be vented from the primary heating coil by unscrewing the small dust cap on the auto air vent by half a turn. The

primary system should be pressurised to the minimum pressure required by the boiler (usually 1 bar), the pressure gauge fitted should be used to ensure the correct system pressure is set. When full and pressurised the filling loop isolating valves should be closed and the levers on the motorised valves returned to the AUTO position.

Vent any trapped air, NOTE the radiators and boiler should be separately vented, the auto air vent will not vent all air at commissioning. Check the primary system for leaks and rectify as necessary. Flush the primary system in accordance with the boiler manufacturer's instructions and add a suitable inhibitor when re-filling. Repeat above process whenever refilling.

Switch on the electrical supply to the Megafluo HE SystemFit indirect controls and the boiler. Programme the Megafluo SystemFit HE controller as detailed in the Fitting and User Instruction leaflet supplied with the controller. Set the controller for Hot Water operation only (the +1HR ON Hot Water over-ride button can be used if the time is during a Hot Water OFF period). Check that the Heating 2-Port motorised valve is closed and that the Hot Water 2-Port motorised valve opens. The pump should run and the boiler fire (tap symbol appears in controller display). The primary flow to the Megafluo SystemFit HE should become hot, if it does not check for a wiring or piping error. Allow the Megafluo unit to heat up and check that the Hot Water thermostat and 2-Port motorised valve operate correctly. A storage temperature of approx. 60°C is recommended (approx. graduation 4 on the indirect thermostat). If necessary the temperature can be adjusted by inserting a flat bladed screwdriver in the adjustment knob (located on the front of the thermostat mounting bracket, see Diagram 9) and rotating. The minimum thermostat setting is 10°C. The adjustment range 1 to 5 represents a temperature range of 30° to 70°C.

Select the Heating only function on the controller. **NOTE:** The room temperature is set at the controller, no adjustment is possible at the Room Sensor unit. Check that the Heating 2-Port motorised valve opens and that the Hot Water 2-Port motorised valve is closed. The pump should run and the boiler fire (a flame symbol appears in the controller display). The primary flow to the Megafluo SystemFit HE and the radiator circuit should become hot, if it does not check for a wiring or piping error. If a second CH zone is fitted adjust the programmable room thermostat so that it is calling for heat. Check that the second CH zone valve opens. The pump should run and the boiler fire. The primary flow to the second CH zone should become hot, if it does not check for a wiring or piping error.

Select the Heating and Hot Water control function on the controller. Check that the Heating 2-Port motorised valve and the Hot Water 2-Port motorised valve open. **NOTE:** it may be necessary to cool the Megafluo HE SystemFit down to allow the indirect thermostat to call for heat, it may also be necessary to increase the required room temperature setting if the room temperature has already reached that programmed. The pump should run and the boiler fire (both a tap symbol and a flame symbol should appear in the controller display). The primary flow to the Megafluo HE SystemFit and the radiator circuit should become hot, if it does not check for a wiring or piping error.

When the Heating and Hot Water temperatures are reached the 2-Port motorised valves should close, the pump stop running and the boiler stop firing. **NOTE:** if a pump over-run boiler is fitted the pump may continue to run for a short time after the boiler has shut down.

Check that no water is discharged from either the Expansion Valve or Temperature and Pressure Relief Valve during the heating cycle.

does not check for a wiring or piping error.

If the user temperatures or On and Off times have been adjusted for commissioning purposes the controller should be reset to the desired settings. The operation of the controller should be demonstrated to the user and the Controller Installation and User Instructions left with them for

6.5 AUTOMATIC SYSTEM BY-PASS

An automatic differential bypass valve is fitted to the Megaflo HE SystemFit. This has been factory set to an optimum position for most domestic heating systems. However, in some systems it may require further adjustment. To do this:

Loosen the brass locking screw on the top of the adjustment cap of the bypass valve. Turn the adjustment knob fully clockwise so that the number 5 coincides with the indicator arrow on the body of the valve.

Turn on the system and set the controller to Heating only. Balance the system in the normal manner.

With the boiler firing and the pump running, slowly turn the adjustment knob anti-clockwise until hot water can be felt on the outlet side of the bypass valve. Turn the adjustment knob clockwise by half a turn. Lock in position by tightening the brass locking screw.

6.6 BENCHMARK™ LOG BOOK

On completion of the installation and commissioning procedures detailed in this manual the Benchmark™ "Installation, Commissioning and Service Record Log Book" should be completed and signed off by the competent installer or commissioning engineer in the relevant sections.

The various system features, location of system controls, user instructions and what to do in the event of a system failure should be explained to the customer. The customer should then countersign the Benchmark™ log book to accept completion.

The log book should be left with the customer along with these instructions. The log book includes sections that should be filled in when any subsequent service or maintenance operation is carried out on the Megaflo HE SystemFit.

User Instructions

7.1 WARNINGS

IF WATER ISSUES FROM THE TEMPERATURE/PRESSURE RELIEF VALVE ON THE MEGAFLO HE UNIT REFER TO SECTION 7.5 FIRST. IF THIS DOES NOT RECTIFY THE FAULT SWITCH OFF ELECTRICAL SUPPLY TO THE IMMERSION HEATER(S) OR SHUT DOWN THE BOILER. DO NOT TURN OFF THE WATER SUPPLY. CONTACT A COMPETENT INSTALLER FOR UNVENTED WATER HEATERS TO CHECK THE SYSTEM.

DO NOT TAMPER WITH ANY OF THE SAFETY VALVES FITTED TO THE MEGAFLO HE SYSTEM, IF A FAULT IS SUSPECTED CONTACT A COMPETENT INSTALLER.

7.2 TEMPERATURE CONTROL

IMMERSION HEATER(S)

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 70°C. This will usually have been done during installation. Adjustments can only be made by opening the terminal cover(s), **DO NOT remove/open 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 disc on top of the thermostat and rotating (see Diagram 8).

If in any doubt consult a competent electrician.

HEATING BY BOILER

The Megafllo HE SystemFit is fitted with an Indirect Thermostat which controls a 2 Port motorised valve and hence the temperature of the water in the Megafllo HE SystemFit unit. 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 70°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 knob located on the front of the thermostat mounting bracket (see Diagram 9) and rotating. At the minimum position the temperature will be approx. 10°C. The adjustment range 1 to 5 represents a temperature range of 30° to 70°C

If in any doubt consult a competent electrician.

DO NOT bypass the thermal cut-outs in any circumstances.

The space heating control temperature and the operating times for Heating and Hot Water are set using the remotely mounted Controller. The optimum temperatures and times will have been set during commissioning. Should the temperatures or timings need to be altered refer to the Installation and User Instructions leaflet supplied with the Controller for the method of adjustment. If a second CH zone is fitted this will be controlled by its own programmable room thermostat. Refer to the manufacturers Installation and User instructions supplied with the programmable room thermostat for the method of setting and adjustment of heating times and temperatures.

7.3 FLOW PERFORMANCE

When initially opening hot outlets a small surge in flow may be noticed as pressures stabilise. This is quite normal with unvented systems and does not indicate a fault.

In some areas a cloudiness may be noticed in the hot water. This is due to aeration of the water, is quite normal and will quickly clear.

7.4 OPERATIONAL FAULTS

Operational faults and their possible causes are detailed in Section 9.3. It is recommended that faults should be checked by a competent installer.

7.5 AIR VOLUME RE-CHARGING

The air volume within the Megafluo HE unit will periodically require recharging to ensure any expanded water is accommodated within the unit. A discharge of water INTERMITTENTLY from the Expansion Valve will indicate the air volume has reduced to a point where it can no longer accommodate the expansion. To recharge the air volume :-

- i) Turn off the water supply to the Megafluo HE unit by turning off the isolating valve on the Cold Water Combination Valve. Turn the black handle so that it lies at 90° to the direction of flow.
- ii) Open the lowest hot tap supplied by the Megafluo HE.
- iii) Hold open the Temperature/Pressure Relief Valve until water ceases to run from the tap and gurgling noise at the valve stops.
- iv) Close Temperature/Pressure Relief Valve.
- v) Turn on the isolating valve at the Cold Water Combination Valve by turning the black handle so it lies parallel to the direction of flow, when water flows from the hot tap, close tap.
- vi) The air volume will be automatically recharged as the unit refills.

If after following the above actions water still discharges from the Expansion Valve further advice should be sought from a competent installer or the Heatrae Sadia Service Department.

Maintenance

8.1 MAINTENANCE REQUIREMENTS

To ensure the continued optimum performance of the Megafluo HE SystemFit it should be regularly maintained. This is of particular importance in hard water areas or where the water supply contains particulate matter. Maintenance should be carried out by a competent person and any replacement parts used should be authorised Heatrae Sadia Megafluo spare parts. It is recommended that maintenance is carried out every 12 months and includes the checks detailed in 8.2 and 8.3 below.

In hard water areas consideration should be given to periodically descaling the immersion heater elements. To do this the Megafluo HE unit will need to be drained, 8.4 and 8.5 below detail how to drain the unit and remove the immersion heater(s).

8.2 CHECK OPERATION OF SAFETY VALVES

Slowly open the Temperature and Pressure Relief Valve by twisting its cap for a few seconds. Check water is discharged and that it flows freely through the tundish and discharge pipework. Check valve reseats correctly when released.

NOTE : The water discharged may be very hot.

Repeat the procedure for the Expansion Valve (located on the Expansion Valve Core Unit).

8.3 CLEAN THE STRAINER

The strainer is incorporated within the Pressure Reducing Valve housing of the Cold Water Combination Valve (see Figure 1). To inspect and clean the strainer:

- i) Turn off the isolating valve on the Cold Water Combination Valve by turning the black handle so it lies 90° to the direction of flow.
- ii) Open the lowest hot tap in the system to relieve the system pressure.
- iii) Using a spanner unscrew the pressure reducing cartridge and remove the moulded housing. The strainer will be removed with the cartridge.
- iv) Wash any particulate matter from the strainer under clean running water.
- v) Replace the strainer and screw the Pressure Reducing Valve cartridge into the moulded housing.
- vi) Close hot tap, turn on isolating valve by turning handle so it lies parallel to the direction of flow. Check for leaks.

8.4 DRAINING THE MEGAFLO HE UNIT

Switch off the electrical supply to the immersion heater(s) and/or shut down the boiler. Turn off the mains water supply to the Megafluo HE SystemFit unit. 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 hot water tap nearest to the Megafluo HE SystemFit to relieve the system pressure. Open drain cock. If water fails to drain from the Megafluo HE SystemFit vent the unit by manually opening the Temperature/Pressure Relief Valve.

8.5 DESCALING IMMERSION HEATER(S)

Ensure the Megaflö HE is drained and disconnected from electrical supply before removing cover(s). Open the cover(s) to the immersion heater housing(s) and disconnect wiring from immersion heater(s). Remove the thermostat by carefully pulling outwards from the immersion heater. Unscrew immersion heater backnut(s) and remove immersion heater from the unit. A key spanner is supplied with the Megaflö HE SystemFit 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 (order part number 95 611 822) to the element plate.

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 thermostat(s) by carefully plugging the two male spade terminations on the underside of the thermostat head into the corresponding terminations on the element.

Rewire the immersion heater(s) in accordance with Diagram 7. Close and secure terminal cover(s).

8.6 REFILLING SYSTEM

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

Close the drain tap. With hot tap open, turn on mains water supply. When water flows 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.

8.7 BENCHMARK™ LOG BOOK

On completion of any maintenance or service of the Megaflö HE SystemFit the Benchmark™ "Installation, Commissioning and Service Record Log Book" should be filled in to record the actions taken and the date the work was undertaken.

Fault Finding & Servicing

9.1 IMPORTANT

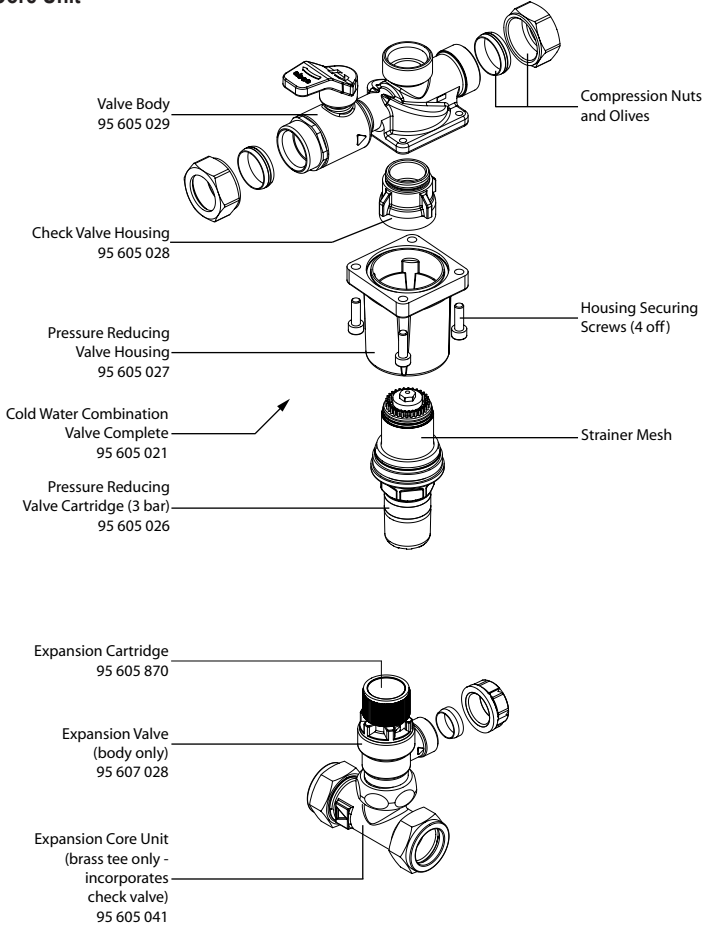
- i) Servicing should only be carried by authorised Heatrae Sadia Service Engineers or Agents or by competent installers in the installation and maintenance of unvented water heating systems.
- ii) Any spare parts used MUST be authorised Heatrae Sadia parts.
- iii) Disconnect the electrical supply before removing any electrical equipment covers.
- iv) **NEVER** bypass any thermal controls or operate system without the necessary safety valves.
- v) Water contained in the Megafluo HE SystemFit 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 Megafluo HE SystemFit range. Refer to the Technical Data label on the unit to identify the model installed and ensure the correct part is ordered.

Description	Part no.	Description	Part no.
Immersion heater (lower)	95 606 963	Immersion heater (upper)	95 606 964
Immersion heater gasket	95 611 822	Immersion heater backnut	95 607 869
Immersion heater key	95 607 861	Tundish	95 605 838
Immersion heater blanking plug	95 605 881	Cold water combination valve	
Expansion relief valve cartridge		body incl. isolating valve	95 605 871
- 8bar	95 605 870	Pressure reducing valve	
Expansion Core housing		cartridge - 3bar	95 605 873
(incorporating Check Valve)	95 605 872	Temperature/Pressure Relief	
Cold Water Combination Valve		Valve	95 605 810
complete	95 605 869	Combined thermostat/thermal	
Set of compression nuts		cut-out for imm. heater	95 612 026
and olives	95 607 838	2 Port motorised valve	
Terminal cover upper		(22mm connections)	95 605 819
(210 litre units and above)	95 607 836	2 Port motorised valve	
Indirect thermostat	95 612 697	(28mm connections)	95 605 884
Indirect thermal cut-out	95 612 698	Terminal cover (lower)	95 607 837
4 way terminal block	95 607 902	Pressure gauge	95 607 065
Wiring Centre	95 612 702	Automatic air vent	95 605 050
TP9 Programmer	95 607 903	12litre Primary Expansion	
TP1 Room temperature sensor	95 607 904	Vessel	95 607 066
Automatic bypass valve		Expansion Vessel hose	95 607 067
(straight pattern)	95 605 882	Circulating pump	95 605 840
Insulation set (T&P Relief Valve)	95 607 089	Expansion Relief Valve	
Drain valve (1/4 turn)	95 605 051	(3 bar Primary Circuit)	95 607 095
Accessory kit	95 607 094	Filling loop and connection	95 607 096

Diagram 11 - Exploded view of the Cold Water Combination Valve and Expansion Core Unit



9.3 FAULT FINDING

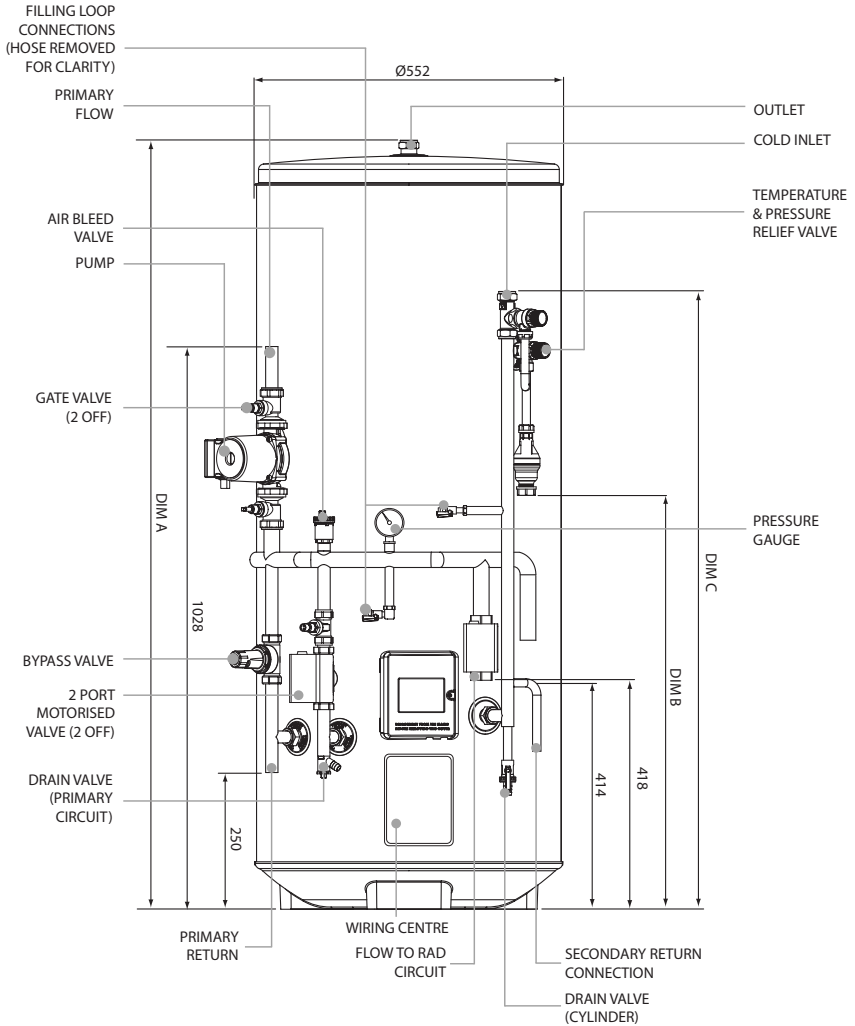
The Fault Finding chart overleaf (Table 2) will enable operational faults to be identified and their possible causes rectified. Any work carried out on the MegaflO HE SystemFit unvented water heater and its associated controls **MUST** be carried out by a competent installer for unvented water heating systems. In case of doubt contact the Heatrae Sadia Service Department (see Section 12).

Table 2 - Fault Finding Chart

FAULT	POSSIBLE CAUSE	REMEDY
No hot water flow	1. Mains supply off 2. Strainer blocked 3. Cold Water Combination Valve incorrectly fitted	1. Check and open stop cock 2. Turn off water supply. Remove strainer and clean (see Section 8.3) 3. Check and refit as required
Water from hot taps is cold	1. DIRECT immersion heater not switched on 2. DIRECT immersion heater thermal cut-out has operated 3. INDIRECT programmer set to Central Heating only 4. INDIRECT boiler not working 5. INDIRECT thermal cut-out has operated 6. INDIRECT motorised valve not connected correctly	1. Check and switch on 2. Check. Reset by pushing button. (See Diagram 8) 3. Check. Set to a Domestic Hot Water programme 4. Check boiler operation. If fault is suspected consult boiler manufacturer's instructions 5. Check. Reset by pushing button on cut-out. Check operation of indirect thermostat 6. Check wiring and/or plumbing connections to motorised valve (see Diagram 11)
Water discharges from Expansion Relief Valve	1. INTERMITTENTLY Expansion volume has reduced within unit 2. CONTINUALLY a. Cold Water Combination Valve Pressure Reducer not working correctly b. Expansion Valve seat damaged.	1. See Section 7.5 for re-charging procedure a. Check pressure from Cold Water Combination Valve. If greater than 3 bar replace Pressure Reducer cartridge b. Remove Expansion Valve cartridge. Check condition of seat. If necessary fit new Expansion Valve cartridge.
Water discharges from T&P Relief Valve	1. Thermal control failure NOTE water will be very hot	1. Switch off power to immersion heater(s) and shut down boiler. DO NOT turn off water supply. When discharge stops check all thermal controls, replace if faulty.
"Milky" water	Oxygenated water	Water from a pressurised system releases oxygen bubbles when flowing. The milkiness will disappear after a short while.

Dimensions & Specifications

Diagram 12 - Dimensions



Dimensions & Specifications

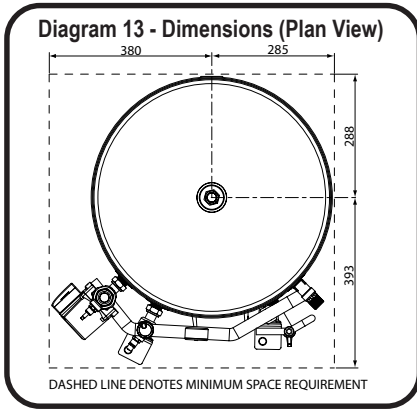


Table 3 - Dimensions

SIZE	TYPE	NOMINAL DIMENSIONS (MM)			UNIT WEIGHT (KG)	
		A	B	C	EMPTY	FULL
125	CL	1115	542	896	34	183
145	CL	1241	643	997	42	211
170	CL	1398	768	1122	45	240
210	CL	1499	844	1198	51	262
250	CL	1751	1071	1425	58	309
300	CL	2065	1322	1676	68	368

Table 4 - Performance characteristics

SIZE	COIL SURFACE (SQ.M)	COIL PERFORMANCE			IMMERSION HEATER	
		HEAT UP (MINS)	RECOVERY (MINS)	RATING (KW)	HEAT UP (MINS)	RECOVERY (MINS)
125	0.61	23	15	18.3	137	92
145	0.73	24	17	18.7	153	106
170	0.79	22	16	24.3	181	125
210	0.79	28	19	24.3	199	154
250	0.79	34	23	23.9	238	184
300	0.79	39	27	24.5	287	220

NOTE

Coil heating performance based on a primary flow rate of 15 l/min at 80° C with flow to water heater coil heat exchanger only. Heating times may be reduced if space heating requirement is simultaneous with water heating requirement or boiler output is lower than potential coil output rating.

Temperature rise is from 15° C to 60° C.

Recovery is based on reheating 70% of the nominal capacity

OUTLINE SPECIFICATIONS

Maximum mains water supply pressure (to Cold Water Combination Valve) 1.6 MPa (16 bar)

Operating pressure (Pressure reducing valve set pressure - non adjustable) 0.3 MPa (3 bar)

Expansion valve set pressure 0.8 MPa (8 bar)

Temperature/Pressure relief valve set temp/pressure 90°C/1 MPa (10 bar)

Immersion heater rating (a.c. supply only)
3.0kW 240V
2.7kW 230V

Outer casing:

White textured plastic coated corrosion proofed steel

Water container:

Duplex stainless steel (grade 1.4362 to EN10088). 100% pressure tested to 1.5 MPa (15 bar).

Thermal insulation:

CFC/HCFC free fire retardant expanded polyurethane foam. Nominal thickness 50mm.

Pipe connections:

All models: Inlet and Outlet connections accept 22mm outside diameter pipe - compression nuts and olives supplied.

125/145 litre models: Primary flow from boiler, primary vent, heating coil return - 22mm o/dia copper pipe. CH motorised valve accepts 22mm o/dia copper pipe. Primary cold feed connection 15mm o/dia copper pipe.

170, 210, 250, 300 litre models: Primary flow from boiler, primary vent, 2nd CH zone tapping - 28mm o/dia copper pipe. CH motorised valve accepts 28mm o/dia copper pipe. Primary heating coil return and primary cold feed connection - 22mm o/dia copper pipe.

Safety features:

All Megafo HE SystemFit units -

Manually resettable thermal cut-out on heating element

Manually resettable thermal cut-out for primary heating. Factory wired in series with 2 port motorised valve supplied.

Factory fitted Temperature/Pressure relief valve

Danfoss TP9 Programmable thermostat with timed Domestic Hot Water (DHW) control:

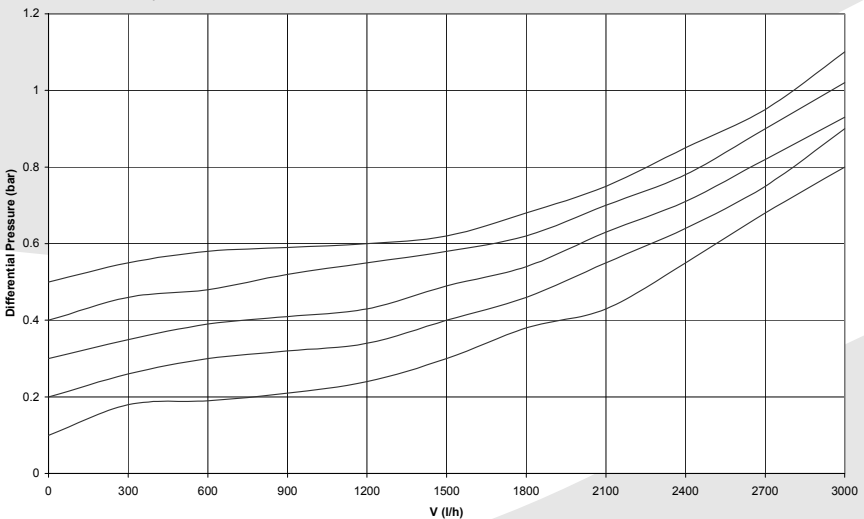
Programmer dimensions: 136mm (W) x 88mm (H) x 32mm (D)
 Room temperature sensor dimensions: 60mm (W) x 45mm (H) x 21mm (D)
 Power supply: 220V/240V ac, 50Hz
 Switch action 2 x SPDT, Type 1B. Switch rating 220/240V ac, 50/60Hz, 3(1)A
 Power reserve: minimum 24 hours
 Memory back up during extended power cut up to 15 days
 Enclosure rating: IP30
 Control temperature range: selectable 5 to 30°C or 16 to 30°C
 Holiday mode with room temperature setback
 Timing accuracy: +/- 1 minute/month
 Maximum ambient temperature: 45°C

Honeywell 2 Port motorised valves:

Model No.: V4043H
 Voltage rating: 230V ac, 50HZ
 Power consumption: 6W
 Primary water temperature range: 5 to 88°C
 Maximum ambient temperature: 50°C

Automatic by-pass valve:

Model No.: RWC Diff 391 301
 Setting range: 0.01 to 0.05 MPa (0.1 to 0.5 bar) differential pressure
 Maximum primary water temperature: 120°C



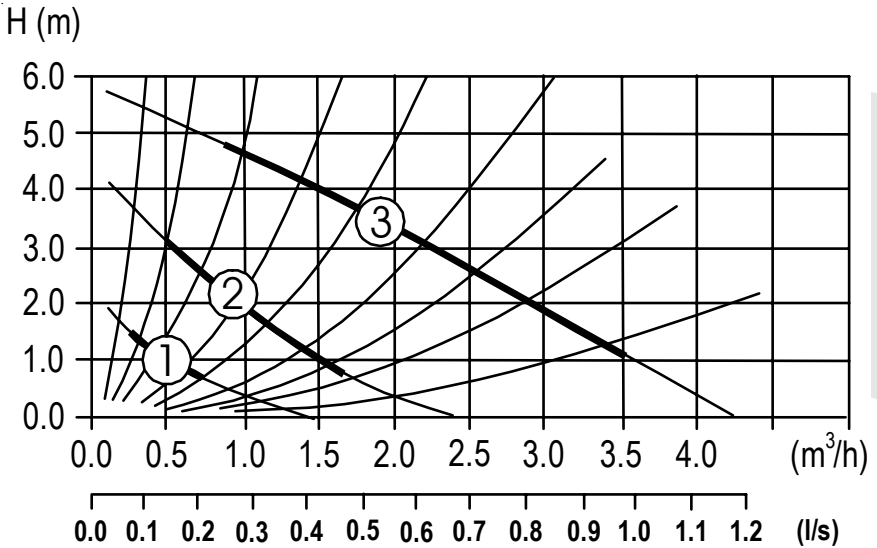
Primary circulating pump:

Model No.: Grundfos UPS15-60
 Working pressure: 1 MPa (10 bar) max.
 Voltage rating: 230V ac, 50Hz
 Starting capacitor: 2uF
 Enclosure rating: IP42

Electrical data

SPEED SETTING	SPEED R.P.M.	INPUT POWER (W)	FULL LOAD CURRENT (A)	LOCKED ROTOR CURRENT (A)
III	1750	95	0.44	0.47
II	1100	65	0.30	0.31
I	750	40	0.17	0.18

Pump Curves



Guarantee

11.1 WARNING

Should the factory fitted Temperature and Pressure Relief Valve be tampered with or removed your guarantee will be invalidated. Neither the Distributor nor Manufacturer shall be responsible for any consequential damage howsoever caused.

11.2 GUARANTEE TERMS

Heatrae Sadia guarantee the electrical parts, thermal controls and valves for a period of two years, excluding the cold water control valve which is guaranteed for a period of five years, from the date of purchase, with the exception of damage due to scaling.

The stainless steel vessel is guaranteed for a period of twenty-five 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) Any disinfection has been carried out in accordance with BS 6700.
- iii) It has not been modified in any way other than by Heatrae Sadia Heating.
- iv) It has only been used for the storage of potable water.
- v) 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.
- vi) No factory fitted parts have been removed for unauthorised repair or replacement.
- vii) Within 60 days of purchase the user completes and returns the certificate supplied to register the product.

Evidence of purchase and date of supply must be submitted.

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 CFC free polyurethane foam.

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

Contacts

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E-mail: sales@ewh.co.uk

SPD

Special Product Division
Unit 9 & 10, Hexagon Business Centre,
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Hayes, Middlesex UB4 0TY
Tel: 020 8606 3567

Parts Center

Network 65 Business Park,
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Lancashire BB11 5ST
Tel: 01282 834403
www.partscenter.co.uk

Newey & Eyre Specialists Products Division

Please contact your local branch

UK Spares Ltd.

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780 South Street,
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