

2.5kW Amptec System Boiler - Underfloor

Fitting Instructions and User Guide

THANK YOU FOR PURCHASING THIS HEATRAE SADIA AMPTEC SYSTEM BOILER - UNDERFLOOR. IT HAS BEEN DEVELOPED TO PROVIDE YOU WITH MANY YEARS OF TROUBLE-FREE SERVICE WHEN INSTALLED IN THE PROPER MANNER.

PLEASE READ AND UNDERSTAND THESE INSTRUCTIONS PRIOR TO INSTALLING YOUR HEATRAE SADIA AMPTEC SYSTEM BOILER - UNDERFLOOR. THEY ARE FOR USE BY COMPETENT PERSONNEL (I.E. TRAINED, EXPERIENCED AND QUALIFIED). THIS BOILER MUST BE INSTALLED IN ACCORDANCE WITH ALL RELEVANT AND CURRENT LEGISLATION.

MOUNT THE BOILER ON THE WALL AND CONNECT UP THE PIPEWORK BEFORE LAYING DOWN THE SCREED.

FOLLOWING INSTALLATION AND COMMISSIONING, THE OPERATION OF THIS BOILER SHOULD BE EXPLAINED TO THE CUSTOMER AND THESE INSTRUCTIONS LEFT WITH THEM FOR FUTURE REFERENCE.

NECESSARY MEASURES HAVE BEEN TAKEN BY THE MANUFACTURER TO MINIMISE THE NUMBER OF HAZARDOUS SUBSTANCES USED DURING THE CONSTRUCTION OF THIS BOILER. THIS ENSURES THE SAFETY OF ITS EMPLOYEES, THE INSTALLER AND THE CUSTOMER AND MINIMISES ENVIRONMENTAL IMPACT.

WHEN WORKING ON THIS PRODUCT, IT IS THE RESPONSIBILITY OF THE ENGINEER TO ENSURE THAT PRECAUTIONS ARE TAKEN TO ENSURE SAFETY TO THEMSELVES AND THOSE AROUND THEM.

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

THIS PRODUCT IS MANUFACTURED FROM MANY RECYCLABLE MATERIALS. AT THE END OF ITS LIFE IT SHOULD BE DISPOSED OF AT A LOCAL AUTHORITY RECYCLING CENTRE.

INSTALLER DETAILS

INSTALLER'S NAME: DATE:

COMPANY NAME (IF APPLICABLE):

COMPANY ADDRESS:
.....
.....

COMPANY TEL. NO.

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APPLICATION CHECKER

HOW TO USE THE APPLICATION CHECKER:

- Firstly, identify your approximate output requirements through a heat loss calculation or measurement (i.e. Low/Medium Demand or High Demand).

- Then, select the floor construction type you wish to use (i.e. solid floor construction or timber suspended/ floating floor construction).

- Next, drop down the Floor Area column and select your required floor area (e.g. if your floor area is 21m², please choose 22.5m² **NOT** 20m²).

- Finally, follow along the selected Floor Area row until you hit your Floor Construction vs Floor Output column.

- Should an 'X' be encountered, this means that your requirements cannot be met through using this 2.5kW electric boiler. However, there may be alternative solutions and Heatrae Sadia would be happy to offer some assistance in this case. Contact details can be found at the back of this book.

IMPORTANT NOTES (GENERAL):

- The tables opposite refer to underfloor heating **outputs** and any reference to heat **demands** in certain applications are approximate. Heatrae Sadia strongly recommend that a heat loss survey is carried out if you are in any doubt as to the expected demand.

- Heatrae Sadia do not recommend individual loop lengths in excess of 120m. Failure to comply with this recommendation may result in unsatisfactory performance from your floor heating system.

- The typical heat demand for a new build extension is approximately 50 W/m² based on 20°C and -3°C internal and external air temperatures.

- Solid floor constructions with a timber floor finish should be restricted to an output of 70 W/m².

- 'Mean Active Loop Lengths' for Low/Medium Demand Applications are based on pipe installed at 200mm CC (centre to centre of pipes) and excludes distribution pipe from manifold to active floor area. Where different floor areas are served by individual loops the installer should calculate actual loop lengths required.

- 'Suggested Coil Lengths' include a total pipe wastage and distribution allowance of 10m.

IMPORTANT NOTES FOR CONSERVATORY APPLICATIONS:

- Typically, conservatories are the most common application requiring heat demands of 100W/m² or more as they have very high heat loads due to the materials used in their construction.

- For this type of application, an underfloor heating system with an output of 100 W/m² will typically be able to maintain an internal and external temperature differential of approximately 13°C. During adverse weather conditions where a higher temperature differential is required, supplementary heating may be required. This temperature differential is typical only and depends on factors such as grade of glazing used, presence of a dwarf wall, size of conservatory etc.

- It is recommended when installing underfloor heating in high demand areas such as near windows, patio doors or larger areas such as conservatories, that pipe spacing is reduced to 150mm CC. This will improve floor reaction times and generally increase comfort levels.

- For optimum system performance in high demand applications, it is also recommended that a screeded floor structure is used in combination with a ceramic or stone tile floor finish.

- 'Mean Active Loop Lengths' for High Demand Applications are based on pipe installed at 150mm CC and excludes distribution pipe from manifold to active floor area. Where different floor areas are served by individual loops the installer should calculate actual loop lengths required.

Floor Area vs Floor Construction vs Floor Output

**Typical Examples of Low/Medium Demand Applications:
Building Regulation extensions, loft conversions.**

| Floor Area m ² | Solid Floors | | Timber Suspended and Floating Floors | | Loop and Coil Lengths (200mm CC) | | |
|------------------------------|--|----|---|--|-------------------------------------|----------|--------------------------------------|
| | Underfloor Heating Output, W/m ² | 70 | 50 | Underfloor Heating Output, W/m ² | 70 | 50 | Mean Active Loop Length metres |
| 10 | ✓ | ✓ | ✓ | ✓ | 2 x 27.0 | 1 x 75m | |
| 12.5 | ✓ | ✓ | ✓ | ✓ | 2 x 34.0 | 1 x 100m | |
| 15 | ✓ | ✓ | ✓ | ✓ | 2 x 40.0 | 1 x 100m | |
| 17.5 | ✓ | ✓ | ✓ | ✓ | 2 x 46.0 | 1 x 120m | |
| 20 | ✓ | ✓ | ✓ | ✓ | 2 x 52.0 | 1 x 120m | |
| 22.5 | ✓ | ✓ | ✓ | ✓ | 2 x 59.0 | 2 x 75m | |
| 25 | ✓ | ✓ | ✓ | ✓ | 2 x 65.0 | 2 x 75m | |
| 27.5 | ✓ | ✓ | ✓ | ✓ | 2 x 71.0 | 2 x 100m | |
| 30 | ✓ | ✓ | ✓ | ✓ | 2 x 77.0 | 2 x 100m | |
| 32.5 | ✓ | ✓ | ✓ | ✓ | 2 x 84.0 | 2 x 100m | |
| 35 | ✓ | ✓ | ✓ | ✓ | 2 x 90.0 | 2 x 100m | |
| 37.5 | X | ✓ | X | ✓ | 2 x 96.0 | 2 x 120m | |
| 40 | X | ✓ | X | ✓ | 2 x 102.0 | 2 x 120m | |
| 42.5 | X | ✓ | X | ✓ | 2 x 109.0 | 2 x 120m | |
| 45 | X | ✓ | X | ✓ | 2 x 115.0 | 2 x 120m | |
| 47.5 | X | X | X | X | X | X | |

**Typical Examples of High Demand Applications:
Conservatories, sun rooms.**

| Floor Area m ² | Solid Floors | | Loop and Coil Lengths (150mm CC) | |
|------------------------------|--|----------|--------------------------------------|------------------------------------|
| | Underfloor Heating Output, W/m ² | 100 | Mean Active Loop Length metres | Suggested Coil Length metres |
| 10 | ✓ | 2 x 36.0 | 1 x 100m | |
| 12.5 | ✓ | 2 x 44.0 | 1 x 100m | |
| 15 | ✓ | 2 x 52.0 | 1 x 120m | |
| 17.5 | ✓ | 2 x 61.0 | 2 x 75m | |
| 20 | ✓ | 2 x 69.0 | 2 x 75m | |
| 22.5 | ✓ | 2 x 77.0 | 2 x 100m | |
| 25 | ✓ | 2 x 86.0 | 2 x 100m | |
| 27.5 | X | X | X | |
| 30 | X | X | X | |
| 32.5 | X | X | X | |
| 35 | X | X | X | |
| 37.5 | X | X | X | |
| 40 | X | X | X | |
| 42.5 | X | X | X | |
| 45 | X | X | X | |
| 47.5 | X | X | X | |

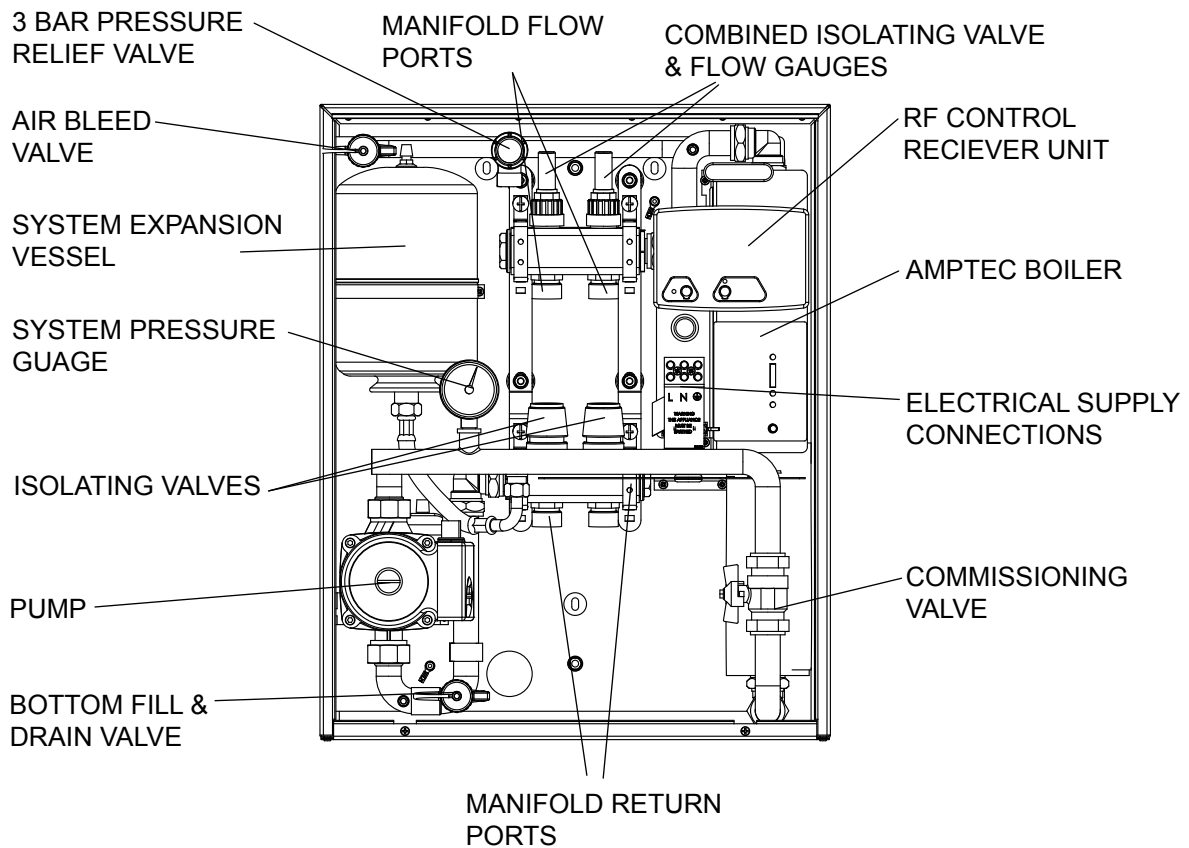


FIGURE 1: 2.5kW ELECTRIC UNDERFLOOR BOILER ASSEMBLY

DESCRIPTION

This electric underfloor boiler is designed to heat recirculated water used in wet underfloor heating systems, ideally suited to applications such as small extensions or conservatories. The boiler unit is housed in a white zintec-steel case and controlled by an TP5000 + RF Programmable Room Thermostat. The water is heated by electric immersion elements contained in the heat exchanger, the temperature of the water is monitored and controlled by a modulation technique.

The unit is 560mm high making the case suitable for mounting onto a dwarf wall such as those used in conservatories, and being only 450mm wide by 170mm deep, it can be partially mounted inside the wall, resulting in a low profile protruding into the living space.

FEATURES

- 2.5kW Ampotec Electric Boiler
- RF Programmable Room Thermostat Control
- Pump
- Expansion Vessel
- 2 Port Manifold
- Pressure Relief Valve
- System Pressure Gauge
- 1/4 turn Commissioning Valve
- Fill and Vent Valves

TECHNICAL SPECIFICATION

| | |
|------------------------------|---|
| Model | Heatrae Sadia 2.5kW Amptec System Boiler - Underfloor |
| Boiler | Amptec 2.5kW |
| Supply Voltage | 220 – 240 volts 50 Hz. |
| Supply Current | 10.4 Amps at 240 volts. |
| Output Power | 2.1 – 2.5kW. |
| Supply Connections | Terminal Block |
| Controls | Programmable Room Thermostat TP5000 + RF |
| Manifold | 2 Port with Flow Meters |
| Water Temperature | 30° to 60°C adjustable |
| Pump | 15/60 |
| Safety Pressure Relief Valve | 3 Bar |
| Operating Pressure | 1 – 1.5 Bar |
| Expansion Vessel | 2 litres |
| Pressure Dial | 0 – 4 Bar reading |
| Case | Zintec steel painted white 560h x 450w x 170d |
| Pipework Entries | Through aperture in the base |
| Front Panel | Removable |

INSTALLATION

Care must be taken when handling and connecting the boiler, not to damage or stress it in any way. Prior to installation the boiler must be stored in a dry and safe place. **It is not suitable for external mounting or operation.**

The boiler must be mounted in an UPRIGHT position. It must be fixed to the wall before connecting the pipework. When choosing the position for the boiler, ensure sufficient clearances to house the unit and allow cover to be removed. It must be sited in a dry, ventilated, frost-free position and not subjected to extremes of temperature.

If thought to be frozen, unit must not be switched on. It must be left to thaw and must be thoroughly inspected to ensure it is totally thawed and undamaged.

System frost protection can be achieved by setting the thermostat to 5°C

The warranty will be invalid if the product is damaged or if liquids leak into the case.

The unit may be surface mounted onto a wall or partially built into the wall to a depth of 100mm.

Before installation check the site.

- i. Check the wall positioning.
- ii. Check the floor pipework layout to be used.
- iii. Check for suitable safety relief valve discharge point/ drainage.
- iv. Fill and venting will be carried out using temporary hose piping and suitable hose clips.
- v. Check access to the electrical supply.
- vi. Mark the position of the entry port before laying down the underfloor pipework.
- vii. Mount the boiler on the wall and connect up the pipework before laying down the screed. It is possible to fit the boiler on the wall after the floor screed has been laid, however care must be taken to ensure the pipes are cut to the correct length.
- viii. The pipework should be pressurised before and during laying the screed.

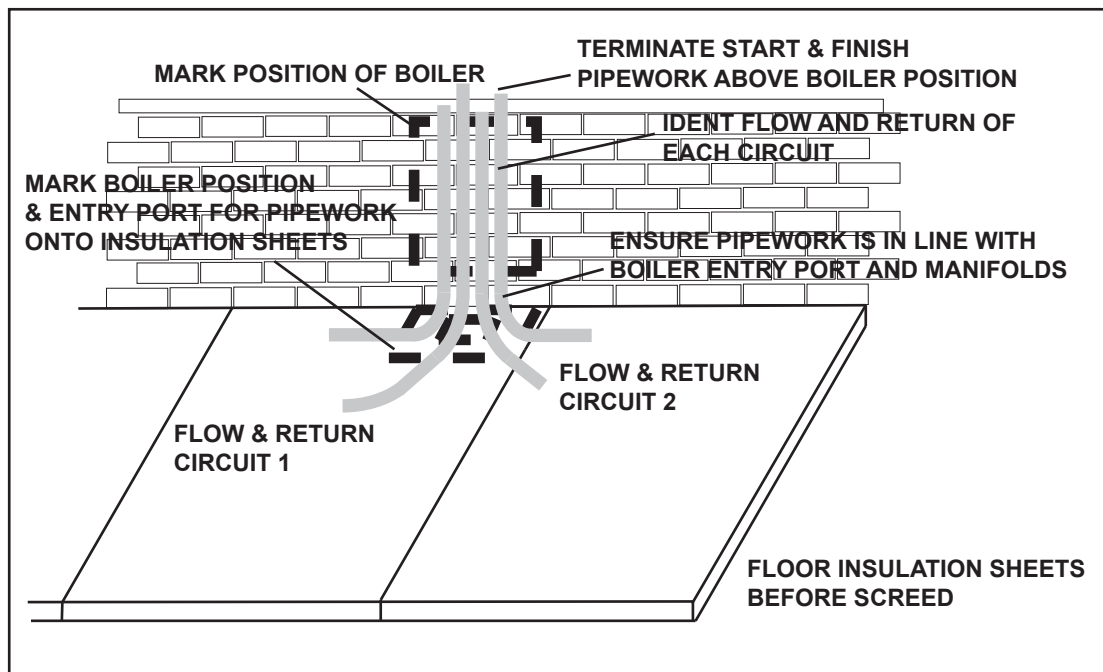


FIGURE 2: BOILER POSITIONING

INSTALLATION - SURFACE MOUNTED

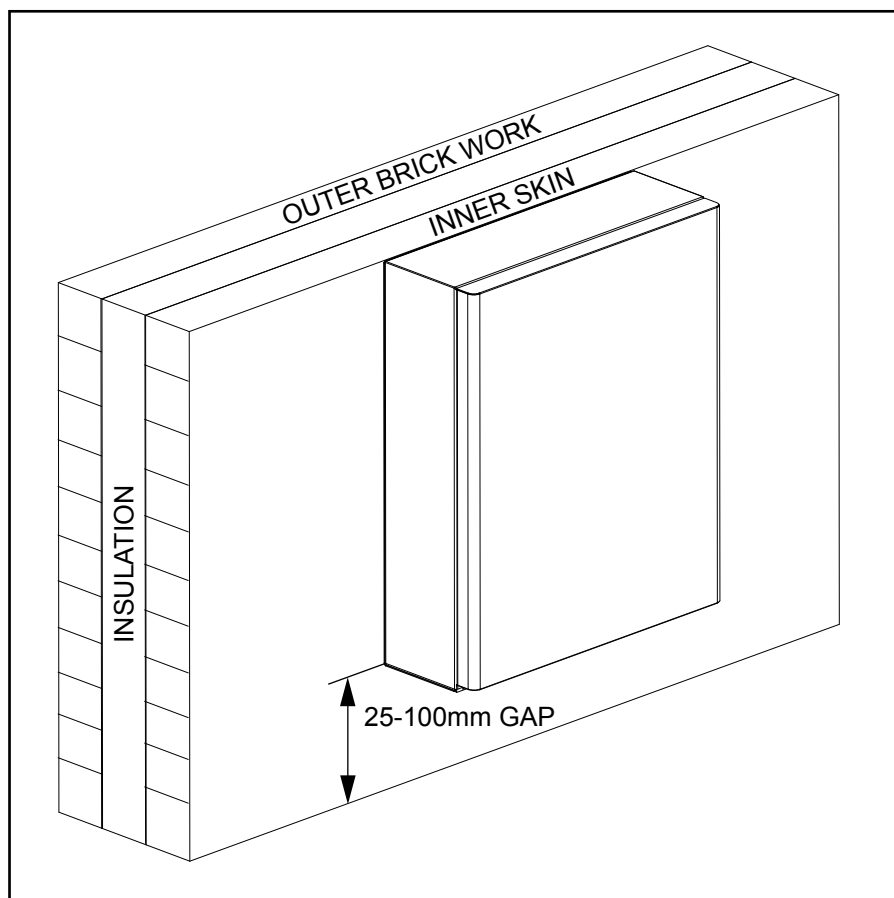


FIGURE 3: INSTALLATION SURFACE MOUNTED

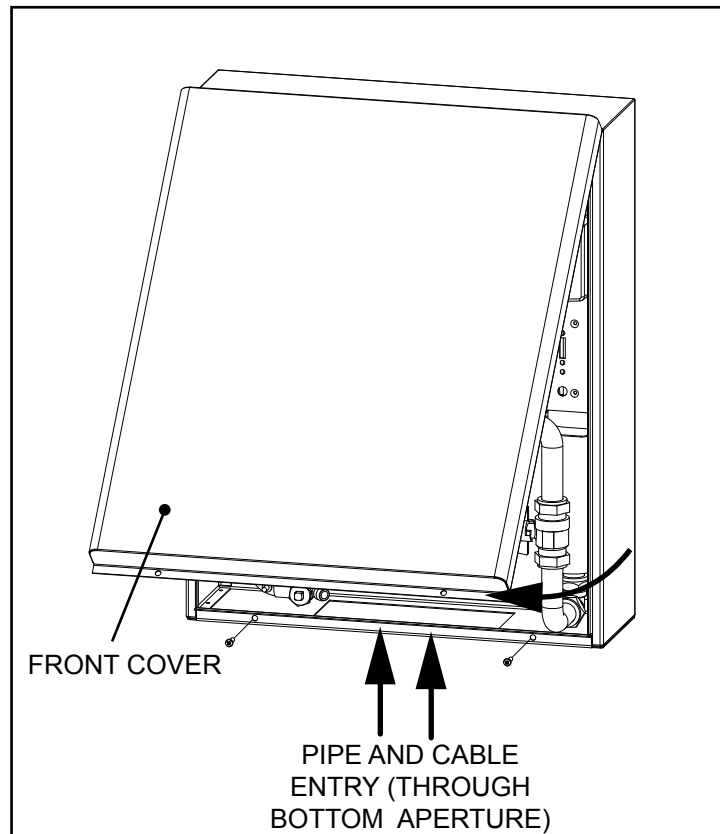


FIGURE 4: FRONT COVER REMOVAL

- 1 Remove the cover.
- 2 Having completed the site checks (see page 7), mark the position of the boiler mounting holes on the wall, using the template supplied. *Tip: a gap of 25 – 100mm between the bottom of the boiler and the finished floor surface will aid pipework connections.*
- 3 Securely mount the boiler onto the wall. Ensure that the boiler casing is not distorted in any way.
- 4 Follow the instructions for 'Connecting to the Manifold' (see page 11).
- 5 The boiler and casing must be protected when screeding.

INSTALLATION - PARTIALLY BUILT INTO WALL

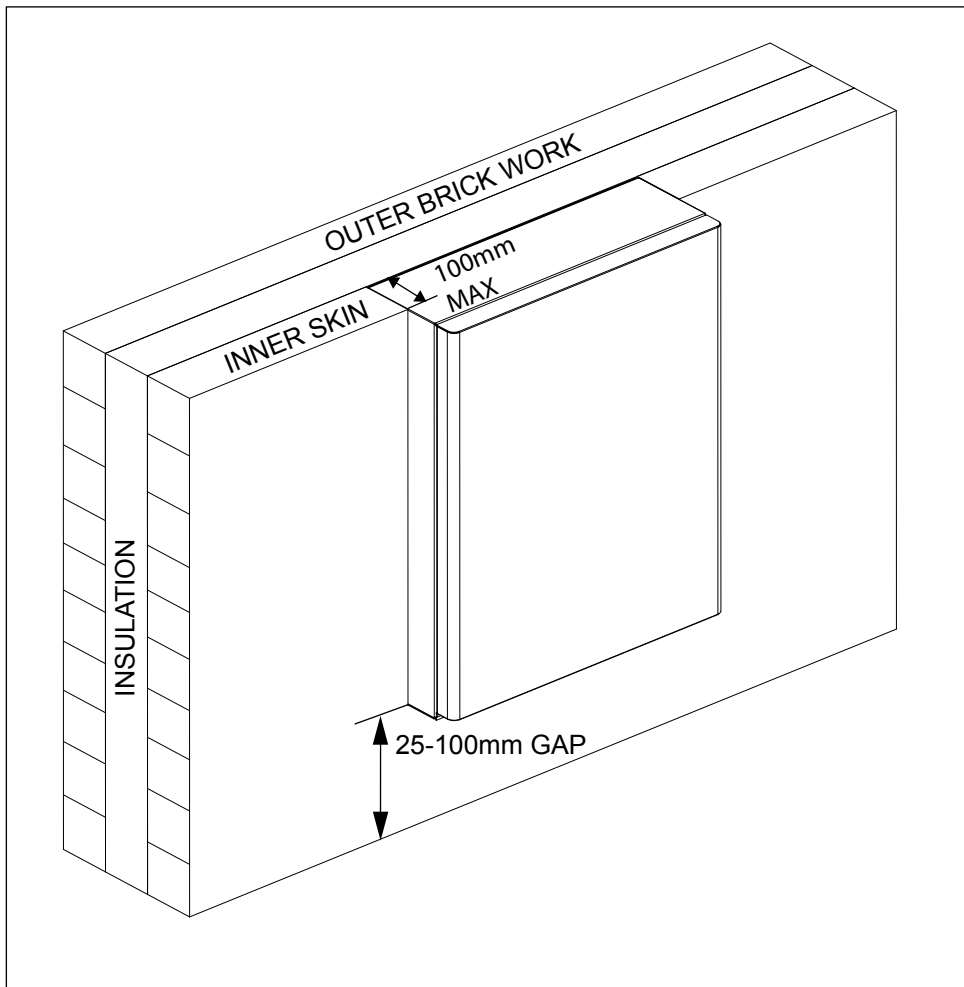


FIGURE 5: INSTALLATION PARTIALLY BUILT INTO WALL

1. Check that on completion there is insulation behind the boiler assembly.
2. Remove the cover.
3. The case can be fitted or built into the wall, up to a maximum depth of 100mm (ideally on an outside wall and secured with mastic). Care must be taken to ensure that the case is not damaged or distorted. Protect the case from rain and any damage during construction of the property.
4. Follow the instructions for 'Connecting to the Manifold' Page 11.
5. The boiler and casing must be protected when screeding.

CONNECTING TO THE MANIFOLD

1. Mount the boiler on the wall and connect up the pipework before laying down the screed.
2. When laying the underfloor heating loops the first pipe end should be connected to the manifold before the loop is laid. Push one end of the first loop through the aperture in the bottom of the boiler casing, behind the return manifold, and connect to the left hand 'FLOW' manifold (see below for connecting to pipework). After positioning loop connect other end to left hand 'RETURN' manifold. Repeat for second loop on right hand side.
3. Connect a discharge pipe to the Pressure Relief Valve and route to the outside. This pipe must be installed with a constant fall from the Pressure Relief Valve, and discharge in a visible position causing no danger to persons in or about the property.

CONNECTING TO UNDERFLOOR PIPEWORK

1. Always use internal pipe supports.
2. Cut the pipe end to the desired length. Ensure the cut is clean and the end cut square.
3. Use appropriate pipe adaptor for your pipe type (not supplied). Unscrew the adaptor. Insert the pipe fully. Tighten the adaptor.

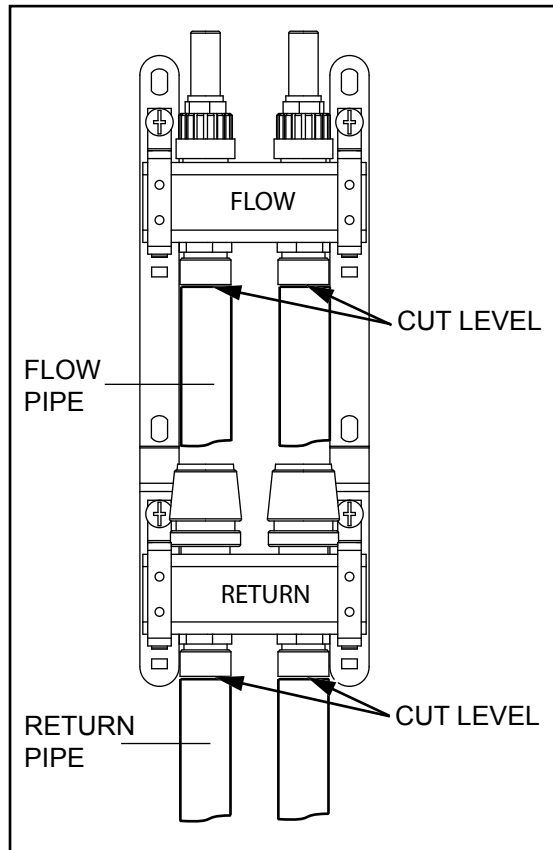


FIGURE 6: CONNECTING TO THE MANIFOLD

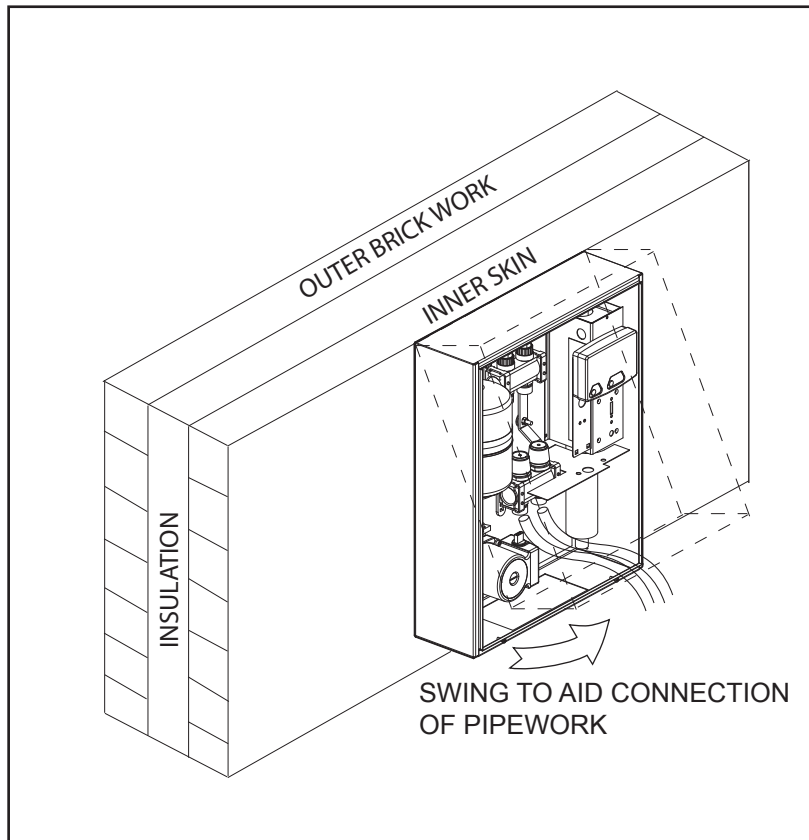


FIGURE 7: CONNECTING TO THE MANIFOLD

FILLING AND VENTING

Having completed the pipework connections, the boiler is now ready to be filled. It is suitable for filling using hosepipes.

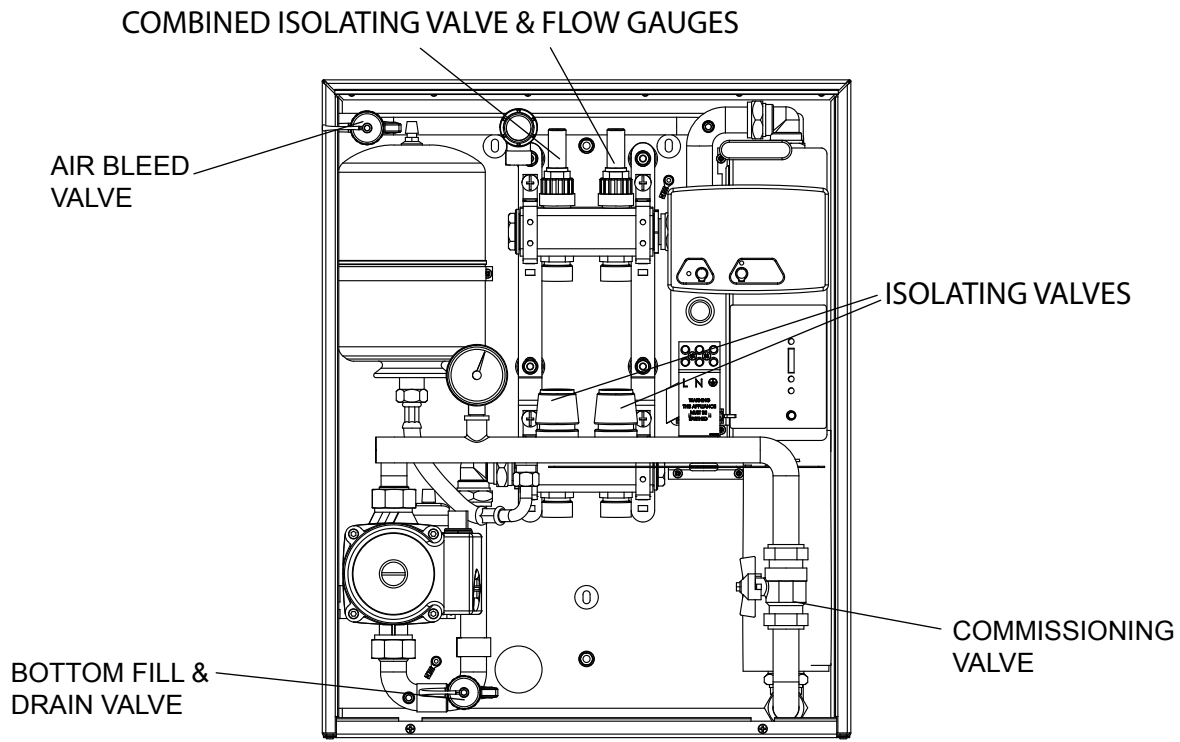


FIGURE 8: FILLING AND VENTING

1. Connect a hosepipe to the AIR BLEED VALVE (Top connector) using a suitable hose clip, and the other end to a suitable drain.
2. Connect a hosepipe to the BOTTOM FILL & DRAIN VALVE, using a suitable hose clip, and the other end to a water supply capable of supplying 1 to 1.5 BAR pressure.
3. Close 1/4 turn COMMISSIONING VALVE.
4. Open left hand side ISOLATING VALVE on lower manifold return port by:
 - a) Holding the lower serrated ring stationary.
 - b) Turning the upper knob fully anti-clockwise.
5. Open left hand side COMBINED ISOLATING VALVE & FLOW GAUGE by:
 - a) Removing white plastic locking ring using 2 small screwdrivers as shown (Fig. 9a).
 - b) Open isolating part of valve fully by turning anti-clockwise (fig. 9b) NOTE: The gentle use of small grips may be necessary.
 - c) Open flow control part of valve fully by turning anti-clockwise (fig. 9c).
6. Open AIR BLEED VALVE fully.
7. Ensure water supply is on.
8. Gently open bottom fill and drain valve to allow water to flow around left hand side heating loop.
NOTE: WHEN USING MAINS WATER PRESSURE ABOVE 2 BAR TAKE CARE TO KEEP SYSTEM PRESSURE ALWAYS BELOW 2 BAR.

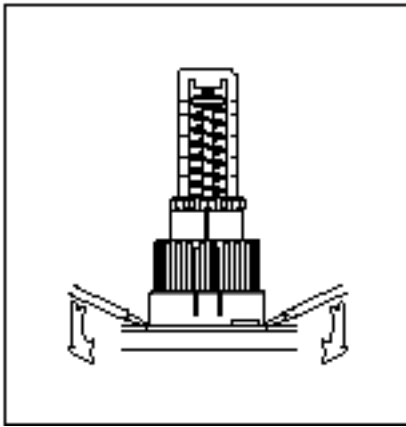


Figure 9a

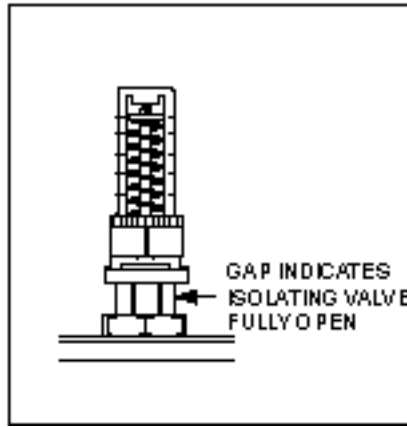


Figure 9b

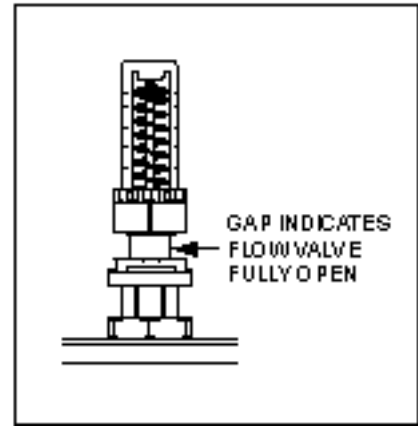


Figure 9c

9. When water discharging from AIR BLEED VALVE is free of air:
 - a) Close BOTTOM FILL & DRAIN VALVE.
 - b) Close left hand side isolating valve on lower manifold.
10. Repeat 4 to 8 for right hand side loop.
11. When water discharging from AIR BLEED VALVE is free of air:
 - a) Open ISOLATING VALVE on lower manifold for left hand side loop.
 - b) Open 1/4 turn COMMISSIONING VALVE.
12. When water discharge from AIR BLEED VALVE is free of air:

Using both the AIR BLEED VALVE and BOTTOM FILL & DRAIN VALVE set system pressure to 1 to 1.5 BAR. NOTE: TAKE CARE TO KEEP SYSTEM PRESSURE BELOW 2 BAR.
13. At this stage check there are **no** leaks inside and outside of the boiler. Check all the connections and joints in the boiler, especially above the heat exchanger. The pressure reading should remain steady.

At this stage of installation the screed should be laid, if not already done so.

INSTALLATION - ELECTRICAL

WARNING: This appliance must be earthed. It is suitable for a.c. supply only. Disconnect the electrical supply before removing the cover. Installation must be in accordance with the current IEE Wiring Regulations.

1. The 2.5kW underfloor boiler must be installed by qualified, competent personnel in accordance with supplied instructions and drawings to ensure correct installation.
2. Check there is sufficient mains electrical supply for continuous operation of the boiler. Remember to also take account of supply requirements for the rest of the loading in the extension/conservatory.
3. A double pole isolating switch, with a contact separation of at least 3mm in both poles, should be incorporated in the electrical supply. The supply should be fused 13 Amp.
4. The nominal cross sectional area of the supply cable must be a minimum of 1.5mm².
5. The outer sheath of the cable must be secured using the cable clamp provided.
6. Connect the cable to the terminal block as follows:

BROWN or RED to the terminal block marked "L"
BLUE or BLACK to the terminal block marked "N"
GREEN/YELLOW or GREEN WIRE to terminal marked \oplus .
If using "Twin and Earth" cable, the bare earth wire must be sleeved.
7. **Check the main electrical power connections are tight.** Loose connections can cause a fire and will invalidate the warranty.
8. Before connecting the electrical supply, ensure the system is full of water, set to the correct pressure and there are no leaks. Only then can the electrical supply be switched on.
9. On completion of the work the installation must be tested in accordance with IEE Regulations.

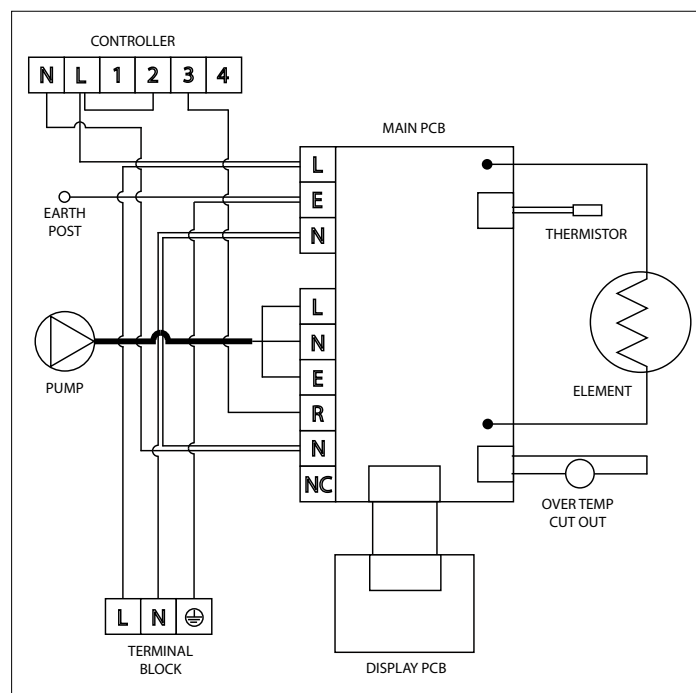


FIGURE 10: BOILER SCHEMATIC WIRING DIAGRAM

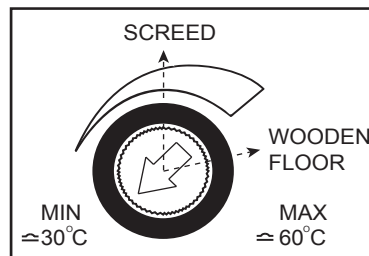
COMMISSIONING

The boiler is fully automatic, making the operation very simple.

NOTE: During commissioning if the electrical supply is interrupted, the RF Control Receiver unit may delay recognition of the thermostat shown by CH1 not illuminating. To speed recognition operate button CH1.

1. Ensure that the Programmable Room Thermostat (page 18) is set to 5°C (Normally system will stay 'OFF') NOTE: If the room temperature is below 5°C the Amptec system will operate, the instructions have been worded assuming room temperature is above 5°C.
2. Set the temperature control on the Amptec Boiler Front Panel to MINIMUM (turn anticlockwise).
3. Switch on the electrical mains supply.
4. Check the Amptec Boiler SUPPLY light is illuminated.
5. Holding the Programmable Room Thermostat in close proximity to the boiler, set the demand temperature on the Programmable Room Thermostat to HIGH using \wedge and \vee (check that the flame symbol is visible in the display on the programmer).
6. Check the Amptec Boiler CALL illuminates (flashing) and that the pump operates. After approximately 3 minutes the CALL light indicator will be solid, the HEAT light on the Amptec Boiler will begin to rise. At full HEAT the Amptec Boiler is producing full power.
7. Check and adjust the Flow Meters to the flow rates specified in Figure 11 using the controls in item 5 on page 13.
Refit white plastic locking rings and push fully home against the flow manifold.
8. Check the pressure gauge. The pressure reading should increase due to the action of the pump. Should it fall below 1BAR, top up the system.
9. Check that the temperature in the flow pipes starts rising. This may take some time dependant upon the size and temperature of the floor.
10. Adjust Amptec temperature control to suit floor type:

- a) Screed floor \approx 45°C
- b) Wooden floor \approx 50 - 55°C



11. Set the demand temperature on the Programmable Room Thermostat to 5°C. Observe that the flame symbol is extinguished. Check the Amptec Boiler HEAT and CALL lights extinguish and check the pump stops.
12. It will be necessary to bleed air from the system. This must be done via the pump air bleed. Ensure any pressure drop is reinstated with water to maintain a system pressure of 1 BAR when COLD.
13. Fit the front panel and repeat the operation with the Programmable Room Thermostat when it is placed in its operational position. Check that the boiler operates.
14. After commissioning the system must be flushed out in accordance with BS 7593:1992, before adding the inhibitor. After flushing, the correct amount of inhibitor must be added before use. Fernox 'Superconcentrate' or MB-1 or BetzDearborn Sentinel X 100 can be used in most water areas, however we recommend you should check with your local water authority to ensure suitability. Check the inhibitor concentration after installation and periodically thereafter to ensure correct protection. NOTE: Follow relevant sections of "Filling and Venting" and "Commissioning" to REMOVE AIR FROM THE SYSTEM.

FAILURE TO FLUSH PROPERLY OR USING INADEQUATE INHIBITOR IN THE SYSTEM WILL INVALIDATE THE WARRANTY.

15. Ensure the customer fully understands the operation of the system.

FLOW RATES

Typical loop flow rates (litres/min), for varying loop lengths, floor output (W/m²) and pipe spacing are shown on the table below.

| Loop Length (m) | Pipe Spacing (200mm) | | Pipe Spacing (150mm) |
|--------------------|----------------------|---------------------|----------------------|
| | 50 W/m ² | 70 W/m ² | 100 W/m ² |
| 50 | 1.00 | 1.40 | 1.44 |
| 75 | 1.50 | 2.10 | 2.15 |
| 100 | 2.00 | 2.80 | 2.87 |
| 120 | 2.40 | 3.22 | 3.44 |

Figure 11: Flow Rates

USER INSTRUCTIONS

The boiler is fully automatic and therefore the heating system is very simple to operate. With the system powered up, the remote Programmable Room Thermostat controls the heating.

The Programmable Room Thermostat operates the heating to maintain the required comfort level.

Tip: underfloor heating reacts slightly differently to traditional radiator systems; the response/warm up period is generally longer. When programming the night (set-back) temperature, do not set the temperatures too low. This will enable the heating to pull up the temperature more rapidly to provide the required comfort levels sooner.

The Programmable Room Thermostat also has the facility to give frost protection (set to 5°C).

WARNING: DO NOT SWITCH ON THE BOILER IF THERE IS A POSSIBILITY THAT THE WATER IN THE BOILER IS FROZEN.

If thought to be frozen, unit must not be switched on. It must be left to thaw and must be thoroughly inspected, by a competent professional, to ensure it is totally thawed and undamaged.

DANFOSS CONTROLLER

Remote Stat Positioning:

The Programmable Room Thermostat controls the boiler. There are NO wire connections between it and the boiler. The Programmable Room Thermostat uses a radio frequency technique to send commands to the boiler where there is an RF receiver.

The Programmable Room Thermostat should be placed inside the same room as the area being heated by the boiler. The boiler casing is steel, which will attenuate the signal (reducing signal strength), therefore the Thermostat should be kept in close proximity to the boiler. Care must be taken if the boiler is placed outside of the heated area, check that the Thermostat can still communicate with the boiler.

From the top left hand corner of the controller ensure the following clearances are in place around it:

to the right: min 140mm to the left: min 15mm above: min 30mm below: min 100mm

The controller must be positioned where it will not be affected by temperature variations; radiators, doors and windows should be avoided to maintain correct temperature control. The controller should be positioned 1.5m from the floor.

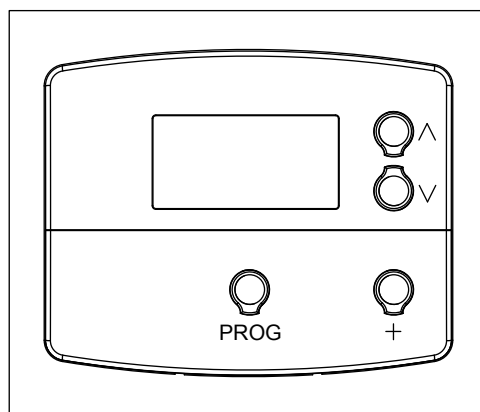


FIGURE 12: DANFOSS - PROGRAMMABLE ROOM THERMOSTAT

Quick set up guide:

1. Place batteries inside controller and replace battery cover.
2. Press PROG once.
3. Adjust the time by using the + and – buttons. If you hold either of these buttons down, the time will change more quickly.
4. Press PROG once.
5. Adjust the day by using the + and – buttons. For reference, Monday = 1, Tuesday = 2 etc.
6. Leave the controller for 2 minutes and it will revert to its normal display mode (showing time, day and temperature).
7. Your boiler will now operate at factory default settings, which many people find suitable for their needs. On weekdays this will increase operating temperature in the morning, at midday and in the evening. At weekends operating temperature will be greatest during the daytime.

Customising your programme:

1. Customising your boiler programme is explained in the TP5000 instruction manual, supplied in the box with the controller. It is recommended that you read the TP5000 manual before attempting to customise the programme.
2. If you are not able to find the TP5000 instruction manual, please refer to the Danfoss web site, www.danfoss.co.uk, where it can be viewed and downloaded.

Resetting the controller:

To reset the unit, press the +, -, \wedge and V simultaneously. This will reinstate the factory default programme (12:00 on day 1 at 20°C).

Battery replacement:

When batteries are low, a battery symbol will flash on the display. The controller will run for another 15 days before switching off. Replace old batteries within 1 minute to prevent programming loss.

CLEANING

Use only a damp cloth and mild detergent to clean the boiler outer casing. Do not use abrasive cleaners. Do not allow water inside the boiler. Do not immerse in water.

To clean the flowmeters on the manifold:

1. Remove white plastic locking ring using 2 small screwdrivers as shown (Fig. 9a).
2. Close the isolation valve fully, then remove the window by securing the flow valve with a 17mm ring spanner, then unscrew the window.
3. Clean the window and screw it back on.
4. Open isolation valve fully, adjust flow rate to desired setting and then refit white plastic locking ring.

SERVICING

IT IS ESSENTIAL THAT THE SYSTEM PRESSURE IS CHECKED ON A REGULAR BASIS AND MAINTAINED AT 1 BAR WHEN COLD.

THE EXPANSION VESSEL PRESSURE SHOULD BE CHECKED AND SET TO 0.75-1BAR. ENSURE THAT THE SYSTEM PRESSURE IS AT ZERO BEFORE CHECKING THE EXPANSION VESSEL. REINSTATE THE SYSTEM PRESSURE BEFORE OPERATION.

Annual checks must include the electrical connections and inhibitor concentration.

Before any servicing or maintenance is carried out on the system, ensure that the electrical supply has been disconnected first. Care must be taken as the water may be scalding hot and at high pressure.

Check the main electrical power connections are tight. Loose connections can cause a fire.

AFTER SALES INFORMATION

For aftersales information and technical support please contact:

Heatrae Sadia
T 0844 871 1535,
F 0844 871 1528
email heatraesadiaservice@heateam.co.uk

FAULT FINDING

| FAULT | POSSIBLE CAUSE AND SOLUTION |
|---|--|
| <p>Floor is not getting warm after 24hrs of continuous operation.</p> | <p>Underfloor heating loops are airlocked or closed. Please see section 'Filling and Venting' for details of how to correct this.</p> <p>1/4 turn commissioning valve has not been reopened after filling and purging the system. Please ensure the valve is in the open position i.e. handle is parallel to pipe.</p> <p>Circulating pump speed is set too low or installed incorrectly. Ensure that orientation of pump is correct and set to speed 2.</p> <p>Lockshield valves on return side of manifold incorrectly set. Ensure that return manifold valves are fully opened i.e. anticlockwise.</p> <p>Room thermostat may be operating in setback mode. Check the current status of the controller using the remote stat.</p> <p>Individual UFH loops are incorrectly balanced. Ensure that flow rates for each loop are similar by checking the flowmeters and adjusting accordingly.</p> <p>Thermal resistance of the floor covering exceeds 0.15m² K/W; this value is the suggested limit for floor covering resistance as defined in BS EN 1264. Change your floor covering to a more underfloor heating friendly surface such as ceramic or stone tiling or wooden/floating floors.</p> |
| <p>Alarm indicator illuminates flashing red.</p> | <p>There is a problem due to a lack of water in the system. Switch electrical supply off, ensure the system is filled and set to the correct temperature. See 'Filling and Venting' section of instructions. Switch electrical supply on again.</p> |
| <p>Alarm indicator illuminates flashing red and the Call indicator illuminates red.</p> | <p>There is a problem with the flow of water in the system. Switch electrical supply off, follow the commissioning procedure and ensure all valves are open. Switch electrical supply on again.</p> |
| <p>System is noisy.</p> | <p>Noise can be normal with new installations but this should settle down in a short period. Check inhibitor strength; see commissioning procedure.</p> |

IF THE SUPPLY CORD IS DAMAGED IT MUST BE REPLACED BY A QUALIFIED PERSON IN ORDER TO AVOID A HAZARD.

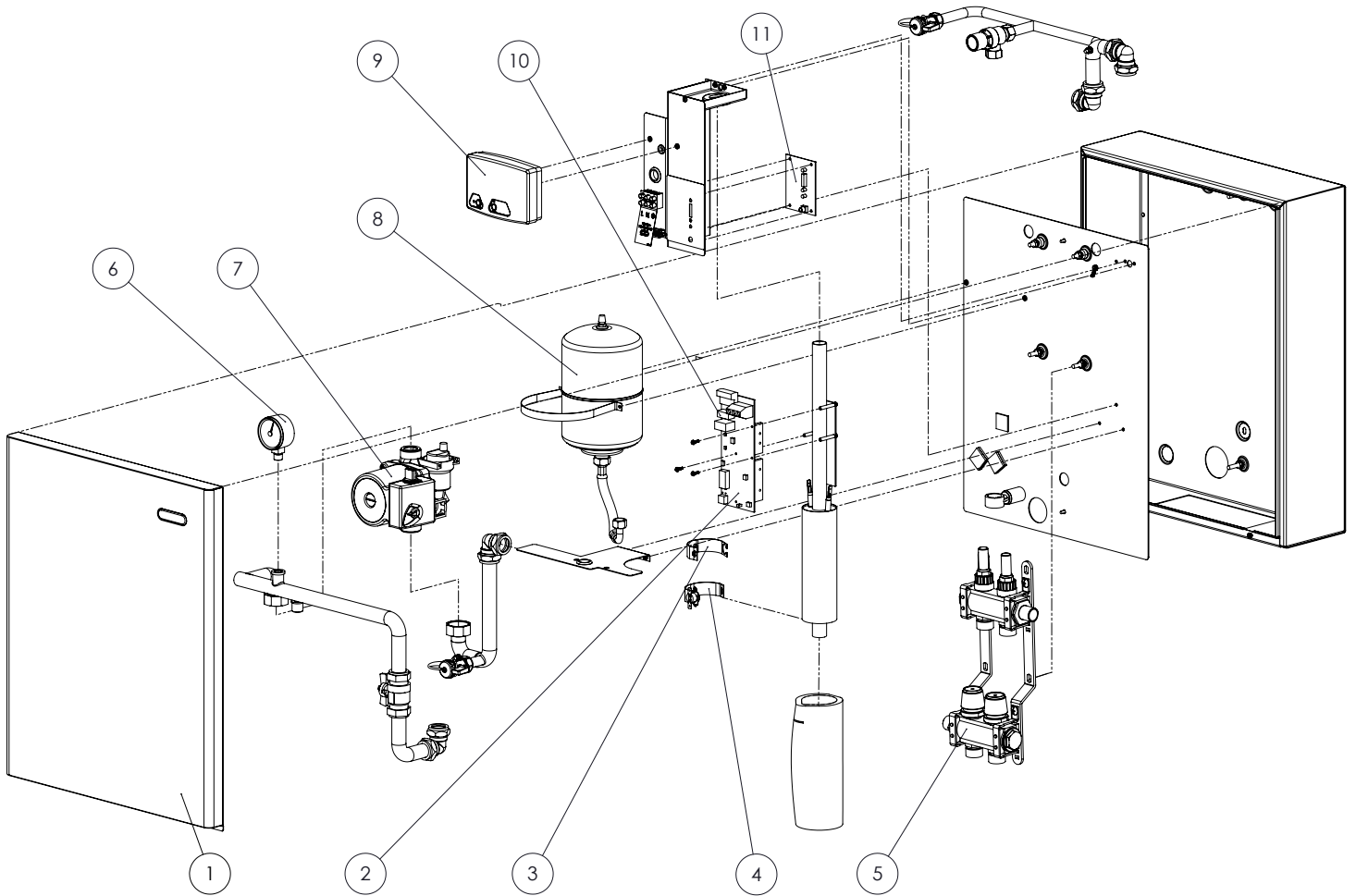
BOILER ALARM RESET

There are 3 steps to reset a tripped condition.

1. Switch OFF the electrical supply.
2. Correct the fault. Check the system is full of water, set to the correct pressure and that there is a good flow of water, i.e. all the valves are open.
3. Switch the electrical supply back ON.

The Boiler must NOT be operated if it is known to have a fault. Switch off and call a service engineer.

SPARES



| No. | Part Number | Description |
|-----|-------------|------------------------------|
| 1 | 95614112 | Front Cover |
| 2 | 95615054 | PCB Main |
| 3 | 95612706 | Thermistor Assembly |
| 4 | 95613628 | Temperature Switch Assembly |
| 5 | 95607182 | Manifold 2 Port |
| 6 | 95607180 | Pressure Gauge |
| 7 | 95605044 | Pump Grundfoss |
| 8 | 95607181 | Expansion Vessel |
| 9 | 95607179 | RF Control Danfoss TP5000-RF |
| 10 | 95612709 | Boiler Fuse |
| 11 | 95615048 | PCB Control |
| | 95607178 | Programmable room thermostat |

GUARANTEE

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

1. The unit has been installed in accordance with the Fitting instructions and User Guide and all relevant Codes of Practice and Regulations in force at the time of installation and that all necessary controls and safety valves have been fitted correctly.
2. The unit has not been modified or tampered with in any way, and has been regularly maintained as detailed in the Installation and User Instructions.
3. The unit has been used only for domestic heating purposes.
4. The unit is not guaranteed against damage by frost.

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

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

SPARES STOCKISTS

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