

AA FIRST

Wall Mount

Models: AAWA5



INSTALLATION INSTRUCTIONS Table of contents

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Before you start



Read and use the instructions supplied with individual kit components to understand the product and to ensure a safe installation and servicing.

This manual is also available at our website <https://www.aafirst.co.uk/>

Explanation of symbols



Read the
instructions



WARNING



Danger of
electric shock



Hot surface



Highly
flammable

Explanation of acronyms

DMM - Digital multi meter.



Compliance

In the UK the system must be installed and maintained in accordance with water supply byelaws, current IEEE regulations and local authority byelaws.

Safety

This appliance is not intended for use by children under 8 years or persons (including children under 8 years) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the 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.

Cleaning and user maintenance shall not be made by children without supervision.

Qualifications

To avoid hazards, all installation procedures must be carried out by a suitably qualified tradesperson. The power cable and power outlet must be in a safe visible position for connection.

Venting

Sometimes steam and / or boiling water droplets may discharge through the vent / overflow outlet on the appliance.

Lifting

Take care when lifting. The appliance may exceed safe lifting limits. If you feel this is beyond your personal capabilities, please seek assistance with the lift. Do not lift the appliance by the front cover or any of its connections.

Airflow

The appliance operates within the ambient temperature range 5°C - 30°C. Proper air circulation must be provided. The system will operate satisfactorily only if the recommended air gaps are provided.

Frost protection

This appliance is not designed for outdoor use. Ensure that the appliance is not installed in an area where the ambient air temperature cannot fall below 5°C.

If the ambient air temperature should fall below 5°C when the system is not in use, do not turn off the appliance electrically to prevent it from freezing. This safeguard does not offer the same protection to the connecting pipework and fittings.

In case of accidental freezing, ensure that ambient environmental conditions around the appliance are above the minimum operating temperature of the appliance.

Turn off the electricity and water supplies for 12 hours to allow the appliance to defrost, then turn back on.

Servicing

Service procedures must be carried out by a suitably qualified and trained tradesperson.

Access to the interior of the appliance to perform service operations is restricted. A screwdriver is required to remove the access covers.


The appliance must be disconnected from its power source during service and when replacing parts.

During service the person servicing the appliance must be able to check from any of the points around the appliance to which he has access, that the appliance is disconnected from its power source.

Application

The appliance is intended to be installed in a commercial environment, where it is supervised by a trained operator, who can also train staff in its safe use.



- FOR CONTINUED SAFETY OF THIS APPLIANCE IT MUST BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
-  The appliance must be earthed, earthing is provided via the power cable. The resistance of the earth connection to each exposed metal part must be less than 1Ω. It is the responsibility of the installer to ensure the power point is earthed.
- All installation and service work must be completed by trained and suitably qualified tradespeople. Faulty operation due to unqualified persons working on this product may void warranty coverage.
- Electrical installation must conform to current IEEE wiring regulations.
- When using fixed wiring, the bare section of earth must be sleeved to within 8mm of the end.
- As the installer, it is your responsibility to install the appliance safely to local regulations and relevant standards and to supply and install all valves as required by local regulations and relevant standards.
- The appliance is rated for 220-240V 50Hz AC operation.
- All appliances must be connected to the mains supply via an all-pole disconnection isolator switch.
- In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device such as a timer, or connected to a mains supply that is regularly switched on and off.
- For service work, do not remove the cover of the appliance under any circumstances without first isolating it from the power supply.
- Connect only to a potable (wholesome, cat1) mains water supply.
- Never locate the system near, or clean with water jets.
- Do not expose the appliance to the elements of nature.
- A pressure limiting valve must be fitted for mains water pressures above the max. limits stated.
- Use of tools can be hazardous, assess the risks before you start.
- A clearance envelope around the appliance must be provided to allow adequate ventilation and service access for safe and effective use.
- Valve and fitting threads must be sealed appropriately with PTFE tape where compression seals are not provided. Do not over tighten plumbing and hose connections.
- The power cord and power outlet must be in a safe and accessible position after installation. When positioning the appliance, ensure the power supply cord is not trapped or damaged. If it is damaged it must be replaced by an AA First service provider or a qualified electrician.
- For safe operation, the appliance is designed to be installed, commissioned and used within 48 hours. Should it not be required for an extended period of time, do not fill and commission until ready for first use.
- For water taste and quality reasons, following any non-use period of more than 48 hours, AA First recommends to perform a system flush. Failure to flush the system may affect water quality.
- For UK, this appliance only contains materials that conform to the requirements of BS6920:2014 'Suitability of non metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of water'.
- AA First cannot be held responsible for any appliance malfunction if the water pressure exceeds that stated. If in doubt, consult your water supply company.
- AA First cannot be held responsible for lime-scale related problems even when a lime-scale reducer has been installed.
- Whilst reasonable precaution is taken to prevent an overflow, AA First cannot be held responsible for any damage caused as a result of incorrect installation or blockage of the overflow or failure to direct

SECTION 3 WARNINGS & REGULATORY INFORMATION

the overflow to a safe outlet.

- To meet WRAS installation requirements, an approved single-check valve providing back-flow prevention protection, should be fitted at the point of connection between the water supply and the appliance.
- Water that has been treated by the reverse osmosis process can become aggressive (due to lack of minerals or ions), and in extreme cases can cause leaching and corrosion of pipes, fittings and other metal parts within the appliance.
- If the appliance is being fed by water treated by reverse osmosis, AA First strongly recommend that the water is tested regularly.
- If micro-bore pipe is used instead of the inlet hose supplied, the size must be minimum OD 3/8"(10mm).
- If using a detachable hose set, only use a new detachable hose set. Do not re-use old hose sets.
- Place the appliance in an environment suitable for its size and use, making sure that it is placed in a horizontal position, make sure that the appliance does not have an inclination greater than 2° on any axis.
- The appliance does not use materials containing flammable blowing gases.
- The appliance does not contain asbestos or oils containing polychlorinated biphenyl.

4.1 Technical data table

Model	Unit	AAWA5
Width	mm	290
Depth*	mm	205
Height	mm	432
Supply voltage	V	230V 50Hz AC
Power rating	kW	3
Power supply required		single phase
Fill type		Automatic
Capacity	L	5
Rapid draw off	L	5
Weight (empty)	kg	7.5
Weight (full)	kg	14.7
Water supply pressure	bar MPa	2.0 - 7.0 0.2 - 0.7
A weighted emission sound pressure	dB(A)	less than 70

Note *Depth measurement excludes tap protrusion (+85mm).



A pressure limiting valve must be fitted for mains water pressures above the max. limits stated above in accordance with local plumbing regulations.

SECTION 5 General product description

5.1 Introduction

This manual has been designed to be a guide for service engineers.

It includes descriptions of all serviceable parts and an exploded drawing of a complete appliance, sub-assemblies and wiring diagrams.

All appliances are inspected and tested in accordance with the company's ISO9001 Quality Management System and ISO14001 Environmental Management System and conform with the protection requirements of the designated standards and specifications:

5.2 Principle of operation

When switched on, the appliance first checks for water at the low-level (bottom) probe. If no water is sensed at the probe, the solenoid is energised. If no water is detected after approximately 5 minutes the solenoid switches off and the indicator will flash the "filling" light. When water is detected at the bottom probe, the heating element is switched on to heat the water to the correct temperature. When the set temperature is reached, the solenoid is pulsed on and off to allow water into the boiler. The amount allowed into the boiler is controlled to maintain the temperature. The heating element stays on during the filling cycle until the normal-operating probe and specified temperature is reached.

When the appliance has reached the normal-operating probe and the correct temperature, it goes into 'idle' mode. The heating element is pulsed periodically to maintain temperature.

SECTION 6 Switch on

6.1 Switch on, commissioning and system status



Use with caution, the appliance dispenses near-boiling water.

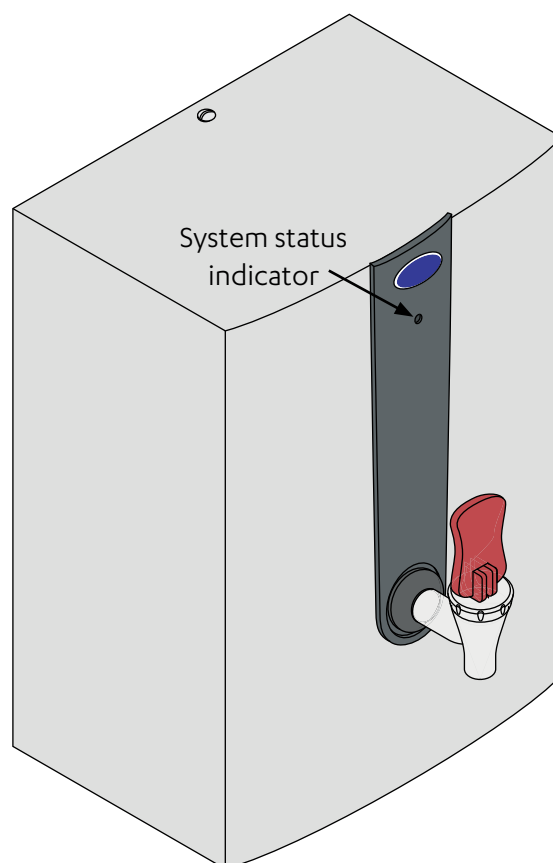
- Turn on the water supply.
- Switch on the mains power supply.
- Monitor the system status indicator.
- The system status indicator turns amber to indicate that the boiler is filling with water.
- Once primed with water, system status indicator turns red to show that the appliance is heating.
- When the appliance reaches the correct temperature the system status indicator turns green to show that the appliance is ready to dispense.
- If a filter is installed, flush the filter before first use, see the installation instructions and user guide.



In normal daily use, the appliance may be used as soon as the READY indicator comes on, but on first install, wait 15 minutes before starting to use.

System status indicator

Amber - filling Red - heating Green - ready



7.1 Servicing the tap



Proceed with caution, the appliance dispenses near-boiling water and tap surfaces may be hot.

Tap removal and replacement

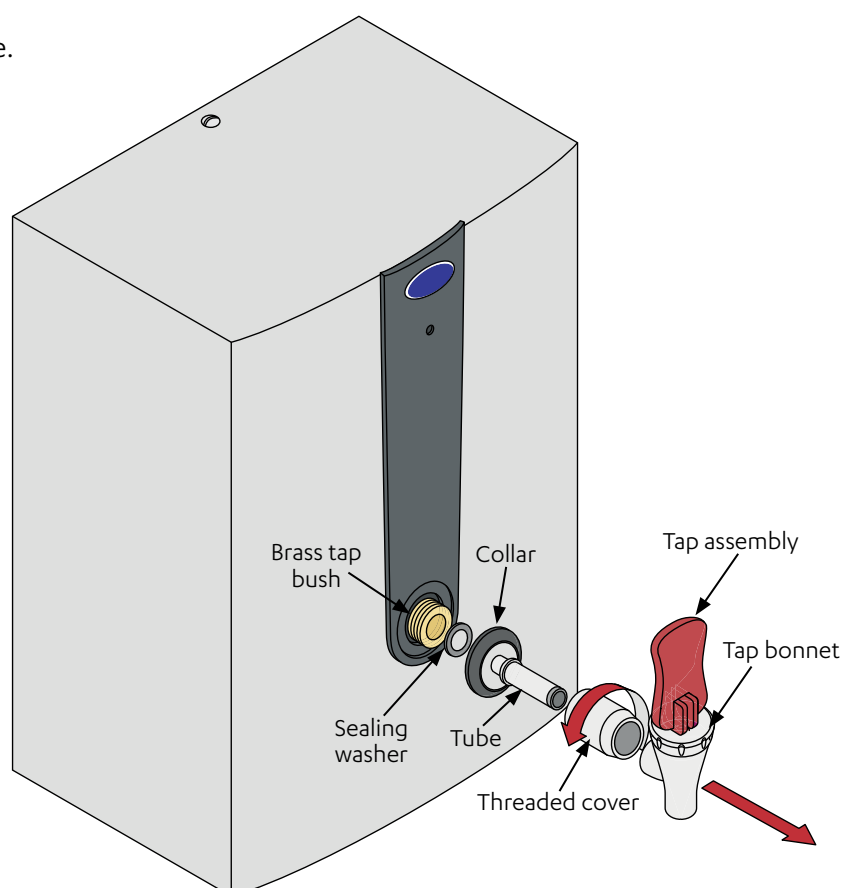
- Disconnect the appliance from the power supply.
- Isolate the mains water supply.
- Dispense water from tap until the water stops flowing.
- Use a 28mm AF spanner to remove the old tap.
- To fit the new tap :
- Ensure rubber sealing washer is in place.
- Carefully screw the tap assembly onto the brass tap bush, leaving the tap upright, as shown below.
- Tighten in position with 28mm AF spanner.
- Do not use grips that are likely to scratch the chrome plating.
- Push the grey tap collar firmly into place and twist to snugly fit against the front panel.

To replace the tap washer

- Disconnect the appliance from the power supply.
- Isolate the mains water supply.
- Dispense water from tap until the water stops flowing.
- Unscrew bonnet and remove the upper tap assembly out of the tap body.
- Remove the old washer from the tap spindle and firmly push the new washer onto the spindle.
- Screw the upper assembly back onto the body.

To replace the tap spring or bonnet

- Disconnect the appliance from the power supply.
- Isolate the mains water supply.
- Dispense water from tap until the water stops flowing.
- Push the pin out of the tap handle. (the pin has a bend in the middle).
- Unscrew the plastic bonnet to replace broken spring. (Small diameter down).
- Replace bonnet and handle.



7.2 Removing the access cover

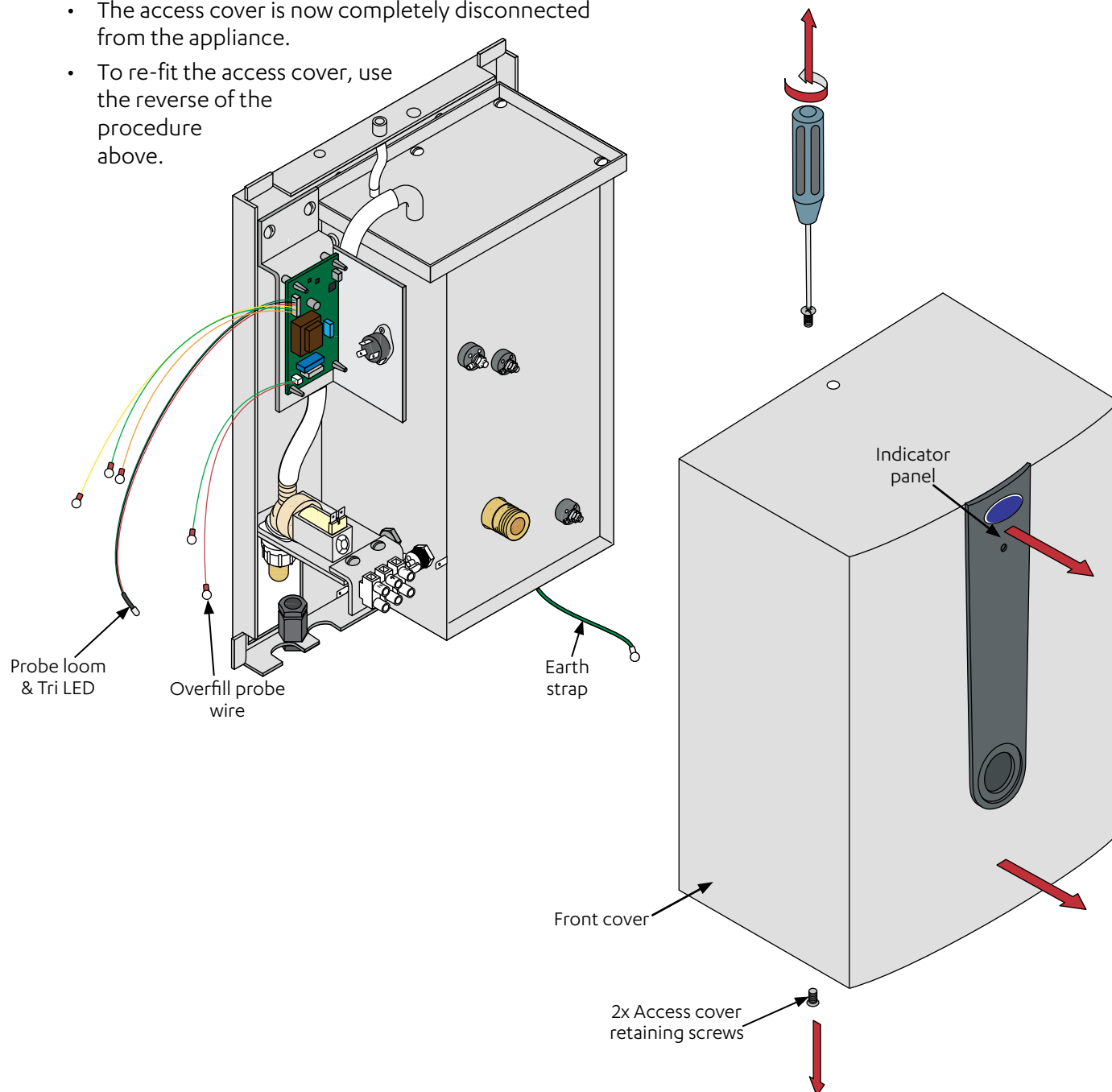


Fabricated metal edges, and limescale deposits can be sharp.
Wear appropriate PPE.



Do not remove the cover of the appliance under any
circumstances without first isolating it from the power supply.

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover by unscrewing the 2 retaining screws that secure it, as shown below.
- Pull forward, away from the appliance.
- Disconnect the Tri LED from the indicator panel inside the access cover.
- Unscrew the earth strap from the access cover.
- The access cover is now completely disconnected from the appliance.
- To re-fit the access cover, use the reverse of the procedure above.



7.3 The sensing probes

- Sensing probes are used to detect the presence of water within the tank (5-13 second response time), using a small electrical current to make a circuit via the water. They are made-up from a PTFE insulator with a stainless steel rod through the centre.
- There are three level sensing probes inside the tank (from bottom to top):
- 1. Low-level Sensor - Yellow wire.
- 2. Normal Operating Sensor - Orange wire.
- 3. Overfill detection Sensor - Red wire.
- **Note** Only the low-level and normal operating sensors are used in normal operation.
- **Common problem:** Hard-water in some parts of the UK causes a build-up of lime-scale on the sensing probes, which acts as an insulator (e.g. the sensor is no-longer able to detect the presence of water). When a sensor becomes insulated, the water level will switch to a different sensor. If no action is taken, the water will reach the Overfill sensor and shut the water inlet and heating off.

Water with low mineral content

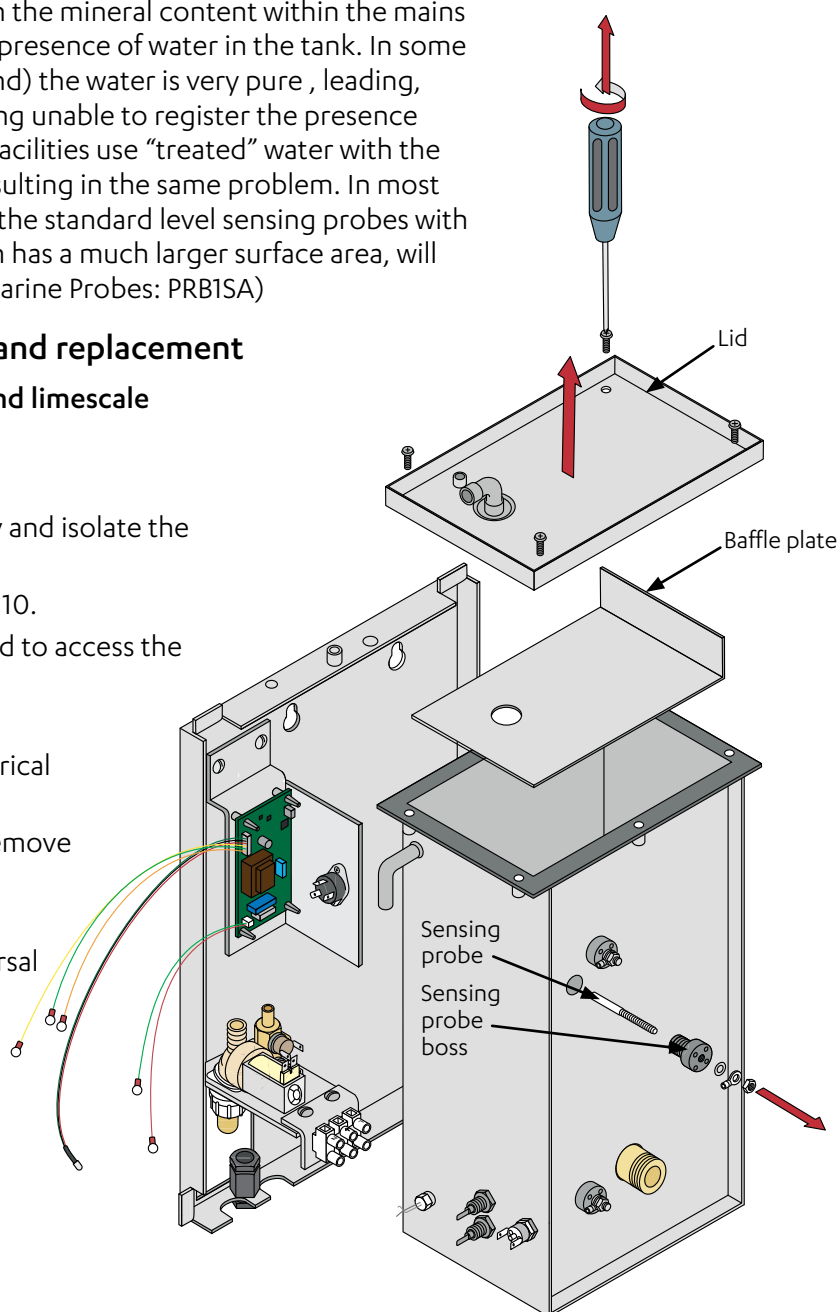
- The level sensing probes depend on the mineral content within the mains water supply in order to detect the presence of water in the tank. In some parts of the UK (e.g. parts of Scotland) the water is very pure, leading, in extreme cases, to the probes being unable to register the presence of water. Similarly, some off-shore facilities use "treated" water with the mineral content removed, again resulting in the same problem. In most circumstances, the replacement of the standard level sensing probes with an alternative "marine" probe which has a much larger surface area, will resolve the problem (Part No. for Marine Probes: PRB1SA)

Sensing probes & boss removal and replacement



**Fabricated metal edges, and limescale deposits can be sharp.
Wear appropriate PPE.**

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see page 10.
- Drain the tank & unscrew the tank lid to access the inside of the tank, see page 20.
- Remove the baffle plate.
- Disconnect the sensing probe electrical connection.
- Unscrew the sensing probe nut & remove (18mm AF spanner).
- Pull out the probe assembly.
- Sensor probe replacement is a reversal of the above procedure.



7.4 The thermistor (thermal resistor)

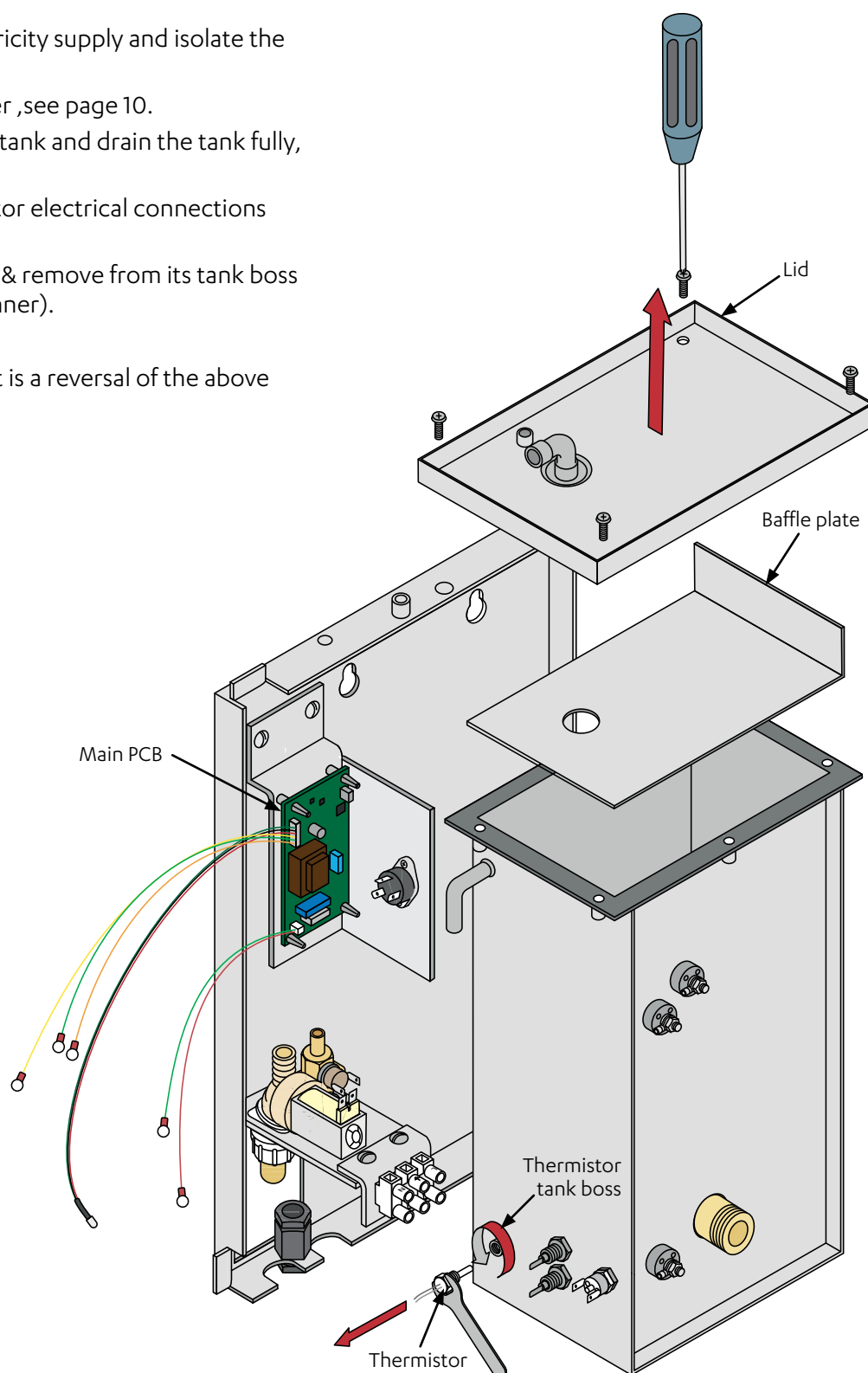
- The thermistor is an electronic device used in place of a thermostat, to measure the temperature of water. It is constructed using a thermally sensitive resistor which exhibits changes in electrical resistance with even a slight change in water temperature, making it extremely accurate (+/- 1.2 degrees Celsius).
- The appliance uses a screw in type thermistor and is sealed with an o-ring.

Thermistor removal and replacement



**Fabricated metal edges, and limescale deposits can be sharp.
Wear appropriate PPE.**

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see page 10.
- Access the inside of the tank and drain the tank fully, see page 20.
- Disconnect the thermistor electrical connections from the main PCB.
- Unscrew the thermistor & remove from its tank boss (13mm open ended spanner).
- Pull out the thermistor.
- Thermistor replacement is a reversal of the above procedure.



7.5 The heating element

- The heating elements are made from Incoloy 800 material, which gives them a long life expectancy. They are sealed into the tank by three silicone rubber washers and secured by 1/4" BSP brass lock-nuts.

Element rating

- XEN175SP 3.0kW Heating element for the AAWA5.

Element Resistance

- 3.0kW : 19-20 Ω .

Element Current rating

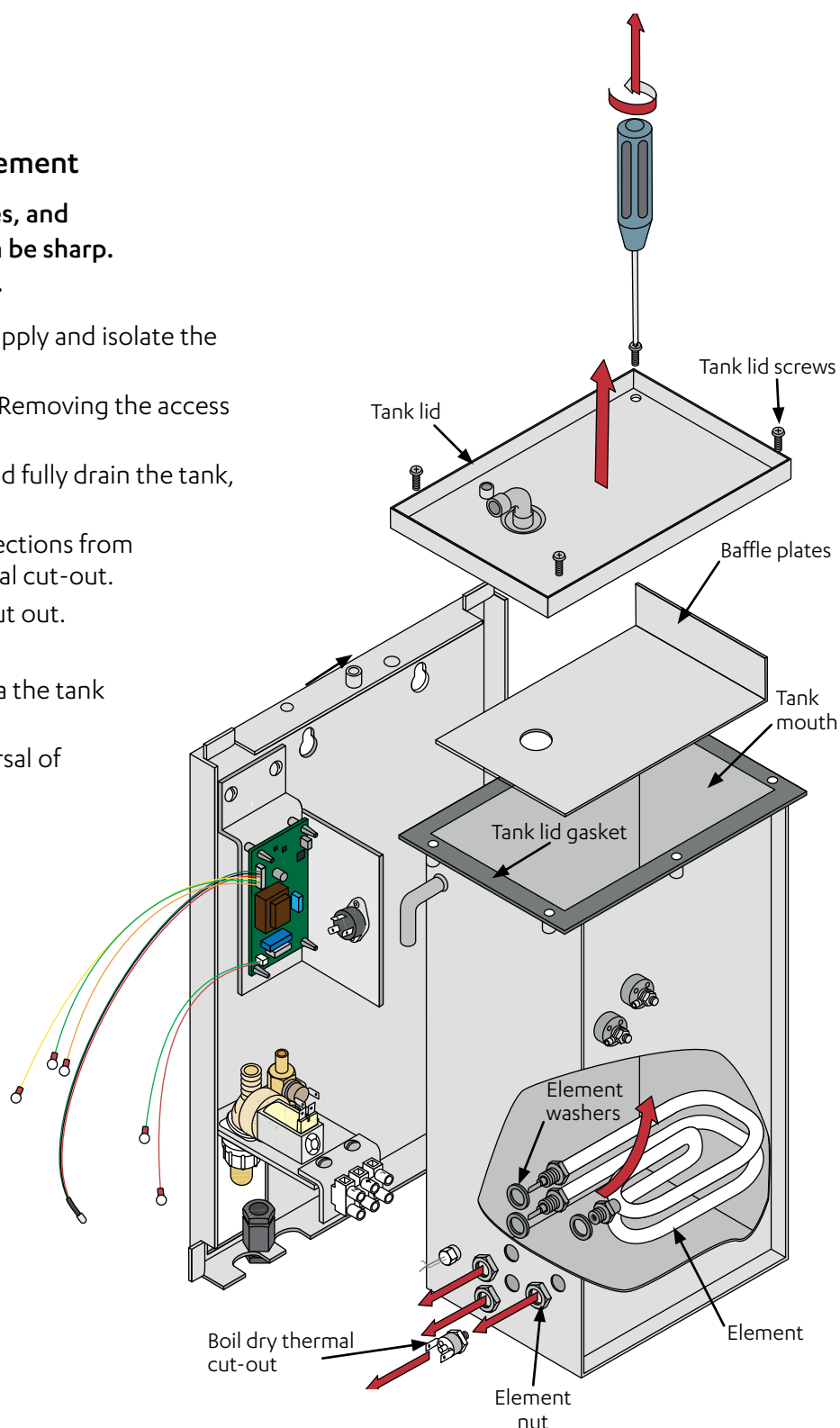
- 3.0kW : 10-12 A.

Element removal and replacement



Fabricated metal edges, and limescale deposits can be sharp. Wear appropriate PPE.

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see "Removing the access covers" on page 10.
- Access the inside of the tank and fully drain the tank, see page 20.
- Disconnect the electrical connections from the element and boil dry thermal cut-out.
- Unscrew the boil dry thermal cut out.
- Unscrew the 3 element nuts.
- Manoeuvre out the element, via the tank mouth.
- Element replacement, is a reversal of the above procedure.
- Ensure that the silicon rubber element washers that seal the element are in place.



7.6 Boil-dry Protection

- Each element has a brazed "hot-return" fitting, which accepts a stud-mounted 120°C thermal cut-out.
- If the element overheats (boil-dry situation etc.), the thermal cut-out picks up the rise in temperature and breaks the live supply to the heater.

Boil dry thermal cut-out removal and replacement



Fabricated metal edges can be sharp.
Wear appropriate PPE.

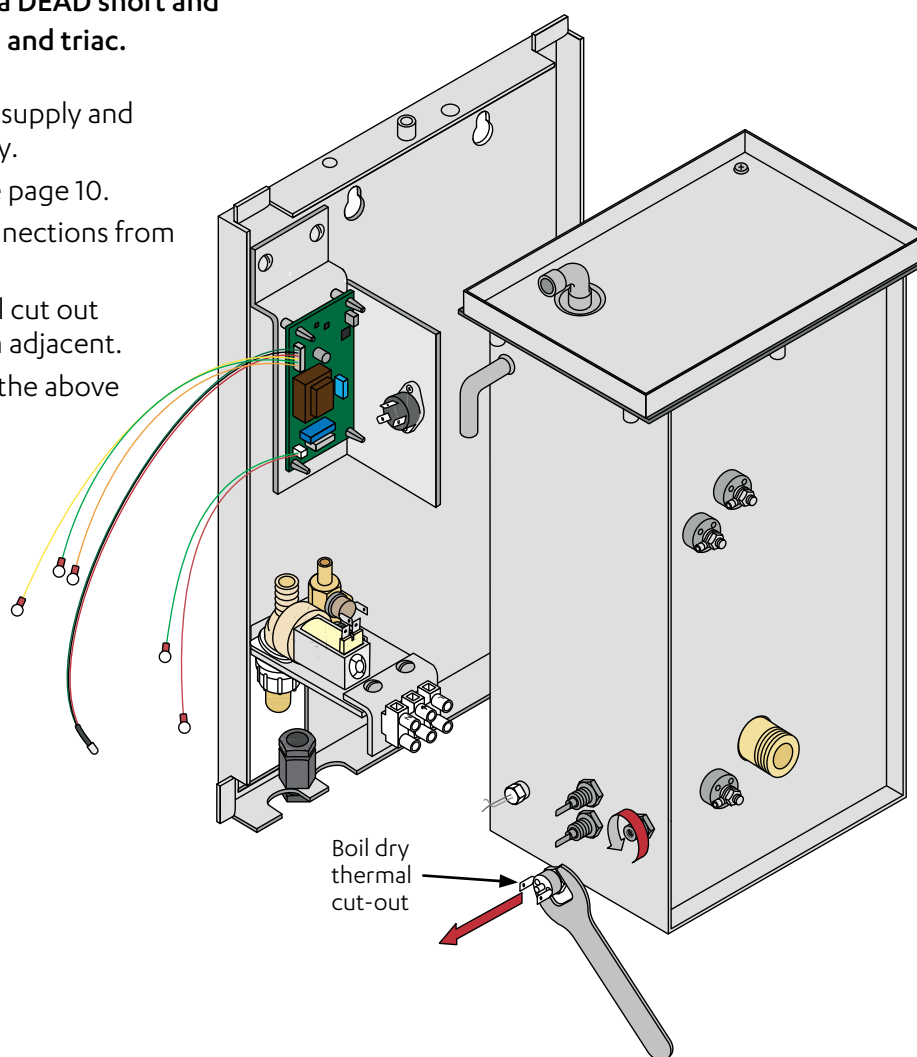


When replacing the boil dry cut-out ensure LIVE and NEUTRAL wires are on the correct connections.



Failure will result in a DEAD short and destroy both cut-out and triac.

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see page 10.
- Disconnect the electrical connections from the boil dry thermal cut out.
- Unscrew the boil dry thermal cut out (17mm AF spanner), as shown adjacent.
- Replacement, is a reversal of the above procedure.

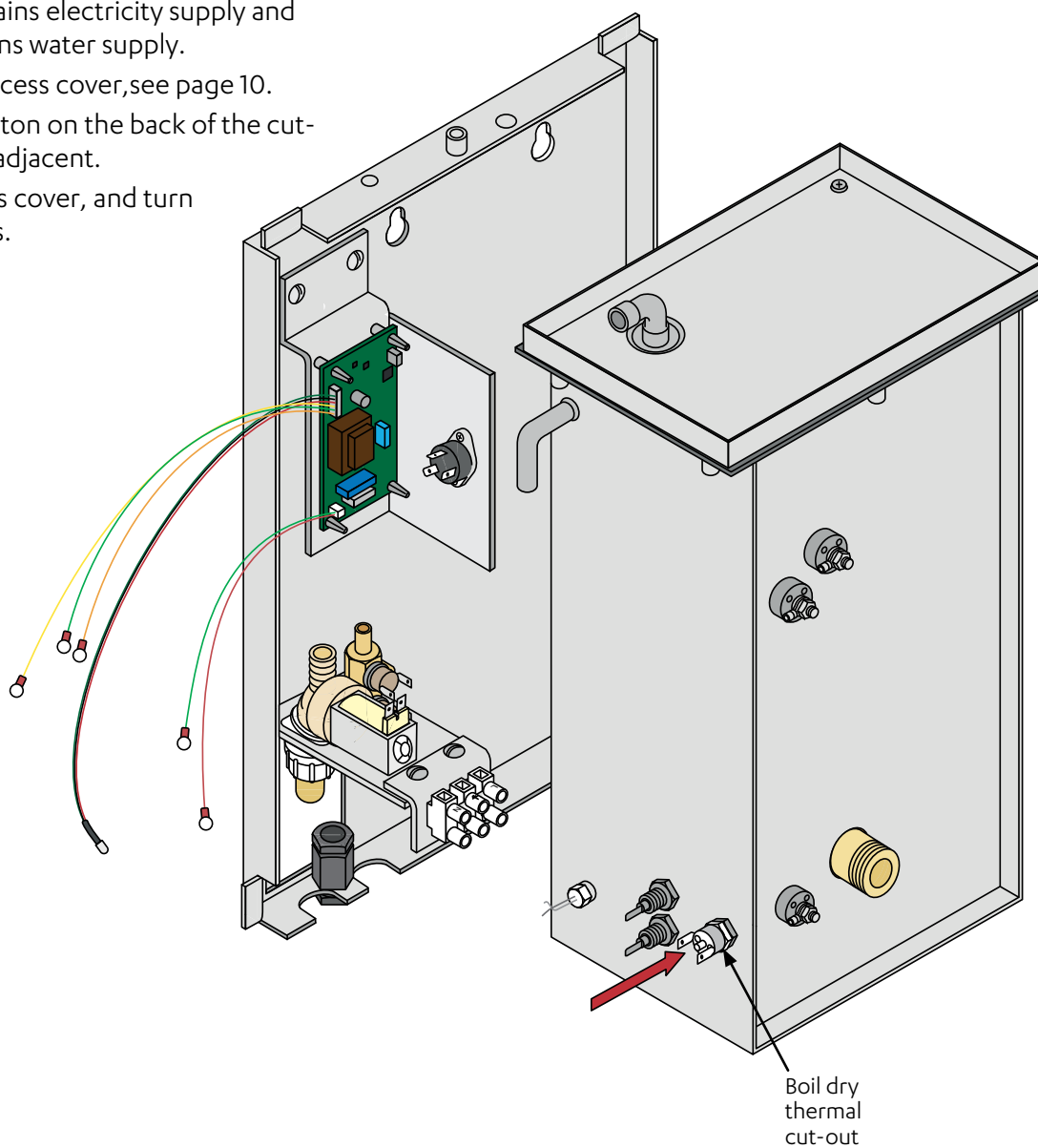


Boil dry thermal cut-out reset



Fabricated metal edges can be sharp.
Wear appropriate PPE.

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see page 10.
- Push in the button on the back of the cut-out, as shown adjacent.
- Refit the access cover, and turn on the supplies.



7.7 Over boil protection (air-vent)

- The appliance has two thermal cut-out switches situated on the air vent. Their function is to protect the appliance in the event of an over-boil situation - the thermal switches will cut power to the element.



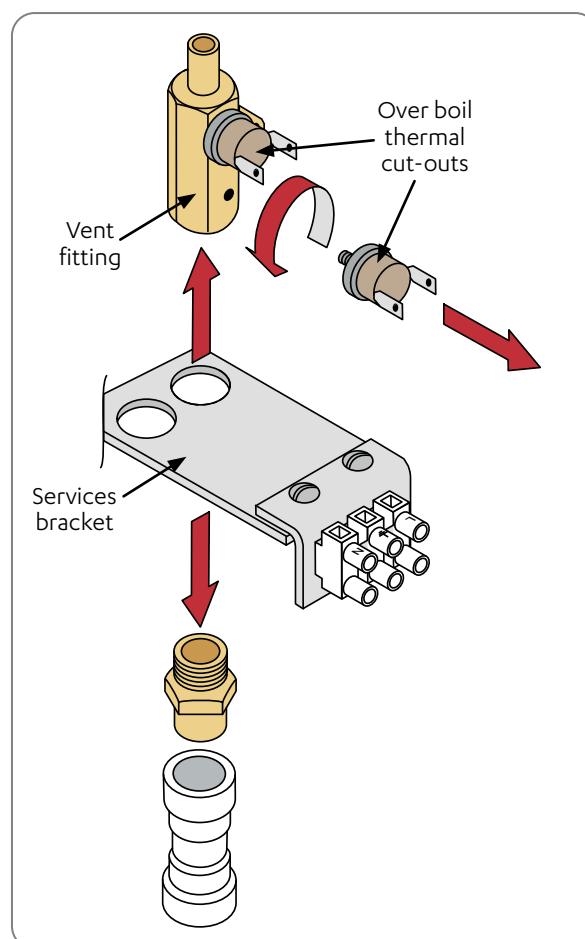
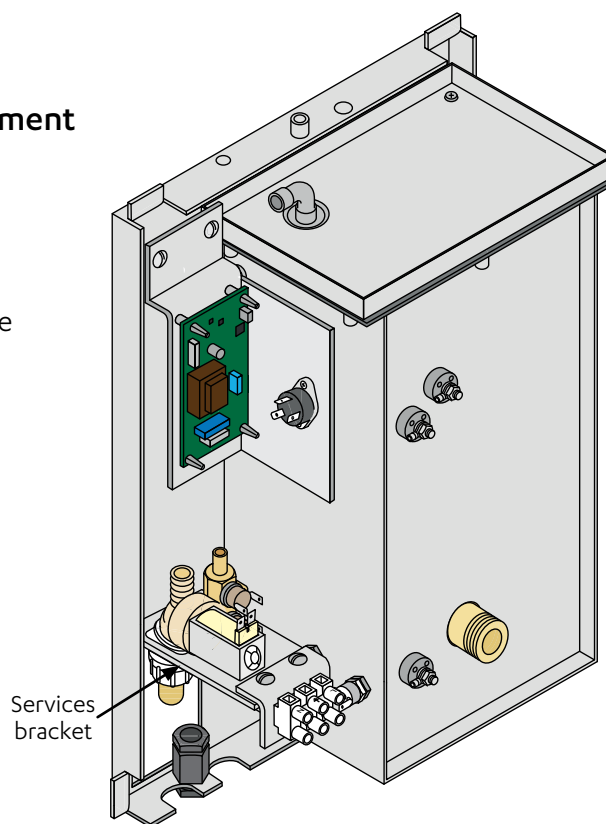
**Fabricated metal edges can be sharp.
Wear appropriate PPE.**

Over boil thermal cut outs removal and replacement

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see page 10.
- Disconnect the electrical connections from the over boil thermal cut outs (situated on the vent fitting at the back of the services bracket).
- Unscrew the vent fitting from the services bracket
- Unscrew the over boil thermal cut out.
- Replacement, is a reversal of the above procedure.

Over boil thermal cut out reset

- Activates if the appliance produces excess steam. This can be due to :
- Lime-scale within the tank.
- A temporary interruption in the water supply.
- A faulty temperature sensor or internal component (triac).
- To reset the over boil thermal cut - out, switch off the mains power supply to the appliance and allow the appliance to cool down for ten minutes before switching back on (the over boil thermal cut - out should automatically reset).



7.8 The triac

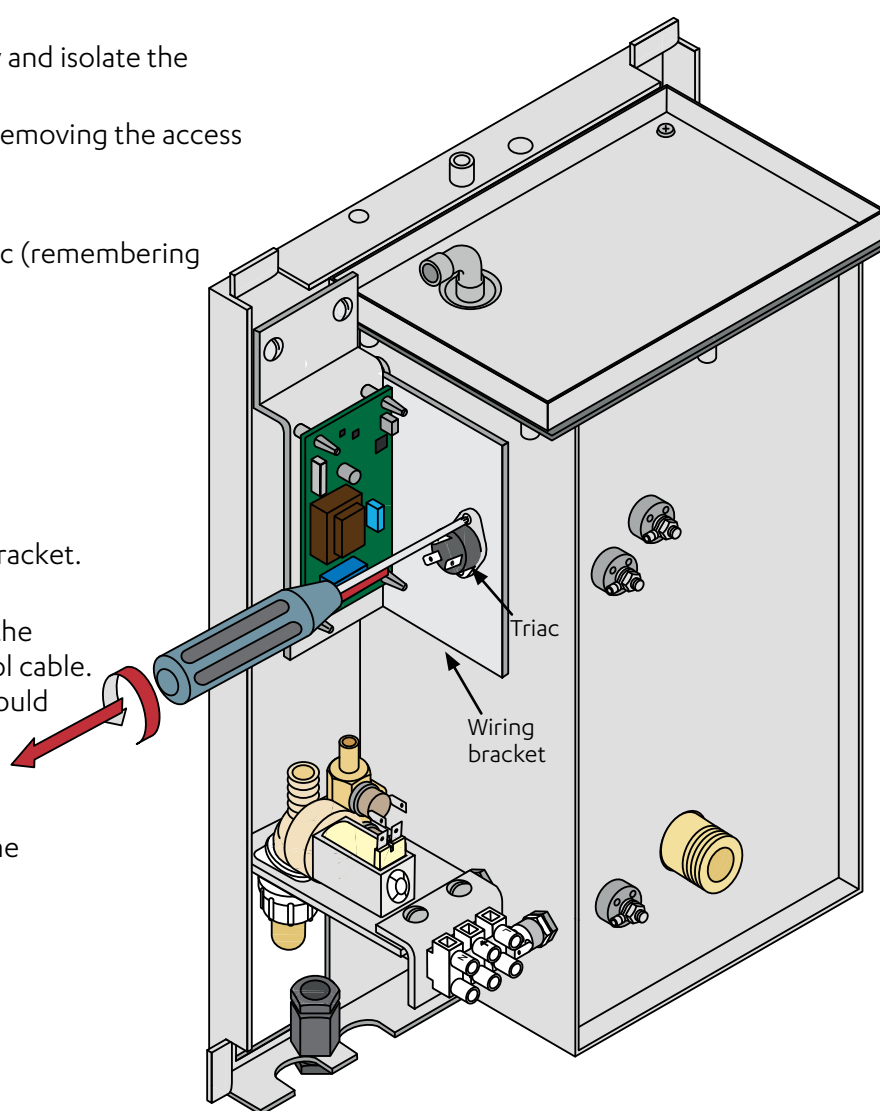
- The triac is a device used to switch the heating element on via a control signal from the PCB. The triac generates heat, which has to be dissipated. This is done by bolting it to the wiring bracket using heat-sink compound between the surface of the triac and the aluminium bracket.
- If the triac fails, in 90% of cases it will fail in the closed position. This causes the heating element(s) to remain on. If this happens, the appliance will overheat. When steam enters the air-vent pipe, the over-boil safety cut-out will detect a rise in temperature and switch off power to the elements.
- If the triac has failed in the closed position there will be continuity between the grey and brown cables on triac.

Triac removal and replacement



**Fabricated metal edges, and limescale deposits can be sharp.
Wear appropriate PPE.**

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see "7.2 Removing the access cover" on page 10.
- Locate triac on the wiring bracket.
- Disconnect the 3 wires from the triac (remembering which wires go to each terminal).
- Loosen the two M3 pozi-hd screws that clamp the triac to the wiring bracket.
- Replace with new triac.
REMEMBER to apply heat-sink paste to the flat base of the triac before fixing to wiring bracket.
- Re-connect wires:
Note: One terminal is smaller than the other two, this is for the pink control cable. Working clockwise from the pink would be the live out to the elements (Brown) leaving the other terminal for the Grey cable.
- Reverse the above procedure get the appliance back to functionality.



7.9 The printed circuit board

Main PCB (XE150G) removal and replacement



Fabricated metal edges, and lime scale deposits can be sharp.
Wear appropriate PPE.

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see page 10.
- Locate the main PCB.
- Disconnect wire connections and JST plug connections from PCB (spade terminals on PCB are colour co-ordinated).
- Pinch the 4 plastic mounting pillars and pull the PCB away from the pillars.
- Replace in reverse of above.

Main PCB (XE150G) indicators

- There are four appliance status LED's on the XE150 main PCB.

Continuous Flashing Amber

Process functional.

Green

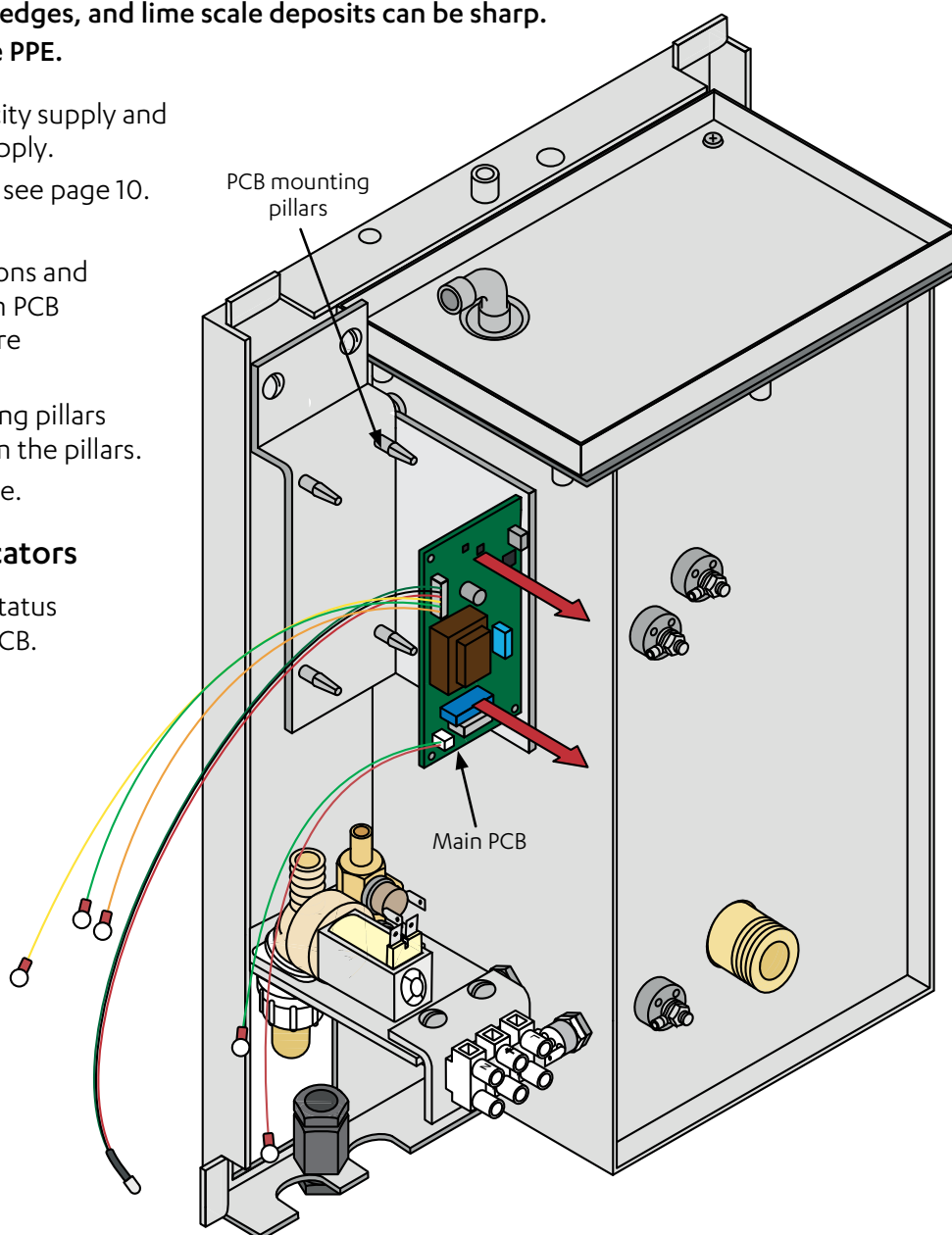
Mains supply to PCB.

Red

Heating element is on.

Amber

Boiler filled with water.



Potentiometer & temperature adjustment

- The potentiometer, mounted on the main PCB, is used to adjust the temperature setting of the appliance. It is a small PCB-board-mounted component, which can be adjusted using a very small electrical screwdriver.
- Locate the potentiometer on the main PCB.
- To adjust temperature; turn anti-clockwise to increase temperature and clockwise to decrease temperature.

7.10 The solenoid valve

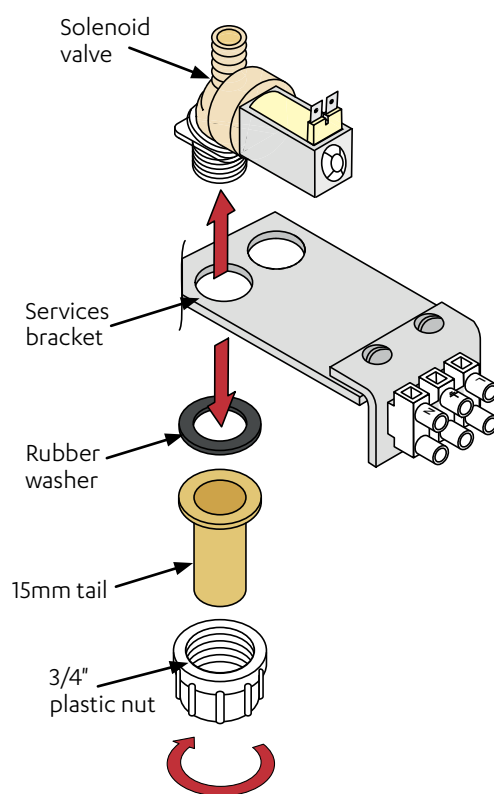
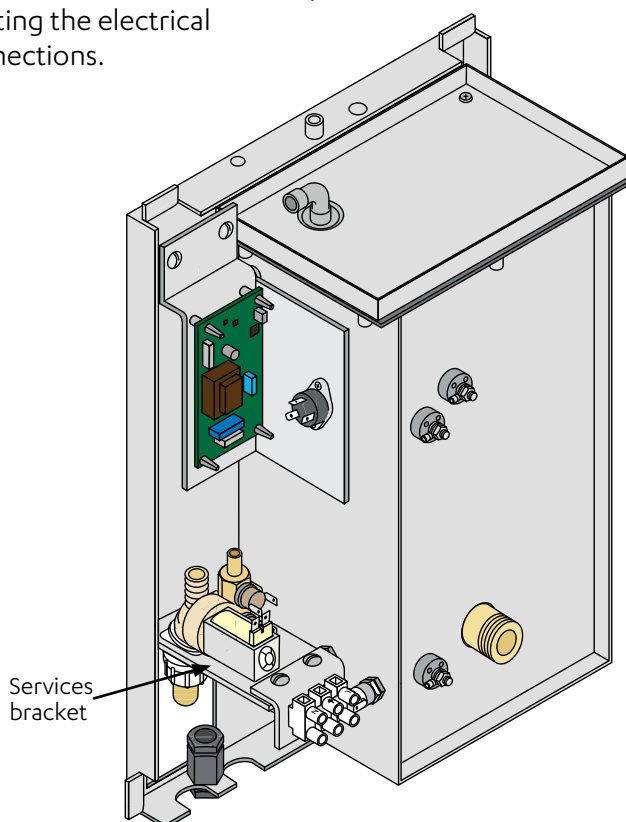
- The cold-water inlet valve can operate between 0.2 -0.7 MPa (2 bar and 7bar) mains pressure. It contains a 2-litre per minute restrictor to control the incoming water flow. If a valve without this restrictor is used, it could cause the temperature to be lower than expected. The only serviceable part on the valve are the coils. The coils are susceptible to water damage from steam or water leaks. The coil has a small constant voltage to it which is normal. When energized they should be 230V.
- Mains water pressure range 0.2 MPa and 0.7MPa (2 and 7 bar).
- Incoming mains water pressure can vary wildly from site to site and can also fluctuate dependent on the time of day (water pressure often increases at night). In extreme cases, this can take the mains water pressure outside that at which the boiler can operate. A pressure reducing valve, factory-set at 0.3MPa (0-3 bar), will protect the inlet valve from excessive in-coming mains water pressure.
- Very low in-coming mains water pressure, below 0.1MPa (1bar) can result in the solenoid valve bypassing, as insufficient water pressure prevents the valve from seating correctly, although this is much less common.

Solenoid valve removal and replacement



Fabricated metal edges, and limescale deposits can be sharp. Wear appropriate PPE.

- Turn off the mains electricity supply and isolate the mains water supply.
- Remove the access cover, see page 10.
- Locate the solenoid on the services bracket on the bottom LHS of the appliance.
- Remove the silicone tube from the solenoid valve outlet.
- Remove the solenoid's electrical connections.
- Disconnect external incoming mains water supply pipework.
- Unscrew the 3/4" plastic nut.
- Remove solenoid valve and replace, refitting the electrical connections.



7.11 The storage tank

- The tank lid is secured using 4x M4 stainless steel screws and is sealed with a silicone rubber gasket. Silicone sealant secures the gasket to the tank. The tank body and lid are made from type-304 stainless steel while the internal baffle plate is made from type-316 stainless steel (type-316 is more resistant to the corrosive properties and minerals found in some mains water supplies in specific parts of the UK).

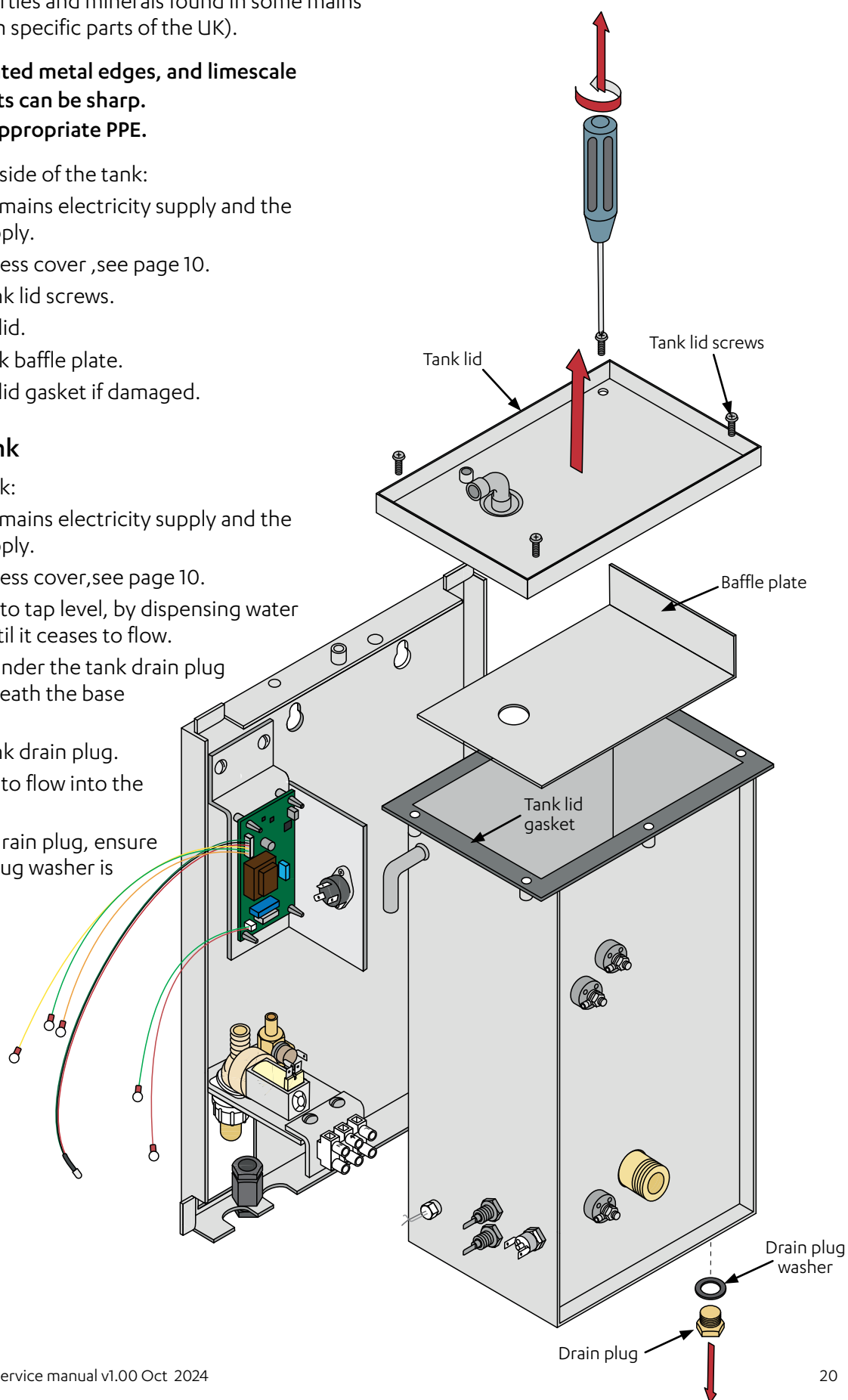


Fabricated metal edges, and limescale deposits can be sharp. Wear appropriate PPE.

- To access the inside of the tank:
- Disconnect the mains electricity supply and the mains water supply.
- Remove the access cover, see page 10.
- Unscrew the tank lid screws.
- Lift off the tank lid.
- Remove the tank baffle plate.
- Lift off the tank lid gasket if damaged.

Draining the tank

- To drain the tank:
- Disconnect the mains electricity supply and the mains water supply.
- Remove the access cover, see page 10.
- Drain the water to tap level, by dispensing water from the tap until it ceases to flow.
- Place a bucket under the tank drain plug situated underneath the base of the tank.
- Unscrew the tank drain plug.
- Allow the water to flow into the bucket.
- Re-fit the tank drain plug, ensure that the drain plug washer is in place.



7.12 De-scaling (including cleaning probes)

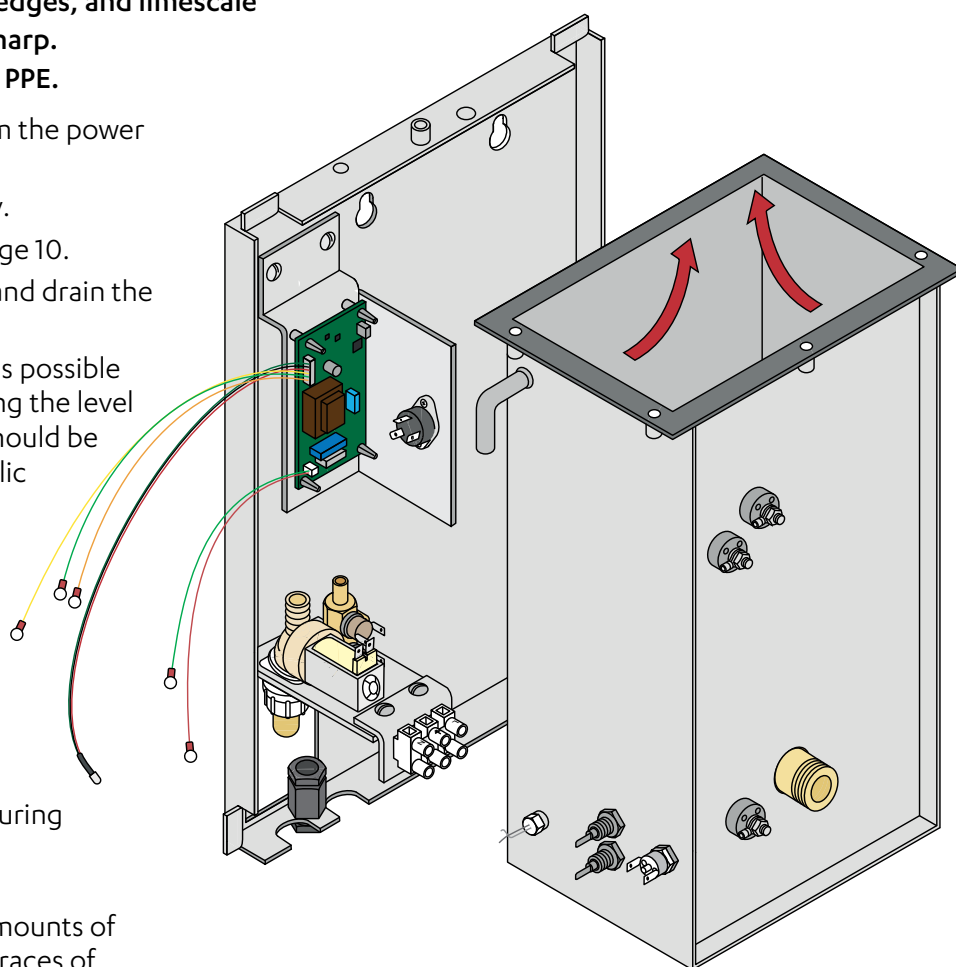
- **Common problem:** Hard-water in some parts of the UK will usually result in a build-up of lime-scale within the tank. This can lead to a variety of different problems:
- One of the more common problems is caused by scale deposits coating one (or more) of the three sensing probes - The scale acts as an insulator (e.g. the sensor is no-longer able to detect the presence of water).
- Heavy scale deposits on the inside of the tank can also affect the accuracy of the temperature sensing device (thermistor). The scale acts an insulator between the water and the stainless-steel tank-body (or probe), thus reducing the responsiveness of the thermistor, which can eventually lead to an over-boil situation arising.
- A heavy build-up of scale on the heating element can also reduce its life expectancy.

De-scaling Instructions



**Fabricated metal edges, and limescale deposits can be sharp.
Wear appropriate PPE.**

- Disconnect the appliance from the power supply.
- Isolate the mains water supply.
- Remove the top cover, see page 10.
- Access the inside of the tank and drain the tank, see page 20.
- Remove as much loose scale as possible by hand. Any hard scale coating the level sensing probes and holders should be cleaned off using a non-metallic scouring pad.
- Use a good de-scaler such as "Renegite" to remove hard scale deposits.
- Mix 2-3 packets in hot water and pour into tank.
- Leave for approximately 20 minutes.
- Flush tank out with water, ensuring that all traces of de-scaler are removed before re-assembly.
- Flush tank out with copious amounts of fresh water, ensuring that all traces of de-scaler are removed before re-assembly.



7.13 Silicone Tubes & Gaskets

- All the silicone tubes and gaskets used on AA First products are produced from Platinum Cured Silicone which is widely used in the medical field.
- Although this silicone is WRAS Approved and fit for potable water, steam attacks it and after a period of time can degrade the silicone and make it brittle.
- When carrying out a descale or any other maintenance, it is worth checking the silicone pipes and gasket for this. Pay particular attention to the water inlet pipe which can degrade from the inside and become weak and burst in use.

SERVICE MANUAL	TABLE OF CONTENTS	SAFETY	TECHNICAL SPECIFICATIONS	PRODUCT DESCRIPTION	COMPONENT SERVICING	TROUBLE SHOOTING	SPARE PARTS	WIRING DIAGRAMS	CONTACT
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8.1 Earth continuity test



All accessible metal parts must be earthed.

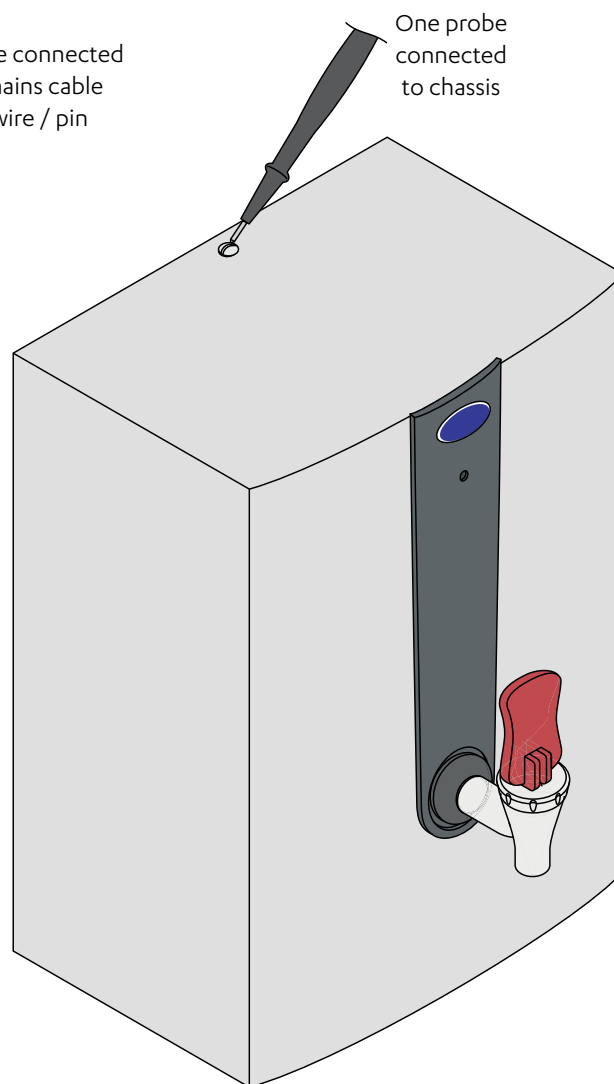
- Following service work, the earth continuity must be checked. Use an insulation tester, appliance tester, DMM or continuity tester with an accuracy of Class 5 or better ($\pm 5\%$ at full-scale deflection).

To test the earth continuity

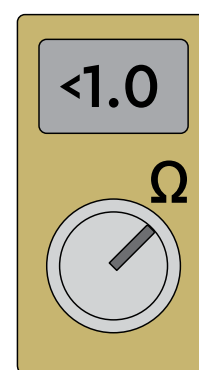
- Isolate the appliance from the electricity supply.
- Set the meter to the lowest ohms (Ω) scale and set to a reading of 0Ω with the meter probes connected together.
- Connect one of the meter probes to the earth wire of the mains cable or earth pin of the mains plug.
- Connect the second meter probe to a bare patch of metal or a screw (the edge is best) on the appliance and read the display.
- Repeat with the second test lead touching the metal body of the tap.
- All readings should be less than 1Ω .
- If any of the reading are above this value, check the earth connection inside the appliance.



One probe connected to the mains cable earth wire / pin



One probe connected to chassis



Insulation resistance meter or DMM

9.1 Fault finding

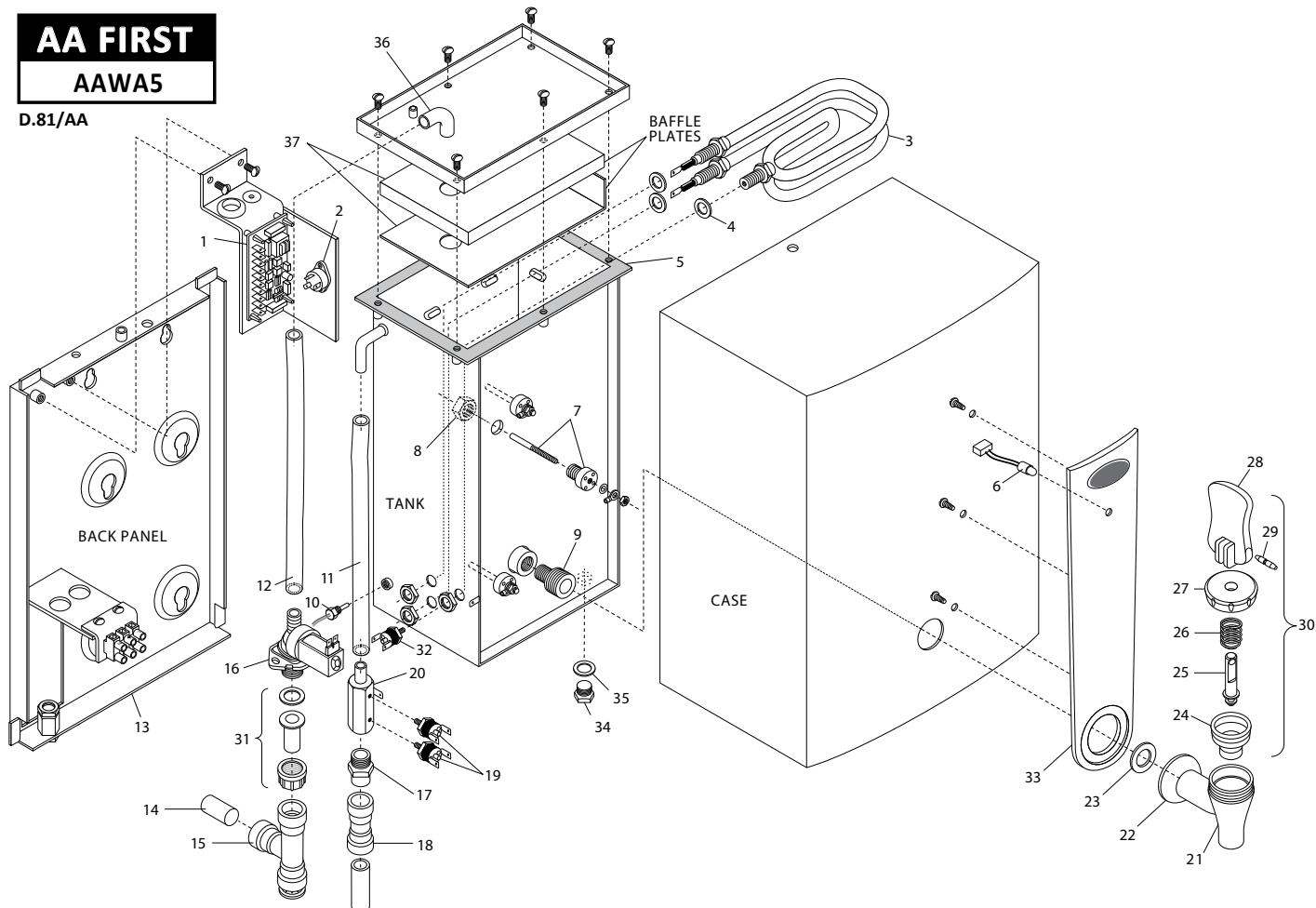
This section contains a list of faults and causes that the appliance may encounter.

Boiler problem	Possible cause
Dead	<ul style="list-style-type: none"> • P.C.B. faulty - (1A fuse or transformer). • No mains input (installation or outside interference). • Unsound terminal connection. • Communications lead between main PCB & indicator panel is disconnected or poor connection (boiler won't operate if cable is not connected). • Blown fuse in plug. • Bad connection in plug (mains lead fault). • Indicator panel PCB.
Overfilling	<ul style="list-style-type: none"> • Water pressure too low or high. • Contaminant sticking valve open. • Water connected to overflow (installation problem). • Top probe scaled up.
Not Filling	<ul style="list-style-type: none"> • Blocked inlet elbow. • Blocked solenoid filter. • Water turned off . • Kinked inlet hose. • Water pressure too low or high • Solenoid coil failed. • Scaled-up Normal-Operating Probe. • Normal Operating Probe wire shorted out. • Faulty element (See: Not Heating below) • Thermal Cut-out activated
Water Draw-Off	<ul style="list-style-type: none"> • Tap spring or washer fault
Over Boiling	<ul style="list-style-type: none"> • Potentiometer set too high or faulty thermistor . • Faulty triac. • Appliance not filling. • Appliance scaled up. • Faulty thermistor.
Not Heating	<ul style="list-style-type: none"> • Thermal cut-out tripped. • Faulty element. • Faulty traic. • Faulty P.C.B. • Unsound connection on element or triac.
P.C.B. Blown	<ul style="list-style-type: none"> • Steam (See over boiling) or water damage. • Element blown (1A fuse on P.C.B.). • Triac blown.
Taste Problems	<ul style="list-style-type: none"> • Washing appliances or dish washer on same feed BLUE or RED hoses on same feed. • Outside interference. • Expired filter on feed. • Foreign body in boiler.

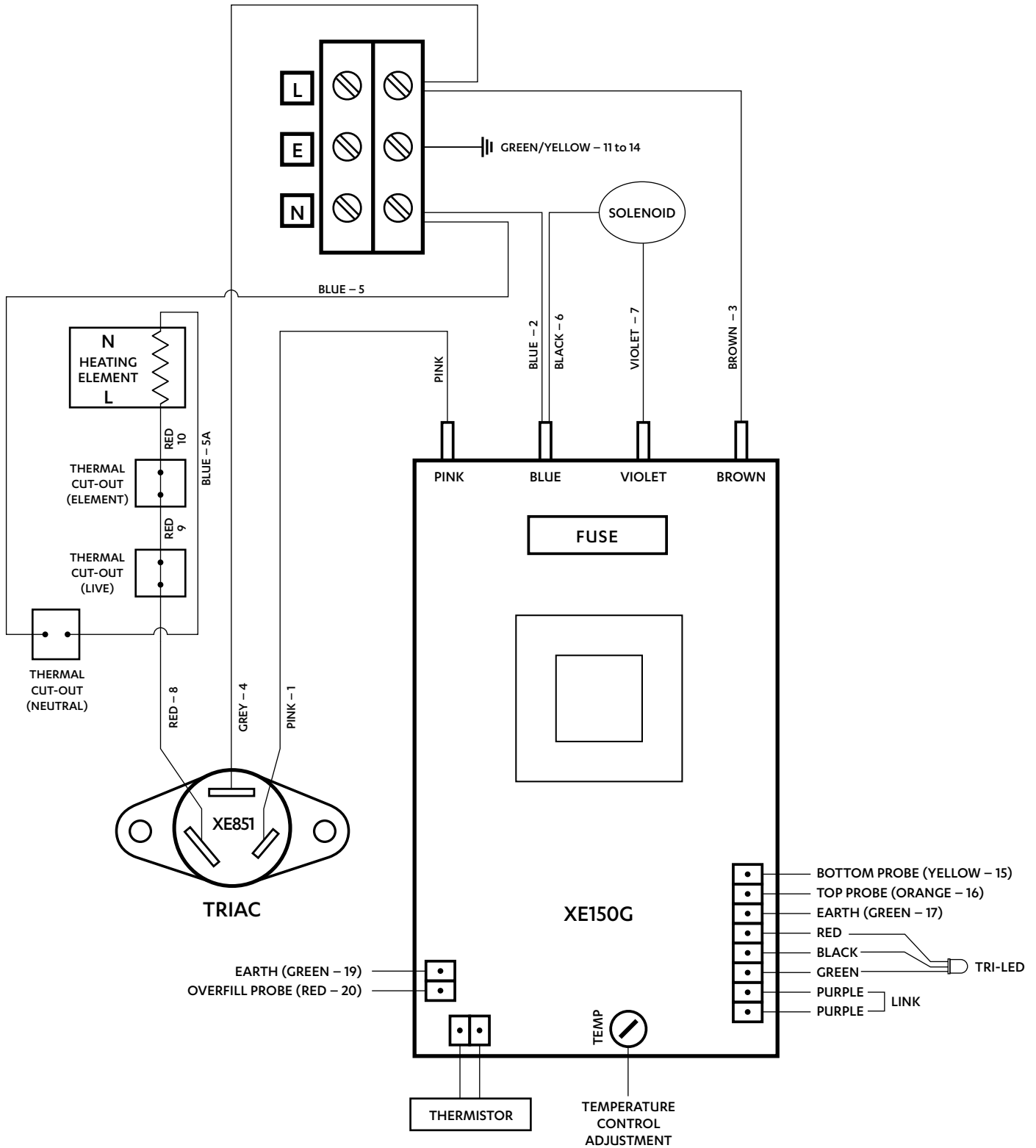
10.1 AAWA5 Spare Parts

Listed items		
Ref	UK Item	Desc
1	XE150GSP	Main Control Circuit Board
2	XE851SP	Triac (25A)
3	XEN175SP	Element
4	XEN100WSP	Element Washer (silicone rubber)
5	WEN5GN5P	Tank Gasket
6	XE152SP	Tri-coloured LED c/w flying lead
7	PRB1A	Probe Assembly
8	T514SSSP	Hex Nut
9	XTP1019HSSP	Brass tank adaptor
10	XE853SP	Thermistor Stick On
10	XE853PRBSP	Thermistor Screw In
11	SR2SP	Overflow silicone tube (per Metre)
12	ACC309SSP	Water feed pipe (Per Metre)
13	Not available separately	Back Panel
14	WMB15BSP	Brass blanking bung
15	WMB15TSP	John Guest 15mm Push-fit "T" coupling
16	SOL12SP	Cold water inlet solenoid valve
17	SRF15SP	Brass 1/4" BSP to 15mm push-fit
18	WMB15SSP	John Guest 15mm straight push-fit
19	XETR7SP	Over-boil safety cut-out
20	SRF25SP	Brass thermal cut-out mount
21	WTP500	Complete draw-off tap c/w tap extn's (standard type)
22	XEN304SP	Grey plastic tap collar
23	XW5H2SP	Tap washer-seal (silicone rubber)
24	TP1001LSP	Silicone seat-cup tap washer
25	XTP1053SP	Tap stem
25	TP1007NSP	Tap Spring
27	XTP1052SP	Tap bonnet
28	XTP1055LCRED	AAFIRST RED Tap handle
29	TP1030SP	Bent tap pin
30	XTP1050A	Upper tap handle assembly complete (standard type)
31	WMB34A	3/4" BSP nut, washer & brass tail push-fit
32	XETR5SP	Boil-dry safety cut-out (set @ 120°C)
33	WMB5GREYSP	Plastic front facia
34	WBA247CSP	Brass Tank Drain Plug
35	WBA501SP	Fibre Washer
36	Not available separately	Inlet Elbow
37	Phone for cost	SS Baffle Plates

10.1 AAWA5 Spare Parts continued



11.1 Wiring diagram for all models





AA First
Cedar House
Grange Farm
Long Lane
Shaw
Newbury
RG14 2TF

Tel: 01635 20248

<https://www.aafirst.co.uk/>

