the electric heating company

COMPACT ALL IN ONE

The ultimate solution for central heating & hot water

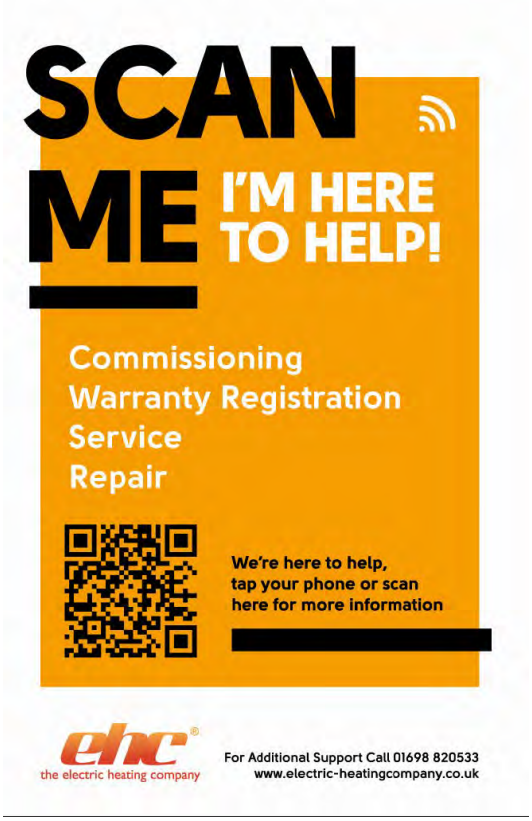
INSTALLATION
&
TECHNICAL MANUAL

This Document MUST Be Left In The Possession Of The Property Owner On Completion Of Installation Of This Product

hot water association
DEVELOPING HOT WATER

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

rev.no:01



Need Help?

Scan the Tag on your Boiler via NFC or QR to access the following features to save time during Commissioning & Repair.

> Boiler Commissioning

> Warranty Registration

> Service Log

> Installation Manuals

> Repair Videos

> Spare Parts

> Warranty Terms & Conditions

> Extended Warranty

If you require any further assistance:

Telephone: 01698 820533

E-mail: info@electric-heatingcompany.co.uk
or visit our website www.electric-heatingcompany.co.uk

1. SAFETY

1.1 SYMBOL KEY

This symbol expresses the risk of serious personel injury or death unless taking care of warnings.

This symbol expresses the risks which can cause minor injuries or harms to the environmet and goods.

1.2 SAFETY PRECAUTIONS

Do not open the protective cover of the device.

Electric shock as a result of the contact with electrical items.

Personel injury like burnt as a result of contact with overheated surfaces or cut as a result of contact with sharp surfaces.

Do not remove the device from the place of mounting, do not disconnect the electrical or water connections. (Get in contact with an authorised engineer)

Electric shock as a result of the contact with electrical items.

Flood as a result of incorrect disconnection of water installation.

Protect the main electrical cable against damages.

Electric shock danger as a result of contact with not isolated open wires.

Do not leave tools or other objects on the device.

Injury resulted from falling objects from device because of vibration.

Damage to the furniture or floor or animals resulted from falling objects from device because of vibration.

Do not climb on the device.

Personal injury as a result of falling down with device or falling down of the device itself.

Damage risk under device as a result of fall from the place installed.

Do not climb on unsteady objects like stool, chair or ladders for cleaning or maintenance.

Personal injury resulted from falling from height or cuts which can be caused from a rapid closing of the ladder.

Do not clean the device without firstly isolating the main power supply.

Electric shock as a result of contact with electrical items.

Use the device for only heating the house and getting hot water.

Explosion and damage risk resulted from inappropriate use and overloading. Damage risk to the environment resulted from inappropriate use.

Do not allow children or adults who have limited physical or mental competence, or People lacking the knowledge about the operating instructions of the boiler to intervene with the device.

Risk of damage to device resulted from misuse.

Personal injury from burns, breathing smoke or poisoning.

Pay attention as to not damage any electric cables and water pipes inside the wall while making holes on wall for boiler mounting plate.

⚠ Electric shock as a result of the contact with electrical items.

⚠ Flood risk results from water pipe puncture.

⚠ Suitable cable types must be used in all electric connections.
Fire risk results from overheated cables due to incorrect type or size.

GENERAL EXPLANATIONS

The Compact All-In-One (AIO) provides wet central heating via conventional radiators or underfloor heating, the product also provides hot water with an S plan configuration and coupled with a Stainless Steel Unvented Cylinder. The cylinder is approved to comply with G3 Building Regulations and the United Kingdom Water Supply (Water Fittings) Regulations / Scottish Water Byelaws.

This Indirect cylinder comes supplied with all necessary safety & control devices needed to connect to the water mains. If for any reason you suspect this may not be the case, please contact us.

Installation and services must be in accordance with current standards and Regulations. The Electric Heating Company Ltd is not responsible for damages caused from incorrect installation and usage. Make sure the boiler is operated only to comply with the intended use of the boiler. Any usage which does not comply with the boiler'is intended use may cause serious injury, death or harms to the environment and goods.

Do not allow unauthorized persons to tamper with or adjust settings or components within this product.

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 the use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not operate or interfere with the appliance.

BENCHMARK

The Benchmark scheme places responsibilities on both manufacturers and installers. The purpose is to en-sure that customers are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturer’s instructions by competent persons and that it meets the requirements of the appropriate Building Regulations and relevant electrical qualifications. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference.

Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hot water Industry Council who manage and promote the scheme.

Visit www.centralheating.co.uk for more information.

C.O.S.H.H

Materials used in the manufacture of this appliance are non-hazardous and no special precautions are required when fitting or servicing this appliance.

PREPARATION

Load Check

A load check should be taken into consideration when installing high output boilers. In some situations it may be a requirement to contact the local DNO.

Central Heating Installation

Detailed recommendations are given in EN 12828.
Pipes forming part of the useful heating surface should be insulated to prevent any potential heat loss or frost damage.
Drain valves should be fitted at the lowest point of the system pipe work in an accessible position.

General Installation Requirements

The Compact AIO must be installed, commissioned and maintained by a competent installer holding a current G3 unvented qualification, and/or being a member of a competent persons' scheme. Once the unit is installed and commissioned, the user must be given an explanation of the operation of the product and its key safety components. In addition, the end user must be given this installation manual for future reference.

Boiler Sizing

Calculate the "Space Heating" requirements in accordance with BS EN 12831 and BS EN 14336. An additional allowance of 3kW (10,239 Btu's) for the Domestic Hot Water should be made to the "Space heating" calculation to determine the correct boiler output.

Storage and Handling

Care must be taken when handling the product. Seek assistance when moving the product as required, and follow safe working practices and lifting techniques to avoid injury or product damage. Before installation, the Compact AIO must be stored upright in its original packaging, on a secure, level surface within a dry and frost- free environment.

2. INTRODUCTION OF THE DEVICE

The Compact AIO is available in one of two configurations, Basic or Ultimate. Both versions provide central heating with the use of panel radiators or underfloor heating. The primary heating circuit water is heated in the main heat exchanger of the Compact boiler with the heating elements. The Primary hot water circulates the installation with the help of the circulation pump, delivering hot water to the radiators or underfloor heating circuits. The AIO also produces domestic hot water at Mains pressure to be used in sinks, showers and baths in the house via the stainless steel hot water cylinder which is indirectly heated by the Compact boiler via the integral cylinder coil.

Basic Version

Ultimate Version

INTRODUCTION OF THE DEVICE

Basic Version

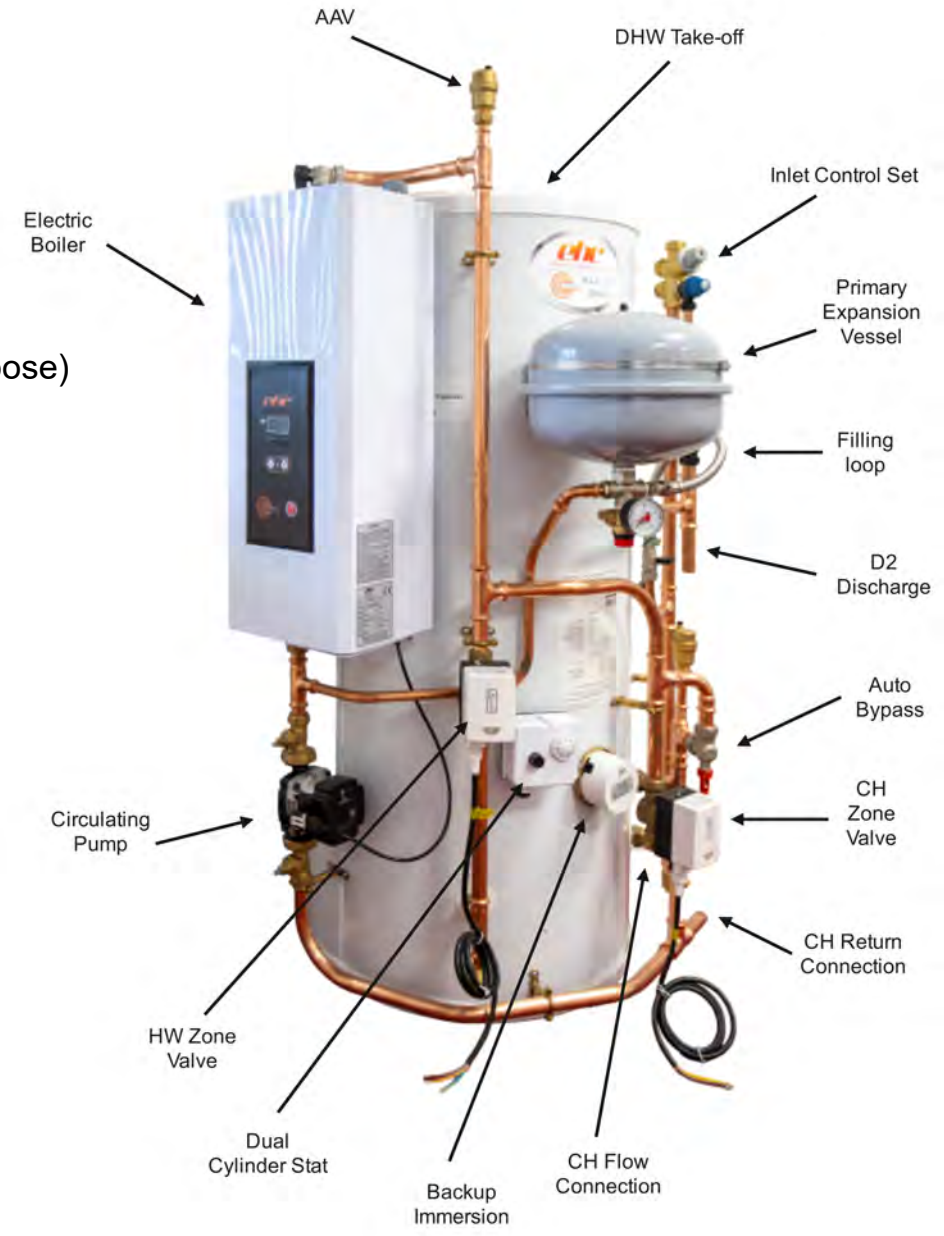
The Compact All In One Basic Version is available in various configurations ranging from 8kW to 14.4kW with hot water capacities from 150L to 300L. The basic version is supplied with Primary and Secondary pipework pre-plumbed. The following two lists detail components included with the product along with further components which must be fitted in order to comply with industry standard and warranty requirements.

Components Supplied/Fitted;

- Inlet Control set
- Tundish
- Temperature & Pressure Relief Valve
- 3kW Immersion Heater
- 2 Port Zone Valve (x2)
- Grundfos Circulation Pump
- System Expansion Vessel
- 3 Bar Pressure Relief Valve
- Dual Cylinder Stat
- Filling Loop
- Automatic Bypass Valve
- Auto Air Vent (x2)
- DHW Expansion Vessel (Loose)

Additional Components Required;

- Magnetic Filter
- Controls
- Wiring Centre



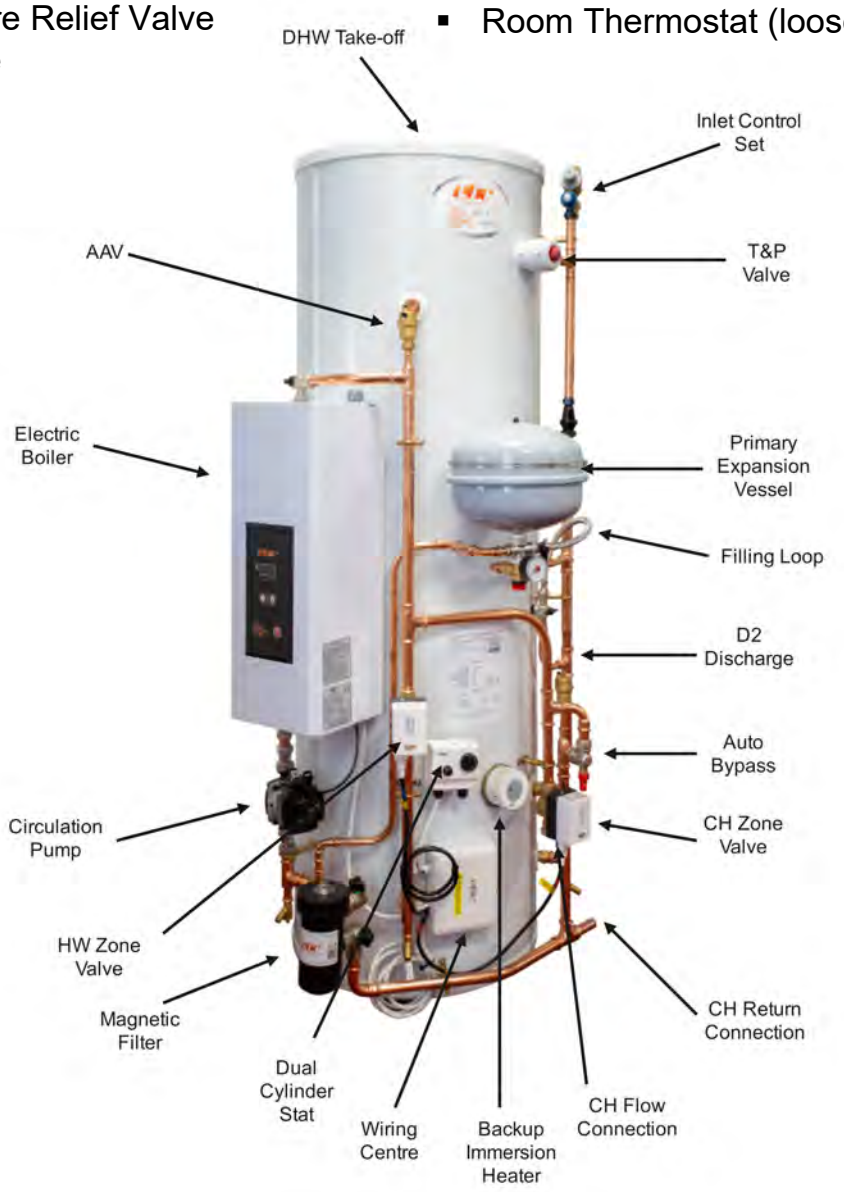
INTRODUCTION OF THE DEVICE

Ultimate Version

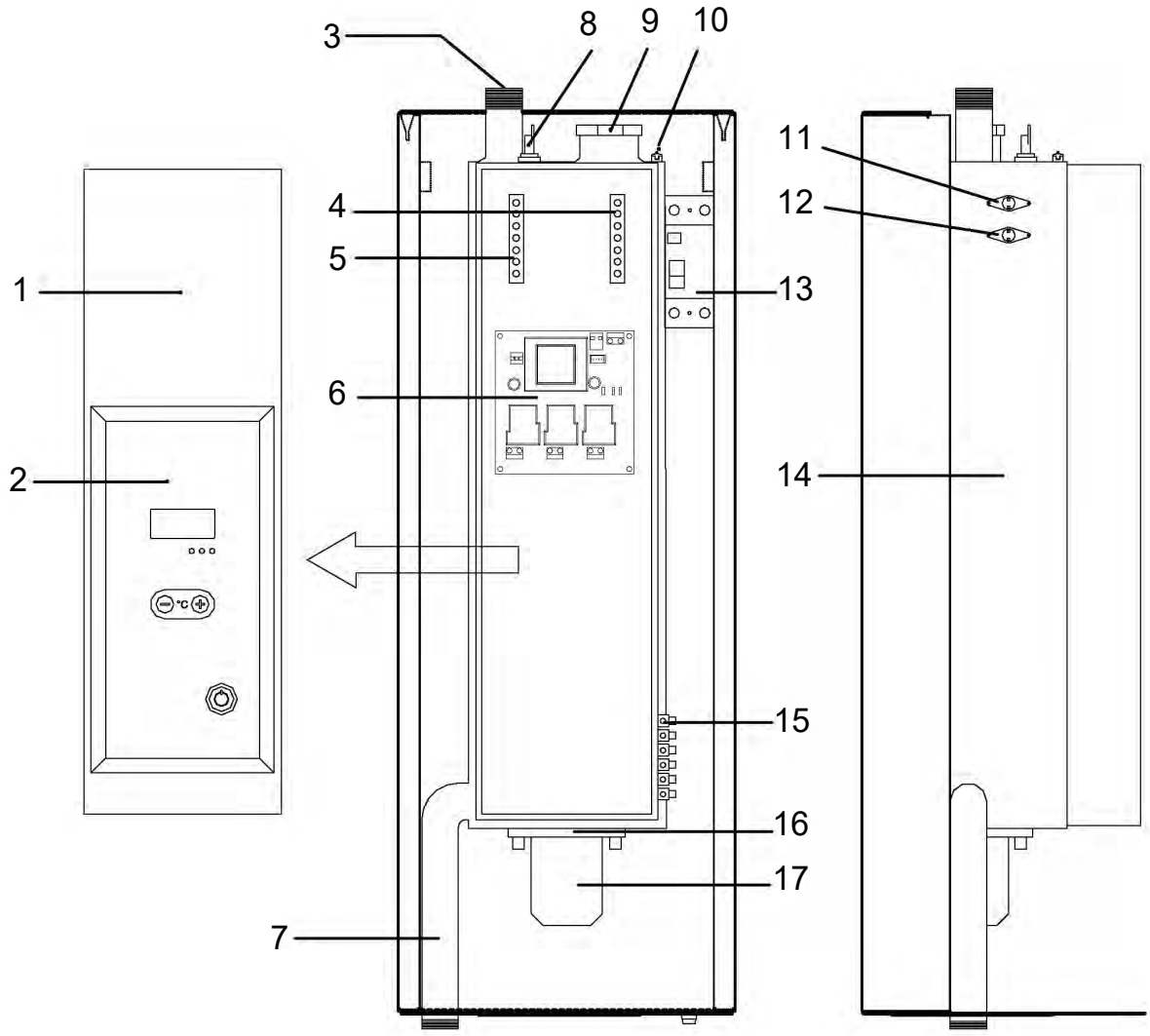
The Compact All In One Ultimate Version is available in various configurations ranging from 8kW to 14.4kW with hot water capacities from 150L to 300L. The Ultimate version is supplied with Primary and Secondary pipework pre-plumbed, along with the addition of being pre-wired with wiring centre. A magnetic filter is also pre-fitted. The following list details components included with the product.

Components Supplied/Fitted;

- Inlet Control set
- Tundish
- Temperature & Pressure Relief Valve
- 3kW Immersion Heater
- 2 Port Zone Valve (x2)
- Grundfos Circulation Pump
- System Expansion Vessel
- 3 Bar Pressure Relief Valve
- Wiring Centre
- Dual Cylinder Stat
- Filling Loop
- Automatic Bypass Valve
- Auto Air Vent (x2)
- Magnetic Filter
- DHW Expansion Vessel (Loose)
- Twin Channel Programmer (Loose)
- Room Thermostat (loose)



COMPONENTS OF THE BOILER



1. Control Box Top Cover
2. Mainboard and Digital Panel
3. Flow Outlet Pipe
4. Neutral Distribution Terminal
5. Line Distribution Terminal
6. Power Relay Board
7. Return Inlet Pipe
8. CH NTC Temperature Sensor
9. Float Water Level Sensor
10. Earth Connection
11. Limit Thermostat
12. Safety Thermostat
13. RCD Device
14. Main Heat Exchanger
15. External Connection Terminals
16. Heating Element
17. Heating Element Insulator Cap

- Drawings are for illustration purposes. Some components may vary in different capacities of boilers.
- The manufacturer reserves the right to make changes to the parts used in the boilers.

MAIN FEATURES OF THE BOILER

- The Compact AIO Boiler uses ONLY electricity as fuel.
- Electricity as fuel for heating has no emissions and is 100% environment friendly.
- There is no heat loss in electric heating. Unlike combustion systems with fossil fuels, there is no exhaust therefore there is no heat loss from the exhaust with hot fumes.
- The Compact boiler operates with 99% efficiency.
- With full automatic modulation, heating capacity of the boiler is adjusted according to the heating demand, ensuring maximum energy savings during operation.
- Mainboard with microprocessor and a digital screen enables easy operation for the end user.
- Underfloor heating mode for safe and efficient underfloor heating applications.
- Due to its quiet operation the boiler can be mounted in living areas easily.
- It offers an aesthetic look with its minimized dimensions and exterior design.
- Provides hot water for showers, sinks and baths via the Unvented Cylinder.
- Heating system can quickly enter the regime and heat the house rapidly.
- Float water level sensor ensures the main heat exchanger is full and heating elements are prevented from operating without water.
- RCD (short circuit relay) provides electrical protection and safe operation..
- Electronic water temperature control with NTC system assures precise temperatures.
- Double safety measures against overheating with limit thermostat and safety thermostat.
- Anti-jamming system for the circulation pump. Operates every 24 hours to prevent pump jamming.

MOUNTING AND INSTALLATION

Siting The Unit

This product must be installed vertically on a flat base that is capable of supporting the maximum-fill weight of the cylinder. For each meter an outlet is above the cylinder, the supply pressure of the hot water will be reduced by 0.1 bar.

The minimum recommended cupboard size is 850mm square as the product diameter can vary (capacity and configuration dependant). This is to ensure that there is access to the cylinder safety controls/immersion heaters and for future valve maintenance or replacement during service. Therefore, please ensure all connections are outward facing towards a door or similar opening for this purpose.

This product should not be installed in humid places such as bathrooms and areas that may be affected by rain water or steam.

Areas subject to freezing should be avoided. If the Compact AIO is sited outside of a heated area of the dwelling, such as a garage or outbuilding, ensure the provision of adequate frost protection, such as insulation of exposed pipework. Pipe lengths must be kept to a minimum to ensure minimal losses. Never leave the boiler switched off if there is a danger of having temperatures below 0°C in the room where it is located, (An additional frost stat must be used if there is a likelihood of the temperature falling below 0°C).

GENERAL INSTRUCTIONS FOR INSTALLATION

The product must be installed by a professional plumber or heating engineer and must be connected to the public low voltage network by a qualified Electrician.
The Electric Heating Company Ltd will not be held responsible for any faulty installations which are performed by unqualified tradespersons.

Pipe Connections

Pipe connections for the central heating circuit and Domestic hot water are 22mm

Case Removal

In order to take off the front cover, undo the fixing screws at the top and bottom of the unit and pull the cover toward you, Care should be taken not to damage the front controller.

Isolation Valves

We recommend that lock-shield isolation valves are fitted on the Flow and Return pipe-work. Such valves must be full bore and not “ball valves”. The installation of “ball valves” in the flow and return pipe-work will reduce the recommended flow rates through the boiler.

Insulation

Where practical, and if possible, we recommend that all pipe-work is insulated, in particular the primary pipe-work within a boiler cupboard. This is to reduce heat loss and reduce high cupboard temperatures from exposed pipe-work. (BS 6700 +A1)

Water Connections
The Compact AIO is fitted with a removable filling loop for the replacement of water lost from the heating system (sealed systems). Reference should be made to BS EN 14336 for the method of filling and make up of water. There must be no direct connection between the boilers central heating system and the main water supply. When mains water is required to fill the system directly, all local water bylaws must be observed, and any connection made must be disconnected after use.

Automatic Bypass
The Compact AIO is pre-fitted with an automatic bypass valve. Further to this a bypass radiator should be installed on the central heating circuit and locked open, an allowance should be made for a minimum radiator size of 600mm x 600mm single convector or equal to 2500 Btu. (This will be located in the room where the thermostat is installed). To comply with building regulations, Part L and Part J (in Scotland), room and cylinder thermostats must be fitted.

Flushing
The system must be flushed to within 10% of mains water PPM to ensure that no debris is trapped in the system as this may result in boiler failure which will not be covered by manufacturer's warranty. Where existing radiators and pipe-work are utilized a power flush must be carried out to remove debris. For further guidance please see section 14 - Flushing & System Protection. After flushing inhibitor **MUST** be added to the system as per the manufacturers instructions. For underfloor heating systems or systems operating below 55 Degrees biocide should also be added to the system.

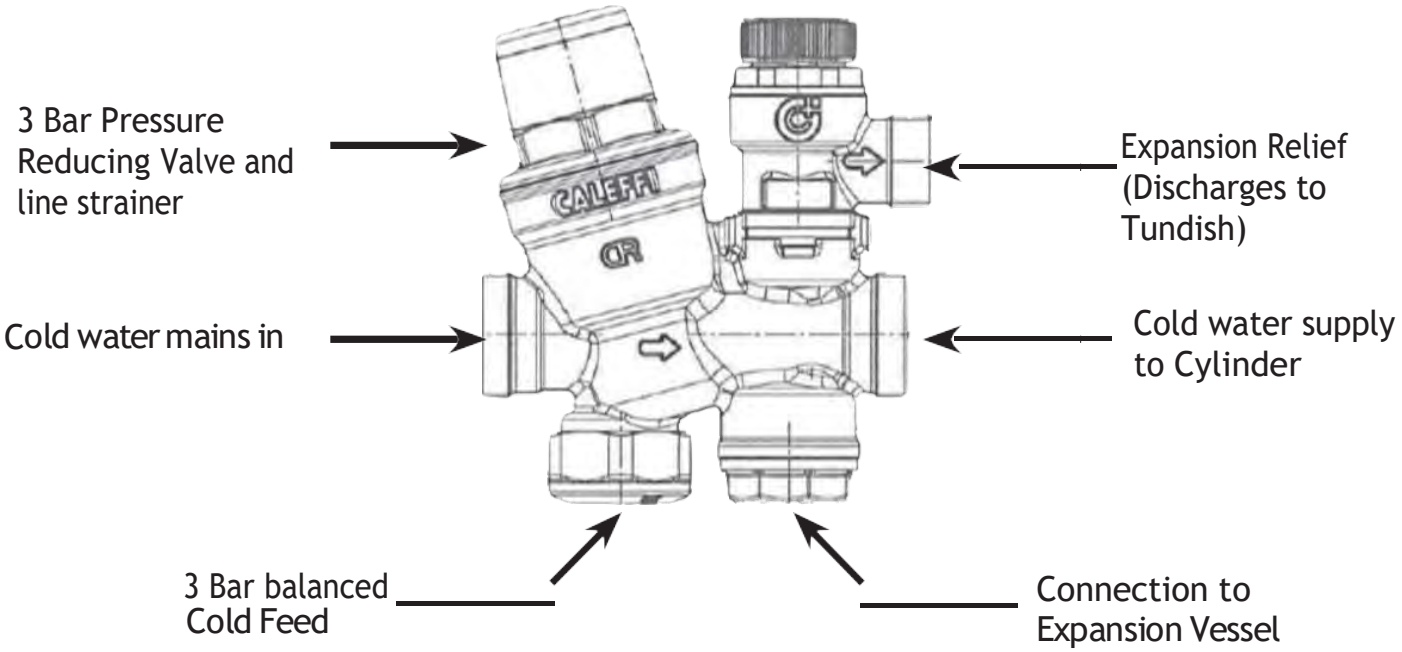
System Pressures
All boilers are pressure tested in the factory. The normal working pressure of the boiler should be set to approx 1.5 bar. All sealed systems should comply with the relevant building regulations and standards, including BS EN 13831 - Specification for Expansion Vessels.

CAUTION ! : During installation ; A magnetic filter **MUST** be installed on the return pipework of the central heating circuit. Failure to install and maintain a suitable filter will invalidate the boiler warranty. If you have purchased the Compact AIO Ultimate a magnetic filter is already pre-installed.

3.5 HEATING AND HOT WATER SYSTEM INSTALLATION CONNECTIONS

- In order to provide a good circulation throughout the heating system, installation pipe diameters must be selected properly to prevent flow restrictions. When selecting the pipe diameter, pipe resistance above the capacity of the pump must be avoided.
- If the system becomes over pressurized, the 3 bar pressure relief valve operates in order to discharge water and decrease system pressure.

Included in your unvented safety components is a multibloc inlet control group. This single unit is standard issue for many unvented water systems, and comprises of many different safety valves, housed into a single brass casting. This is detailed as follows:



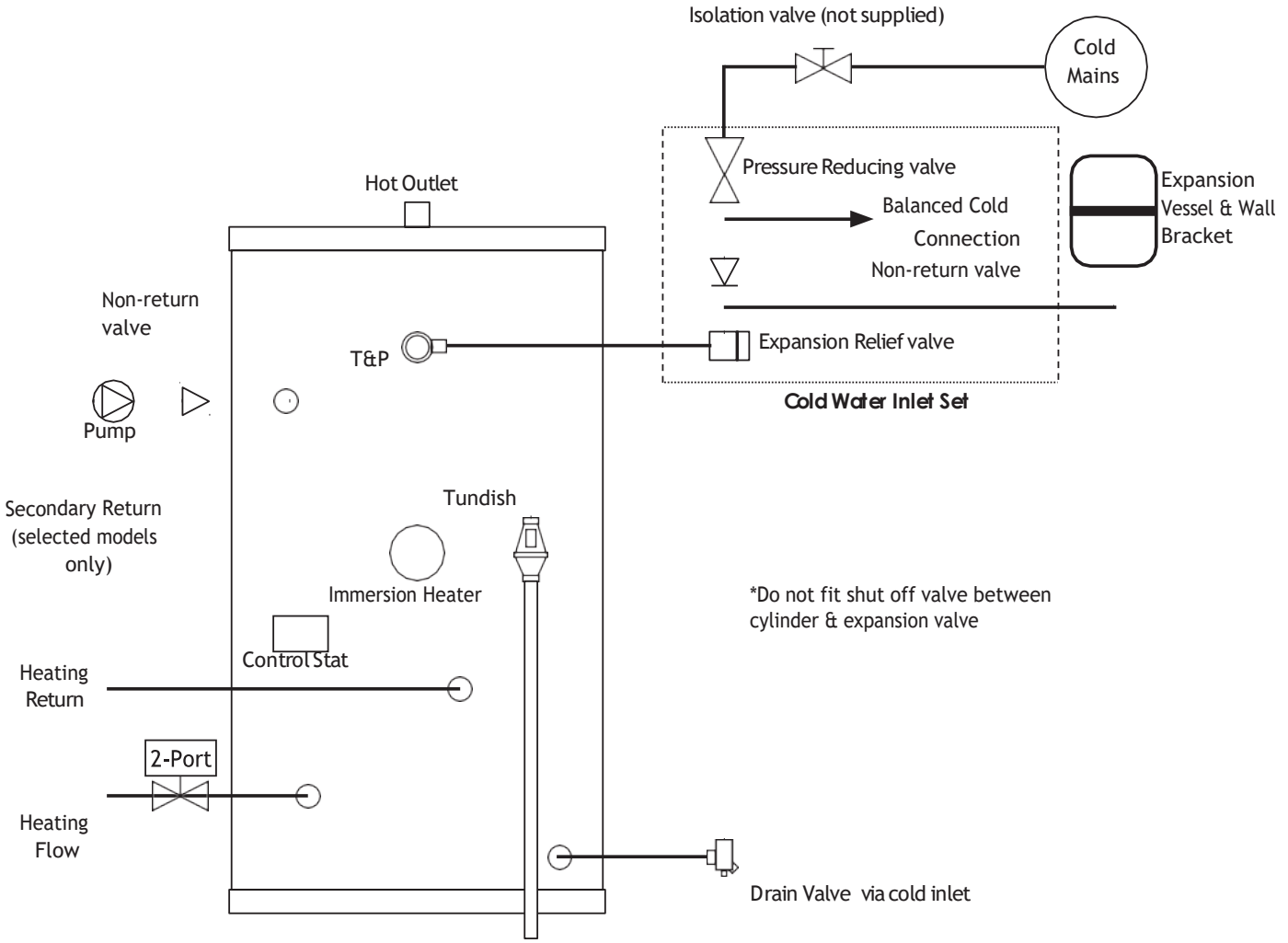
We recommend that the maximum on-site water demand be assessed and the water supply be tested to ensure it meets the following requirements. This should be sourced from mains water only - your warranty does NOT include the use of wells or bore holes as a water supply.

It must be noted that a high mains water pressure does NOT always guarantee a high flow rate. Ensure a working (not static) condition site pressure reading is taken. The minimum mains water supply requirements should be 0.15MPa (1.5 bar) working pressure, and a 20 litres per minute flow rate available. Where mains inlet pressures may exceed 10 bar, an additional upstream pressure reducing device should be fitted in addition to the cold water inlet set provided.

The mains supply pipe-work should be a minimum of 22mm. This could warrant the replacement of any existing 1/2 (15mm) cold mains pipe-work.
The water supply must be of a wholesome water quality, defined as Fluid Category 1 in the Water Supply Regulations 1999. In areas of hard water content ($CaCO_3$) greater than 200ppm, treatment should be installed.

The changing or alternation of one water supply to another can be detrimental on the operation and/or life expectation of the product and its accessories. Where a water supply changeover occurs, e.g. a rainwater tank supply, bore water supply, desalinated water supply, public reticulated water supply or water brought in from another supply, then water chemistry information should be sought, or should be tested to ensure the supply will meet the requirements given in these guidelines for our manufacturer's warranty to apply.

CYLINDERSUPPLY AND SAFETY DISCHARGE SCHEMATIC



PLEASE NOTE - THE WATER CONNECTION BOSSES AND THE OLIVES & GLAND NUTS SUPPLIED AS STANDARD ON THIS INDIRECT ARE THREADED 3/4" BSP.

COLD MAINS PIPEWORK

The cold mains pipework should be a minimum of 22mm, through to the cylinder installation to ensure that hot water flow requirements for taps and shower heads are met. Care should be taken to avoid inefficiency and heat transfer where cold water pipes run adjacent to hot water or heating pipework. Install an isolating valve (not supplied) to the cold mains pipework. A 22mm BS1010 stopcock or a quarter turn full-bore lever valve should be used rather than a screwdriver slot or other similar valve.

Mount the external expansion vessel in a suitable position to the wall using the provided bracket, and connect the pipework to the expansion vessel connection provided on the cold water inlet set. There must be no obstruction or flow restriction between the cylinder and the expansion vessel.

You must ensure that the cylinder does not fill to a pressure of greater than 3.0bar. If there are to be any showers, bidets, or monobloc taps in the installation (or wherever mixing/blending water fittings are installed) then a balanced cold supply is necessary, otherwise there is the danger of a mains fed cold service pressure leaking into the controlled hot circuit. Such back pressure would be detrimental to the system and could cause the unwarranted operation of discharge valves.

It is essential that the cold service be balanced throughout the property by taking the cold services from the balanced cold connection on the inlet control set. Should this not be possible an independent 3.0bar inlet pressure reducing valve must be installed into the cold supply of any such mixed fitting, suitably positioned so as to not compromise water flow to the cylinder. An outside hose tap may still be connected direct to the incoming cold supply if desired.

HOT WATER PIPEWORK

The majority of the hot water distribution pipework should be 22mm, possibly reduced to 15mm or 10mm dependant on the type of tap. Keep the hot draw off pipework to a minimum to maximise the transfer speed of hot water from cylinder to outlet. We advise against soldering fittings immediately to the hot water drawoff, as this reduces any inherent risk of flux landing on the immersion heater and causing premature corrosion to the connection and unit.
If the balanced cold connection is not provided, do not use monobloc mixer taps or showers. This would cause the unit to back pressurise and result in discharge. Ensure that the top of the vessel is accessible for servicing.

CONNECTION OF PRIMARY COILS

The Cylinder coil is provided with 22mm compression connections and are suitable for open vented or sealed system primary circuits. The coil must be positively pumped and are not suitable for gravity systems. To ensure maximum performance and efficiency the primary flow must enter the left hand lower coil connection when viewed from the front of the cylinder, and return from the right hand upper coil connection. An air release valve must be installed adjacent to the return connection point.
The coils are rated to 6.0 bar maximum operating pressure although heating circuits normally operate at a maximum of 3.0 bar. In a boiler circuit the two port valve should be installed in the primary flow.

CONTROL THERMOSTAT

The Compact AIO is provided with a mechanical control dual cylinder thermostat. This adjustable safety component can be changed by the end user to keep the hot water in the cylinder stored at any value between 25°C-65°C. As well as being a thermostatic control, the stat also functions as a heat source isolation safety device with the included 2-port zone valve in the event of overheating, and should be installed as per the wiring diagrams set out in this manual.
Please ensure that the flow output from the boiler is set 10°C higher that the cylinder thermostat so that the vessel can achieve the desired temperature.

RECOMMENDED STORAGE TEMPERATURE

For domestic usage a temperature set of 55°C-60°C is the norm. This is above recognised bacterial growth levels and low enough to prevent nuisance tripping of limit thermostats or unnecessary scaling.

SECONDARY CIRCULATION

Seconday return connections are supplied as standard on 200-300 litre indirect cylinders only. A circulator suitable for potable water must be used in conjunction with a non-return valve to prevent backflow. It may be necessary to incorporate an extra expansion vessel into the circuit to accommodate an increased system volume in larger secondary circulation systems.

DISCHARGE ARRANGEMENT

This information is not exhaustive. If in doubt, seek advice. Full details of Building Regulation G3, is available from: www.planningportal.gov.uk

The discharge from both the temperature, and expansion relief valves can be joined together via a 15mm end feed tee. Water should only be discharged when there is a fault with the system, and be visible at the tundish. (Consider a safety device to alert those of impaired vision or mobility when this occurs.)

Discharge water must not be allowed to collect in the pipe-work but rather flow freely to the tundish. This should be vertically mounted, in a visible location, in the same space as the cylinder, and fitted as close as possible within 600mm of the safety device (the relief valves). The discharge pipework must be in accordance with Part G3 of the Building Regulations. These are as follows:

- The discharge pipe (D2) from the Tundish should have a vertical section of pipe 300mm long below the Tundish before any elbows or bends in the pipework.
- This pipe should then be installed with a continuous fall of at least 1 in 200 thereafter.
- The pipe must 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 times larger and so on.) Bends must be taken into account in calculating the flow resistance. An alternative approach for sizing discharge pipes would be to follow the BS 8558 Specification for the design installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

Discharge pipework should terminate in a safe place where there is no danger to persons in the vicinity of the discharge. Examples of acceptable discharge arrangements include:

To a trapped gully with the outlet below a fixed grating and above a water seal.

Downward discharges to low level, within 100mm, above external surfaces such as a car park, hard stand- ing, grassed area with a protective wire cage to prevent contact but retaining visibility of discharge.

Into a metal hopper at high level with a metal downpipe and a clearly visible termination point or onto a roof capable of withstanding high temperature discharge at least 3m away from any plastic guttering.

uilding Regulation G3 allows non-metallic pipework within the tundish discharge (D2). The discharge pipe (D2) should be made of a) metal or b) another material that has demonstrated it can safely withstand high temperature water discharges and is clearly and permanently marked to identify the product and the perfor- mance standard. The discharge should not be connected to a soil discharge stack unless it can be demon- strated of safely withstanding high temperature water discharges, in which case it should;

1. Contain a mechanical seal, not a water trap, which allows water into the branch pipe but not foul drain air to be ventilated through the tundish.
2. Be a separate branch pipe with no sanitary appliances connected to it.
3. Plastic pipes used as branch pipes with the discharge should be Polybutalene (PB) or cross linked polythene (PEX) complying with national standards such as Class S of B7291-2: or Class S of BS7291-3 respectively.

4. Be continuously marked with a warning that no sanitary appliances should be connected to the pipe.
5. Plastic pipes should be joined and assembled with fittings appropriate to the circumstances in which they are used as set out in BS EN ISO 1043-1.

Queries regarding specific discharge arrangements should be directed to your local building control office.

DIAGRAM 1 - Typical discharge pipe arrangement

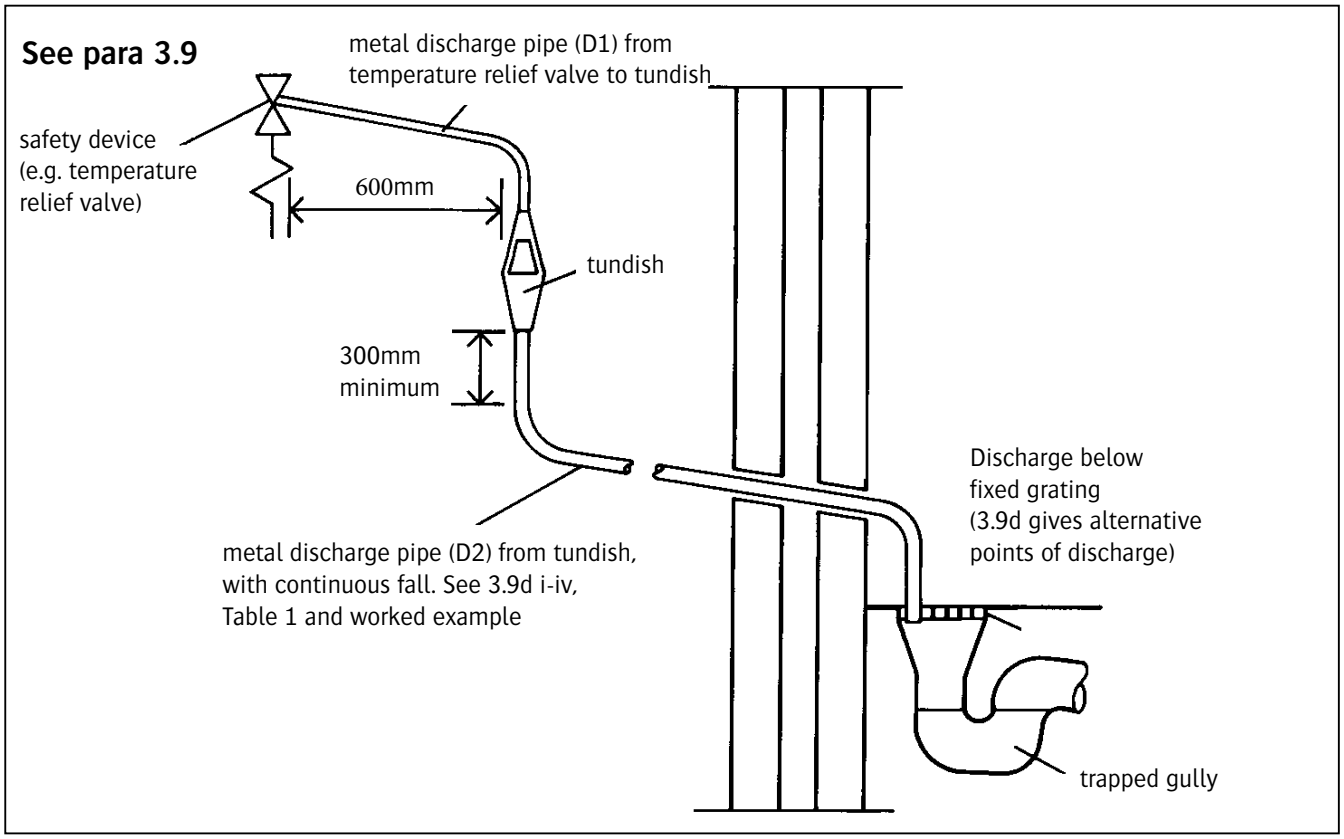


Table 1 - Sizing of copper discharge pipe 'D2' for common temperature relief valve outlet sizes

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

*see 3.5, 3.9, 3.9(a) and Diagram 1

ELECTRIC CONNECTION

The electricity connection of the boiler must be made by a qualified electrician. Improper electrical connections made by unqualified people may cause failure of critical components of the boiler and will invalidate the warranty.

DANGER ! Electric Shock Risk

- Make sure to isolate the main energy supply before starting to work on the boiler.
- Secure the main energy supply to prevent from accidental switch on while working on the boiler.

Electricity Connection Precautions

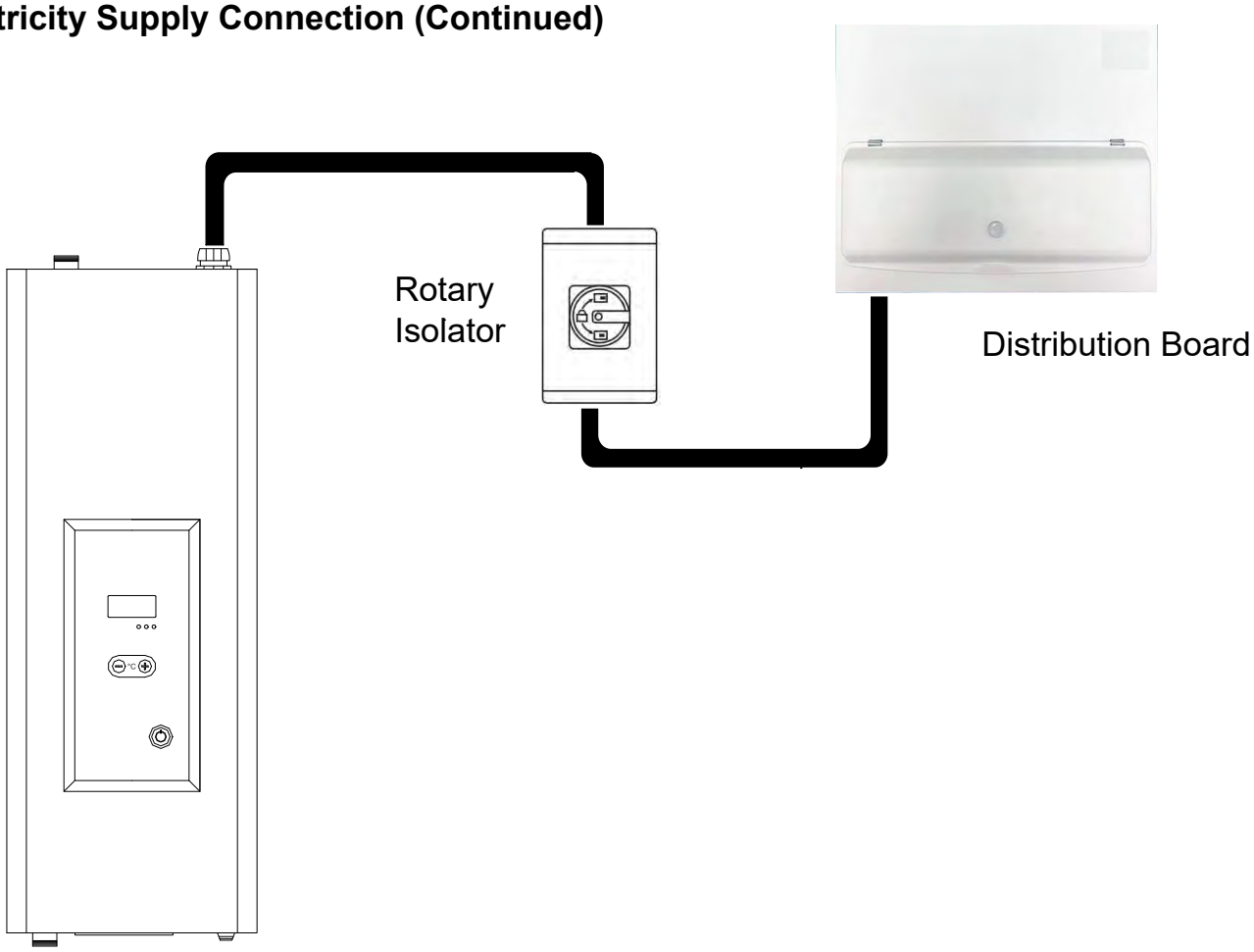
- All wiring must be carried out in accordance with current wiring regulations BS7671.
- All electrical connections must be made by a qualified electrician.
- We recommend that a load check is carried out when installing high power boilers. This must be done by a qualified electrician. Upgrading the main fuse of the property may be required.
- A proper earth connection must be made before operating the boiler.

Electricity Supply Connection

- The main electrical cable supplying the boiler should be connected to the internal RCD device and main distribution board according to the below diagrams.
- Where possible it is recommended to supply the boiler and associated circuits from a dedicated distribution board to prevent overload of the current domestic distribution board.
- If an electric shower is present we recommend that a Shower Sensor is installed within the system to each shower. This will cause an interrupt to the boilers control signal when the shower is in use. It will disable the boiler protecting the electrical system from overload. EHC part code is ESFS15C
- Local isolation is required to be installed adjacent to the boiler by means of a rotary isolator suitably rated for the boiler capacity.
- If the property is supplied by a rural power supply or prone to lightening strikes & power cuts it is recommended to install a suitable surge protection device to the boiler supply. This will reduce the risk of damage to the boiler electronics during these events.
- The boiler supply cable should be calculated by the means of a cable calculation in accordance with BS7671 by a suitably qualified electrician.
- A separate power supply rated at 3A is required to power the wiring center and associated controls.

Supply Voltage for all Compact Boiler capacities is 230V /50Hz. Make sure that the cable size and main breaker size is suitable for the choosen capacity before installing the boiler.

Electricity Supply Connection (Continued)



The cable connections are clearly marked on the RCD device terminals.

- Monophase (230V) **L** **N**
- Earth connection is marked with ⏚

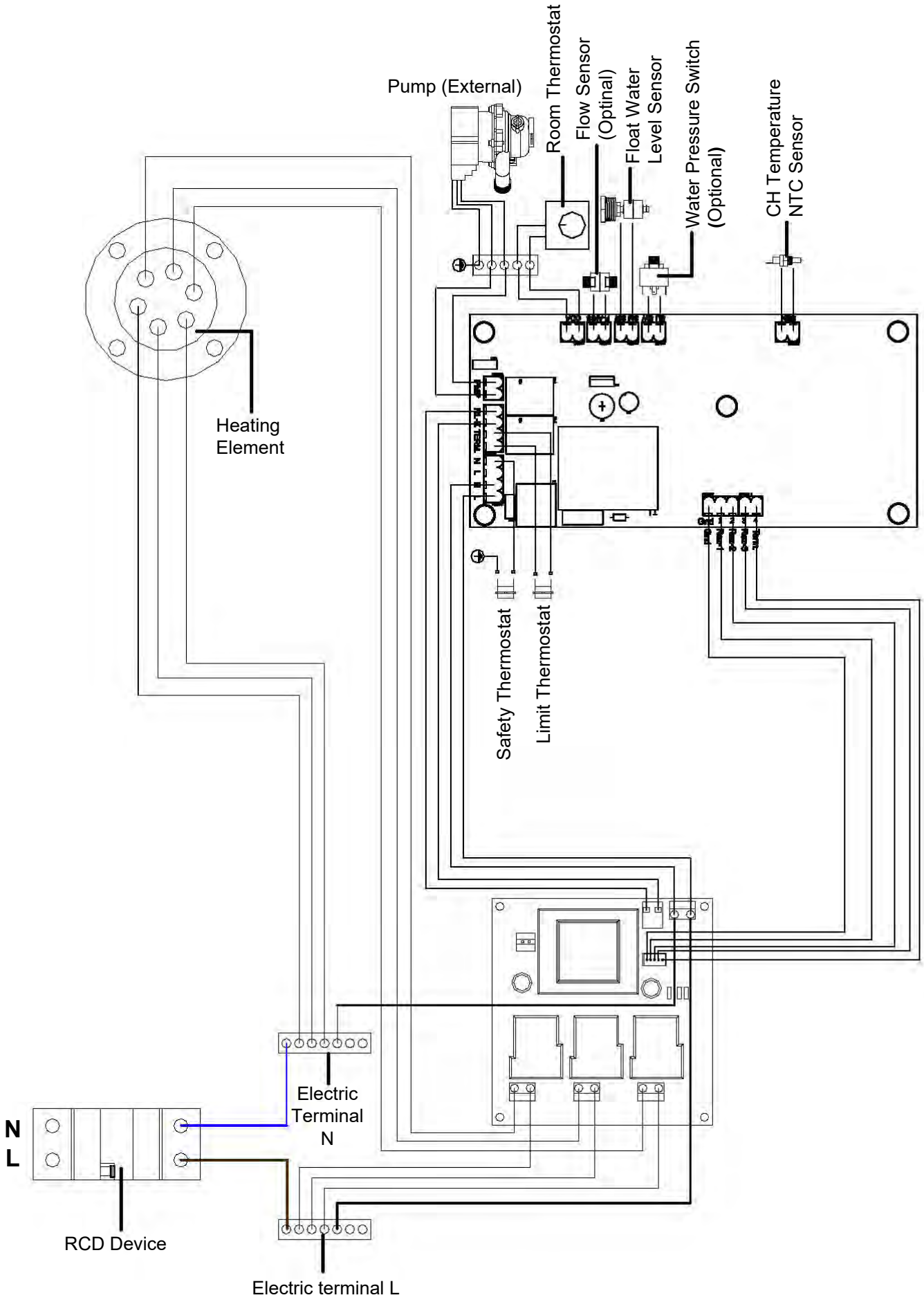
WARNING

- Make sure that the cable terminations are fixed tightly (with 2.8 -3.5 Nm torque) onto the RCD device. Loose connections may generate sparks and may cause fire risk.
- Do not operate the boiler without proper earth connection. Fix a proper size earth cable tightly to the ring cable clip and tighten the screw to the boiler chassis.
- Use the cable glands provided on the boiler to secure the electrical supply cable.

Electricity Connection Parameters

Heating Power	kW	4	6	8	10	12	14,4
Min. Cable Diameter	pcs./mm2	2x6	2X6	2x10	2x10	2x16	2x16
RCD (Single Phase)	A/mA	25 / 30	40 /30	40 / 30	63 / 30	63 / 30	80 / 30
Main Breaker (Single Phase)	A	25	40	40	63	63	80
Electric Isolation Degree	IP	X4D	X4D	X4D	X4D	X4D	X4D

Diagram 230V (Monophase)



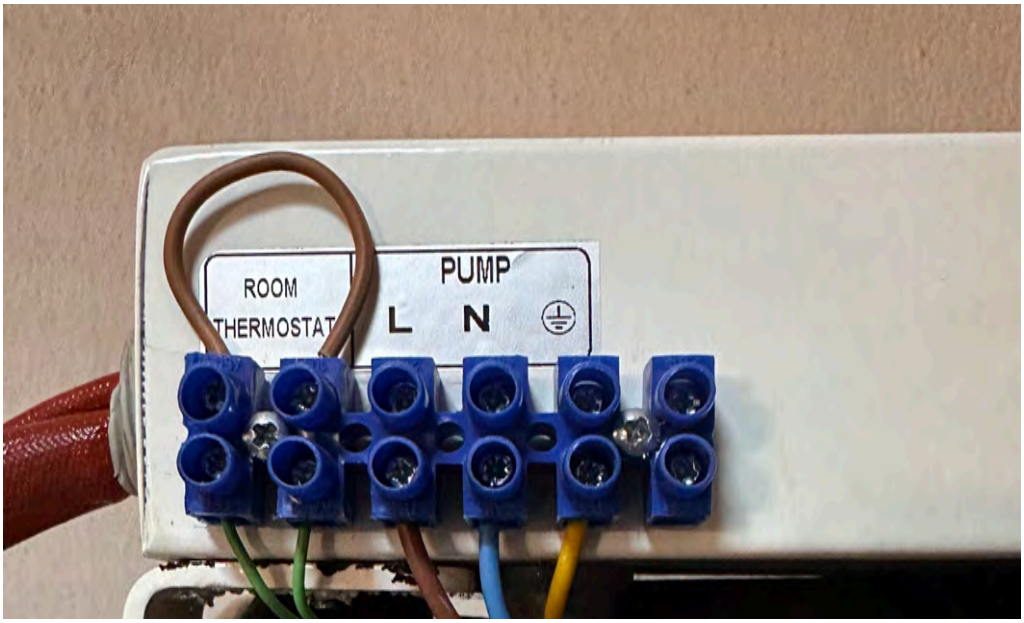
Control Wiring

A separate power supply rated at 3A is required to power the wiring center and associated controls.

A set of terminals are mounted inside the boiler on the right hand side of the relay board cover for easy connection of pump and external controls to activate the boiler. You can see this terminal in the below picture.

Circulation Pump Power Supply: Make sure to fix the pump line, neutral and earth cables tightly into the terminals as labeled.

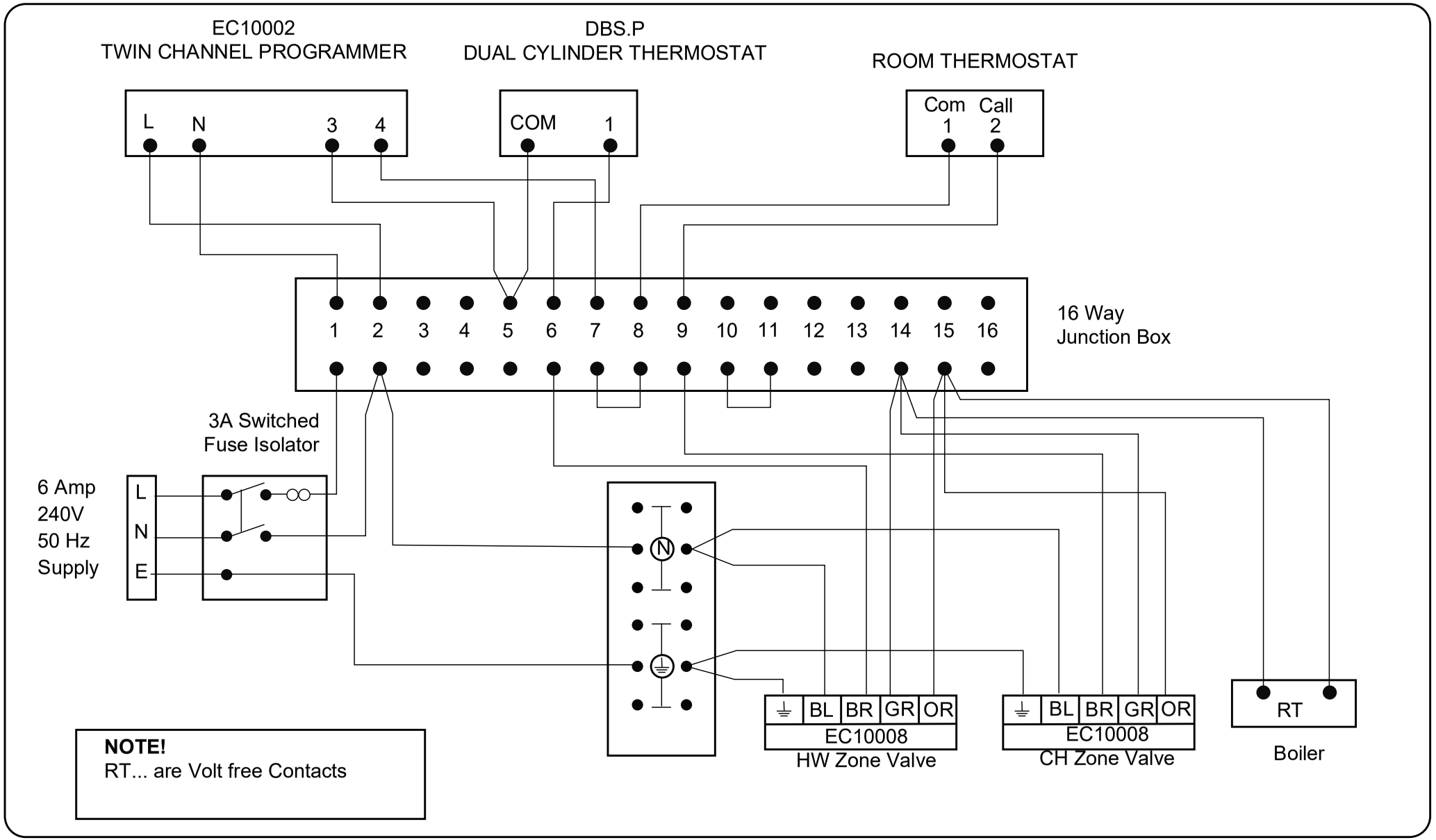
External Controls (Call for Heat: Remove the jumper cable from the room thermostat terminal and connect the call for heat wiring (Volt-free from the external controls. Make sure not to connect any voltage to the terminals labeled as room thermostat.



WARNING!

- **Do not connect any voltage to the room thermostat terminals as this will damage the boiler and .. validate the warranty.**

Heating & Hot Water Wiring: S Plan



Product: EC10010
Description: 16 WAY JUNCTION BOX

230V~10A 50Hz ClassII -15T55
BS6220 FIXED WIRING MAX 1.5mm

IP20

Back-Up IMMERSION HEATER

All Compact AIO's are supply with a backup immersion heater element of 3 Kilowatt output at 240 Volts, Incoloy elements, double pole thermal isolation and a 1¾" BSP threaded head.

ELECTRICAL CONNECTION - 3kW

This appliance must be earthed. It is suitable for a 240 volt A.C. supply only. The electrical installation should only be carried out by a suitably qualified electrician in accordance with latest I.E.E. regulations. Ensure the electrical supply is isolated before working on the system.
The electrical supply to each immersion heater must be fused at 16A via a double pole isolating switch with a separation of at least 3mm to both poles to BS 3456.
The cable must be 2.5mm2 heat resistant (85°C HOFR) sheathed flex complying to BS EN 50525. Do not use a cable of lesser rating.
For immersion heaters other than 3kW consult wiring requirements supplied with the immersion heater.
Do not operate the immersion heater(s) until the unit is full of water. If any sterilisation liquid is in the cylinder do not operate the immersion heater(s) as this will cause premature failure.
This device must be earthed.
Earth connection, (green & yellow), should be made firmly to the earth post marked "E", using the terminal attachments provided. Live connection, (brown), from the mains supply cable to the thermostat terminal marked "L". Neutral connection, (blue), from the mains supply cable to the thermostat terminal marked "N".

RECOMMENDED TEMPERATURE SETTINGS - IMMERSION HEATER

For domestic usage a temperature set of 55°C-60°C is the norm. This is above the growth temperature area for Legionella and low enough to prevent nuisance tripping and unnecessary scaling.

THERMOSTAT OPERATION - Immersion Heater

The thermostat has an adjustable control operating between 20°C and 65°C. The usual desired domestic setting is between 55°C and 60°C. The thermostat is supplied preset at 60°C.

THERMAL CUTOUT - Immersion Heater

If the cylinder begins to overheat (80°C), the thermal cut-out will activate, isolating both the live and negative connections within the immersion heater. This may also happen during a power spike. For resetting, isolate the power supply and allow the cylinder to cool down. Remove the head cap and press the high limit cut-out reset button on top of the thermostat. Should nuisance tripping occur, consult a qualified electrician to investigate the power supply and/or the thermostat itself.

COMMISSIONING

FILLING THE PRIMARY HEATING CIRCUIT

THE PRIMARY CIRCUT MUST BE FLUSHED IN ACCORDANCE TO BS 7593

1. Connect the primary filling loop and tighten.
2. Make sure that all primary connections are tight before filling.
3. Open the filling loop and allow the system to start filling.
4. H6 error code showing the main heat exchanger is not filled with water will be shown on the display until the exchanger is fully filled and the float water level sensor enables operation. the H6 code will then disappear from the display.
5. Check the manometer on the installation as you fill water.
6. Fill the system to 2 bar, then start to purge the radiators and main heat exchanger until all the air is out the system.
7. This will have to be repeated several times to fully purge the system re-filling as you go.
8. Once all air is purged adjust the system pressure to 1.5 bar.
9. Add inhibitor from a reputable manufacturer, This will protect against the formation of scale, corrosion. It is crucial however, that for the protector to work correctly, the system must be properly cleansed and flushed.
10. If any part of the system operates at a temperature less than 55°C biocide will also require to be added to prevent microbiological growths.

We recommend inhibitor levels are checked on an annual basis (usually during the service) or sooner if the system content is lost.

CAUTION!

A Magnetic Filter Must Be Fitted To This Boiler. Failure To Protect The System Will Invalidate the Manufacturer's Warranty.

FILLING THE HOT WATER CIRCUIT

1. Check the pressure in the potable vessel is set to 3 Bar.
2. Check all connections for water tightness including factory made connections, as these may become loose in transit.
3. The hot tap furthest away from the cylinder should be opened before filling the system to purge air and flush any disturbed particles.
4. Open the stopcock on the cold supply to start filling the cylinder.
5. Once a steady flow of water is present at the furthest away tap, close the outlet and proceed to open any remaining taps in turn to purge air from the system before turning on the electrical supply.

SAFETY VALVE CHECKS

A problem is occurring if water is released from either safety valve during the heat up process (temperature relief and expansion relief.) This must be rectified before continuing. Both valves should be opened slowly one at a time, and then together, allowing as much water as possible through the tundish. Check that the discharge pipework is cleared of obstruction, free flowing, and without spillage over the tundish. Check that the valves reseat correctly when released.

DRAINING PROCESS

Isolate the unit from the electric supply to prevent immersion heater burn out. Isolate the unit from the cold mains. Attach a hose to the draining tap. Ensure this reaches to a level below the unit for creating an effective siphon so that the maximum amount of water is drained from the unit. Open the hot tap closest to the unit and open the draining tap.

Caution: Water drained off may be hot.

STARTING UP

First time operation of the boiler must be done by a Competent Installer in order to validate the guarantee of the boiler and to ensure the boiler runs efficiently and safely for many years.

The Competent Installer is responsible for completing the commissioning form electronically via the Scan Me badge located on the front of the boiler.
The following steps will be taken to put the boiler into operation:

a) Check that the main circuit breaker and RCD device switches are on.
b) Check that the valves of the heating circuit and DHW installation are open.
c) Make sure water is filled to the system as explained in the previous section and all air inside the system is vented correctly.
d) Check that all RCD's operate by pressing the TEST button, then restore teh power.
e) Press the on/off button and turn on the boiler. Adjust the central heating temperature using the + / - buttons. The adjusted temperature will flash on the display and then the instantaneous temperature will be shown on the screen during operation of the boiler.
f) Set the programmer to on for central heating and turn up the room thermostat, central heating zone valve will open and the boiler will start to operate according to the adjusted temperature on the control panel. Detailed explanation about making operation adjustments are given in section 5, user instructions.
g) Set the programmer to on for hot water, the hot water zone valve will open and the boiler will start to operate according to the adjusted temperature on the control panel. the temperature on the boiler control panel should be set 10°C higher than the cylinder thermostat.

IMPORTANT!

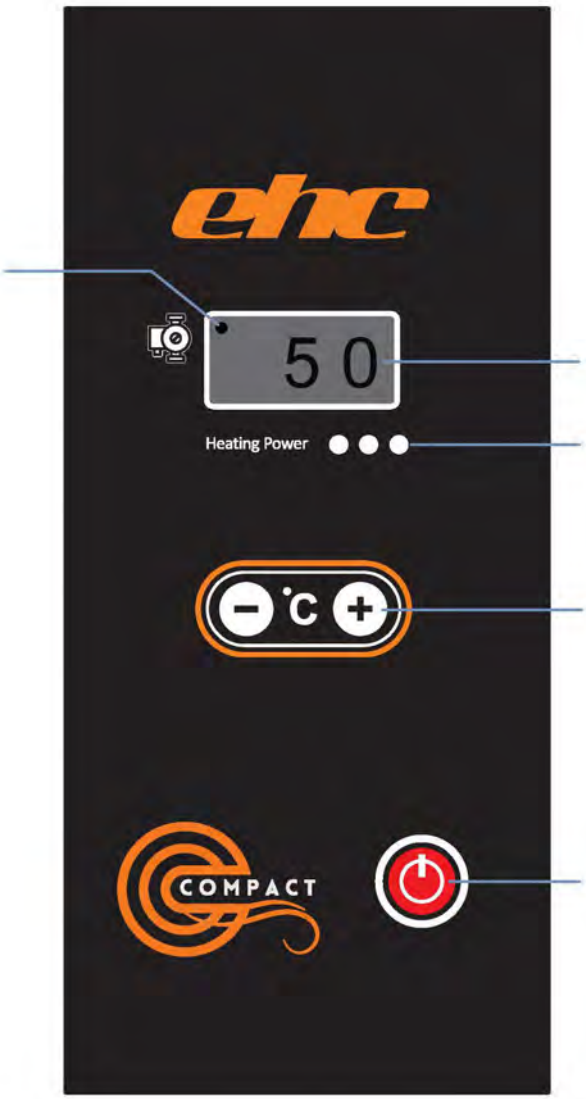
Once the boiler is operational scan the Smart Tag on the front of the boiler with your Phone or Tablet via NFC or QR to Complete the Commissioning Records and register the Boiler Warranty.

The Boiler Smart Tag also provides the following support features for the User and Maintenance Engineer;

> Boiler Commissioning
> Warranty Registration
> Service Log
> Installation Manuals
> Repair Videos
> Spare Parts
> Warranty Terms & Conditions
> Extended Warranty

USER INSTRUCTIONS

CONTROL PANEL



All functions required to run the boiler is done via the buttons on the control panel. Set boiler water temperature, current temperature, power stages, pump activation, error codes and parameters can be followed and adjusted on the digital screen.

A. **Pump Active Indicator:** When the dot on the digital screen is present, it indicates that the pump is runing.
B. **Digital Display:** Set temperature, current water temperature and error codes are shown on the digital display.
C. **Power Stage Indicator Leds:** Shows the power stage the boiler is currently operating on. 3 leds on - max. capacity, 2 leds on - 2/3 capacity, single led on - 1/3 capacity.
D. **+ / - Buttons:** These buttons are used to adjust the desired boiler water temperature. Use + to increase and - to decrease the boiler temperature. Adjusted temperature flashes on the display and then the display switches to showing the actual water temperature.
E. **On/Off Button:** Push this button to turn on or off the boiler.

TURNING ON THE BOILER

Switch on the main electricity supply of the boiler. Then press the on/off button to turn on the boiler and adjust the desired temperature using the + and - buttons on the control panel. The display will show the pump active indicator, the current water temperature and the leds will indicate the power stage the boiler is currently operating on. The boiler will operate automatically with modulating power to maintain the adjusted temperature. Press on/off button again to turn off the boiler. OFF will be shown on the display and this is the standby mode for the boiler.

NOTE: For the protection systems such as frost protection and pump anti -jamming functions to operate properly, The electrical supply should be on and all the valves on the installation should be open. Any damage or breakdown occurring wihle the electricity is off or if the valves are kept closed is not covered by warranty.

⚠ **CAUTION!** Frost damage which may occur in cases where the electricty is off or the installation valves are kept closed is not covered by warranty.

ADJUSTABLE OPERATION PARAMETERS

There are 2 adjustable parameters for the Compact boiler. To enter into parameter adjustment mode, while the boiler is at Off position, press and hold + or - button until P01 appears on the display. Press off button once to select the parameter and use + and - buttons to change the value. Use off button to save and exit.

P01 Parameter: The compact boiler can be customized to be used with a radiator installation or with underfloor heating. This adjustment is made from the P01 parameter.
P01=0 radiator heating (Default factory setting
P01=1 underfloor heating
Radiator heating water temperature adjustment range is 30-80°C
Underfloor heating water temperature adjustment range is 30-50°C

P02 Parameter: Additional optional flow sensor or water pressure sensor connection activation.
P02=0 connection enabled
P02=1 connection disabled (Default factory setting

IMPORTANT NOTE: Do not change the P02 parameter. It should be set at 1 at all times for Compact boiler series. Otherwise H7 error code will be shown on the screen and the boiler will not operate.

SAFETY SYSTEM OF THE DEVICE

The Compact Boiler has the following safety features in order to ensure the highest level of safety and highest technology.

RCD DEVICE (SHORT CIRCUIT RELAY)

In case of short circuit, the relay shuts off the electricity connection and prevents any possibility of electrocution, protecting human health and safety. For the RCD device to work properly, an earth connection with proper dimension and ground resistance must be connected to the boiler by a certified electrician. Failure to do so will cause the RCD device to malfunction. In such a case, the manufacturer is not responsible for any harm to people or environment.

HEATING TANK FLOAT WATER LEVEL SENSOR (H6)

This sensor prevents the boiler from running without sufficient water inside the heating tank therefore avoids any damage to the heating elements. In case of low water level, H06 is displayed on the device's screen. The air trapped must be completely removed from the air vent valve which is placed on top of the device. If the water pressure drops after the air is taken, the display shows H03. In this case, water should be added from the filling valve.

OVERHEAT LIMIT THERMOSTAT

If the water temperature at the heating system is above 93°C, the system energy is cut off by the main board and H5 warning code is shown on the LCD screen.
What to Do: When the water temperature of heating system drops down to 60°C, the boiler will start working again. If this failure occurs two times consequently, please turn off the boiler and call an authorized service engineer.

SAFETY THERMOSTAT

This is a secondary safety measure to prevent overheating in the boiler. If the limit thermostat does not function and the boiler temperature reaches 96°C, the safety thermostat shorts neutral to the boiler chassis and the RCD device shuts off the electricity supply. Proper earth connection is required for the safety thermostat to work properly.

FROST PROTECTION

When the temperature in the heating system drops down to 5°C, there is security system that automatically activates the heating elements. When the water temperature reaches 30°C, the heating elements are stopped. This system prevents the water inside the boiler from freezing and subsequent damage to the components (this does not protect the DHW cylinder).
In order for this system to work, the main switch to which the device is connected must be turned on and the valves on the installation should be open. Malfunctions and damages caused by frost when the electricity is off or if the valves are closed are not covered by warranty.

CENTRAL HEATING NTC SENSOR

When a sensor failure occurs in central heating system.H1 warning code appears on the digital screen.

CIRCULATION PUMP ANTI-JAMMING SYSTEM

When the boiler is in the OFF position, the pump connected to the circuit is operated in every 24 hours by the control card for a certain period of time to prevent locking and jamming of the pump.

⚠ CAUTION!

- The stand-by safety systems of the boiler; such as frost protection and pump lock protection are only active if the electricity connection of the boiler is on. The valves on the installation should not be closed.
- Especially during winter, when the ambient temperature decreases below 0°C there is a risk of freezing and the system water must be drained if the electrical connection of the device is interrupted during these periods.

TECHNICAL TABLE

Boiler						
Heating Power	kW	8	10	12	14.4	
Output	BTU	27297	34121	40946	49135	
Maximum Working Pressure (Heating)	Bar	3				
Heating Circuit Temperature Range	°C	30 - 80				
Boiler Electrical						
Supply Type		1Ph	1Ph	1Ph	1Ph	
Minimum Cable Size	mm	10	10	16	16	
RCD Specification	A/mA	40/30	63/30	63/30	80/30	
Circuit Protective Device	Amps	40	50	63	80	
Voltage	Volts	230				
Fequencey	Hz	50				
Load Currrent	Amps	35	43	52	63	
Element Resistance	ohms	6.6	5.3	4.4	3.7	
Primary Hydraulics						
Central Heating Connections	mm	22				
Primary Expansion Vessel	Litres	8				
Primary Expansion vessel Pre-Charge	Bar	1.5				
DHW Cylinder						
Capacities	Litres	150	170	200	250	300
Maximum Mains Water Pressure	Bar	10				
Max Fill Pressure (Inlet Control)	Bar	3				
Maximum Working Pressure	Bar	5.5				
Operating Pressure of Expansion Valve	Bar	6				
Operating Pressure of T&P Valve	Bar	7				
Opertaing Temp. of T&P Valve	°C	95				
Cylinder Electrical						
Immersion Element	kW	3				
Immersion Minimum Cable Size	mm	2.5				
Immersion Circuit Protective Device	Amps	16				
Conrols Circuit Minimum Cable Size	mm	1				
Controls Circuit Protective Device	Amps	3				
DHW Hydraulics						
DHW Connections	mm	22				
DHW Expansion Vessel	Litres	12	12	19	19	19
DHW Expansion Vessel Pre-Charge	Bar	3				
Dimentions & Weight (Basic)						
Capacity	Litres	150	170	200	250	300
Height	mm	1264	1392	1592	1894	2113
Diameter	mm	800	800	800	800	800
Weight (NET)	Kg	57	61	65	70	75
Weight (Gross)	Kg	207	231	265	320	375
Dimentions & Weight (Ultimate)						
Capacity	Litres	150	170	200	250	300
Height	mm	1264	1392	1592	1894	2113
Diameter	mm	800	800	800	800	800
Weight (NET)	Kg	61	65	69	74	79
Weight (Gross)	Kg	211	235	269	324	379

MAINTENANCE

The following checks MUST be carried out annually by a competent engineer and recorded By Scanning the Boiler Smart Tag;

- **Any spares used must be purchased from EHC.**
- **Safety devices must not be bypassed. Do not use the unit if safety features are not fully operational.**
- **Proof of annual servicing is required to avoid invalidating your manufacturer's guarantee.**
- **Upon installation of the unit the installer must complete the accompanying commissioning certificate at the rear of this manual.**

1- Check for leaks in the water circuit and, if necessary, replace the joints to ensure water tightness.
2- Check the status of the device visually.
3- Check the safety system of the heating system are working properly. Activate the test button on the internal RCD (Short Circuit Relay)
4- Check all electrical connections of the device. Fasten any loosened cables.
5- Clean the Magnetic Filter
6- Check the hot water production flow rate and temperature.
7- Check the general operation of the device.
8- Check & adjust the Primary expansion vessel pre-charge pressure to 1.5 bar
9- In accordance with Part L of the building regulations check system water condition and inhibitor strength levels. EHC recommends the use of Adey Pro Check for this task.
10- The expansion relief valve should be eased open to allow water to flow for a minimum of 5 seconds. Close the valve and make sure it resets correctly. Repeat this procedure with the temperature & pressure relief valve. Ensure that the discharge pipework is cleared and allowing a free flow of discharge.
11- Ensure all fitted immersion heaters are working correctly. They should be controlling the water temperature between 55°C and 60°C.
12- Make sure the pressure in the DHW expansion vessel is set to 3 bar. This is done by turning off the water supply to the unit and opening a hot tap first. Air or CO2 can be used for repressuring the expansion vessel.
13- Remove the head on the inlet control set and clean the mesh filter within.
14- Record the service via the Scan Me tag on the front of the boiler.

DISCHARGE AT THE TUNDISH

IF WATER IS FLOWING THROUGH THE TUNDISH THIS INDICATES DISCHARGE FROM ONE OF THE SAFETY VALVES AND INDICATES A FAULT IN THE SYSTEM. CONTACT A COMPETENT PLUMBER OUT TO SERVICE OR DIAGNOSE THE SYSTEM.

ERROR CODES AND TROUBLESHOOTING

Error Code	Explanation	Reason	Solution
H1	CH Temperature Sensor Error	∝ Disconnected sensor cable ∝ NTC sensor failure ∝ Mainboard failure	❖ Check the cable and socket ❖ Replace the NTC sensor ❖ Replace the mainboard
H4	Safety Thermostat Error Boiler temp >=95°C	∝ Air trapped inside the system ∝ Valves on the installation may be closed ∝ Thermostat failure ∝ Particule filters may be clogged. ∝ Circulation pump failure ∝ Mainboard failure	✓ Vent the air from boiler and radiators then fill system upto 1.5 bars. ✓ Make sure all the valves are open ❖ Check the thermostat connections, replace thermostat if necessary. ❖ Clean the filters. ❖ Turn the rotor manually, check pump electric connection, replace pump if needed. ❖ Replace the mainboard.
H5	Limit Thermostat Error Boiler temp >=93°C	∝ Air trapped inside the system ∝ Valves on the installation may be closed ∝ Thermostat failure ∝ Particule filters may be clogged. ∝ Circulation pump failure ∝ Mainboard failure	✓ Vent the air from boiler and radiators then fill system upto 1.5 bars. ✓ Make sure all the valves are open ❖ Check the thermostat connections, replace thermostat if necessary. ❖ Clean the filters. ❖ Turn the rotor manually, check pump electric connection, replace pump if needed. ❖ Replace the mainboard.
H6	Main Heat Exchanger Water Level Error	∝ Air trapped in main heat exchanger ∝ Float water level sensor failure	✓ Vent the air inside the mani heat exchanger using the manual air vent. Fill the system upto 1.5 bar. ❖ Check the cable of folat water level sensor ❖ Check if the folater is stuck, clean the part so the floater moves freely. Replace the float water level sensor if neccessary.

❖ These solutions can only be performed by AUTHORIZED SERVICE PERSONNEL.

✓ These solution steps can be performed by end users.

UNVENTED CYLINDER TROUBLESHOOTING

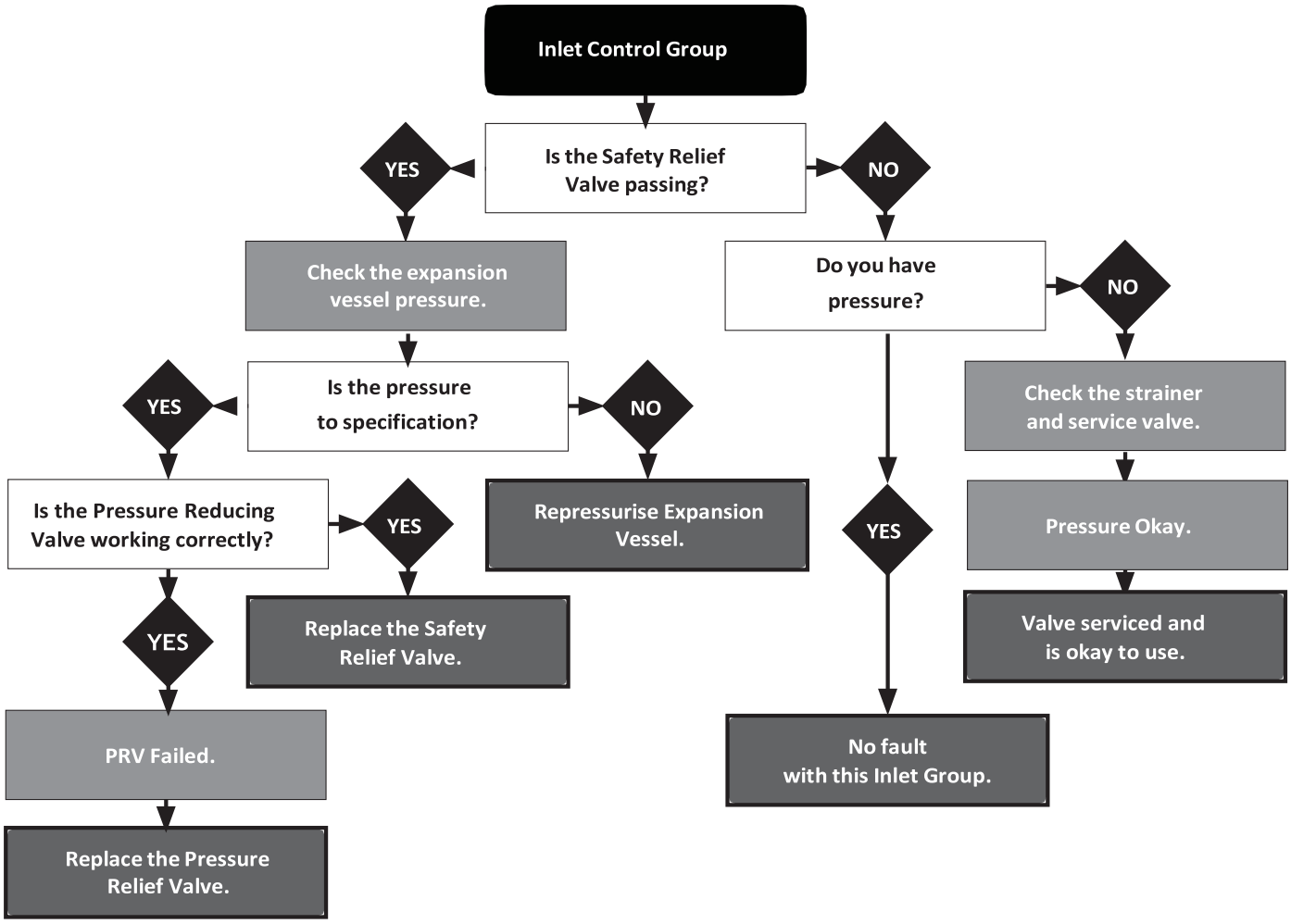
CYLINDER FAULT FINDING

PROBLEM	POSSIBLE CAUSE	REMEDIATIVE ACTION
Water is visible at tundish	Potential discharge from T&P valve	Follow tundish/T&P fault finding
	Potential discharge from Expansion relief valve due to fault at PRV	Follow inlet control set fault finding
	Back pressure from system	Check all cold connections into mixers are fed from the balanced cold service from the inlet control valve. If not, additional PRV's must be fitted.
Expansion relief valve opens when cylinder is heated	Possible fault at Expansion Vessel	Follow expansion vessel fault finding
Cylinder appears to be leaking from inside the steel case	Loose cylinder connection - notably from hot water outlet	Check all connection points including the immersion heaters and the hot outlet to ensure that these are not leaking and re-make joints if necessary.
Noise when operating tap or shower	Vibrating/insecure pipework	Ensure that all pipework is secured to the wall with pipe clips as appropriate.
Reduced water flow	Possible external water works being carried out	Check with local authorities and wait until works to be completed
	Lodged debris from mains at Inlet control PRV sticking	Strip & clean PRV/inline filter, or replace inlet control set.
No hot water available	Possible immersion heater failure	Follow immersion heater fault finding

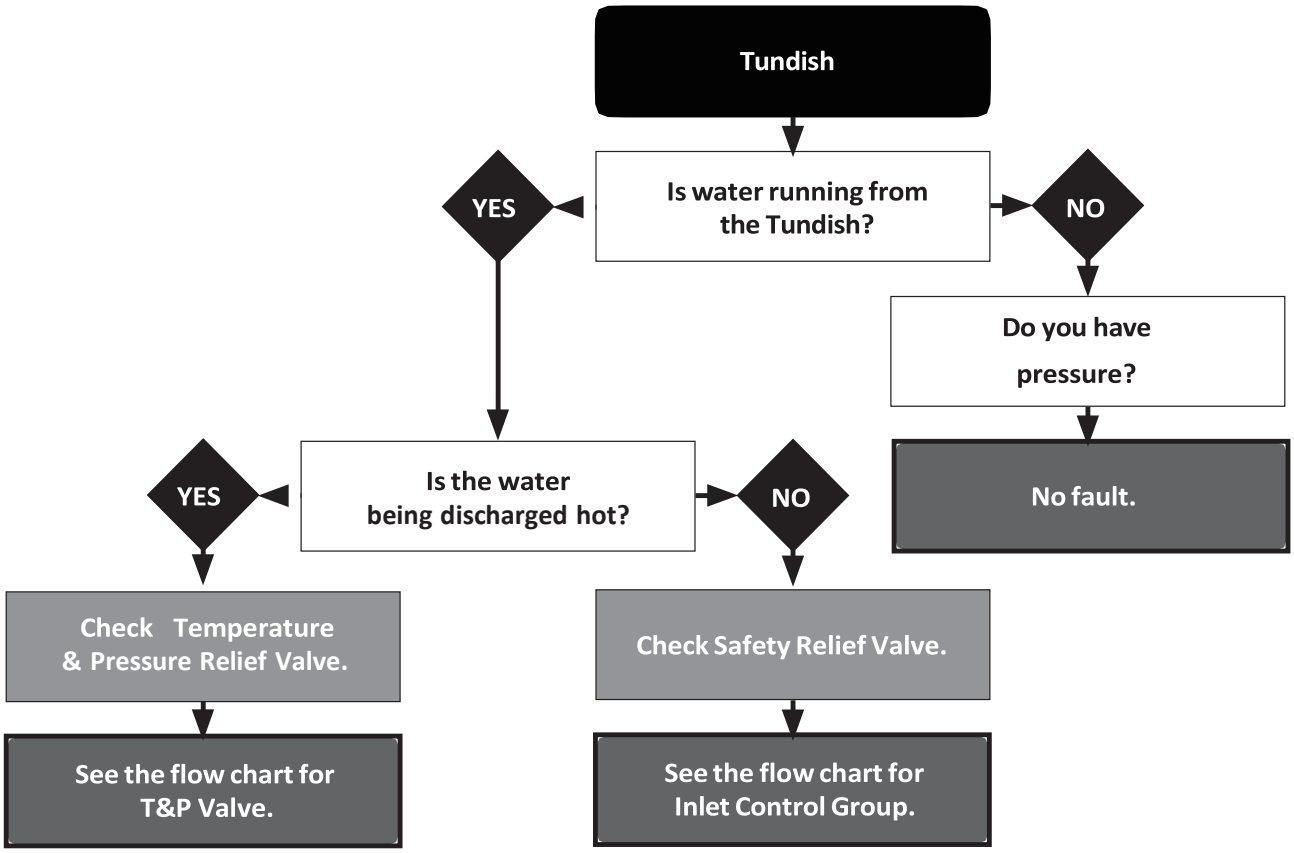
EXPANSION VESSEL FAULT FINDING

PROBLEM	POSSIBLE CAUSE	REMEDIATIVE ACTION
Discharge of water from relief into tundish	Expansion Vessel is undersized	Vessel needs resizing and installing by a qualified heating engineer.
	Pre-charge set incorrectly on vessel installation	Pre-charge requires setting when the system is depressurised according to manufacturer's recommendations.
	Vessel membrane is ruptured and require replacement	Check schrader valve for leaks or damage. Replace vessel if necessary
	Membrane may be partially depressurised due to losses over time and require re-pressurisation	Check schrader valve for leaks or damage. Have heating system serviced and vessel repressurised or replaced.
Leak from flange or water connection	Failure of flange plate	Replace flange plate or entire vessel
	Ruptured membrane has led to internal corrosion and has caused leak in vessel	Replace entire vessel
Vessel appears full of liquid when system is cold	Membrane is fully depressurised	Replace membrane or entire vessel. Check schrader valve for leaks damage.
Water discharges from vessel when schrader pin is depressed for inspec- tion of pressure	Vessel membrane is ruptured	Replace membrane or entire vessel.

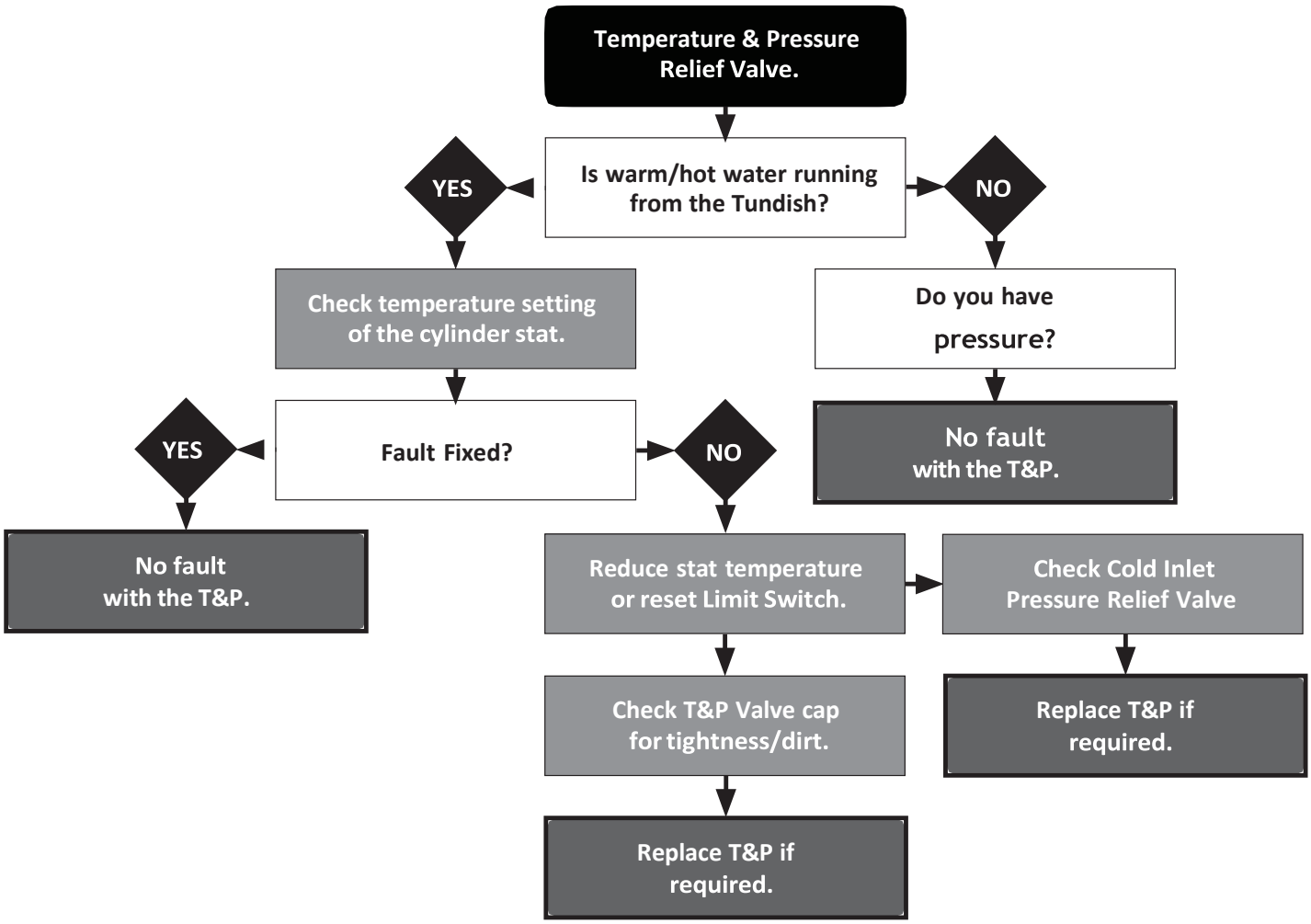
INLET CONTROL GROUP - FAULT FINDING



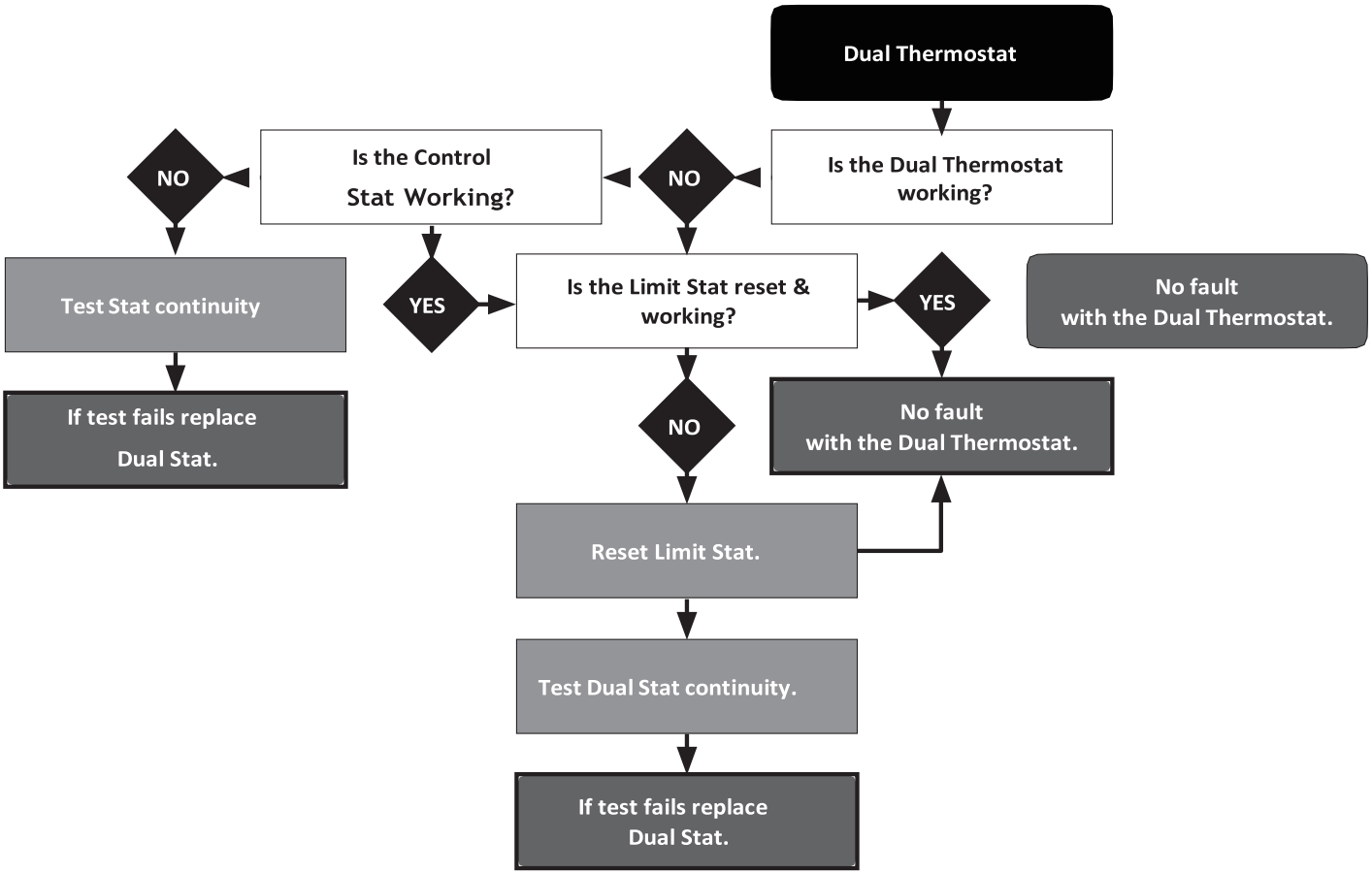
TUNDISH - FAULT FINDING



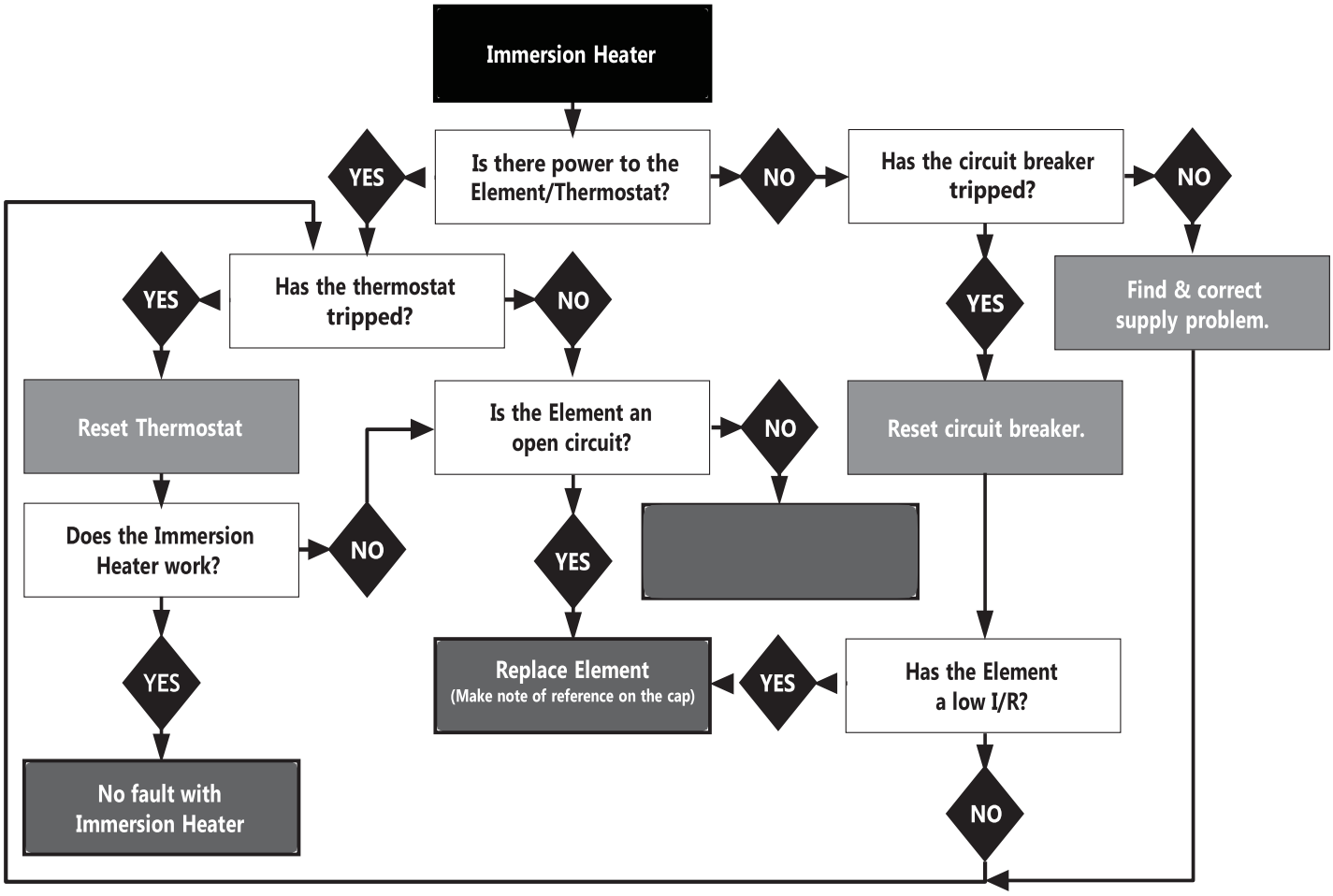
TEMPERATURE & PRESSURE RELIEF VALVE - FAULT FINDING



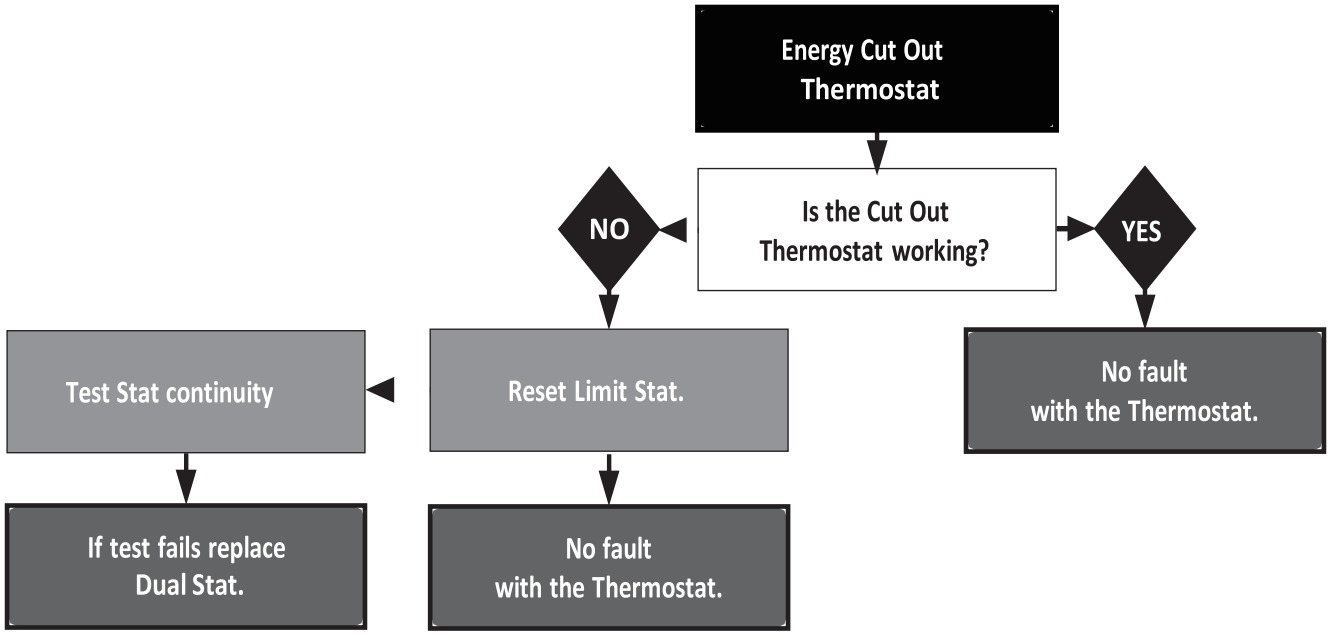
DUAL THERMOSTAT - FAULT FINDING



IMMERSION HEATER - FAULT FINDING



ENERGY CUT OUT - FAULT FINDING



GUARANTEE CONDITIONS

This guarantee starts at the boiler's invoice date and continues to the period of time stated in guarantee certificate. In order for this guarantee to be valid, the commissioning certificate must be completed and warranty registration submitted. First installation and periodical maintenance must be performed and recorded by a Competent Engineer in your area.

1. The installer must be suitably qualified to install EHC products and all Commissioning Sheets & Annual Servicing Sheets require to be made available to EHC when requested.
2. The Boiler must be installed as per the manufacturers installation instructions.
3. The Boiler Warranty starts from the date of purchase and must be registered with EHC by either the Installer or the Householder, within 60 days of the Boiler Purchase date. For new build properties, this must be done within 30 days of the sale being completed. Failure to do so will reset the Warranty Period to 2 Years for Parts and Labour only.
4. To comply with our Manufacturer's Warranty Terms the Boiler must be serviced each year as outlined in the product installation manual. The service must be carried out by a suitably qualified engineer. The service can be done up to 30 days before or after the original anniversary of the Boiler being installed without invalidating the Warranty.
5. If the service is not carried out in accordance with the guidelines within the product installation manual, the Warranty cover will become void. The guidelines are as follows:

a. Service intervals must be every 12 months.
b. Ensure that the expansion vessel pressure is set to 1.5bar
c. Clean external & internal magnetic filters.
d. Check system water condition and inhibitor strength.
e. Check electrical connections.

6. While the Warranty is in place, we will replace parts which were faulty from the date of purchase, at our discretion free of charge. Reasonable Labour costs will only be paid where the value has been pre-agreed and authorised by EHC prior to the repair commencing.
7. This Warranty only relates to the Boiler and integrated controls and does not include any connected system, radiators or accessories such as time switches, thermostats, motorised valves, external pumps, external expansion vessels.
8. If the Boiler breaks down, we may ask you to pay a deposit prior to the repair visit. We will return the deposit in full if we find a fault that is covered by the Warranty. We may keep the deposit if we cannot access your property at the agreed visit time or conditions mentioned in point 5 above of this Warranty have not been met. A responsible adult must be at the property to provide access to the Engineer.
9. Any repair carried out under the terms of this Warranty does not extend the Warranty beyond its original period.
10. The 5 Year Warranty only applies to boilers bought in and used in the United Kingdom, Channel Islands and Isle Of Mann For all other areas out with the UK the Warranty provided will cover parts only for a 2 Year duration.
11. Engineers will not carry out repairs if they think accessing the Boiler would be a risk to Health and Safety.

12. The cylinder carries a 25-year guarantee against faulty materials or manufacturing, based upon the following conditions:

i. Correct installation as per this document and all relevant standards, regulations, and codes of practice in force at the time.
ii. The Benchmark Commissioning Checklist has been completed.
iii. The unit has been serviced annually.
iv. The product has not been modified in any way, other than by us.
v. There has not been any misuse, tampering, or neglect of the cylinder.
vi. It has only been used for the storage of potable water.
vii. It has not been subjected to frost damage.
viii. The system is fed from a public mains water supply.
ix. Storage temperatures have not exceeded 65°C.
x. Installations made only in the United Kingdom.
xi. The water chemistry used in the system is found to be above the maximum allowances.
xii. The guarantee period starts from the date of purchase and online registration is required.

13. If your Boiler is in a cupboard, there must be sufficient room for the Engineer to work (the minimum area is set out in the installation instructions). We will not accept responsibility for removing cupboards, kitchen units, trims etc to gain access for repairs.
14. This Warranty does not in any way affect your Statutory or Legal Rights.
15. Adey Inhibitor (or equivalent) requires to be added to the system during installation and thereafter at regular intervals using the correct dosage.
16. A reputable magnetic filter requires to be installed on the return of every Boiler.
17. Existing systems require to be pressure flushed correctly and final TDS reading recorded on the commissioning paperwork.
18. ThisWarranty does not cover the following:

a. Partswhichfail due to system debris, contamination , scale and/or water quality issues,
b. Boilers installed within mobile leisure accommodation vehicles (LAVs) e.g. Boats, Caravans.

APPENDIX - WATER CHEMISTRY

This water heater is manufactured to suit the water conditions of most public reticulated water supplies. However, there are some known water chemistries which can have detrimental effects on the cylinder. If you are unsure of your water chemistry, you may be able to obtain the relevant water chemistry information from your local water supply authority.
*Our warranty will not apply where water stored in the storage cylinder exceeds at any time any of the fol- lowing levels: - TOTAL HARDNESS 200mg/L, TOTAL DISSOLVED SOLIDS 600mg/L

www.electric-heatingcompany.co.uk/warranty-terms-conditions

IMPORTANT!

Once the boiler is operational scan the Smart Tag on the front of the boiler with your Phone or Tablet via NFC or QR to Complete the Commissioning Records and register the Boiler Warranty.

The Boiler Smart Tag also provides the following support features for the User and Maintenance Engineer;

> Boiler Commissioning
> Warranty Registration
> Service Log
> Installation Manuals
> Repair Videos
> Spare Parts
> Warranty Terms & Conditions
> Extended Warranty

MAINS PRESSURE HOT WATER STORAGE SYSTEM COMMISSIONING CHECKLIST

This Commissioning Checklist is to be completed in full by the competent person who commissioned the storage system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Customer name:	Telephone number:
Address:	
Cylinder Make and Model	
Cylinder Serial Number	
Commissioned by (PRINT NAME):	Registered Operative ID Number
Company name:	Telephone number:
Company address:	
	Commissioning date:
To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:	
Building Regulations Notification Number (if applicable)	

ALL SYSTEMS PRIMARY SETTINGS (indirect heating only)				
Is the primary circuit a sealed or open vented system?	Sealed		Open	
What is the maximum primary flow temperature?				°C

ALL SYSTEMS					
What is the incoming static cold water pressure at the inlet to the system?					bar
Has a strainer been cleaned of installation debris (if fitted)?	Yes		No		
Is the installation in a hard water area (above 200ppm)?	Yes		No		
If yes, has a water scale reducer been fitted?	Yes		No		
What type of scale reducer has been fitted?					
What is the hot water thermostat set temperature?					°C
What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet)?					l/min
Time and temperature controls have been fitted in compliance with Part L of the Building Regulations?					Yes
Type of control system (if applicable)	Y Plan		S Plan		Other
Is the cylinder solar (or other renewable) compatible?	Yes		No		
What is the hot water temperature at the nearest outlet?					°C
All appropriate pipes have been insulated up to 1 metre or the point where they become concealed					Yes

UNVENTED SYSTEMS ONLY				
Where is the pressure reducing valve situated (if fitted)?				
What is the pressure reducing valve setting?				bar
Has a combined temperature and pressure relief valve and expansion valve been fitted and discharge tested?	Yes		No	
The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations				Yes
Are all energy sources fitted with a cut out device?	Yes		No	
Has the expansion vessel or internal air space been checked?	Yes		No	

THERMAL STORES ONLY		
What store temperature is achievable?		°C
What is the maximum hot water temperature?		°C

ALL INSTALLATIONS		
The hot water system complies with the appropriate Building Regulations	Yes	
The system has been installed and commissioned in accordance with the manufacturer's instructions	Yes	
The system controls have been demonstrated to and understood by the customer	Yes	
The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer	Yes	

Commissioning Engineer's Signature
Customer's Signature
(To confirm satisfactory demonstration and receipt of manufacturer's literature)

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

SERVICE RECORD

It is recommended that your hot water system is serviced regularly and that the appropriate Service Record is completed.

Service Provider

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions.

SERVICE 01	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 02	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 03	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 04	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 05	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 06	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 07	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 08	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 09	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

SERVICE 10	Date:
Engineer name:	
Company name:	
Telephone No:	
Comments:	
Signature	

the electric heating company

(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems).

This marking shown on the product or its literature, indicates that it should not be disposed of with other household wastes at the end of its working life.
To prevent possible harm to the environment or human health from uncontrolled waste dis-posal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the pur-chase contract. This product should not be mixed with other commercial wastes for disposal.

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