



# INSTALLATION & SERVICING

**IMAX XTRA 2**  
**80 120 160 200 240 280**  
**80P 120P 160P 200P 240P**

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal Heating.

For the very latest copy of literature for specification and maintenance practices visit our website [idealheating.com](http://idealheating.com) where you can download the relevant information in PDF format.





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**Table 1 Performance Data**

Model			80	80P	120	120P	160	160P	200	200P	240	240P	280
Boiler Output (non-condensing) Mean 70°C	Max	kW	78.6	76.9	118	115.2	157.3	153.6	196.6	192.1	253.9	230.5	275.2
	Min	kW	23.3	23.1	23.1	23.1	29.1	28.8/	43.1	42.2	47.0	46.1	51.0
Boiler Output (condensing) Mean 40°C	Max	kW	82.2	80.5	123.4	120.7	164.5	161	207.8	201.3	249.4	241.5	290.9
	Min	kW	25.8	24.2	25.9	24.2	32.3	30.2	47.3	44.3	51.6	48.3	55.9
Boiler Input Max Rate	Nett	kW	80	80	120	120	160	160	200	200	240	240	280
	Gross	kW	88.8	87.0	133.3	1304	177.7	173.9	222.1	217.4	266.5	260.9	310.9
Boiler Input Min Rate	Nett	kW	24	24	24	24	30	30	44	44	48	48	52
	Gross	kW	26.6	26.1	26.6	26.1	33.3	32.6	48.9	47.8	53.3	52.2	57.7
Gas Rate	Max Rate	m <sup>3</sup> /hr	8.1	3.24	12.1	4.84	16.1	6.44	20.1	8.04	24.2	9.68	28.2
Approx. flue gas	Max Rate	m <sup>3</sup> /hr	121	125.1	182	187.5	242	250.1	302	312.6	363	375.2	423
Flue Resistance	Max	Pa	100	100	100	100	150	150	150	150	150	150	150
Flue Gas CO <sub>2</sub> G20/ LNG	Max Rate	%	9.3/9.8	10.6/11.0	9.3/9.8	10.6/11.0	9.3/9.8	10.6/11.0	9.3/9.8	10.6/11.0	9.3/9.8	10.6/11.0	9.3/9.8
	Min Rate	%	9.1/9.6	9.8/10.2	9.1/9.6	9.8/10.2	9.1/9.6	9.8/10.2	9.1/9.6	9.8/10.2	9.1/9.6	9.8/10.2	9.1/9.6
NO <sub>x</sub> with O <sub>2</sub> = 0% weighted	ppm	mg/kWh	26	62.2	26	68.4	35	72.9	26	70.1	26	67.1	26
Efficiency	Seasonal (Building Regs L2)	%	95.7	93.7	95.7	93.7	95.7	93.7	95.7	93.7	95.7	93.7	95.7

**Table 2 General Data**

Model		80	80P	120	120P	160	160P	200	200P	240	240P	280	
Gas Supply		2H - G20 - 20mbar / 3P - G31 - 37mbar (Propane via conversion kit)											
Gas Connection	R (in. BSP)	1											
Flow Connection	R (in. BSP)	2											
Return Connection	R (in. BSP)	2											
Hydraulic Resistance	@20°C	80		85		90		95		100		105	
Max. Pressure (sealed sys)	bar	6											
Maximum Static Head	m (ft)	61 (200)											
Electricity Supply	Max Rate	230V 50Hz											
Fuse Rating	A	External: 13A* Internal: 10A											
Power Consumption (boiler only)	W	110		150		200		220		240		250	
Air Inlet O/D	mm	110											
Flue Size Dia	mm	150					200						
Condensate Drain	mm	21.5											
Packaged Weight (Dry)	kg	159.5		178.5		200		243.5		259.5		270.5	
Unpackaged Weight (Dry)	kg	141.5		160.5		182		224		240		250	
Water Content	litres	11.0		14.3		17.5		18.4		24.0		27.2	

\* Electricity supply and fuse rating for pumps etc. refer to manufacturer's instructions.

**Note:** Propane variant to follow at a later date.

Natural gas consumption is calculated using a calorific value of 37.8MJ/m<sup>3</sup> (1038Btu/ft<sup>3</sup>) gross or 34 MJ/m<sup>3</sup> (910 Btu/ft<sup>3</sup>) nett at 15°C and 1013.25 mbar.

- a. For l/s divide the gross heat input (kW) by the gross C.V. of the gas (MJ/m<sup>3</sup>)
- b. For ft<sup>3</sup>/h divide the gross heat input (Btu/h) by the gross C.V. of the gas (Btu/ft<sup>3</sup>).

## HEALTH & SAFETY DOCUMENT NO. 635

### The electricity at work regulations, 1989.

The manufacturer's notes must NOT be taken, in any way, as overriding statutory obligations.

**IMPORTANT.** These appliances are CE certified for safety and performance. It is, therefore, important that no external control devices, e.g. flue dampers, economisers etc., are directly connected to these appliances unless covered by these Installation and Servicing Instructions or as otherwise recommended by **Ideal Heating** in writing. If in doubt please enquire.

Any direct connection of a control device not approved by **Ideal Heating** could invalidate the certification and the normal appliance warranty. It could also infringe the Gas Safety Regulations and the above regulations.

**CAUTION.** To avoid the possibility of injury during the installation, servicing or cleaning of this appliance, care should be taken when handling edges of sheet steel components.

### Imax Xtra 2

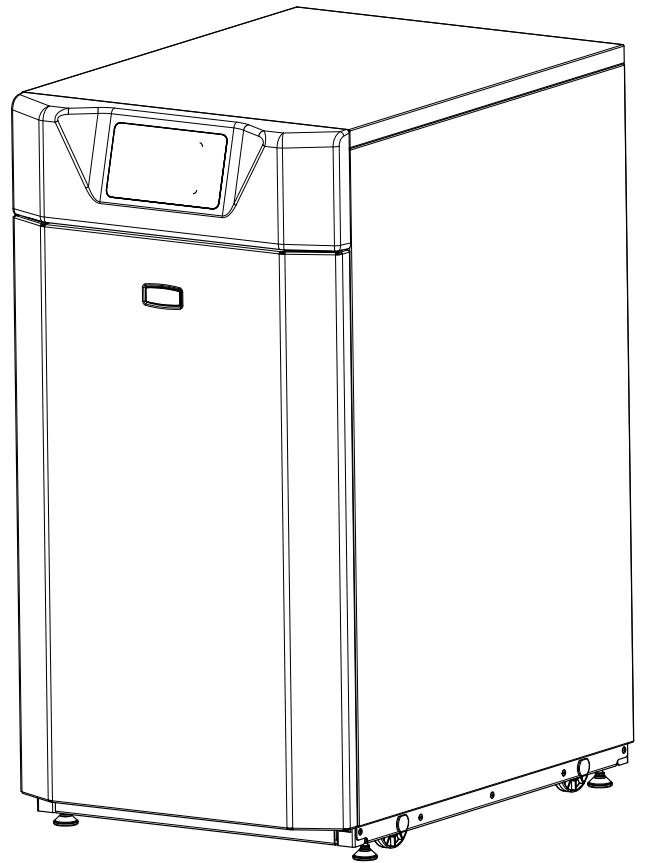
80, 120, 160, 200, 240 & 280

80P, 120P, 160P, 200P & 240P

Natural Gas & Propane

Destination Countries: GB, IE

CE No. 682118



#### Key to symbols

IE = Ireland, GB = United Kingdom (Countries of destination)

PMS = Maximum operating pressure of water

C53 = A room sealed appliance which is connected via its separate ducts to two terminals that may terminate in zones of different pressure.

C63 = A room sealed appliance intended to be connected to a separately approved and marketed system for the supply of combustion air and discharge of combustion products. The fan is up stream of the combustion chamber.

B23 = An appliance intended to be connected to a flue which evacuates the products of combustion to the outside of the room containing the boiler. The combustion air is drawn directly from the room. The fan is up stream of the combustion chamber.

**NOTE TO THE INSTALLER: LEAVE THESE INSTRUCTIONS ADJACENT TO THE GAS METER.**

## 1. GENERAL

### 1.1 INTRODUCTION

The Imax Xtra 2 boilers are fully automatically controlled, floor standing, fanned, super efficient condensing appliances.

The comprehensive boiler controls built into the appliance include:

- Volt free 'alarm' contacts (lockout)
- Volt free 'boiler run' contacts
- Burner hours run meters
- System temperatures

The boilers can draw their combustion air from the room via a filter or ducting from outside.

Through a sophisticated control system combined with premix burner technology and an aluminium heat exchanger, the boilers are capable of high operating efficiencies of 93% (gross) and low emissions.

These boilers are certified to meet the requirements of the EC Gas Appliance Directive, Boiler Efficiency Directive, EMC and Low Voltage Directive.

### 1.2 OPTIONAL EXTRA KITS

- **Single Heating Circuit Kit (Clip in)**
- **Dual Heating Circuit Kit (Clip in)**
- **Strap-on Sensor Kit**
- **Room Unit (QAA55)**
- **0-10V Pump Kit (Clip in)**
- **Immersion Sensor Kit**
- **Outside Sensor Kit**
- **Cascade Header Kits**
- **Cascade Boiler Flue Non-return Damper**
- **Boiler Pump Kits**
- **Low Loss Header kits**
- **Magnetic Low Loss Header Kits**
- **Plate Heat Exchanger Kits**
- **Condensate Pump Kit**
- **NG to LPG Conversion Kit**
- **LPG to NG Conversion Kit**
- **Motorised Flue Damper**

### 1.3 SAFETY

#### Current Gas Safety (Installation and Use) Regulations or rules in force

The appliance is suitable only for installation in GB and IE and should be installed in accordance with the rules in force.

In GB, the installation must be carried out by a Gas Safe Registered Installer or in IE by a competent person. It must be carried out in accordance with the relevant requirements of the:

- Gas Safety (Installation and Use) Regulations
- The appropriate Building Regulations either The Building Regulations, The Building Regulations (Scotland), Building Regulations (Northern Ireland)
- The Water Fittings Regulations or Water Byelaws in Scotland
- The Current I.E.E. Wiring Regulations

Where no specific instructions are given, reference should be made to the relevant British Standard Code of Practice.

In IE, the installation must be carried out by a Competent Person and installed in accordance with the current Building

Regulations and reference should be made to the current ETCI rules for electrical installation.

The appliance is not to be used 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.

Children must be supervised not to play with the appliance.

The boilers have been tested and certified to EN15502 for use with Natural Gas and LPG.

Detailed recommendations are contained in the following Standards and Codes of Practice:

BS. 5854 BS. 6644	Flue and flue Structures in Buildings. Installation of gas fired hot water boilers of rated inputs between 70kW and 1.8MW (net) (2nd and 3rd family gases).
BS. 6880	Low temperature hot water heating systems of output greater than 45kW.
Part 1	Fundamental and design considerations.
Part 2	Selection of equipment.
Part 3	Installation, commissioning and maintenance
BSEN.12828:2012	Heating Systems in buildings: Design for water based systems.
BSEN.12831:2017	Heating Systems in buildings: Method for calculation of the design heat load.
BSEN.13831	Specification for: Expansion vessels using an internal diaphragm, for sealed hot water heating systems.
BSEN.14336:2004	Heating Systems in buildings: Installation and commissioning of water based heating systems.
IGE/UP/1	Soundness testing and purging of industrial and commercial gas installations.
IGE/UP/2	Gas installation pipework, boosters and compressors on industrial and commercial premises.
IGE/UP/10	Installation of gas appliances in industrial and commercial premises.
HSE INDG436	Guidance for steam and hot water boilers.

### 1.4 SAFE HANDLING OF SUBSTANCES

No asbestos, mercury or CFCs are included in any part of the boiler or its manufacture.

### 1.5 FOUNDATION / LOCATION OF BOILER

The boiler must stand on a floor which must be flat, level and of a suitable load bearing capacity to support the weight of the boiler (when filled with water) and any ancillary equipment.

Ideally the boiler should be placed on a plinth exceeding the plan area of the boiler by 75mm on each side and at least 100mm high.

**The boiler must not be fitted outside.**

### 1.6 GAS SUPPLY

The local gas supplier should be consulted, at the installation planning stage, in order to establish the availability of an adequate supply of gas. An existing service pipe must NOT be used without prior consultation with the local gas supplier.

A gas meter can only be connected by the local gas supplier or by a registered Gas Safe engineer or in IE by a competent person.

An existing meter should be checked, preferably by the gas

# SECTION 1 - GENERAL

supplier, to ensure that the meter is adequate to deal with the rate of gas supply required. A minimum working gas pressure of 15mbar for Natural Gas and 32mbar for Propane MUST be available at the boiler inlet.

Do not use pipes of smaller size than the boiler inlet gas connection.

The complete installation MUST be tested for gas soundness and purged in accordance with the appropriate standards.

## Gas Boosters

A gas booster is required if the gas pressure available at the boiler is lower than that required by the boiler manufacturer to attain the flow rate for maximum burner input rating.

Location of the booster requires careful consideration but should preferably be closer to the burner rather than the gas meter. Ventilation should also be considered to ensure ambient temperature does not exceed designed recommendations. Further guidance is provided in IGE/UP/2.

## 1.7 FLUE INSTALLATION

**IMPORTANT.** It is the responsibility of the installer to ensure, in practice, that products of combustion discharging from the terminal cannot re-enter the building or any other adjacent building through ventilators, windows, doors, other sources of natural air infiltration, or forced ventilation / air conditioning.

If this should occur the appliance MUST be isolated from the gas supply and labelled as 'unsafe' until corrective action can be taken.

### Terminal Position

Due to the high efficiency of the boilers plumbing will occur. Vertical termination is recommended, terminated above the roof line, and terminal positions which could cause problems should be avoided. Horizontal room sealed terminations greater than 70kW but less than 333kW must be risk assessed in accordance with Appendix 9, IGEM/UP/10. Over 333kW the termination must be vertical. Particular care should be taken in the case of large output boiler installations, and complying with the requirements of the Clean Air Act.

The flue must be installed in accordance with the appropriate Building Regulations and standards listed on page 6 and in compliance with BS6644. In IE refer to I.S.820:2000.

## 1.8 FLUE SYSTEM DESIGN

Due to the high efficiency of these boilers, the flue gas temperatures are low and the buoyancy in the stack will be relatively small. The boiler is supplied with an integral fan which is fully matched to the boiler in each case to provide correct combustion air flow and overcome the flue resistance.

The power of this fan is such that there is a large reserve of pressure available to overcome a significant length of flue without affecting the combustion performance of the boiler.

The maximum pressure available at the base of the flue to overcome flue resistance is 100Pa (0.4" w.g.) for 80 and 120, and 150Pa (0.6" w.g.) for 160, 200, 240 and 280. This includes the resistance of any air ducts used to connect the air inlet direct to outside air.

See table below for approximate maximum straight flue lengths.

Boiler	80/80P	120/120P	160/160P	200/200P	240/240P	280
Flue Size (mm)	Ø150	Ø150	Ø150	Ø200	Ø200	Ø200
Approx. Max. Straight Flue Length (m)	240	109	100	256	180	138

If the air inlet filter kit, supplied with this appliance, is to be utilised, the following table shows approximate maximum straight flue lengths and pressures available.

### Installation & Servicing

Boiler	80/80P	120/120P	160/160P	200/200P	240/240P	280
Flue Size (mm)	Ø150	Ø150	Ø150	Ø200	Ø200	Ø200
Approx. Max. Straight Flue Length (m)	235	105	50	136	72	46
Flue Pressure (Pa)	98	97	76	80	60	50

The addition of elbows and their positions in the flue will have a significant effect on the maximum flue length. Consult with your flue supplier for detailed design work.

### IMPORTANT NOTE.

**If combustion air is drawn from within the boiler room, ensure no dust or airborne debris can be ingested into the appliance. An air inlet filter is supplied to protect the burner from debris, but if exposed to excessive amounts, this will require regular cleaning to prevent blockage. Ideally where possible duct the air supply into the boiler room from a clean source outside the boiler room/building.**

**Where it is not possible to duct air from outside the boiler, the air inlet pipe MUST be used, refer to Frame 2.3.**

### Cascade Fluing

When using Cascade flue arrangements do not operate the boilers for commissioning without ensuring that the shared flue is free flowing without blockage at the terminal, and products of combustion MUST NOT pass through non-firing boilers under any circumstances.

If an Electrically Controlled Flue Damper is to be used please ensure it has a Voltage Free Contact (relay) for operational feedback monitoring. The relay must be Open when the Damper is closed and Closed when the Damper is open. Any electrically controlled flue damper must conform to the following standards and be approved for fail-safe operation (i.e. spring return to closed position): BS EN 16475-4, BS EN 60730-1, BS EN IEC 60730-2-14. Where two (2) Imax Xtra 2 single boilers are being installed as a retrofit replacement for Imax Xtra E320, E400, E480 or E560 dual boilers an Electrically Controlled Flue Damper must be used on each individual boiler flue.

For the 80kW-160kW Imax Xtra 2, it is recommended to use the Kutzner Weber MUK 150. This needs to be controlled by the Boiler/System Pump/NRV Connection, and the feedback relay connected to the LV Interlock/NRV Connection.

For the 200kW-280kW Imax Xtra 2, it is recommended to use the Kutzner Weber MUK 200. This needs to be controlled by the Boiler/System Pump/NRV Connection, and the feedback relay connected to the LV Interlock/NRV Connection.

Refer to Hydraulic Diagrams in section 2.

### Material

With no requirement for buoyancy to discharge flue products and with low flue gas temperatures, single wall flues are suitable for most installations. Care should still be taken to maintain compliance with building regulations and relevant standards.

The type of flue pipe used should be 316 grade Stainless Steel or be of equivalent corrosion resistance. Advice regarding the availability of proprietary types of flue system can be obtained by contacting **Ideal Heating**. All joints or connections in the flue system must be impervious to condensate leakage. A condensate collector is supplied as part of the flue assembly which must be installed directly into the flue connection of the heat exchanger. This ensures flue condensate is removed before entering the sump of the boiler.

Care should also be taken in the selection of flue terminals as these tend to accentuate the formation of a plume and could freeze in cold weather conditions.

## SECTION 1 - GENERAL

Care should be taken to ensure the specification of the chimney is suitable for the application by reference to the manufacturers literature.

### 1.9 WATER CIRCULATION SYSTEM

A circulation pump may be connected to the boiler, see below.

The boiler must NOT be used for direct hot water supply. The hot water storage cylinder MUST be of the indirect type.

Single feed, indirect cylinders are not recommended and MUST NOT be used on sealed systems.

The appliances are NOT suitable for gravity central heating nor are they suitable for the provision of gravity domestic hot water.

The hot water cylinder and ancillary pipework, not forming part of the useful heating surface, should be lagged to prevent heat loss and any possible freezing - particularly where pipes run through roof spaces and ventilated underfloor spaces.

The boiler must be vented. There must be no low points between the boiler flow connection and a system vent point, which should be positioned as close as practically possible to the boiler flow connection.

Draining taps MUST be located in accessible positions, which permit the draining of the whole system - including the boiler and hot water storage vessel. They should be at least 1/2" BSP nominal size and be in accordance with BS. 2879. Do not use the boiler drain tap to drain the system as this can induce sludge into the heat exchanger.

The central heating system should be in accordance with the relevant standards listed on page 6.

Due to the compact nature of the boiler the heat stored within the castings at the point of shutdown of the burner must be dissipated into the water circuit in order to avoid overheating. In order to allow pump operation after burner shutdown the boiler control box incorporates a 5 minute pump overrun facility. In order to make use of this, a pump must be supplied from the terminals inside the boiler. Note: for pumps requiring greater than 1.0 amp current, they must be connected via a relay.

When sizing pumps, reference should be made to the Hydraulic Resistance Table on page 8 which show the boiler resistance against flow rates, to achieve the required temperature differential.

Water flow rates for common systems using either 11°C, 20°C or 30°C temperature differentials are given in the table below.

Boiler	Water flow rate temperature difference					
	11 °C		20 °C		30 °C	
	l/s	m³/h	l/s	m³/h	l/s	m³/h
<b>80/80P</b>	1.78	6.41	0.98	3.53	0.65	2.34
<b>120/120P</b>	2.68	9.65	1.47	5.3	0.98	3.53
<b>160/160P</b>	3.57	12.85	1.96	7.06	1.31	4.72
<b>200/200P</b>	4.51	16.24	2.48	8.93	1.65	5.94
<b>240/240P</b>	5.42	19.51	2.98	10.73	1.98	7.13
<b>280</b>	6.32	22.75	3.47	12.49	2.31	8.32

#### Note.

- With the boiler firing at maximum rate, the temperature differential should not be less than 10°C. High flow rates required for lower temperature differentials could lead to erosion of the heat exchanger water ways
- With the boiler firing at minimum rate, the temperature differential should not be greater than 35°C. Lower flow rates generating higher temperature differentials will lead to lock out of the boiler

- The lower the return temperature to the boiler, the higher the efficiency. At return temperatures of 55°C and below, the difference becomes marked because the water in the flue gases starts to condense, releasing its latent heat

In installations where all radiators have been provided with thermostatic radiator valves, it is essential that water circulation through the boiler is guaranteed. A mixing header will perform this task. Alternatively this can be best achieved by means of a differential pressure valve, which is installed in a bypass between the flow and return pipes. The bypass should be fitted at least 6m from the boiler, and should be capable of allowing a minimum flow rate to achieve a temperature differential of no greater than 40°C at minimum rate.

### 1.10 WATER TREATMENT

**These boilers incorporate an ALUMINIUM heat exchanger.**

**IMPORTANT.** The application of any other treatment to this product may render the warranty of Ideal Heating INVALID.

Ideal Heating recommend Water Treatment in accordance with Guidance Notes on Water Treatment in Central Heating Systems.

If water treatment is used Ideal Heating recommend only the use of SCALEMASTER SM-1 PRO, FERNOX, MBI, ADEY MC1, SENTINEL X100 or CALMAG CM100 inhibitors and associated water treatment products, which must be used in accordance with the manufacturers' instructions.

For further information contact:

Fernox  
www.fernox.com Tel: +44 (0) 3301 007750

Sentinel Performance Solutions  
www.sentinelprotects.com Tel: +44 (0) 1928 704330

Scalemaster Water Treatment Products  
www.scalemaster.co.uk Tel: +44 (0) 1785 811636

Calmag Ltd.  
www.calmagltd.com Tel: +44 (0) 1535 210320

Adey  
www.adey.com Tel: +44 (0) 1242 546700

#### Notes.

1. It is most important that the correct concentration of the water treatment products is maintained in accordance with the manufacturers' instructions.
2. If the boiler is installed in an existing system, any unsuitable additives MUST be removed by thorough cleansing.
3. In hard water areas, treatment to prevent limescale may be necessary - however the use of artificially softened water is NOT permitted.
4. Under no circumstances should the boiler be fired before the system has been thoroughly flushed.

#### HYDRAULIC RESISTANCE

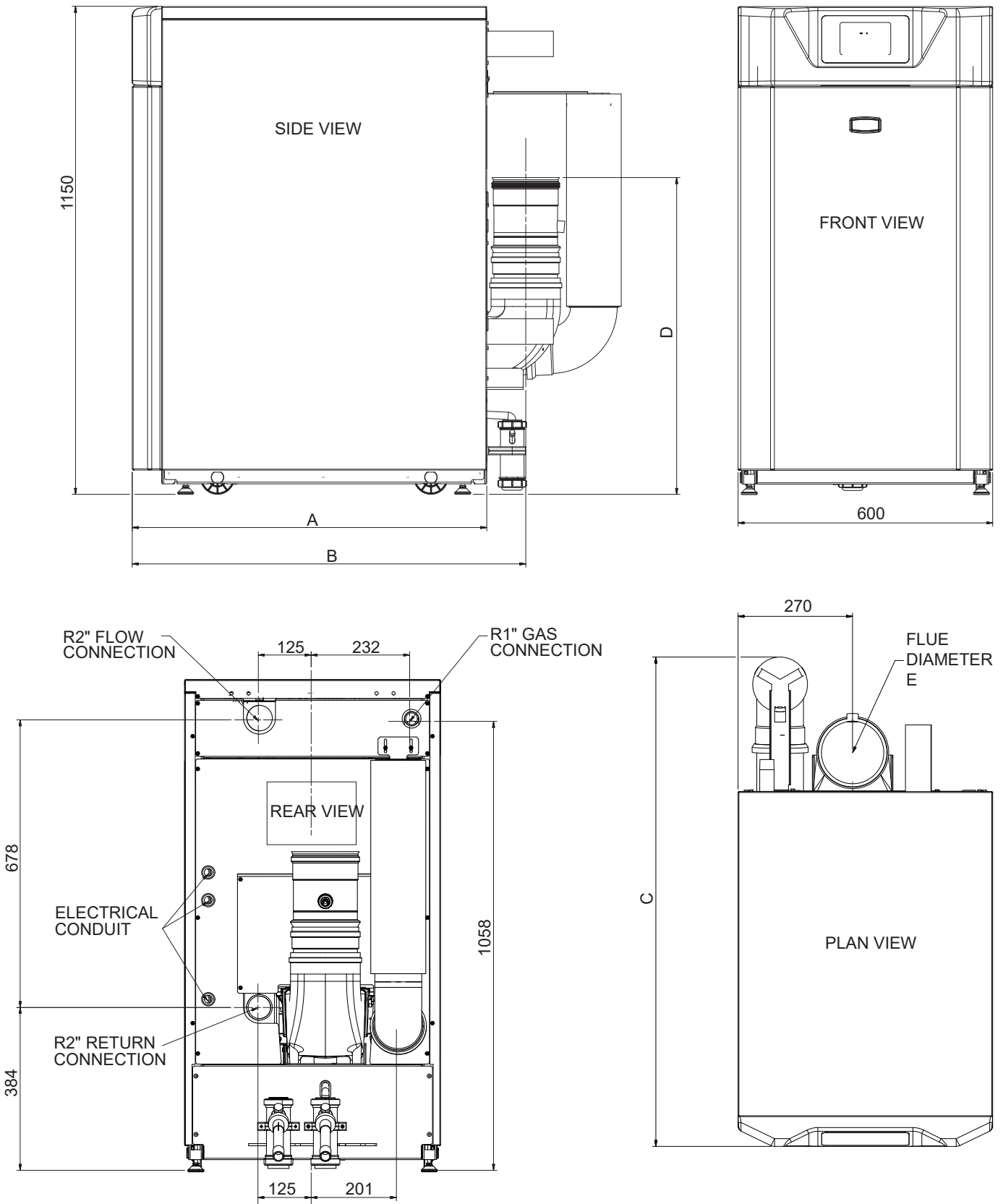
Boiler	Pressure Drop (mbar)		
	@ 11°C	@ 20°C	@ 30°C
<b>80/80P</b>	264	80	36
<b>120/120P</b>	281	85	38
<b>160/160P</b>	297	90	40
<b>200/200P</b>	314	95	42
<b>240/240P</b>	330	100	44
<b>280</b>	347	105	47



# SECTION 1 - GENERAL

## 1.11 BOILER DIMENSIONS AND CONNECTIONS

All dimensions shown in mm



	A	B	C	D	E
80kW	835	927	1152	747	150
120 - 160kW	835	927	1152	687	150
200 - 280kW	1087	1204	1405	685	200

## SECTION 1 - GENERAL

### 1.12 ELECTRICAL SUPPLY

Wiring external to the appliance **MUST** be in accordance with the current I.E.T. (BS7671) Wiring Regulations and any local regulations which apply. For Ireland reference should be made to the current ETCI rules for electrical installations.

### 1.13 CONDENSATE DRAIN

The condensate discharge pipe from the boiler must be connected to a suitable drain point on site. All pipework and fittings in the condensate drainage system **MUST** be compatible with condensate. Refer to either BS 6644:2011 or the Building Regulations for materials that should be used.

**IMPORTANT.** Any external runs must be insulated to avoid freezing in cold weather causing blocking.

### 1.14 BOILER CLEARANCES

The minimum dimensions as indicated, must be respected to ensure good access around the boiler.

Recommended minimum clearances are as follows.

#### Rear:

700mm or adequate space from the rear of the jacket, to make the flue connections and access to the flue sample point, drain connection, flue and any safety or control devices.

Note:- The installer should provide reasonable clearance to the rear of the boiler to allow for servicing and maintenance activities to be completed in a safe manner.

#### Left Side:

150mm

#### Right Side:

150mm

#### Front:

600mm minimum and 1000mm maximum; except, access doors may be closer, but not less than 200mm and 600mm must still be available for service across the width of the boiler.

**Top:** 500mm.

**Note:** Refer to cascade manuals for boilers, header kits and multiple boiler installation clearances.

### 1.15 VENTILATION

The ventilation requirements of these boilers are dependant on the type of flue system used, and their heat input. All vents must be permanent with no means of closing, and positioned to avoid accidental obstructions by blocking or flooding.

Detail reference should be made to BS. 6644 and IGEM/UP/10 for inputs between 70kW and 1.8MW (net). In IE refer to the current edition of I.S.820. The following notes are for general guidance only:

Dust contamination in the combustion air may cause blockage of the burner slots. An air inlet filter is provided to protect the burner from debris, but when exposed to excessive dust this will need regular cleaning.

#### IMPORTANT NOTE.

**Make sure air inlet is clear before first ignition or before connection to the air inlet ducting (as shown).**

**If combustion air is drawn from within the boiler room, ensure no dust or airborne debris can be ingested into the appliance. Dusty concrete flooring should be sealed to reduce the presence of dust.**

The temperature within a boiler room shall not exceed 25°C within 100mm of the floor, 32°C at mid height and 40°C within 100mm of the ceiling.

#### Open Flued Installations

If ventilation is to be provided by means of permanent high and low vents communicating direct with outside air, then reference can be made to the sizes below. For other ventilation options refer to BS. 6644 and IGEM/UP/10. In IE refer to the current edition of I.S.820.

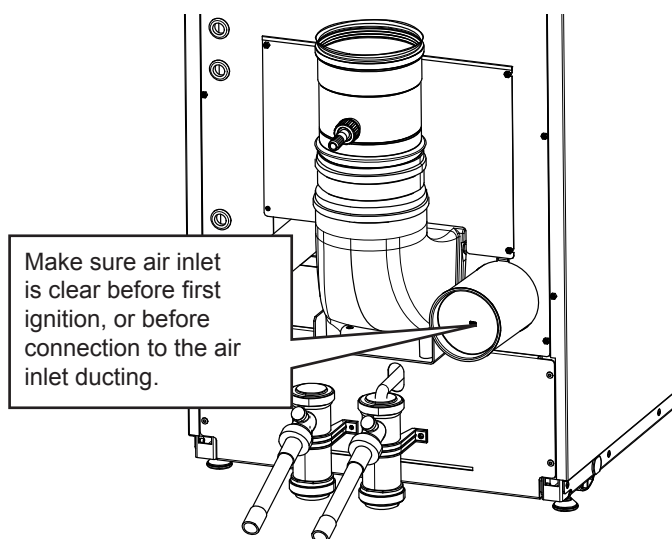
#### Required area (cm<sup>2</sup>) per kW of total rated input (net)

	Boiler	Enclosure
Low level (inlet)	4	10
High level (outlet)	2	5

**Note:** Where a boiler installation is to operate in summer months (e.g. DHW) additional ventilation requirements are stated, if operating for more than 50% of time (refer to BS6644).

#### Room Sealed Installations

A minimum of 2cm<sup>2</sup> free area per kW of net heat input at both high and low level is required for boiler rooms. For enclosures refer to BS6644 and IGEM/UP/10.



### 1.16 OPEN VENTED SYSTEM REQUIREMENTS

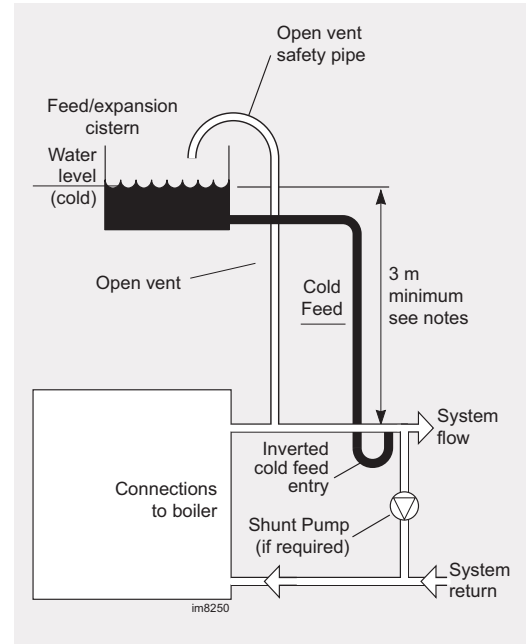
Detailed reference should be made to the appropriate standards listed on page 6.

The information and guidance given below is not intended to override any requirements of the above publications or the requirements of the local authority, gas or water undertakings.

The vertical distance between the pump and feed/expansion cistern **MUST** comply with the pump manufacturer's minimum requirements, to avoid cavitation. Should these conditions not apply either lower the pump position or raise the cistern above the minimum requirement specified by **Ideal Heating**. The isolation valves should be fitted as close to the pump as possible.

The information provided is based on the following assumptions:

1. An independent open vent/safety pipe connection is made immediately after the system flow pipe connection.
2. An independent cold feed/expansion pipe connection is made immediately after the open vent/safety pipe connection.
3. The maximum flow rate through the boiler is based on a temperature difference of 11°C at full boiler output.
4. The boiler is at the highest point of circulation in the system. Systems designed to rise above the boiler flow tappings will automatically require a minimum static head higher than that shown.
5. The position of the open vent/safety pipe above the expansion cistern water level is given as a guide only. The final position will depend upon the particular characteristics of the system. Pumping over of water into the expansion cistern must be avoided.
6. Both open vent/safety pipe and cold feed/expansion pipes must be of adequate diameter to suit the output of the boiler. Refer to Tables below.



**Note.**

- With a cold feed head of <8m, the pump must be fitted on the return to the boiler
- This diagram does not show safety valves, water flow switches, etc. necessary for the safe operation of the system

**Open Vent Pipe Sizes**

Rated Output kW	Minimum Bore mm	Nominal Size (DN) in
61 to 150	32	1 1/4
151 to 300	38	1 1/2
Steel pipe sizes complying with medium or heavy quality or BS1387		

**Cold Feed Pipe Sizes**

Rated Output kW	Minimum Bore mm	Nominal Size (DN) in
60 to 150	25	1
151 to 300	32	1 1/4
Steel pipe sizes complying with medium or heavy quality or BS1387		

**Note.** Refer to Frame 2.14 to 2.21 for typical system arrangements.

### 1.17 SEALED SYSTEM REQUIREMENTS

**Working pressure 6 bar maximum.**

Detailed reference should be made to the appropriate standards listed on page 6. The information and guidance given below is not intended to override any requirements of these publications or the requirements of the local water authority, gas or water undertakings.

1. The installation should be capable of working with flow temperatures of 90°C. All components of the system, including the heat exchangers, indirect cylinders etc must be suitable for a working pressure of 6 bar and temperature of 110°C. Suitable isolation valves and drain points must be provided by the installer.

**2. Safety Valve**

- a. A spring loaded safety valve complying with the relevant standards of BS EN ISO 41261 must be fitted as close to the boiler as possible with no intervening valves or restriction. The valve should have the following features:

- b. A non-adjustable pre-set lift pressure not exceeding 6 bar.
- c. A manual test device.
- d. Provision for connection of a discharge pipe.

**3. Pressure Gauge**

A pressure gauge covering 0-6 bar must be fitted to the system. The gauge should be visible from the fill point and preferably at the same height as the expansion vessel. Initial charge pressure should not be less than 0.5bar and must take account of the static head.

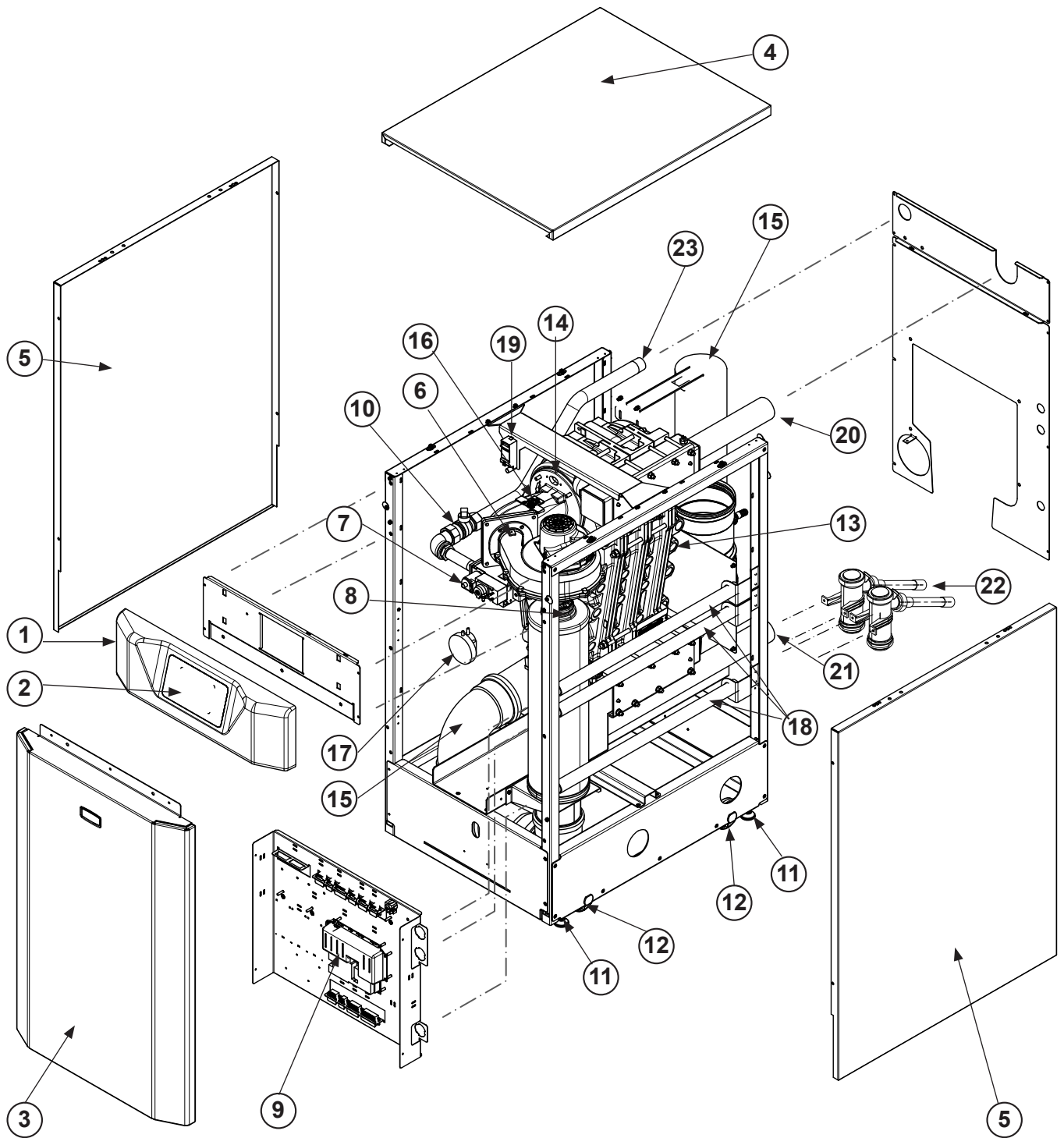
**4. Expansion vessels.**

Expansion vessels must comply with BS EN 13831. Connection to the system must not incorporate an isolation valve.

## SECTION 2 - INSTALLATION

### 2. INSTALLATION

#### 2.1 BOILER ASSEMBLY - Exploded View (120 shown)



#### Legend

- |                         |                     |                          |
|-------------------------|---------------------|--------------------------|
| 1. Control Fascia Panel | 9. Control Module   | 17. Air Pressure Switch  |
| 2. HMI Touchscreen      | 10. Union Gas Cock  | 18. Cable Conduit        |
| 3. Casing Front Panel   | 11. Levelling Feet  | 19. Ignition / Detection |
| 4. Casing Top Panel     | 12. Wheels          | 20. Manifold - Flow      |
| 5. Casing Side Panel    | 13. Heat Exchanger  | 21. Manifold - Return    |
| 6. Fan                  | 14. Sightglass      | 22. Condensate Traps     |
| 7. Gas Valve            | 15. Air Inlet       | 23. Gas Connection       |
| 8. Venturi              | 16. Burner Manifold |                          |

## SECTION 2 - INSTALLATION

### 2.2 PACKAGING REMOVAL / REMOVAL FROM PALLET / LOCATING AND LEVELLING

The boiler is delivered assembled and protected by a cardboard packaging sleeve and fittings and fixed on a wooden base.

The packaged boiler will pass through a 800mm wide opening and unpacked boiler through a 700mm wide opening.

#### To unpack the boiler:

- Carefully remove the straps and lift off the sleeve and pad when ready for installation.
- Remove the accessories (hardware kit box, air inlet elbow, filter cage assembly) and protective cardboard end fittings.
- Safely and responsibly dispose of all packaging materials.

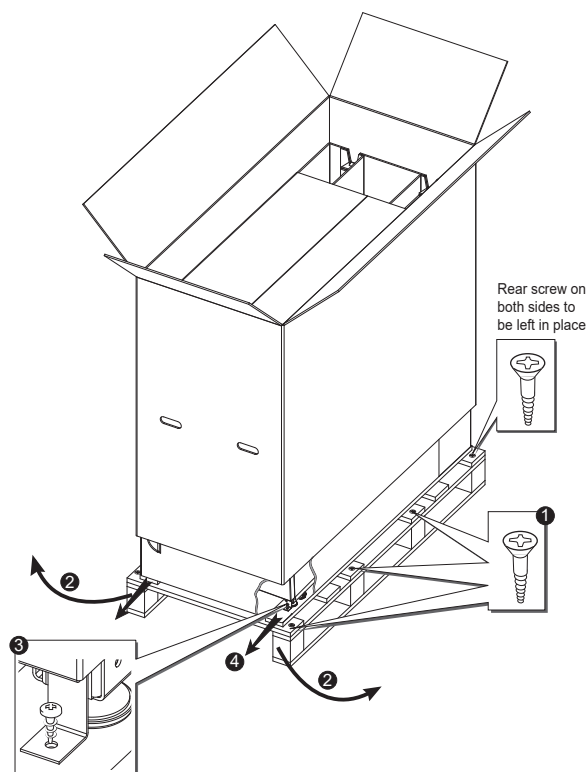
#### To remove the boiler from base (with reference to diagram on right):

1. Remove the three front screws on both sides leaving the rear two screws in place
2. Rotate bottom two battens outwards allowing the front of the base to rest on the floor
3. Remove 4 screws and the retaining brackets
4. Slide the boiler off the base

Adjust levelling feet fully up so that boiler is sat on the wheels to allow final positioning.

At final location, adjust the height of the feet as necessary so boiler is not sat on the wheels.

Safely and responsibly dispose of the base.



### 2.3 FLUE / AIR DUCT INSTALLATION

#### FLUE

A flue sampling point should be provided in the flue system.

When fitting the condensate collector to the flue socket, take care not to disturb the lip seal which must be present.

The flue should then be inserted into the condensate collector and be supported in such a way as to not place a load on the flue socket.

#### IMPORTANT NOTE.

**The condensate collector must be fitted to the sump and attached to the condensate trap in all installations to comply with CE Certification.**

#### AIR DUCT

Combustion air can be drawn either from outside or from the boiler room. When combustion air is drawn directly from the boiler room, the air inlet filter kit provided must be used.

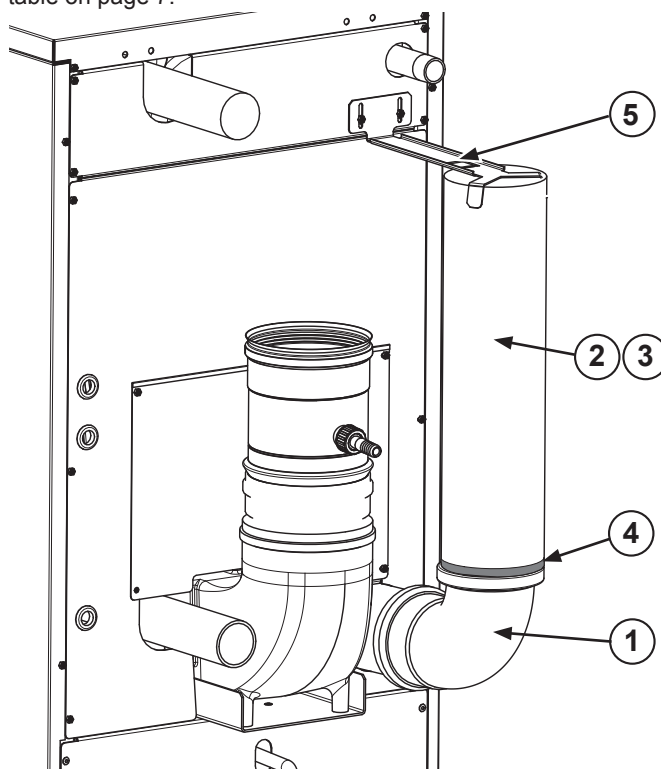
To draw air direct from outside, use any proprietary 110mm soil/drain pipe. The air duct should be terminated with a suitable fixed grille to prevent entry of vermin. This terminal should be positioned as such to avoid blockages or entry of water.

Where ducting the air from outside is not practical, it can be drawn from the boiler room by assembling the air inlet filter as follows into the configuration shown.

1. Fit the 93° elbow onto the air inlet pipe
2. Fit the filter cage assembly onto the 93° elbow.
3. Fit the filter over the filter cage assembly and ensure that it is pulled all the way down.
4. Secure the filter using the velcro strap as shown.

5. Fit the filter bracket using the 2 off bolts provided.

With this kit fitted the maximum straight flue length available and maximum pressure available at the base of the flue to overcome flue resistance will change, refer to the appropriate table on page 7.



## SECTION 2 - INSTALLATION

### 2.4 CONDENSATE DRAIN

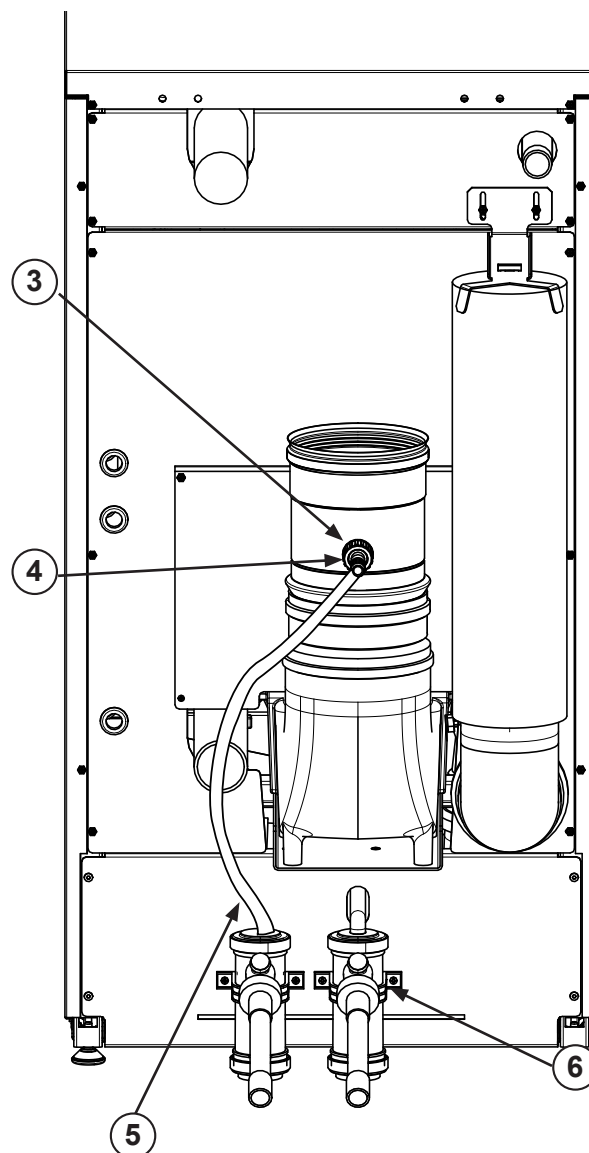
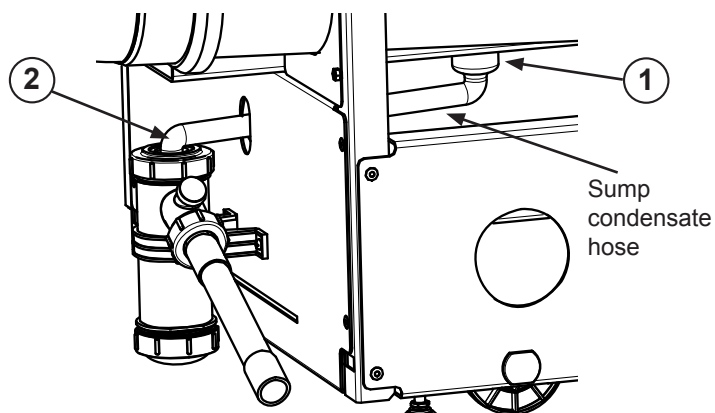
The two condensate drains must be connected to the drain points at the sump outlets and the flue condensate collector outlet. The condensate drain outlet must be connected to a drainage point, preferably within the building.

1. Ensure the sump condensate hose is fully pushed onto the sump outlet pipe underneath the boiler.
2. Ensure the sump condensate hose is fully located onto the right hand condensate trap when looking at the rear of the boiler.
3. Screw the hose adapter onto the threaded outlet of the flue condensate collector.
4. Ensure the flue condensate hose is fully pushed onto the hose adapter.
5. Ensure the flue condensate hose is fully pushed onto the left hand condensate trap when looking at the rear of the boiler.
6. The two condensate traps must be secured at the rear of the boiler using the 4 screws provided.

**IMPORTANT.** Any external runs must be kept to a minimum and insulated. This is to avoid freezing in cold weather causing blocking.

All pipework and fittings in the condensate drainage system **MUST** be compatible with condensate. Refer to either BS 6644:2011 or the Building Regulations for materials that should be used.

The pipe size from the condensate outlet connector is 21.5mm. The routing of the drain must be made to allow a minimum fall of 1 in 20 away from the boiler throughout its length.



Flue condensate hose

**Ensure adequate clearance is available for installing the loose supplied items, or ensure they are installed before the boiler is finally positioned.**

### 2.5 BOILER WATER CONNECTIONS

The boiler flow and return pipes are terminated with 2" BSP male taper threads at the rear of the appliance. Water returning from the system should be connected to the lower pipe, with the flow water connection coming from the top pipe.

Refer to Frame 1.11.

Plastic plugs fitted on the open ends of the flow and return pipes must be removed before connecting the system pipework.

An air vent must be provided immediately after the flow connection.

If installing the boiler onto an existing system it is strongly recommended that the system be thoroughly flushed before connecting the boiler.

When connecting to a new system, it is still important to flush the whole system in accordance with the relevant standards.

## SECTION 2 - INSTALLATION

### 2.6 FROST PROTECTION

The boiler has built into its control system the facility to protect the boiler against freezing.

If the boiler flow temperature falls below 5°C the boiler pump and burner will run until the temperature is 15°C.

Central heating systems fitted wholly inside the building do not normally require frost protections as the building acts as a

'storage heater' and can normally be left at least 24 hours without frost damage. However, if parts of the pipework run outside the building or if the boiler will be left off for more than a day or so, then a frost thermostat should be wired into the system, using the Switched Live 1 installation connection point. Refer to frame 2.13.

### 2.7 GAS CONNECTIONS

The boiler gas supply pipe is terminated in a 1" BSP male taper connection on the left-hand side of the appliance.

A minimum working gas pressure of 15mbar (6" w.g.) for Natural Gas and 32mbar for Propane must be available at the boiler inlet with the boiler firing.

Fit a gas supply pipe NOT LESS THAN 1" BSP to the boiler.

### 2.8 ELECTRICAL CONNECTIONS

**Warning.** This appliance MUST be efficiently earthed.

A mains supply of 230V 50Hz is required. The supply wiring MUST be suitable for mains voltage. Wiring should be 3 core PVC insulated cable NOT LESS than 0.75mm<sup>2</sup> (24 x 0.2 mm) and to BS EN 50525. The fuse rating should be 13A.

Wiring external to the boiler MUST be in accordance with the current I.E.T. (BS7671) Wiring Regulations and any local regulations. For Ireland, reference should be made to the current ETCI rules for electrical installations.

Connection should be made in a way that allows complete isolation of the electrical supply - such as a double pole switch, having a 3mm contact separation in both poles, or a plug and unswitched socket serving only the boiler and system controls. The means of isolation must be accessible to the user after installation.

#### EXTERNAL WIRING

External wiring MUST be in accordance with the current I.E.T (BS7671) Wiring Regulations. For Ireland reference should be made to the current ETCI rules for electrical installations. The appliance must be wired with a permanent live supply.

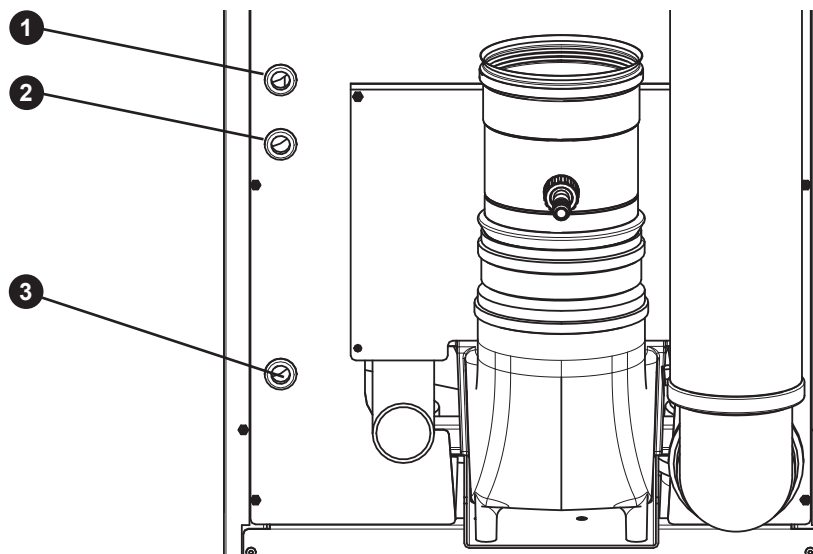
#### INTERLOCKS

Both the Low Voltage Interlock and High Voltage Interlock are already connected to the respective connection points. Please leave these in place if you do not wish to connect them to any external control system or a motorised flue damper. Links are pre-installed on terminal 5 (pink) and terminal 12B (yellow).

### 2.9 INSTALLING THE MAINS AND CONTROL WIRING

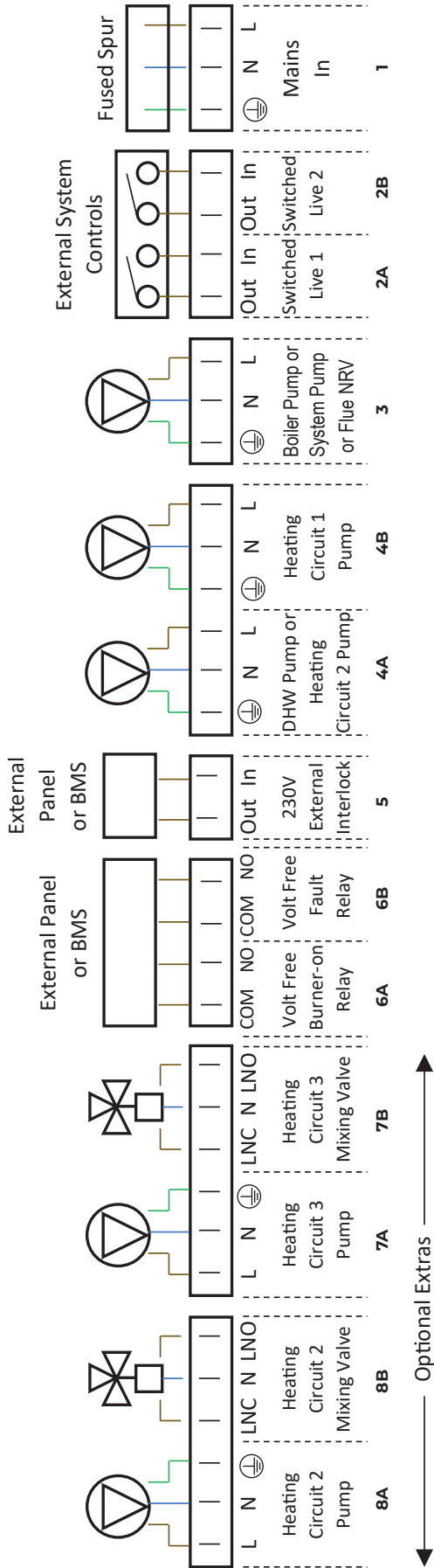
1. Route the mains supply in at the rear, through the top conduit.
2. Route any high voltage cables through the middle conduit.
3. Route any Low voltage cables such as sensor cables through the bottom conduit.
4. Refer to Frame 3.7 for casing and control pod removal.
5. Secure the cables with the cable clamps provided in the controls box.
6. Cable connectors have been provided and are to be utilised for all cable connections within the controls box.

**Note.** Grommets 1 / 2 / 3 may be removed by the installer to allow installation of cable glands (not supplied)

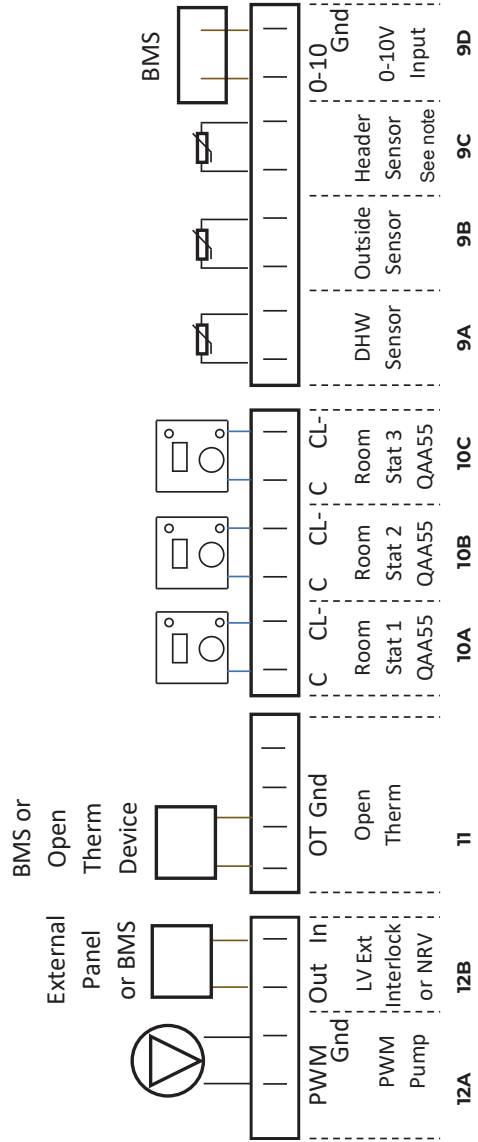


2.10 INSTALLER CONNECTIONS

240V and Volt Free Connections



Low Voltage Connections



Note. Header sensor:

1. This must be installed to sense the flow temperature on the secondary side of any hydraulic separation (low loss header, magnetic low loss header or plate heat exchanger)
2. This must be installed on any boilers that are connected using the Cascade Control Kits.



## 2.11 HEAT CONTROL

It is possible to configure the boiler to provide heat in 1 of 4 methods.

### 1. Switched Live

When 230V is supplied to the Switched Live 1 connection, the boiler will run and maintain either the flow temperature set on the user interface or a flow temperature determined by an Outside Sensor.

**Note.** This control method may also be used where the relays controlling the demand signal to the boiler in the systems main control panel or BMS are rated 230V, switching the live feed from the boilers.

### 2. 0-10V Input

When >0.15V is supplied to the 0-10V Input connection then the boiler will run and maintain either a flow temperature, or capacity output, determined by the voltage level and the defined range for the control method.

### 3. OpenTherm

When OpenTherm is supplied to the OpenTherm connection then the boiler will run and maintain either a flow temperature or an output determined by the OpenTherm signal. Alternatively the OpenTherm connection can be used for Low Voltage Switch control. If a short connection is presented across the OpenTherm connection then boiler will run and maintain a fixed flow temperature set on the user interface

### 4. Internal Boiler Control

When the Internal Boiler Control timer indicates that heat is required, then the boiler will run and maintain either the flow temperature set on the user interface or a flow temperature determined by an Outside Sensor.

**Note.** Pumps mounted behind the boilers will require extension of the wiring to allow termination to the relevant electrical connections within the boiler.

It is preferable that the boiler circulating pump is controlled by the boiler either from the 240V Boiler/System pump output or by the PWM pump output or by the 0-10V pump output (from an optional extra).

If a pump is to be controlled by switching its 230V power supply on and off and the electrical current draw is 0.8A or less, then the pump can be connected directly into the Boiler/System Pump, DHW /Heating Circuit 2 Pump or CH Circuit 1 connections. Otherwise an external relay controlled by the appropriate boiler pump output must be used.

For the Imax Xtra 2 80kW and 120kW, it is recommended to use the Grundfos UPML Pump as the boiler pump. This needs to either be controlled by the Boiler/System Pump Connection, for On/Off Control direct from the boiler, or supplied with a permanent live supply on the same phase as the boiler and controlled by the PWM Pump Connection, for Modulation Control.

For the Imax Xtra 2 160kW, it is recommended to use the Grundfos UPMXXL Pump as the boiler pump. This needs to either be operated by an external relay, controlled by the Boiler/System Pump Connection, or supplied with a permanent live supply on the same phase as the boiler and controlled by the PWM Pump Connection, for Modulation Control.

For the Imax Xtra 2 200kW, 240kW and 280kW, it is recommended to use the Grundfos Magna 3 Pump as the boiler pump. This needs to either be operated by an external relay, controlled by the Boiler/System Pump Connection, or supplied with a permanent live supply on the same phase as the boiler and controlled by the 0-10V Pump Connection (which requires the optional extra 0-10V Pump Kit), for Modulation Control.

If the boiler circulating pump is not controlled by the boiler then the boiler circulating pump **MUST** be set to provide a minimum overrun period of 2 minutes.

Failure to do so may invalidate the boiler warranty.

## 2.12 HOT WATER CONTROL

### HOT WATER CONTROL

It is possible to configure the boiler to provide hot water tank control in 1 of 3 methods.

#### 1. Switched Live

When 230V is supplied to the Switched Live 2 connection the boiler will run and maintain flow temperature to a hot water cylinder.

#### 2. OpenTherm

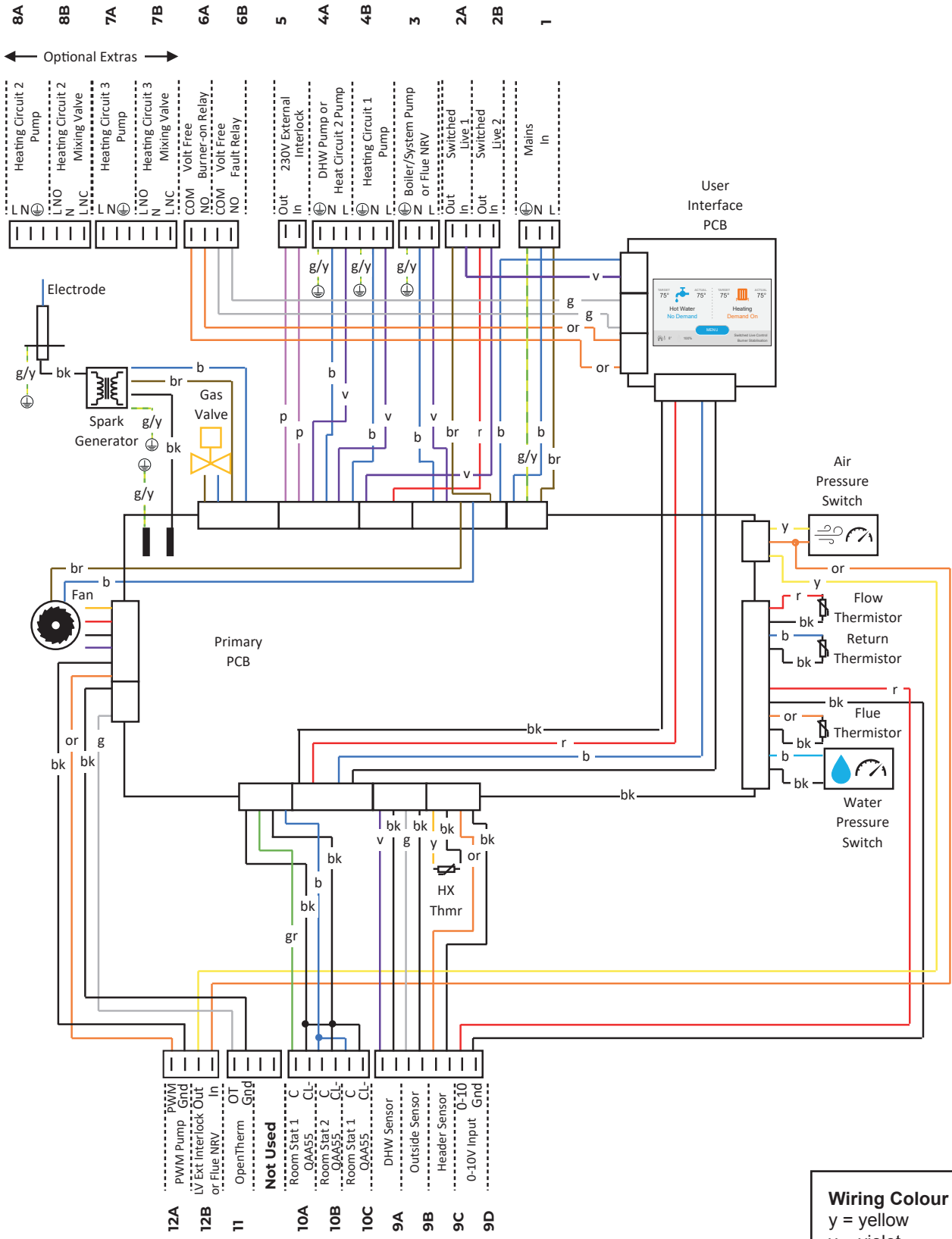
In OpenTherm mode the cylinder temperature can be controlled by either a Thermostat by supplying 230V to the Switched Live 2 connection, or a Sensor (provided as an optional extra).

#### 3. Internal Boiler Control

In IBC mode the cylinder temperature can be controlled by either a Thermostat by supplying 230V to the Switched Live 2 connection, or a Sensor (provided as an optional extra).

# SECTION 2 - INSTALLATION

## 2.13 PICTORIAL WIRING DIAGRAM

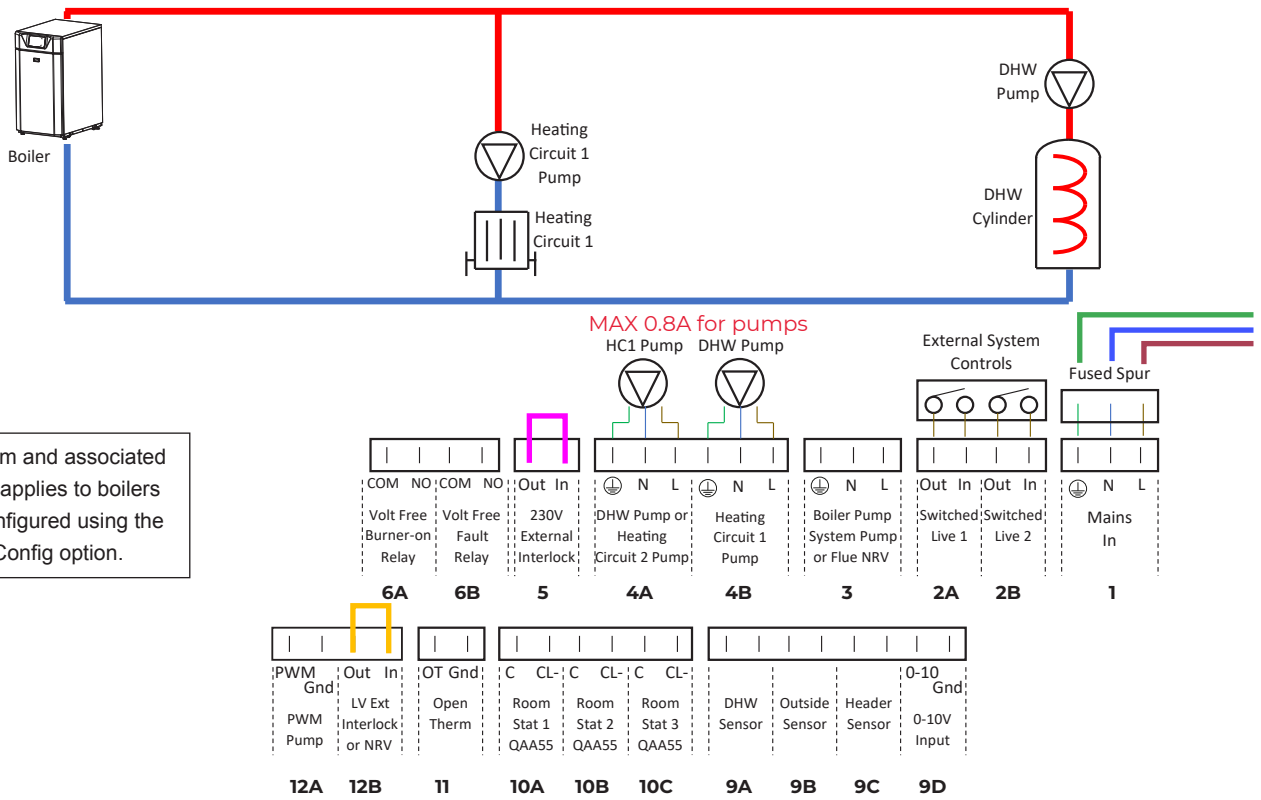


Wiring Colour Key	
y	= yellow
v	= violet
bk	= black
gr	= green
r	= red
br	= brown
b	= blue
g/y	= green/yellow
or	= orange
p	= pink
g	= grey

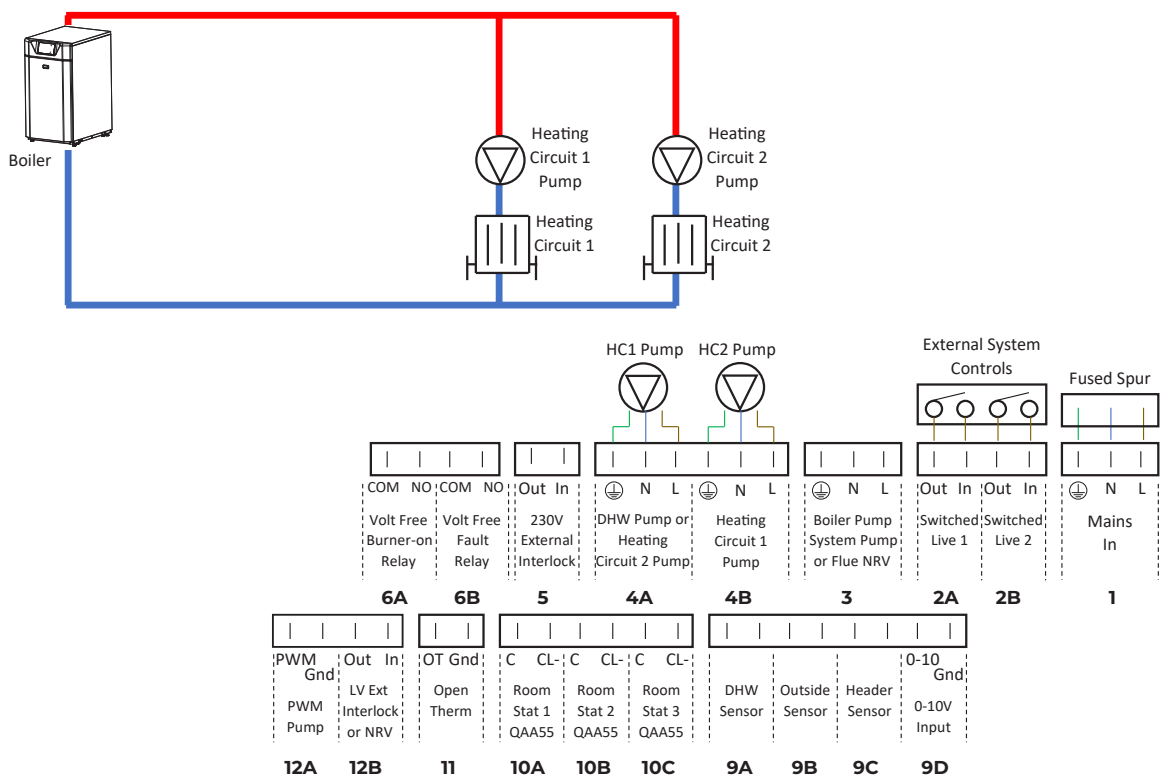
## SECTION 2 - INSTALLATION

### 2.14 HYDRAULIC DIAGRAMS, SWITCHED LIVE (AND BASIC PRE-CONFIG)

#### Switched Live, Single Boiler, 1 CH Pump (Constant Temperature Circuit) & 1 DHW Pump



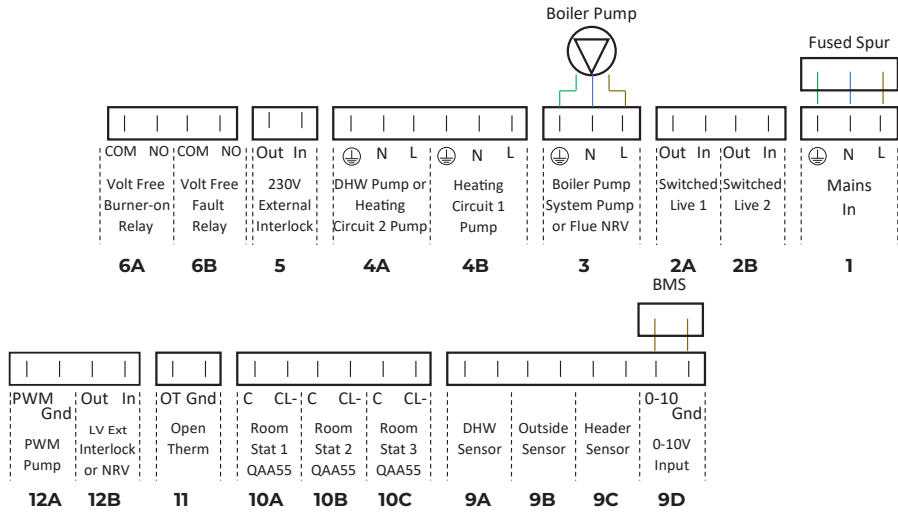
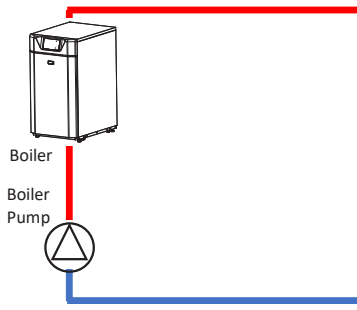
#### Switched Live, Single Boiler, 2 CH Pumps (2 Constant Temperature Circuits)



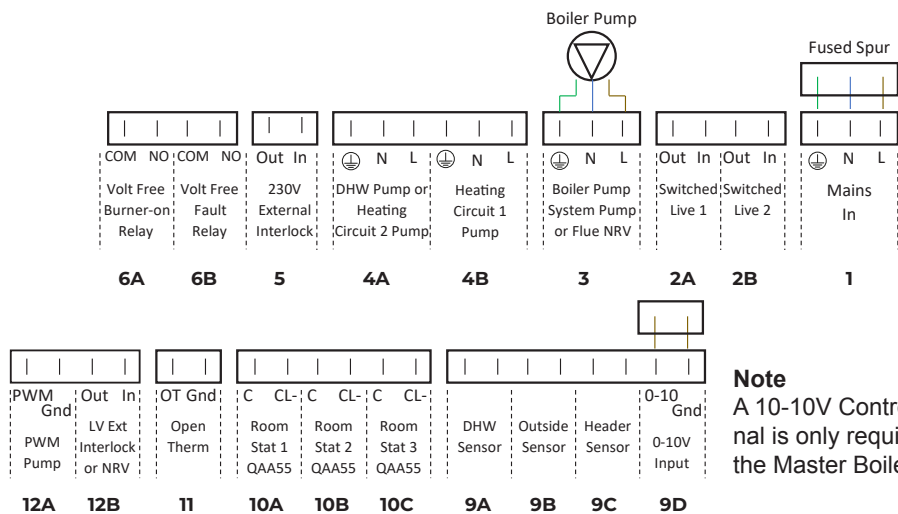
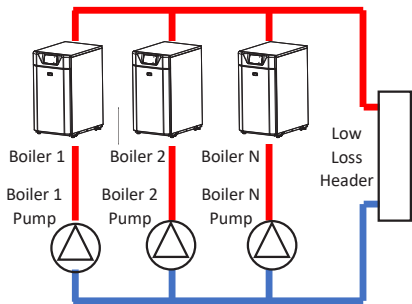
# SECTION 2 - INSTALLATION

## 2.15 HYDRAULIC DIAGRAMS, 0-10V

### Single Boiler, Boiler Pump



### Cascade, Boiler Pump

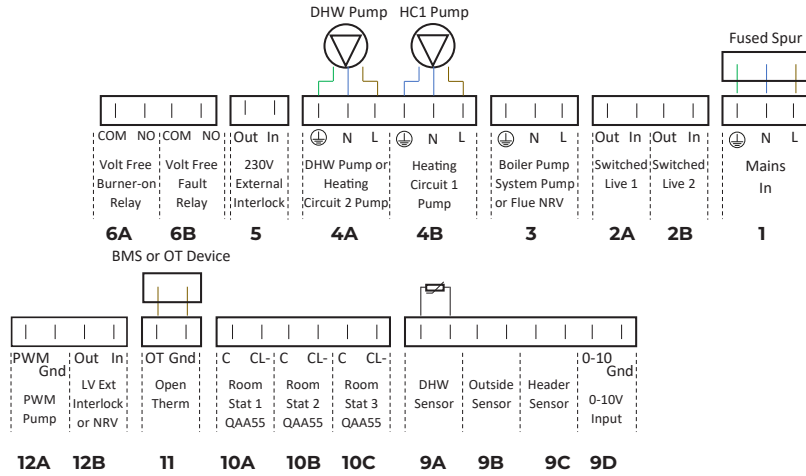
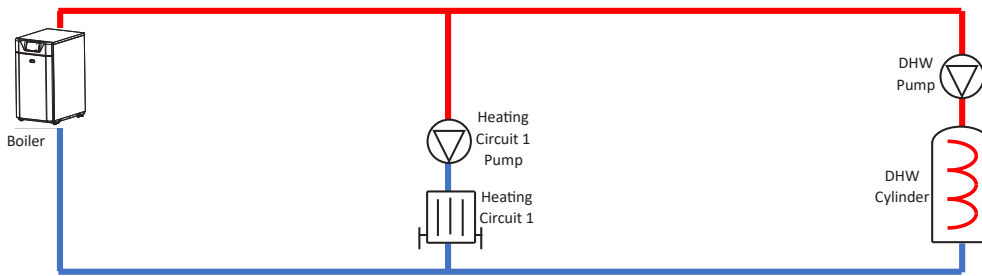


**Note**  
A 10-10V Control Signal is only required to the Master Boiler

# SECTION 2 - INSTALLATION

## 2.16 HYDRAULIC DIAGRAMS, OPENTHERM

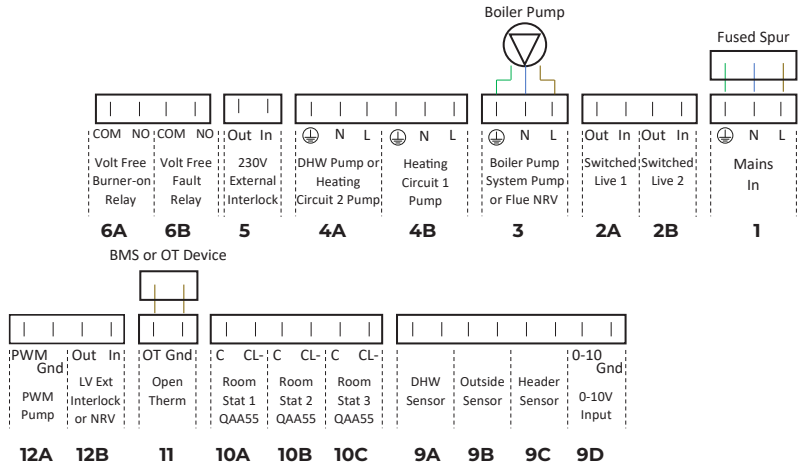
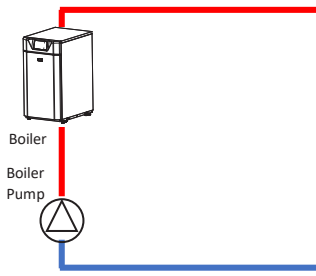
### OpenTherm, Single Boiler, 1 CH Pump (Constant Temperature Circuit) & DHW Pump



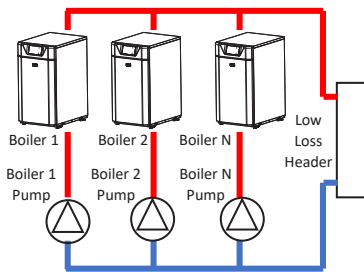
# SECTION 2 - INSTALLATION

## 2.17 HYDRAULIC DIAGRAMS, OPENTHERM Continued

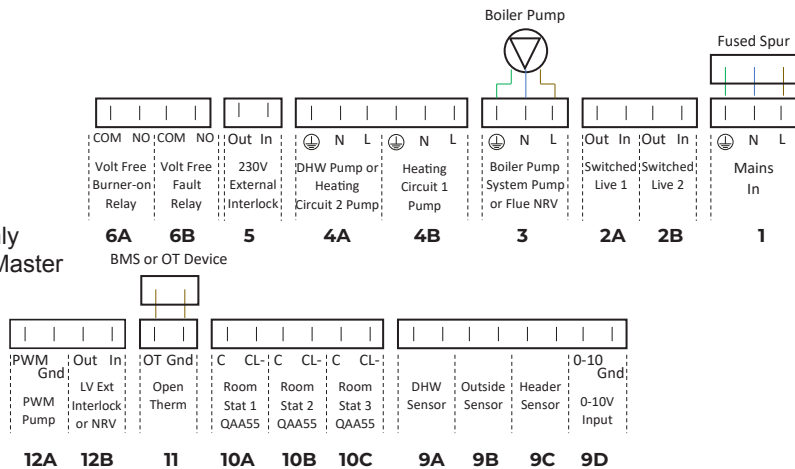
### Imax Xtra 2 Configuration: OpenTherm, Single Boiler, Boiler Pump



### Imax Xtra 2 Configuration: OpenTherm, Cascade, Boiler Pump



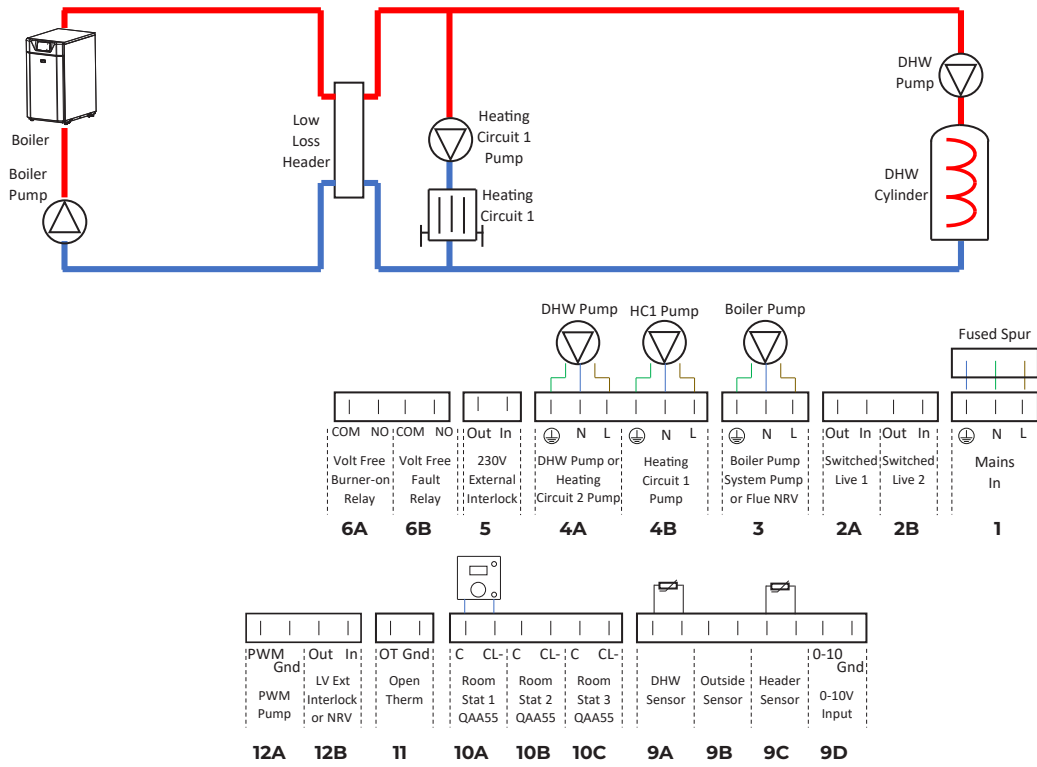
**Note**  
An OpenTherm connection is only required to the Master Boiler



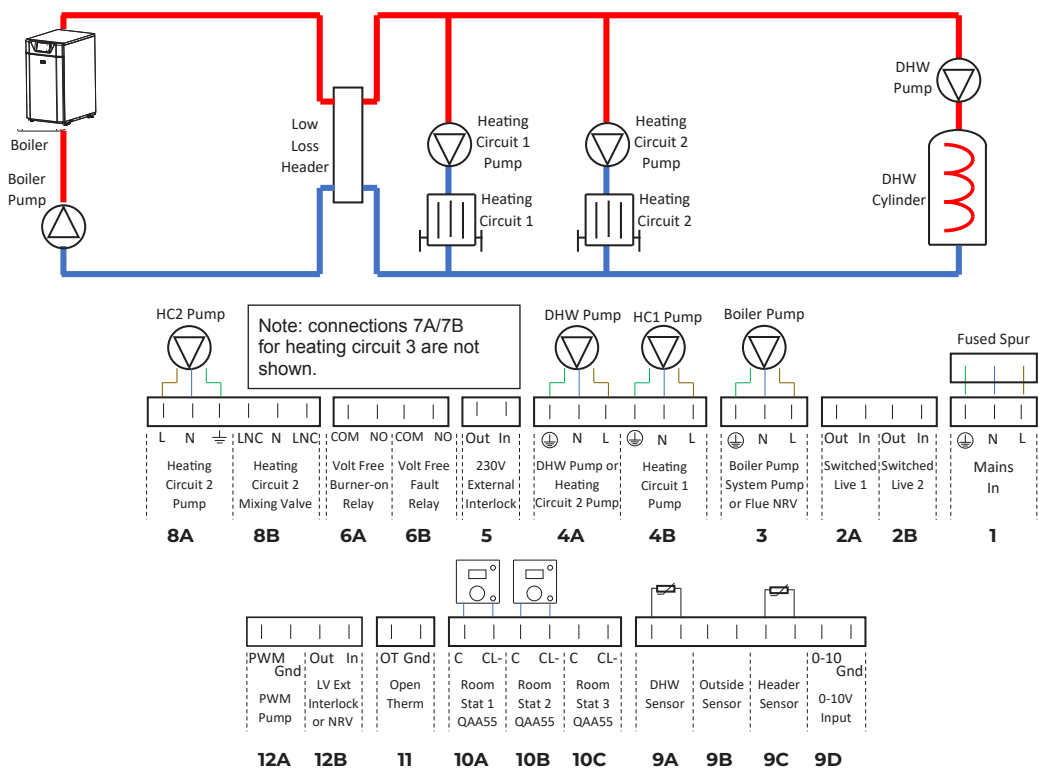
## SECTION 2 - INSTALLATION

### 2.18 HYDRAULIC DIAGRAMS, INTERNAL BOILER CONTROL, SINGLE BOILER

#### Internal Boiler Control, Single Boiler, Boiler Pump, 1 CH Pump (Constant Temperature) & DHW Pump



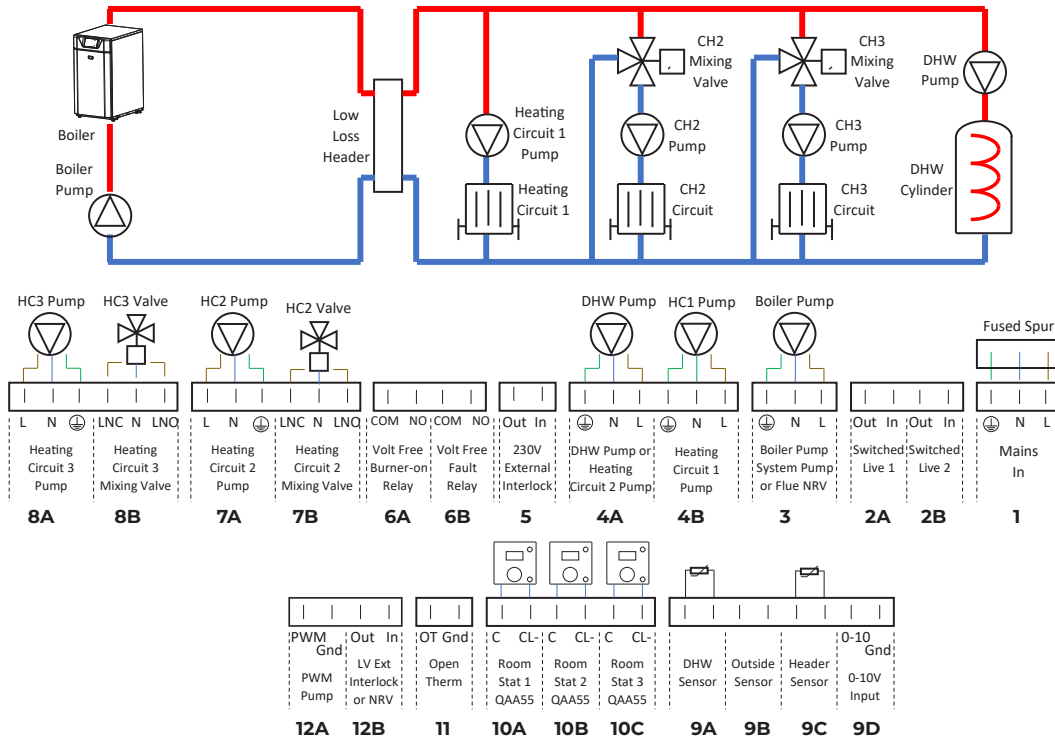
#### Internal Boiler Control, Single Boiler, Boiler Pump & 2 CH Pumps (2 Constant Temperature Circuits)



## SECTION 2 - INSTALLATION

### 2.19 HYDRAULIC DIAGRAMS, INTERNAL BOILER CONTROL, SINGLE BOILER

Internal Boiler Control, Single Boiler, Boiler Pump, 3 CH Pumps (1 Constant, 2 Variable) & DHW Pump



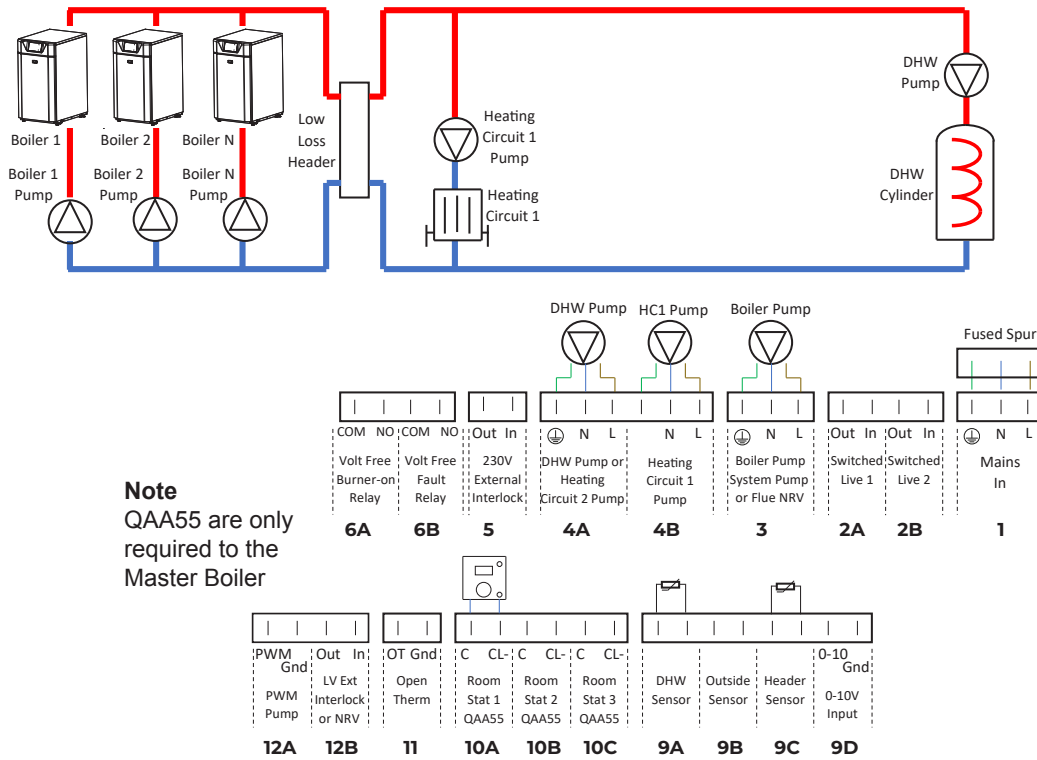
Please refer to document UIN 226210 Dual Additional Heat Zone Kit Instructions for details on how to install the mixing circuit temperature sensors



# SECTION 2 - INSTALLATION

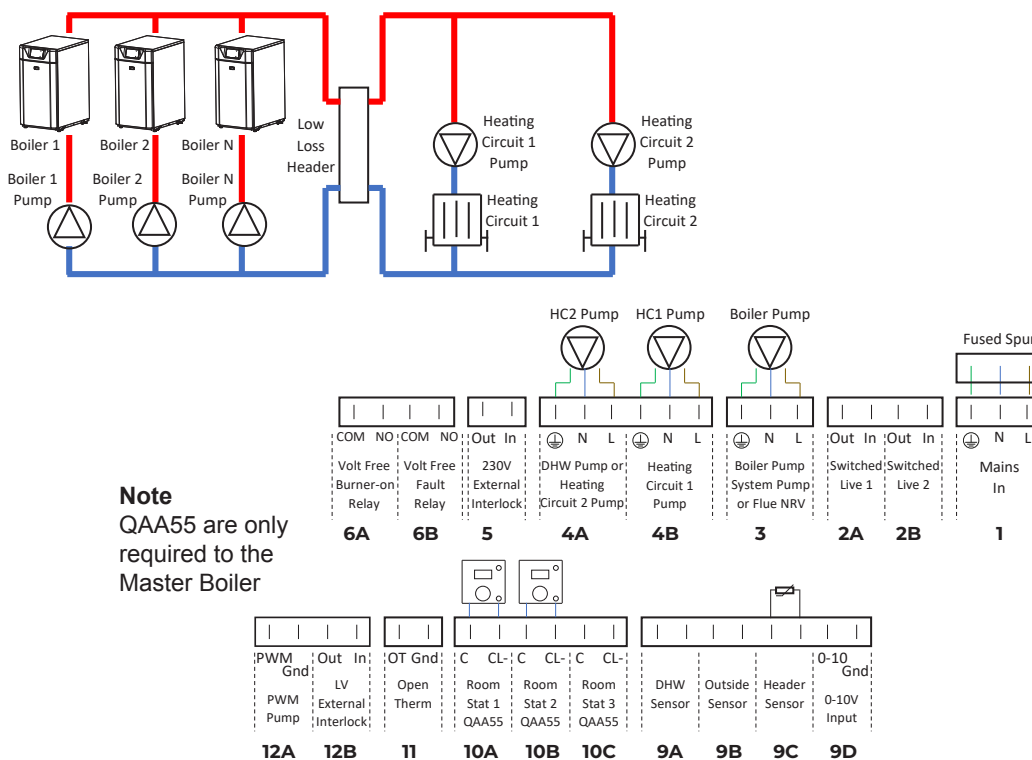
## 2.20 HYDRAULIC DIAGRAMS, INTERNAL BOILER CONTROL, CASCADE

### Internal Boiler Control, Cascade, Boiler Pump, 1 CH Pump (Constant Temperature Circuit) & DHW Pump



**Note**  
QAA55 are only required to the Master Boiler

### Internal Boiler Control, Cascade, Boiler Pump & 2 CH Pumps (2 Constant Temperature Circuits)

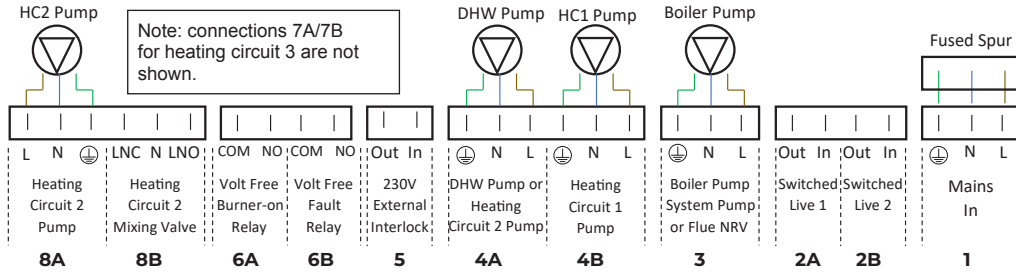
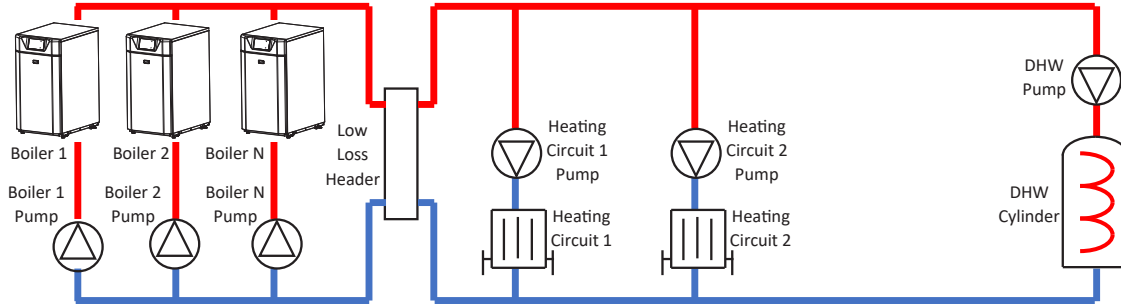


**Note**  
QAA55 are only required to the Master Boiler

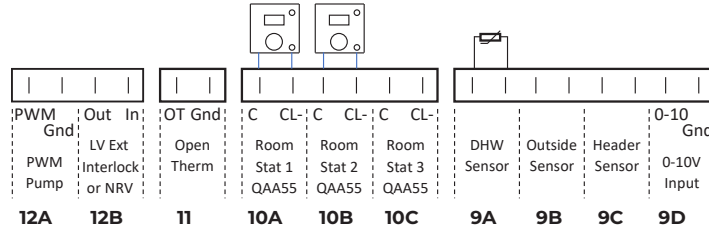
# SECTION 2 - INSTALLATION

## 2.21 HYDRAULIC DIAGRAMS, INTERNAL BOILER CONTROL, CASCADE Continued

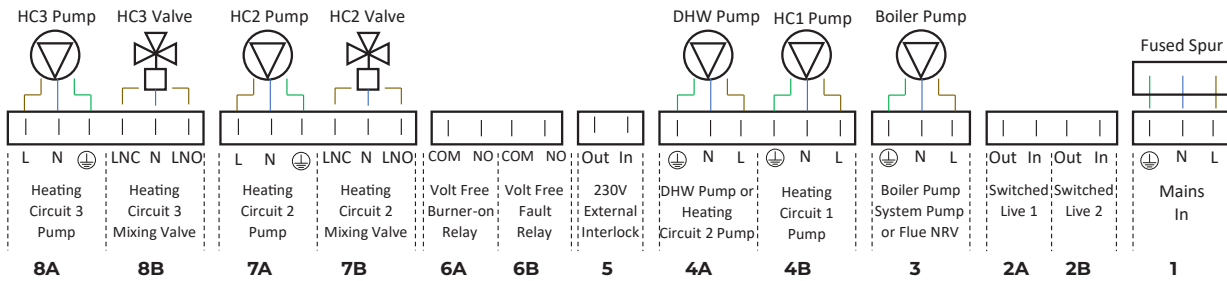
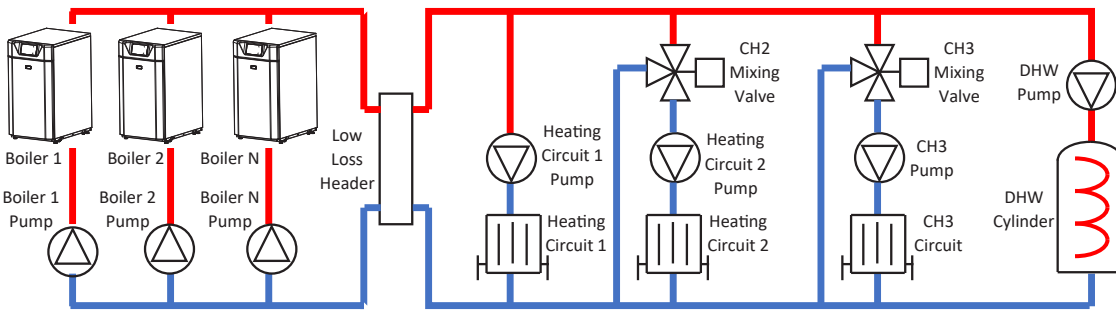
### Internal Boiler Control, Cascade, Boiler Pump, 2 CH Pumps (Constant Temperature Circuits) & DHW Pump



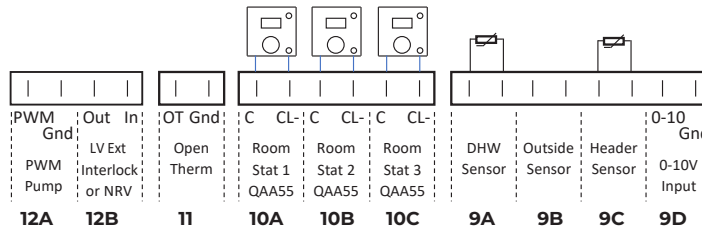
**Note**  
QAA55 are only required to the Master Boiler



### Internal Boiler Control, Cascade, Boiler Pump, 3 CH Pumps (1 Constant Temp, 2 Variable) & DHW Pump



**Note**  
QAA55 are only required to the Master Boiler

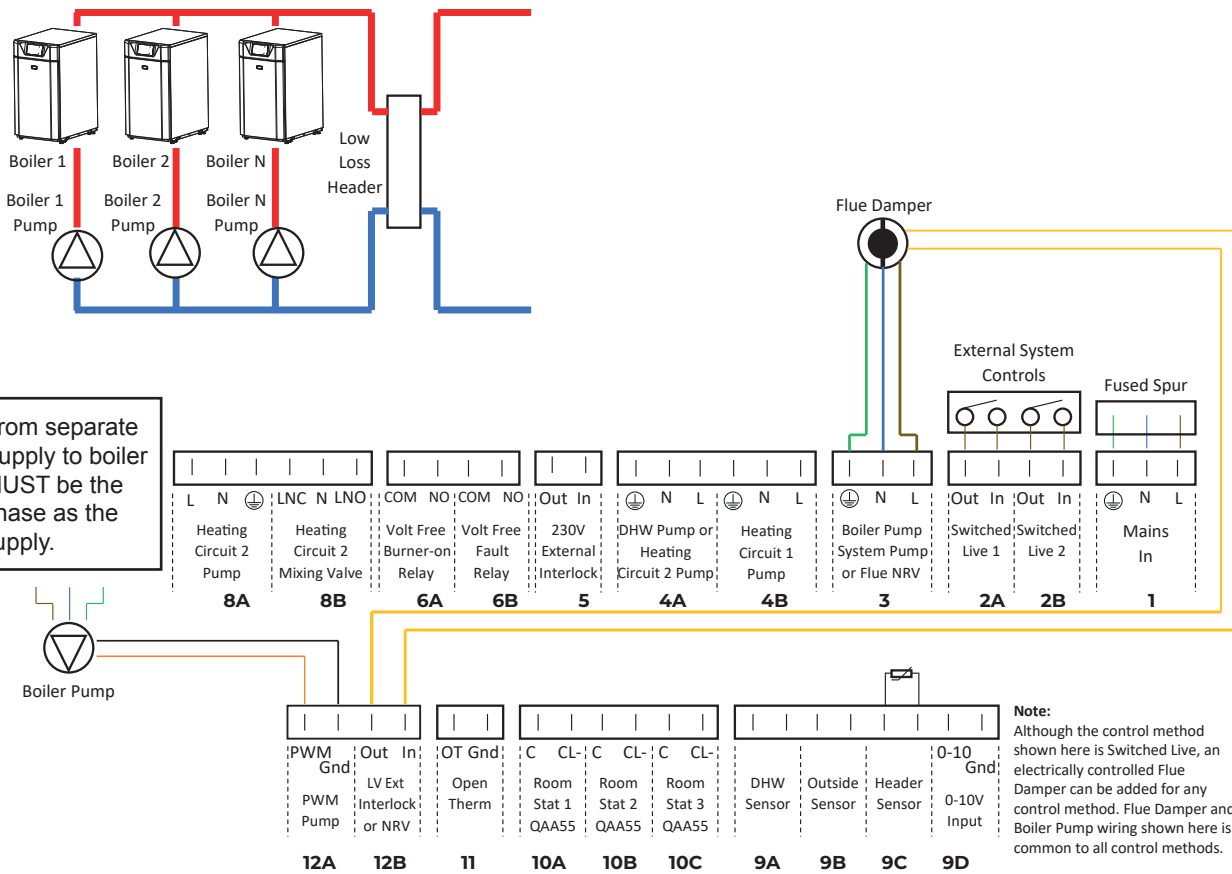


Please refer to document UIN 226210 Dual Additional Heat Zone Kit Instructions for details on how to install the mixing circuit temperature sensors

## SECTION 2 - INSTALLATION

### 2.22 HYDRAULIC DIAGRAMS, SWITCHED LIVE CONTROL, CASCADE, BOILER PUMP & ELECTRICALLY CONTROLLED FLUE DAMPER

#### Switched Live Control, Cascade, Boiler Pump & Electrically Controlled Flue Damper



**Note.** If you are adding a Motorised Flue Damper to an Imax Xtra 2 that already has a Boiler Pump controlled directly from the boiler you must observe the following:

- The On/Off Controlled Boiler Pump MUST be converted to Modulation Controlled Boiler Pump.
- If the Boiler pump has a PWM Modulation Input available you can use the schematic shown above.
- If the Boiler pump only has a 0-10 V Modulation Input available you need to order the 0-10 V Pump Kit. The schematic showing the wiring is shown in the instructions which are provided with the kit.
- The boiler pump will require a separate mains supply which MUST be provided from the same phase as the boiler.

# SECTION 2 - INSTALLATION

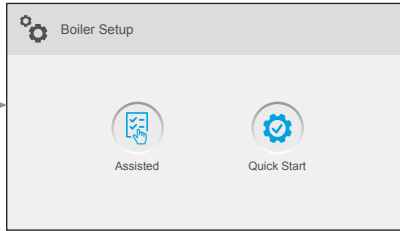
## 2.23 USER INTERFACE INITIAL COMMISSIONING PROCESS

INSTALLATION



When the boiler is powered up for the first time the above screen will be shown.

The HMI touchscreen has a protective screen fitted which needs removing. Safely and responsibly dispose of the protective screen.



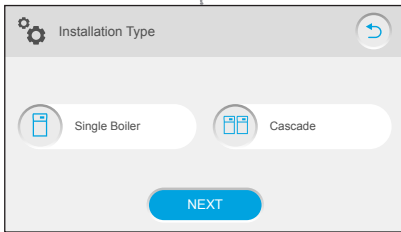
To accept the default configuration press **Quick start**

Default Configuration:  
Switched Live Control  
CH Pump, DHW Pump  
Burner on Relay, Fault Relay

**Quick Start**

Quick Start is Switched Live control of 1x Heating Circuit & 1x Hot Water Circuit  
A HC Pump & DHW Pump Output is also available

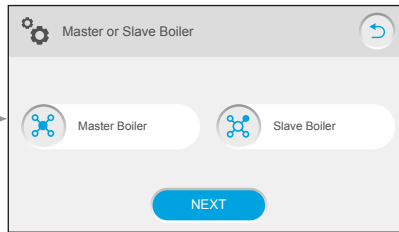
**Assisted**



If standalone boiler is required select **Single Boiler** and press **NEXT**  
If Cascade boiler is required select **Cascade** and press **NEXT**

**Cascade**

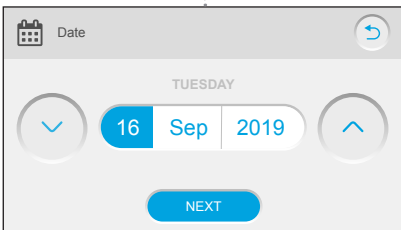
**Single Boiler**



If master boiler is required select **Master Boiler** and press **NEXT**  
If Slave boiler is required select **Slave** and press **NEXT**

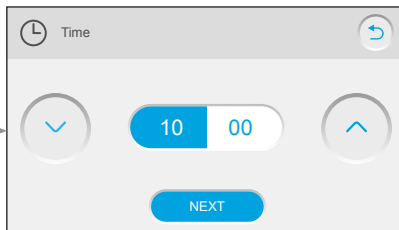
**Slave Boiler**

**Master Boiler**



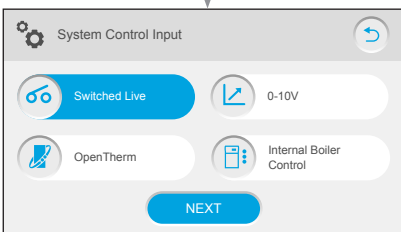
Change the date using the Up and Down arrows and press **Next**

**Next**



Change the time using the Up and Down arrows and press **Next**

**Next**



If Switched Live Control is required select **Switched Live** and press **NEXT**  
If OpenTherm Control is required select **OpenTherm** and press **NEXT**  
If 0-10V Control is required select **0-10V** and press **NEXT**  
If IBC Control is required select **IBC** and press **NEXT**

0-10V

Switched Live

OpenTherm

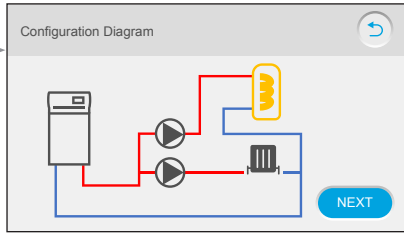
IBC

Go to Frame 2.24

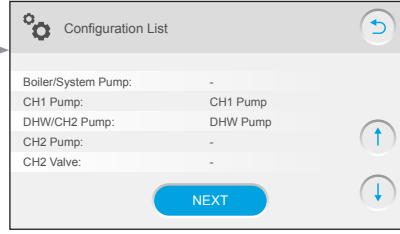
Go to Frame 2.26

Refer to Full Controls Guide

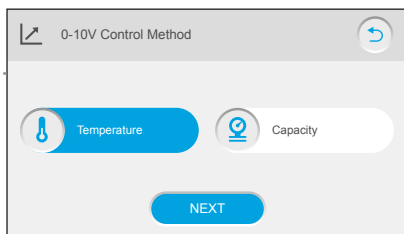
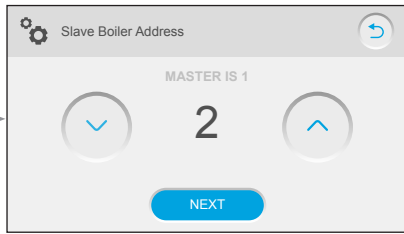
## SECTION 2 - INSTALLATION



The configuration diagram shows the hydraulic setup for Quick Start



The configuration list shows the electrical setup for Quick Start

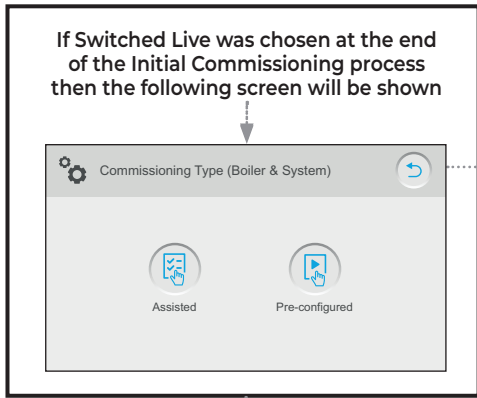


If Temperature Control is required select **Temperature** and press **NEXT**  
If Capacity Control is required select **Capacity** and press **NEXT**

Next  
Go to Frame 2.25

# SECTION 2 - INSTALLATION

## 2.24 USER INTERFACE SWITCHED LIVE COMMISSIONING PROCESS



Pre-configured

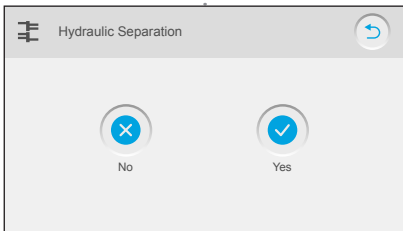
If user has selected single boiler setup

If user has selected multiple boiler setup

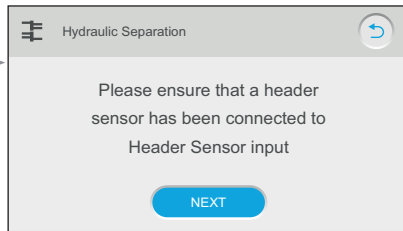
Assisted

If user has selected single boiler setup

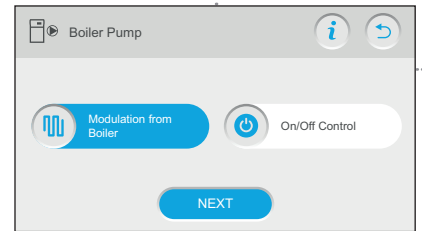
If user has selected multiple boiler setup



Yes



NEXT



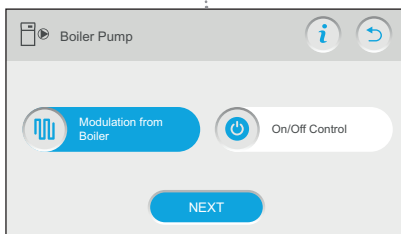
Mod Control

ON/OFF Control

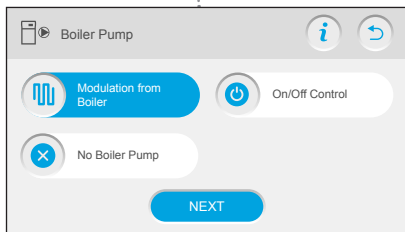
If Hydraulic separation is required between the boiler (primary side) and the secondary side press **Yes**. If no Hydraulic Separation is required press **No**

ON/OFF

Boiler can provide control of a boiler pump if required. The boiler can provide simple on/off control (power on or off) or modulation control via a PWM signal. If no boiler pump control from boiler is required the user can select **No Boiler Pump**



Modulation Control



Mod Control

Capacity

Temperature Differential

For modulation control of boiler pump the boiler can either modulate the according to output, by selecting **Capacity** followed by **NEXT**, or according to the differential temperature, by selecting **Temperature Differential** followed by **NEXT**

No Boiler Pump

ON/OFF Control

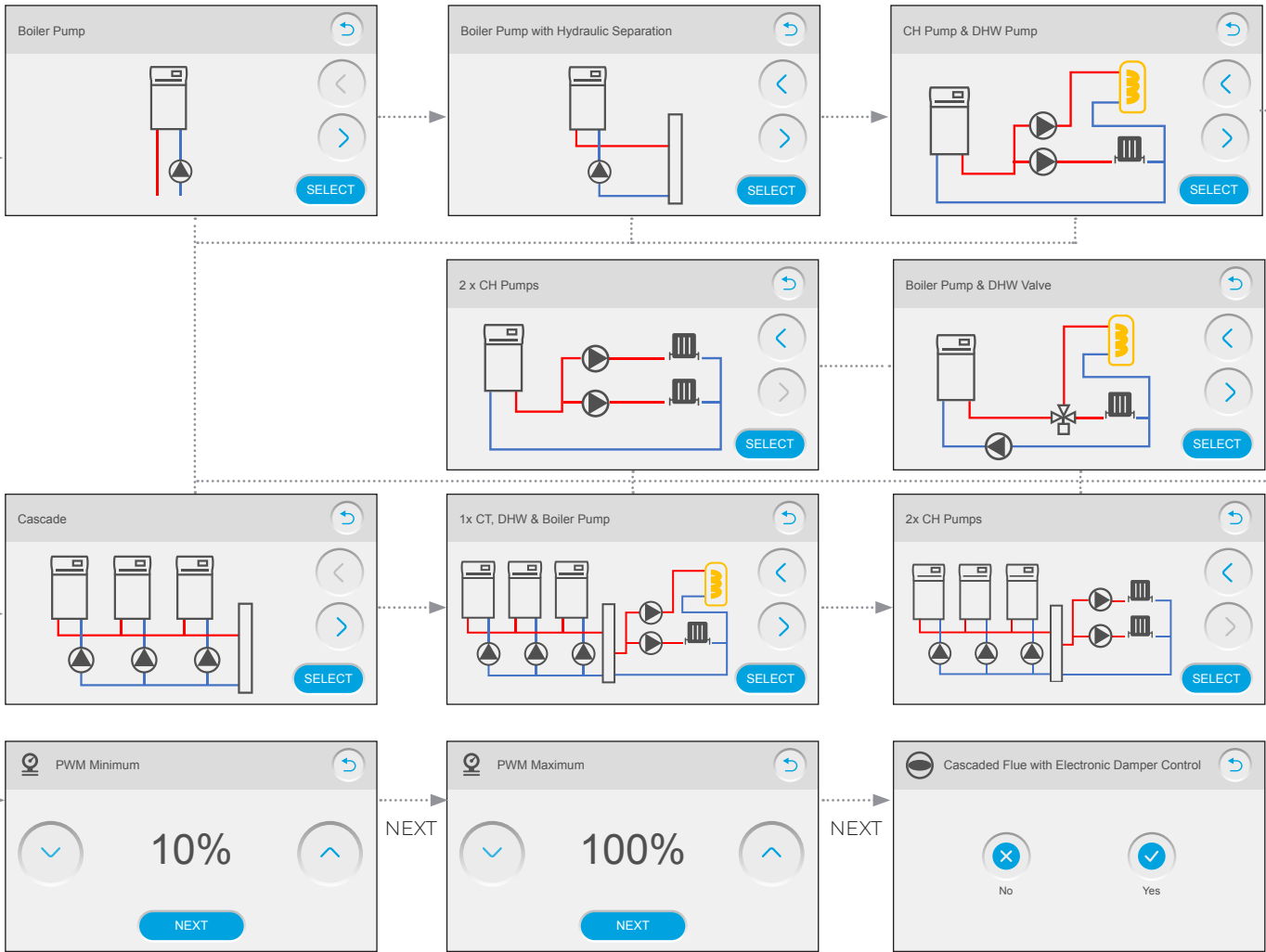
NEXT

Continued Overleaf

Continued Overleaf

Continued Overleaf

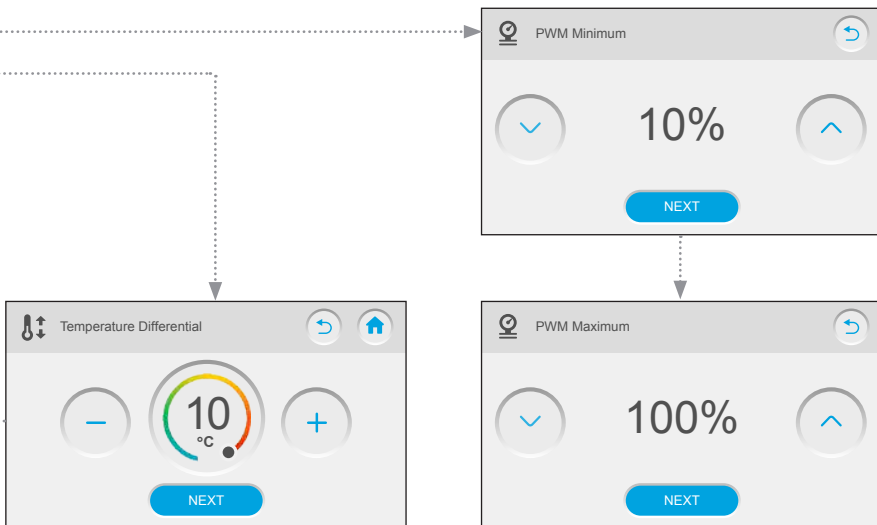
# SECTION 2 - INSTALLATION



**NOTE:** For boiler pump modulation based on capacity, the minimum and maximum values may be adjusted. We would not advise changes to the default values until after the operation of the boiler has been tested.

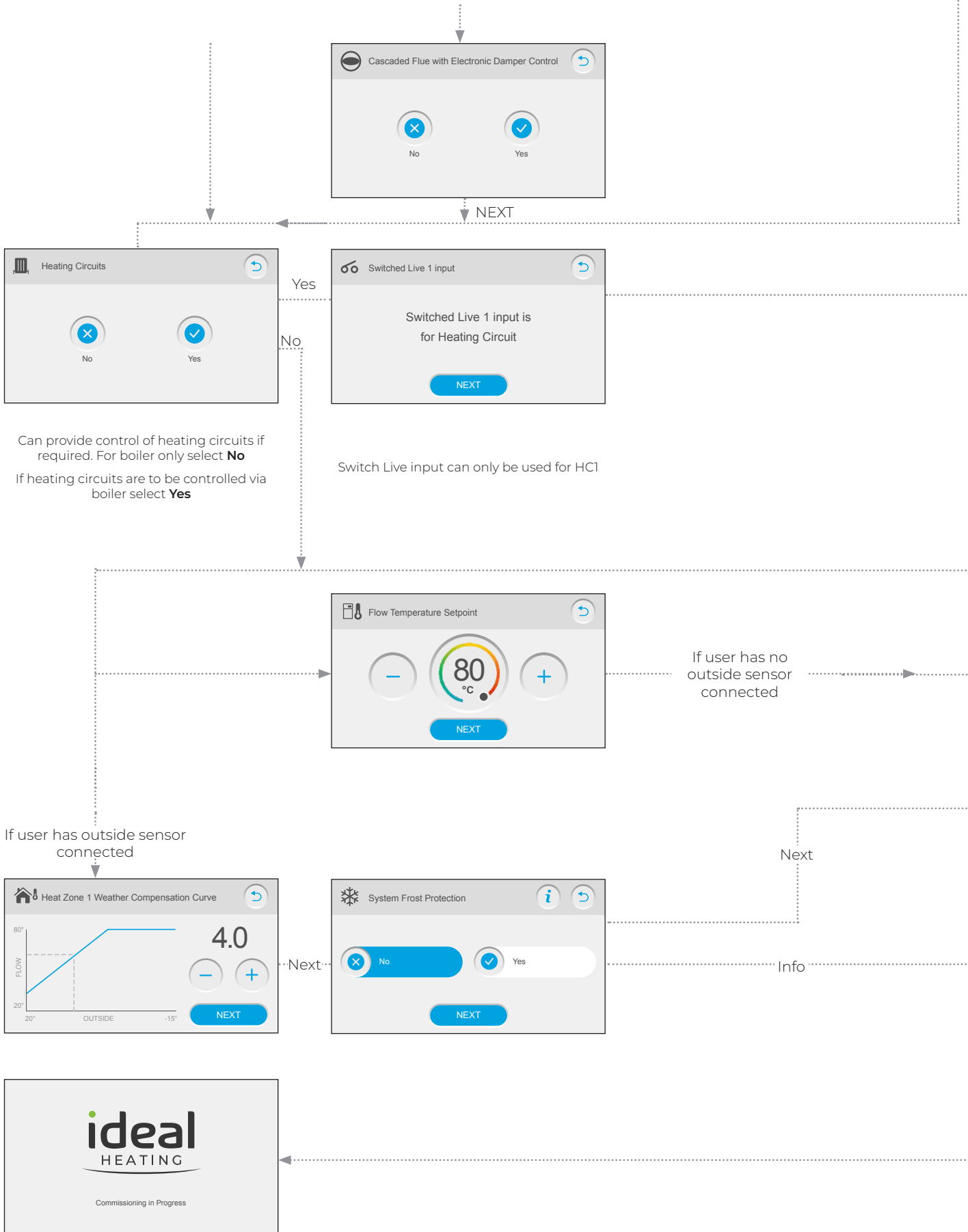
Boiler can provide control of a flue damper if required. The boiler provides on/off control (power on or off) but also requires on/off feedback via the LV Interlock signal.

Flue Damper Control is only available if the user has selected **No Boiler Pump or Modulation Control**



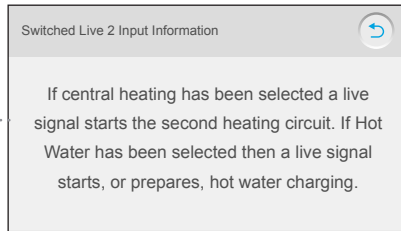
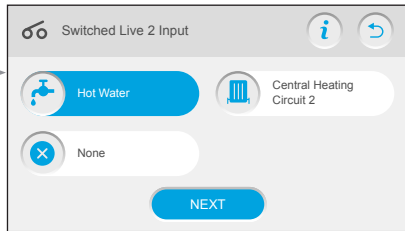
Continued Overleaf

# SECTION 2 - INSTALLATION



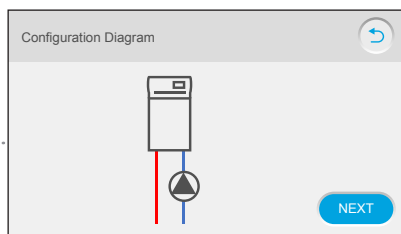
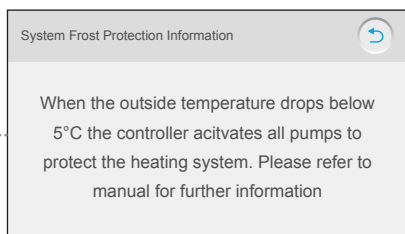


## SECTION 2 - INSTALLATION

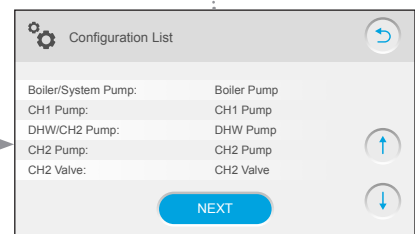


If a second heating circuit is required please select **Heating Circuit 2** followed by **NEXT**  
 If a hot water circuit is required please select **Hot Water** followed by **NEXT**  
 If no additional circuit is required please select **None** followed by **NEXT**

Next

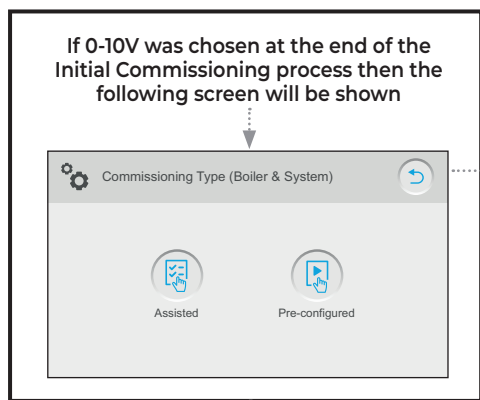


Next



# SECTION 2 - INSTALLATION

## 2.25 USER INTERFACE 0-10V COMMISSIONING PROCESS



Pre-configured

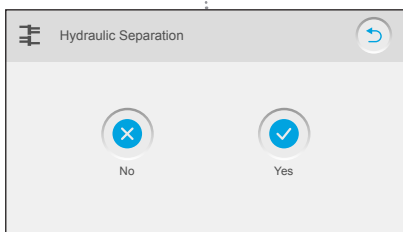
If user has selected single boiler setup

If user has selected multiple boiler setup

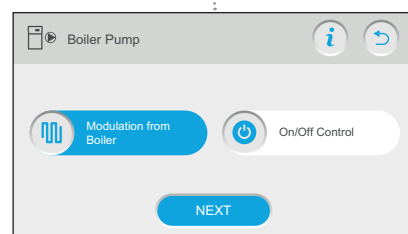
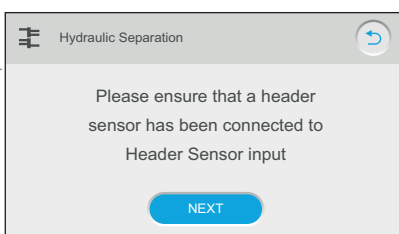
Assisted

If user has selected multiple boiler setup

If user has selected single boiler setup



Yes



Mod Control

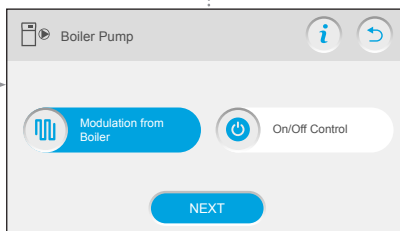
NO

NEXT

ON/OFF Control

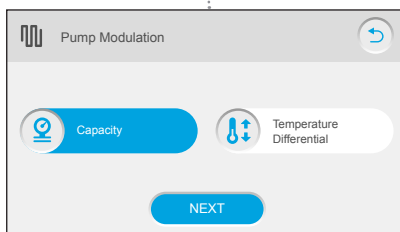
If Hydraulic separation is required between the boiler (primary side) and the secondary side press **Yes**. If no Hydraulic Separation is required press **No**

Boiler can provide control of a boiler pump if required. The boiler can provide simple on/off control (power on or off) or modulation control via a PWM signal.



ON/OFF

Modulation Control

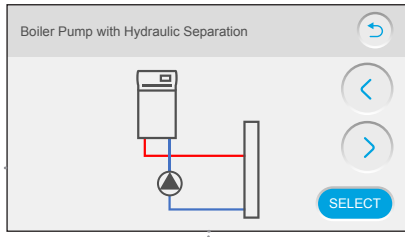
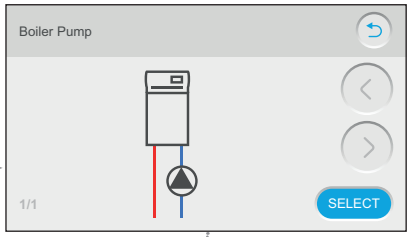


Capacity

Temperature Differential

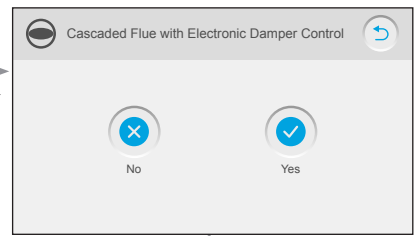
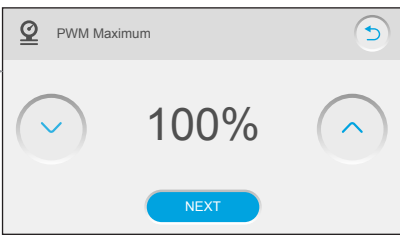
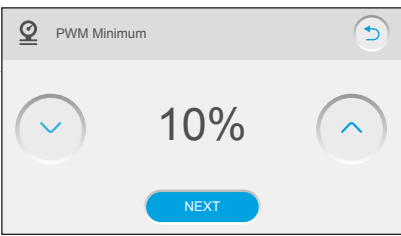
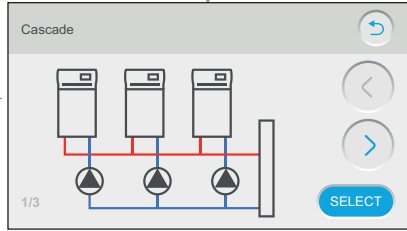
For modulation control of boiler pump the boiler can either modulate the according to output, by selecting **Capacity** followed by **NEXT**, or according to the differential temperature, by selecting **Temperature Differential** followed by **NEXT**

# SECTION 2 - INSTALLATION

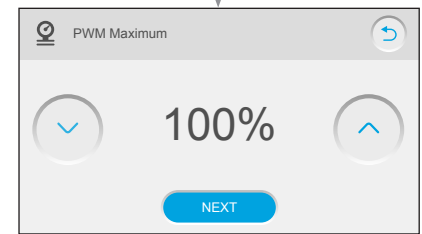
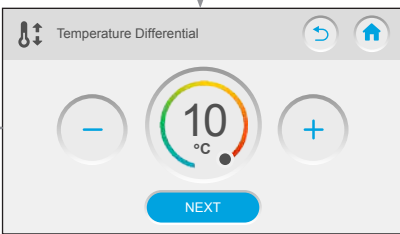
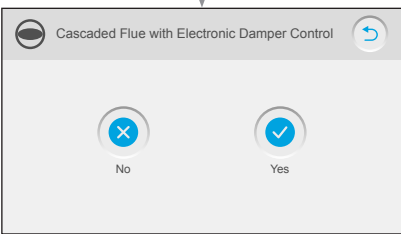
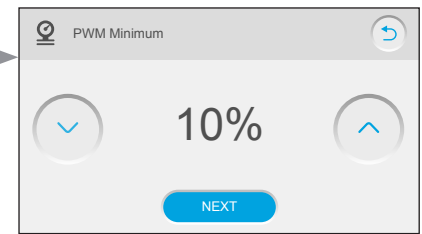


Boiler can provide control of a flue damper if required. The boiler provides on/off control (power on or off) but also requires on/off feedback via the LV Interlock signal.

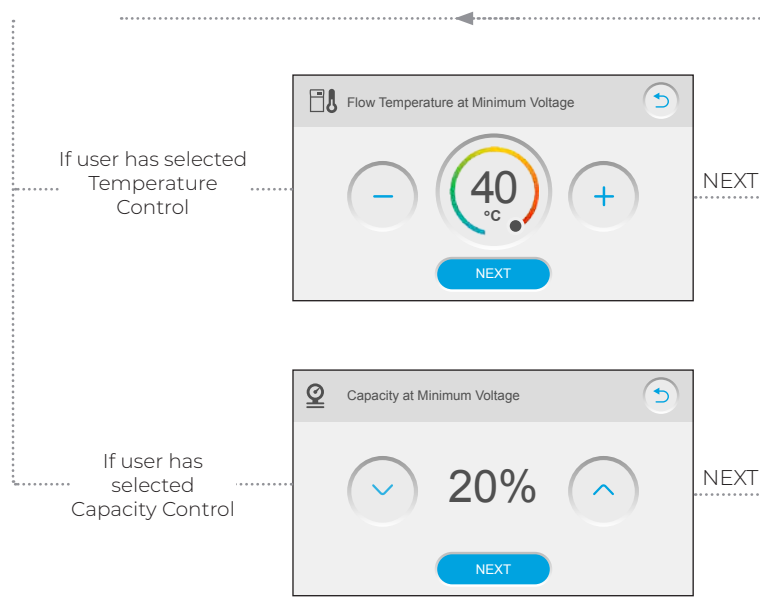
Flue Damper Control is only available if the user has selected **No Boiler Pump** or **Modulation Control**



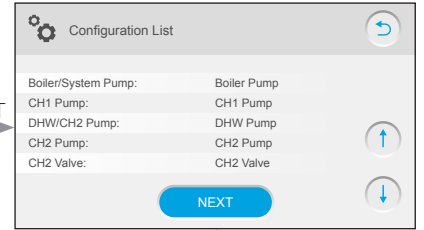
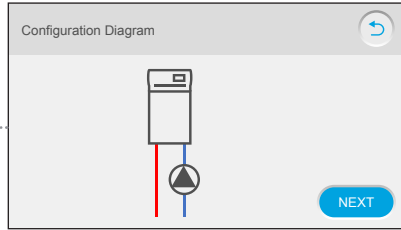
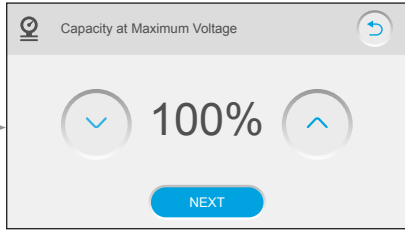
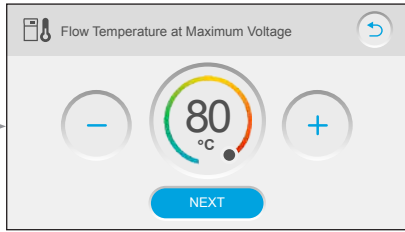
**NOTE:** For boiler pump modulation based on capacity, the minimum and maximum values may be adjusted. We would not advise changes to the default values until after the operation of the boiler has been tested.



## SECTION 2 - INSTALLATION



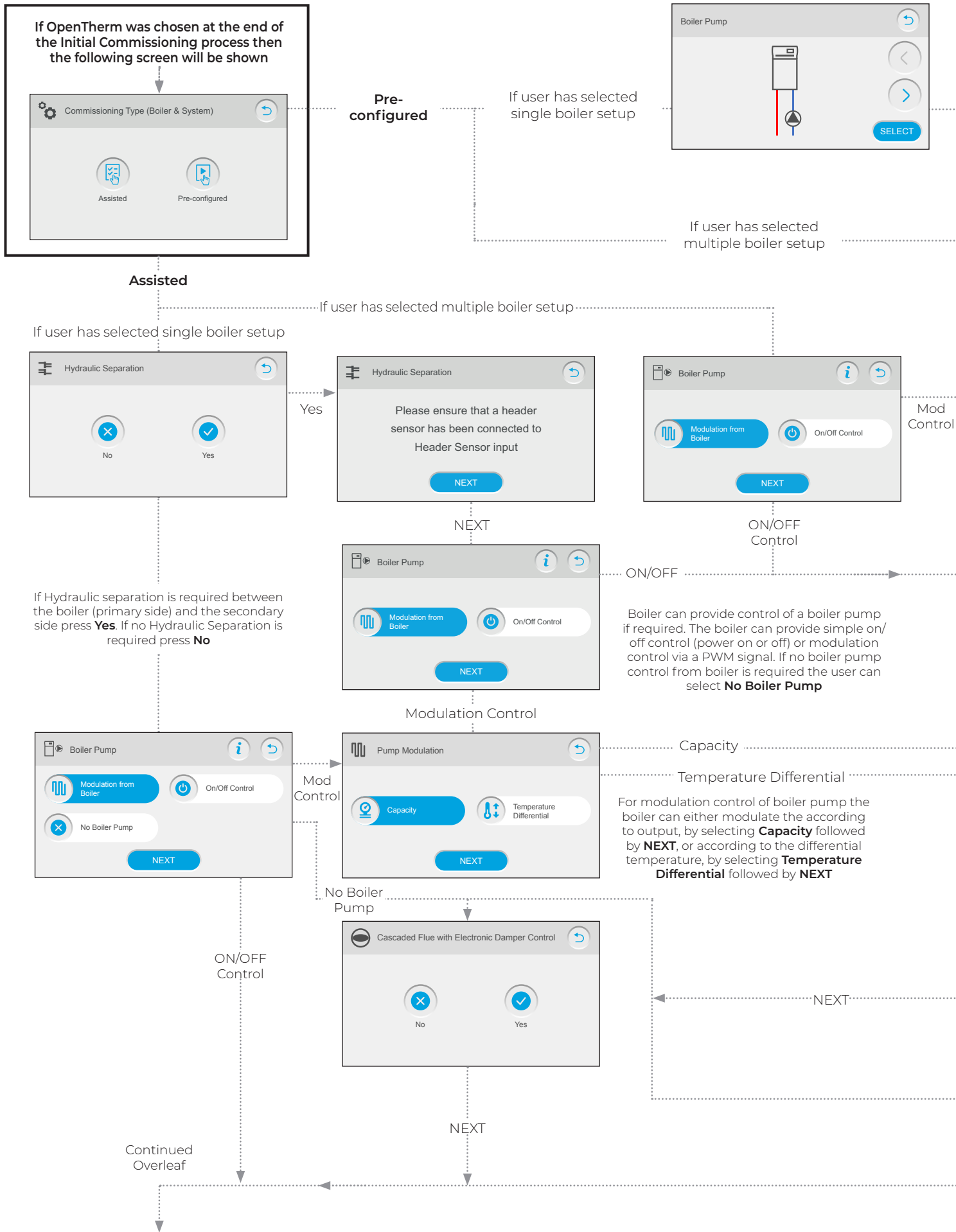
## SECTION 2 - INSTALLATION



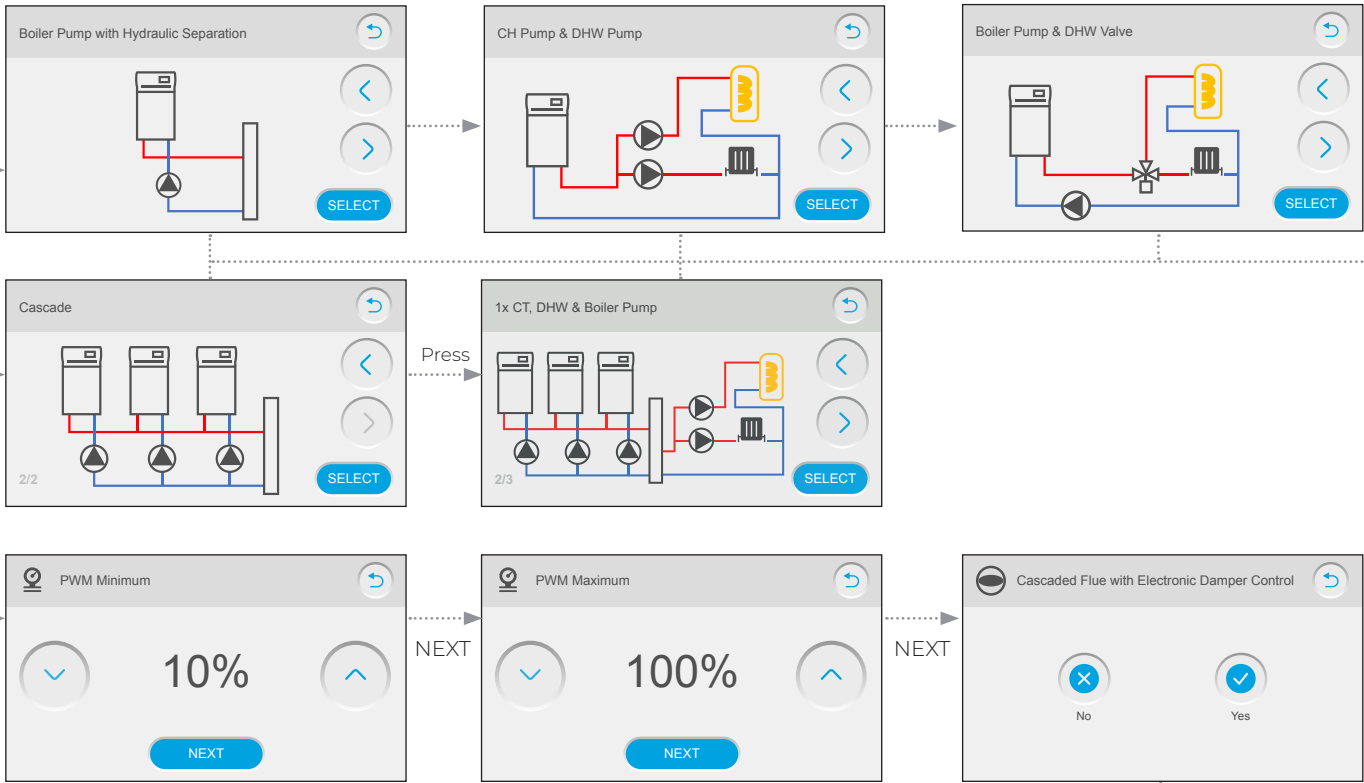
# SECTION 2 - INSTALLATION

## 2.26 USER INTERFACE OPENTHERM COMMISSIONING PROCESS

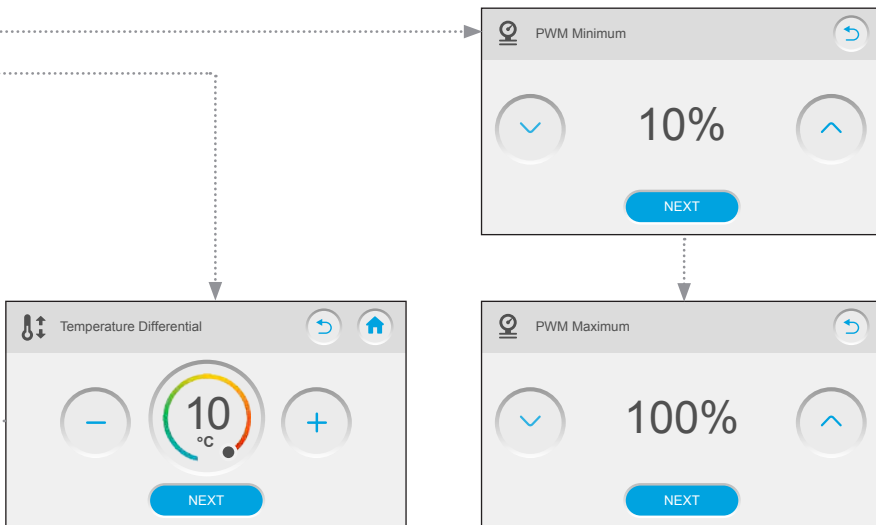
INSTALLATION



## SECTION 2 - INSTALLATION

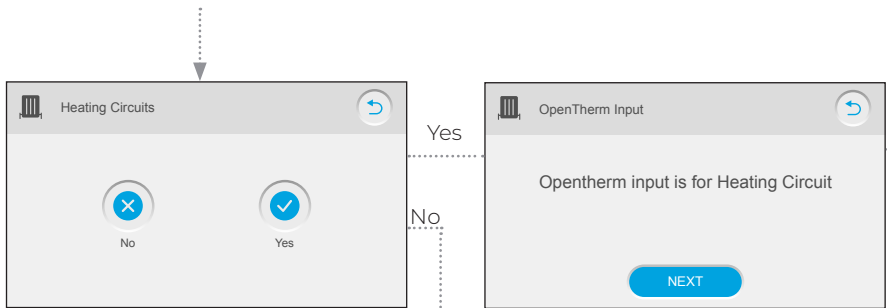


**NOTE:** For boiler pump modulation based on capacity, the minimum and maximum values may be adjusted. We would not advise changes to the default values until after the operation of the boiler has been tested.



Continued  
Overleaf

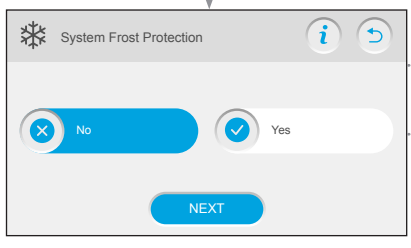
## SECTION 2 - INSTALLATION



Can provide control of heating circuits if required. For boiler only select **No**  
If heating circuits are to be controlled via boiler select **Yes**

OpenTherm input can only be used for HCl

If user has outside sensor connected  
If user has no outside sensor connected



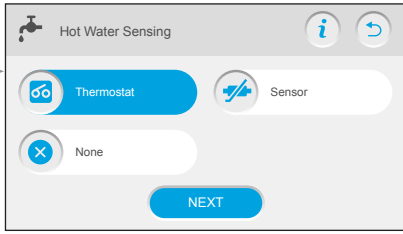
Next

Info





## SECTION 2 - INSTALLATION

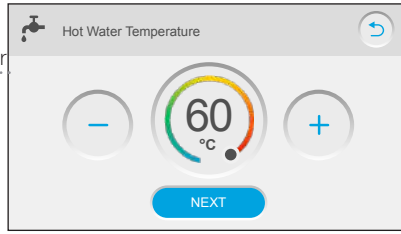


If a hot water circuit is required using Thermostat Control please select **Thermostat** followed by **NEXT**

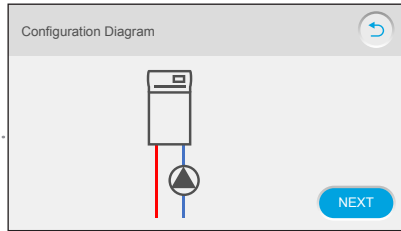
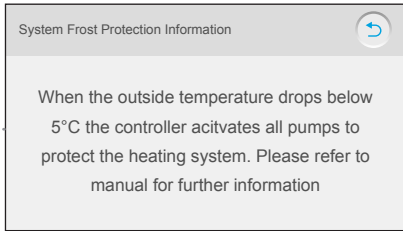
If a hot water circuit is required using Sensor Control please select **Sensor** followed by **NEXT**

If no additional circuit is required please select **None** followed by **NEXT**

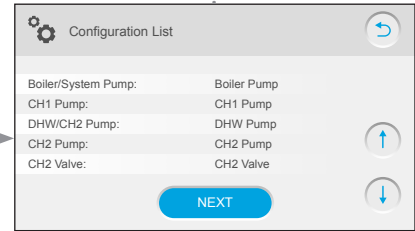
Sensor



Thermostat or None

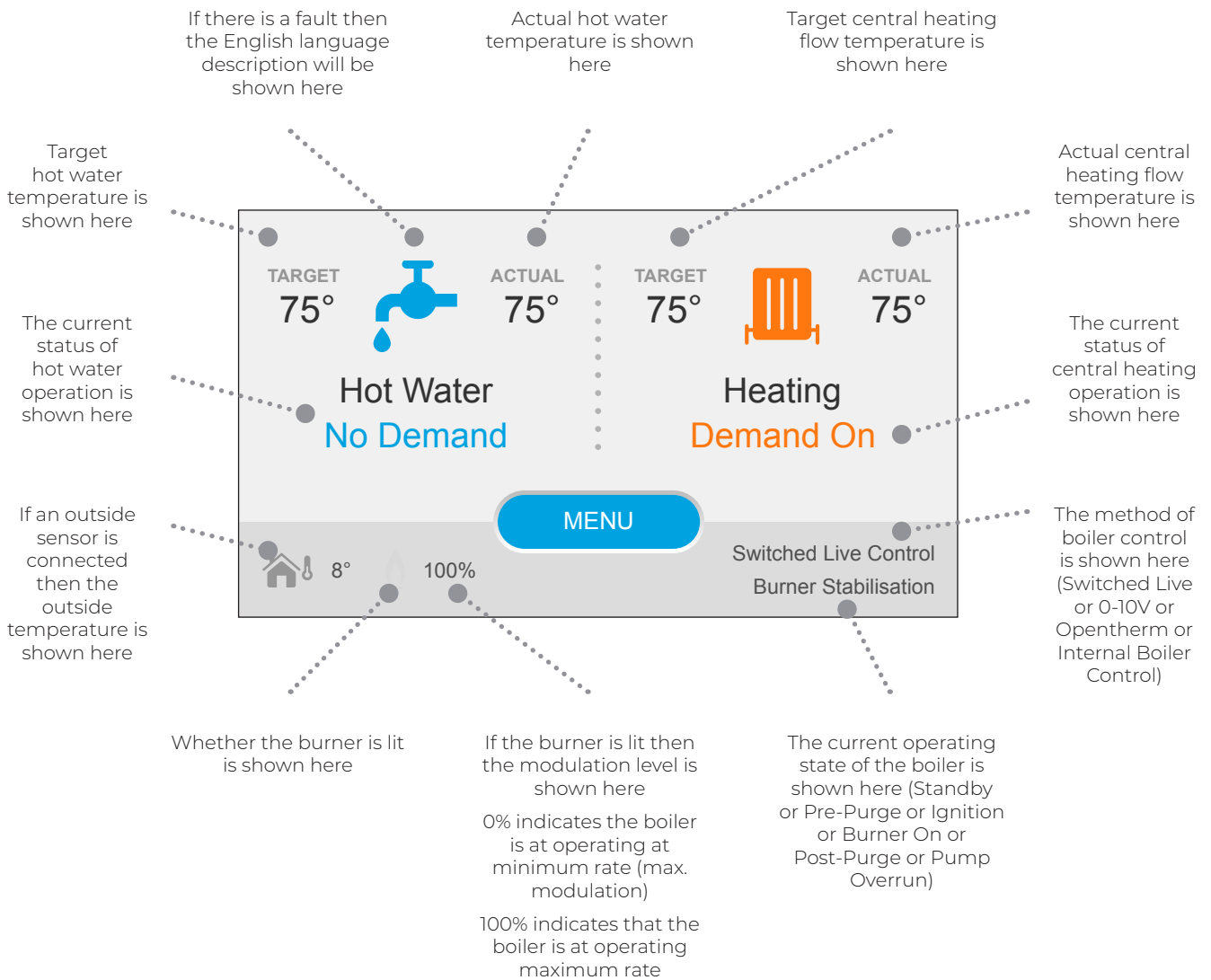


Next



## SECTION 2 - INSTALLATION

### 2.27 IMAX XTRA 2 USER INTERFACE MENU OPERATION



## SECTION 2 - INSTALLATION

### 2.28 IMAX XTRA 2 USER INTERFACE DETAILS

A detailed set of Internal Boiler Control Instructions for:

Factory Reset

Re-configuration

Manually setting relay functions

Manually setting the system control input

Manually configuring a cascade

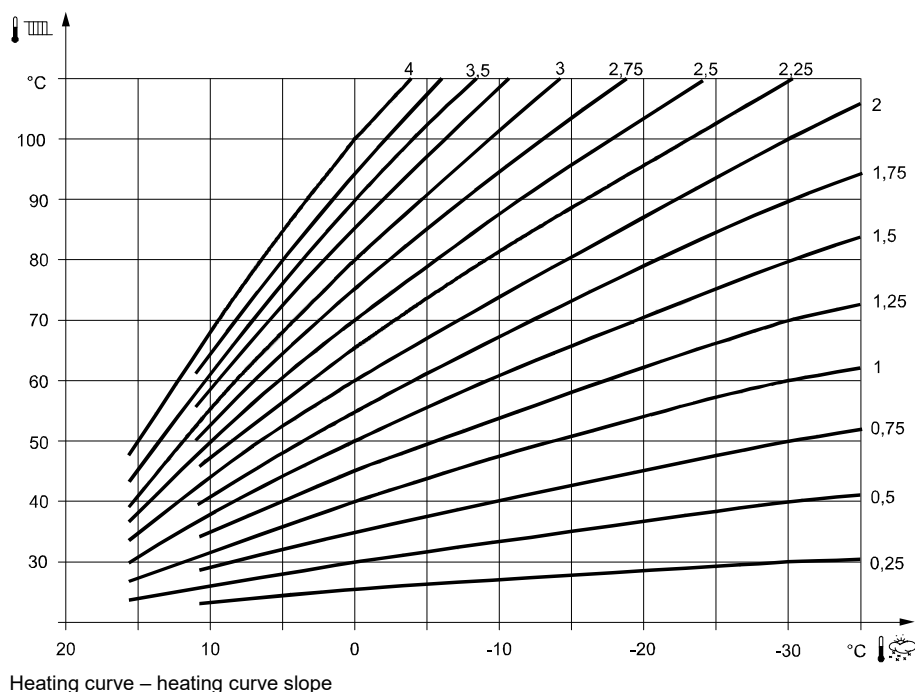
Manually configuring zones

and Manually configuring room units are available online at [idealheating.com](http://idealheating.com)

### 2.29 HEATING CURVE DIAGRAM

The boiler flow temperature setpoint is calculated using the graph shown.

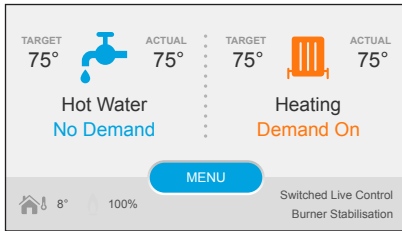
The flow temperature will be varied between 30°C and 80°C.



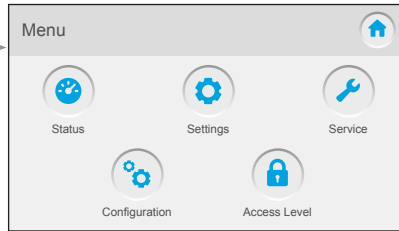
## SECTION 2 - INSTALLATION

### 2.30 USER INTERFACE MENU OPERATION: CENTRAL HEATING SCHEDULES

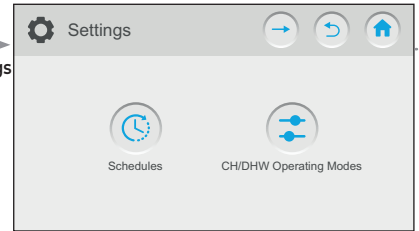
TO VIEW A CENTRAL HEATING SCHEDULE OR CHANGE A ROOM TEMPERATURE SETPOINT OR CHANGE CENTRAL HEATING ON/OFF TIMES PROCEED AS FOLLOWS



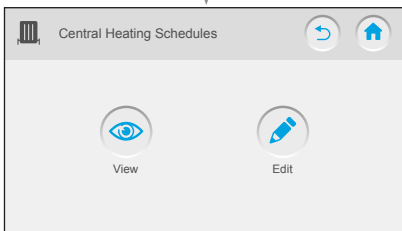
MENU



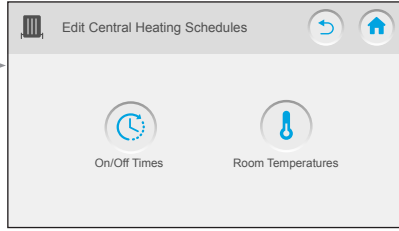
Settings



Schedules



Edit



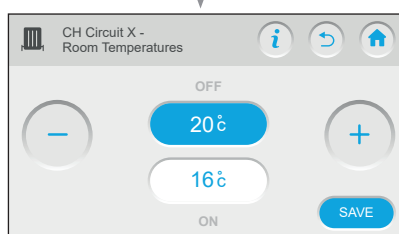
On/Off Times

View

Central Heating Circuit X Schedule

Monday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Tuesday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Wednesday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Thursday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Friday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Saturday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Sunday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00

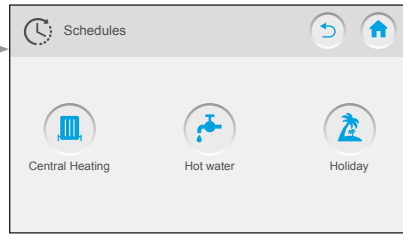
Room Temperature



The ON temperature is the setpoint temperature during an "on period", the OFF temperature is the setpoint temperature during an "off period"

# SECTION 2 - INSTALLATION

If Heating Circuits selected

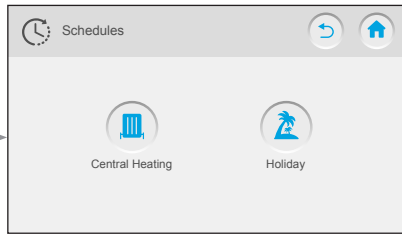


Central Heating

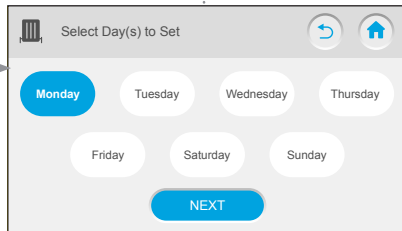


Central Heating X

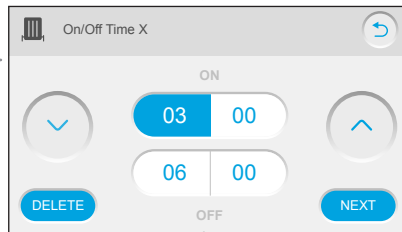
If no Heating Circuits selected



Heating



NEXT



Delete

NEXT

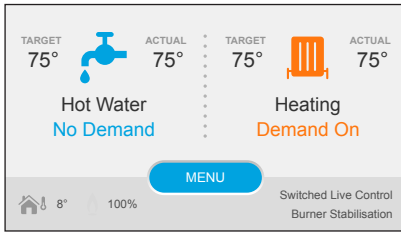
If there is time left in the day up to two additional on/off timer blocks can be added

If additional timer blocks available

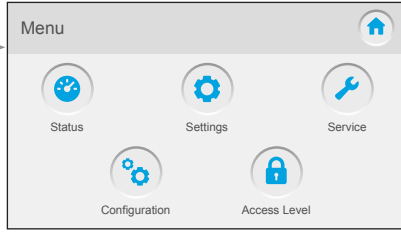
If **no** additional timer blocks available

# SECTION 2 - INSTALLATION

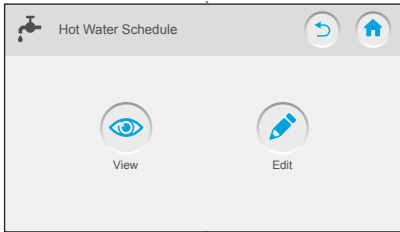
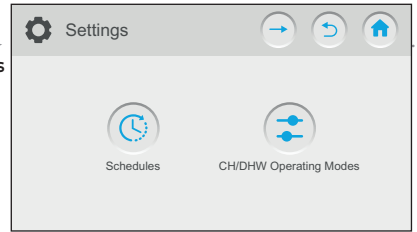
TO VIEW A HOT WATER SCHEDULE OR CHANGE THE HOT WATER TEMPERATURE SETPOINT OR CHANGE THE HOT WATER ON/OFF TIMES PROCEED AS FOLLOWS



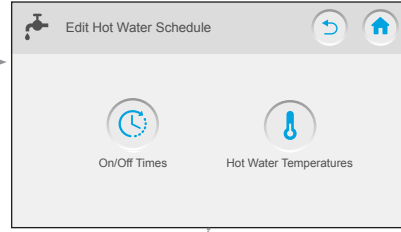
MENU



Settings



Edit

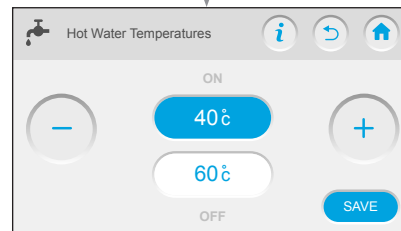


Press On/Off Times

View

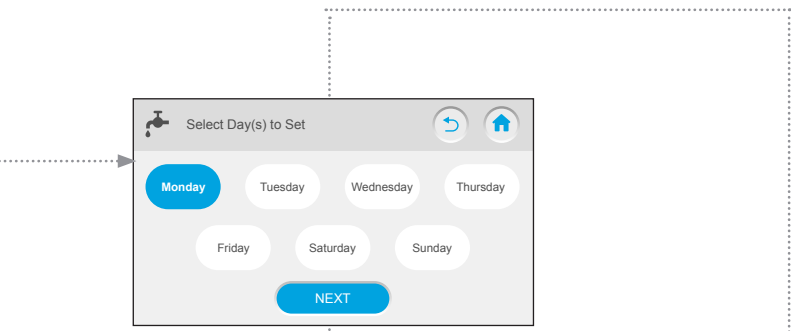
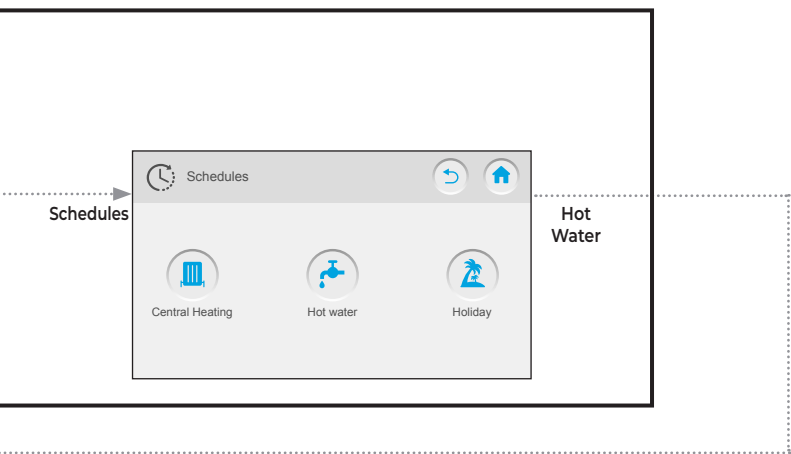


Hot Water Temperatures

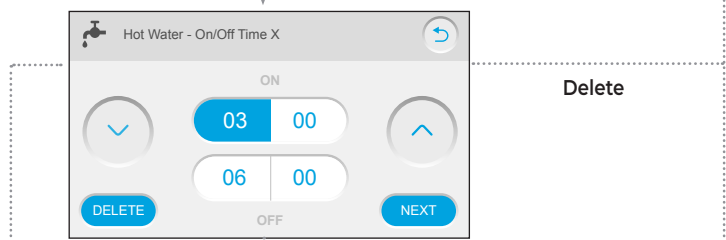


*The ON temperature is the setpoint temperature during an "on period", the OFF temperature is the setpoint temperature during an "off period"*

## SECTION 2 - INSTALLATION



NEXT



NEXT

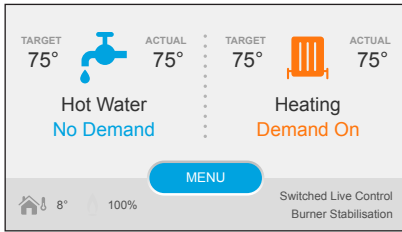
If there is time left in the day up to two additional on/off timer blocks can be added

If additional timer blocks available

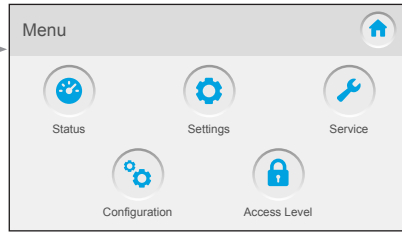
If **no** additional timer blocks available

# SECTION 2 - INSTALLATION

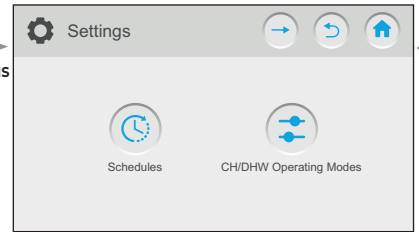
TO VIEW A HOLIDAY SCHEDULE OR CHANGE A HOLIDAY SCHEDULE ROOM TEMPERATURE OR CHANGE HOLIDAY SCHEDULE ON/OFF DATES PROCEED AS FOLLOWS



MENU

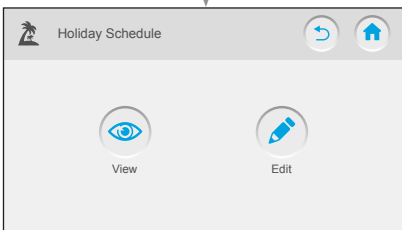


Settings

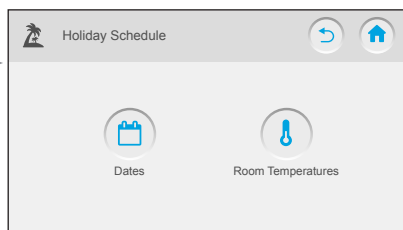


Schedules

Central Heating X

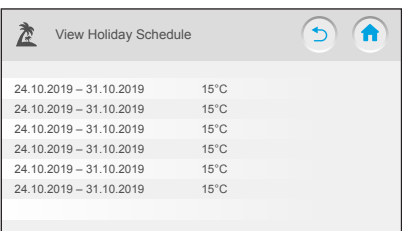


Edit

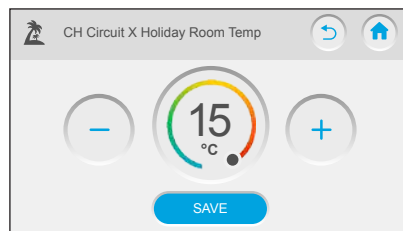


Dates

View



Room Temperatures

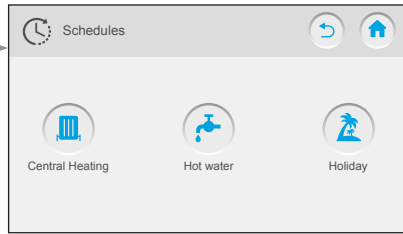


NOTE: Range of holiday temperature adjustment is from 4°C up to room OFF temperature.

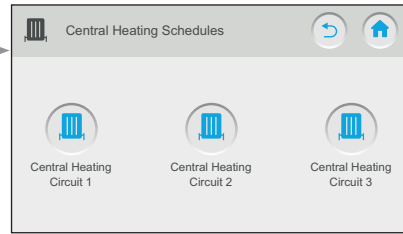


# SECTION 2 - INSTALLATION

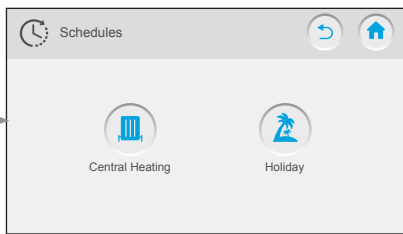
If Heating  
Circuits  
selected



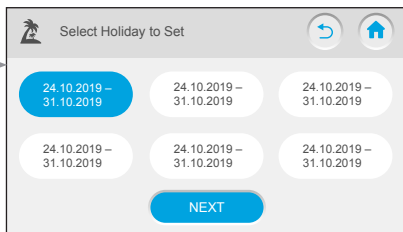
Holiday



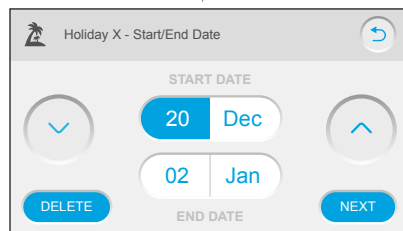
If no Heating  
Circuits  
selected



Holiday



NEXT

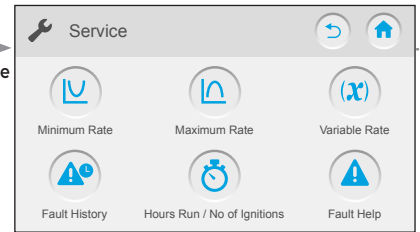
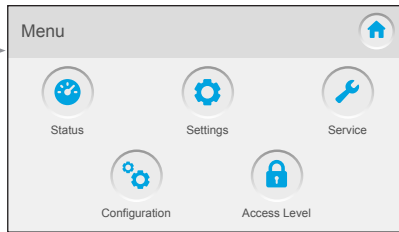
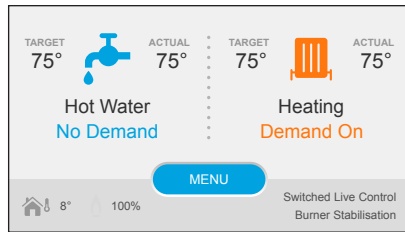


DELETE or  
NEXT

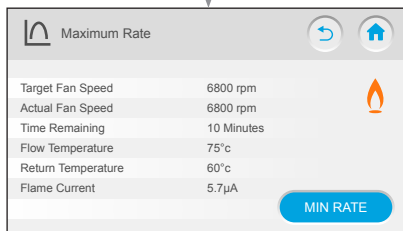
## SECTION 2 - INSTALLATION

### 2.33 USER INTERFACE MENU OPERATION: MAXIMUM RATE, MINIMUM RATE AND VARIABLE RATE

TO SET THE BOILER TO RUN AT MAXIMUM RATE OR MINIMUM RATE OR VARIABLE RATE FOR 10 MINUTES PROCEED AS FOLLOWS



To set the boiler to run at Maximum Rate for 10 minutes press **Maximum Rate**

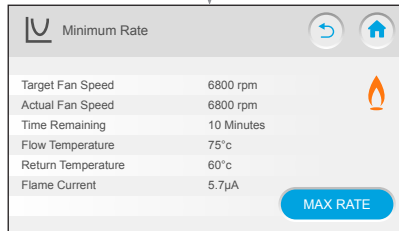


The boiler will run at Maximum Rate for 10 minutes unless the system load is insufficient

The boiler will automatically move back to normal operation after 10 minutes

To move directly to Minimum Rate press **MIN RATE**

To set the boiler to run at Minimum Rate for 10 minutes press **Minimum Rate**

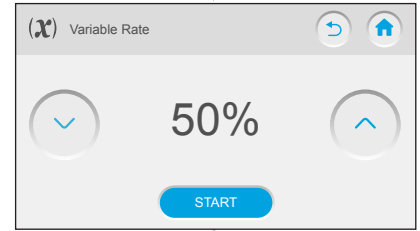


The boiler will run at Minimum Rate for 10 minutes unless the system load is insufficient

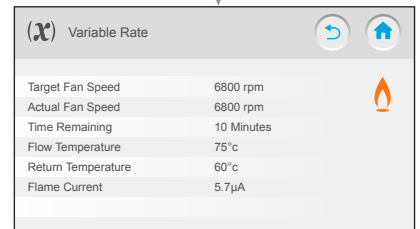
The boiler will automatically move back to normal operation after 10 minutes

To move directly to Maximum Rate press **MAX RATE**

To set the boiler to run at Variable Rate for 10 minutes press **Variable Rate**



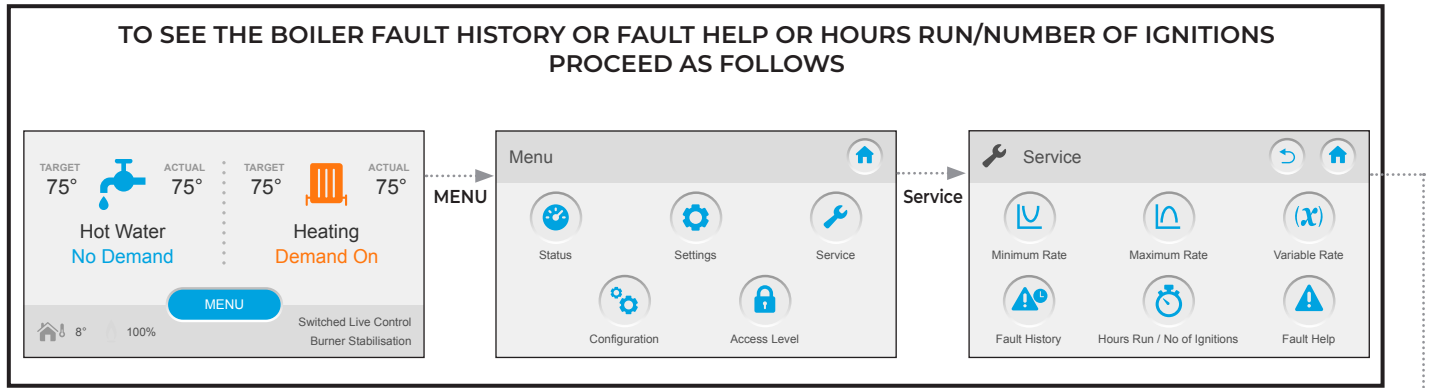
Press up and down until the required gas rate is shown then press **START**



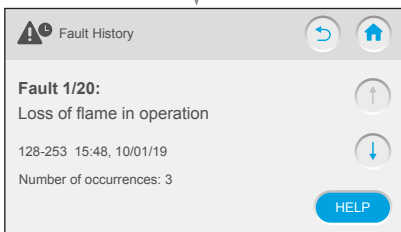
The boiler will run at Variable Rate for 10 minutes unless the system load is insufficient. The boiler will automatically move back to normal operation after 10 minutes

## SECTION 2 - INSTALLATION

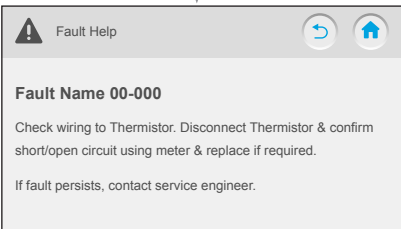
### 2.34 USER INTERFACE MENU OPERATION: FAULT HISTORY, FAULT HELP, HOURS RUN AND NUMBER OF IGNITIONS



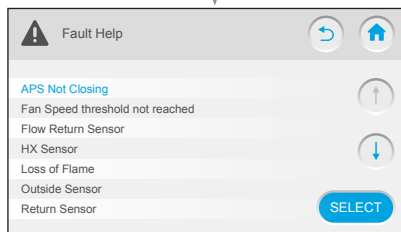
To see the boiler Fault History press **Fault History**



Press **up** and down to see the Next or Previous faults  
Press **HELP** to see Fault Help for this fault



**Fault Help**



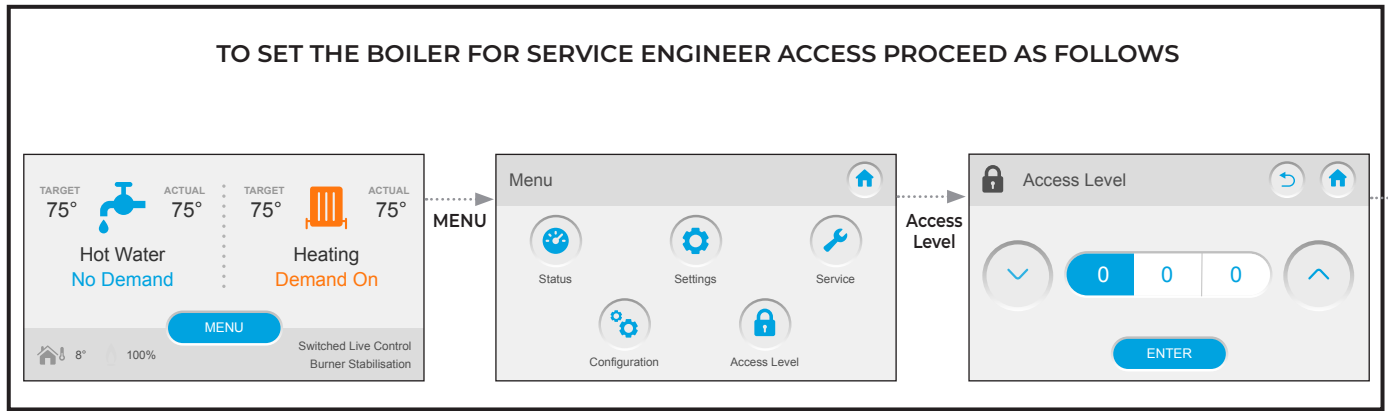
To see Hours Run and Number of Ignitions press **Hours Run/No of Ignitions**



**FAULT HELP PAGE ONLY AVAILABLE WHEN FAULT HAS OCCURRED**

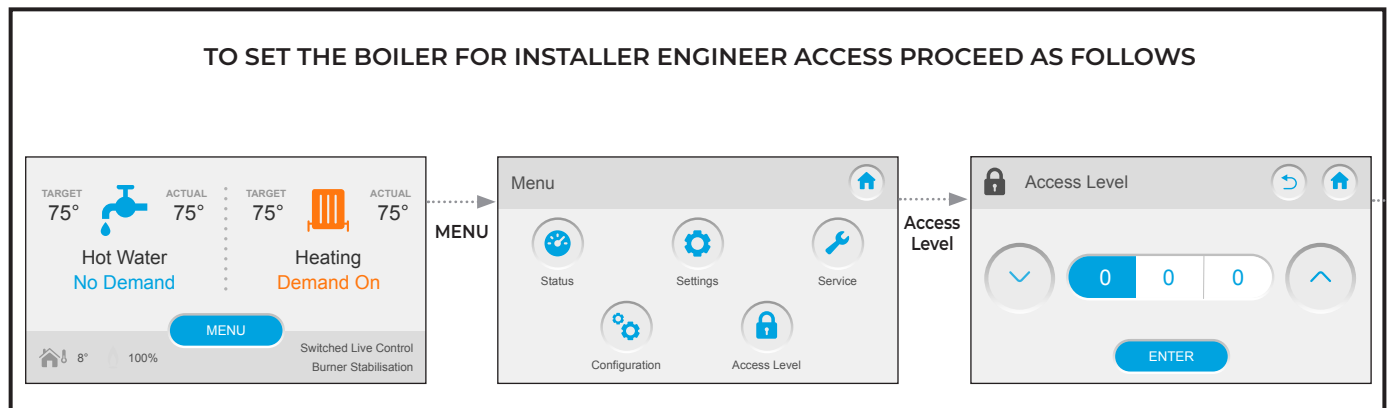
## SECTION 2 - INSTALLATION

### 2.35 USER INTERFACE MENU OPERATION: SERVICE ACCESS



- Press **up** and **down** until the first digit is set to 4  
Press on the second digit and then press **up** and **down** until it is set to 5  
Press on the third digit and then press **up** and **down** until it is set to 6  
Press **DONE**

### 2.36 USER INTERFACE MENU OPERATION: INSTALLER ACCESS



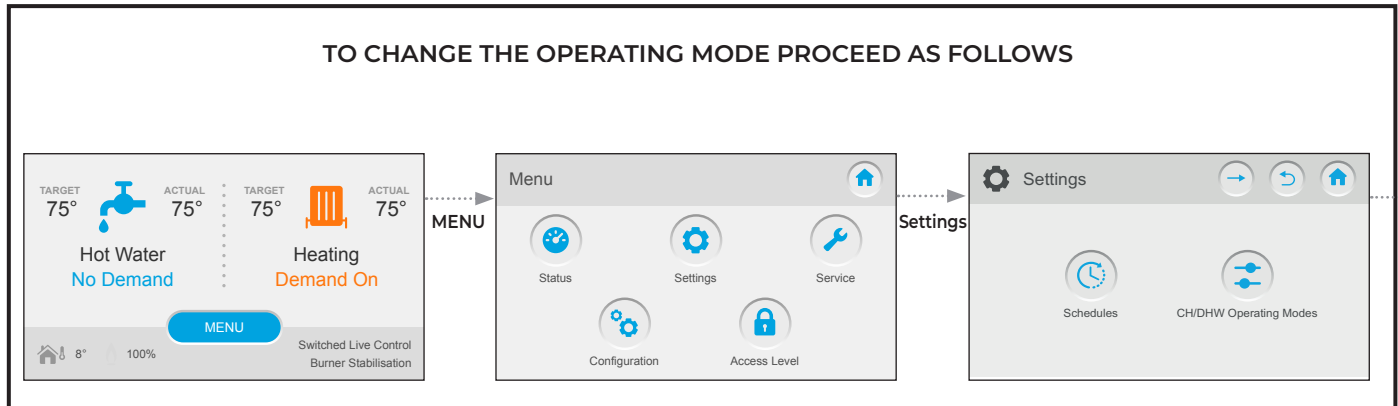
- Press **up** and **down** until the first digit is set to 5  
Press on the second digit and then press **up** and **down** until it is set to 2  
Press on the third digit and then press **up** and **down** until it is set to 9  
Press **DONE**

## SECTION 2 - INSTALLATION

### 2.37 USER INTERFACE MENU OPERATION: OPERATING

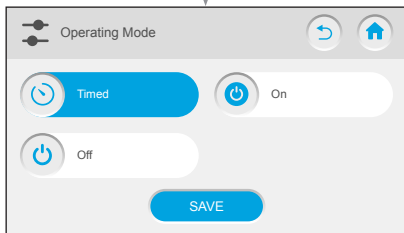
**Note** that to access the Operating Mode, the boiler will first need to be set for either Service Engineer Access Level or Installer Access Level

It will only be possible to change the Operating Mode of circuits that have been configured (there may only be 1 Central Heating Circuit)



Operating Modes

If no Heating Circuits selected

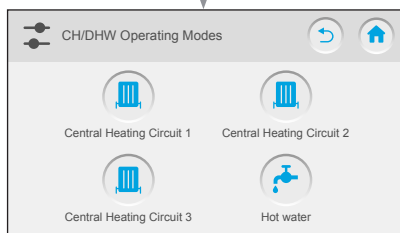


To set the circuit to Timed operation press **Timed** and then **NEXT**

To set the circuit to On press **On** and then **NEXT**

To set the circuit to Off press **Off** and then **NEXT**

If Heating Circuits selected

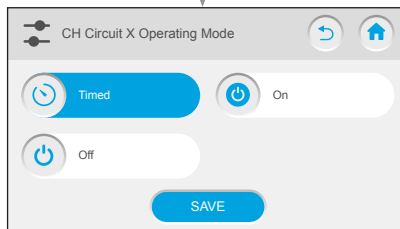


To change CH 1 Operating Mode press **Central Heating Circuit 1** and then **NEXT**

To change CH 2 Operating Mode press **Central Heating Circuit 2** and then **NEXT**

To change CH 3 Operating Mode press **Central Heating Circuit 3** and then **NEXT**

To change DHW Operating Mode press **Hot Water** and then **NEXT**



To set the circuit to Timed operation press **Timed** and then **NEXT**

To set the circuit to On press **On** and then **NEXT**

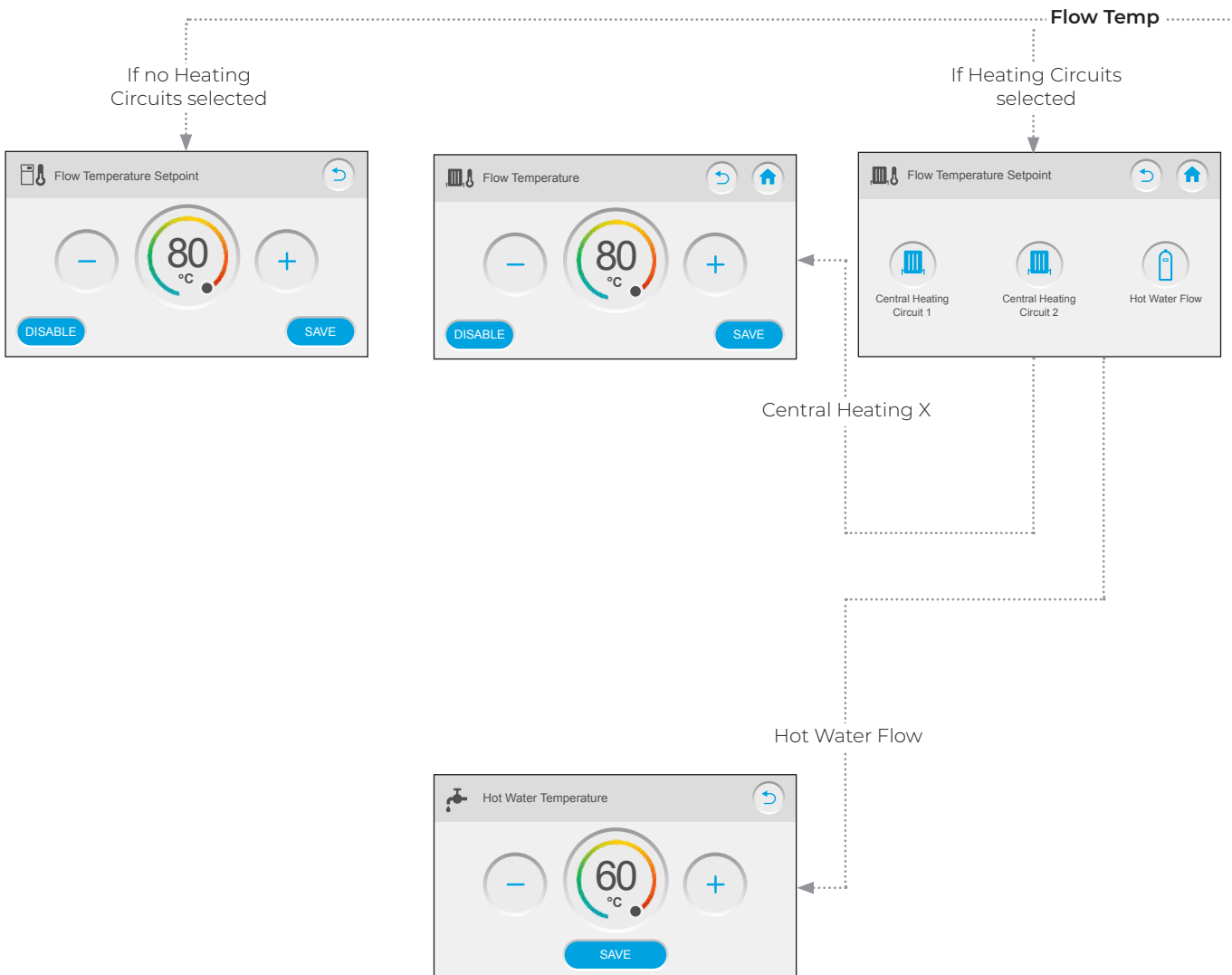
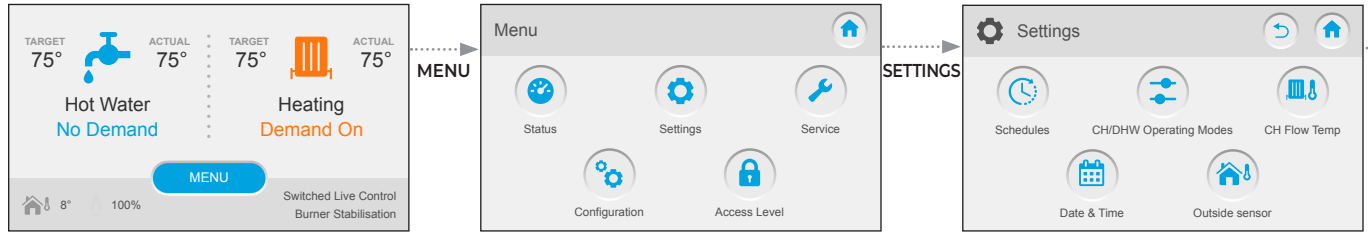
To set the circuit to Off press **Off** and then **NEXT**

## SECTION 2 - INSTALLATION

### 2.38 USER INTERFACE MENU OPERATION: FLOW TEMPERATURE SETPOINT

**Note** that to change the Flow Temperature Setpoint, the boiler will first need to be set for either Service Engineer Access Level or Installer Access Level

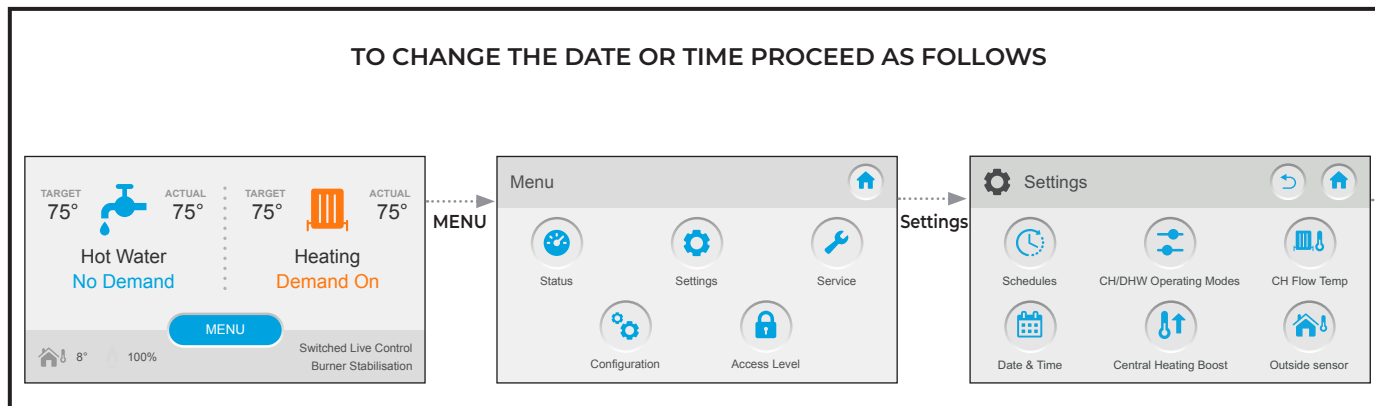
TO CHANGE THE FLOW TEMPERATURE SETPOINT PROCEED AS FOLLOWS



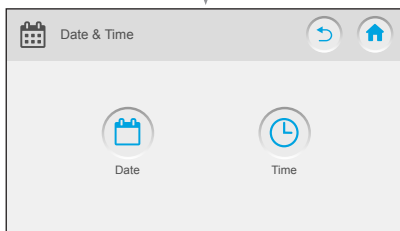
## SECTION 2 - INSTALLATION

### 2.39 USER INTERFACE MENU OPERATION: DATE AND TIME AND LANGUAGE

**Note** that to change the Date and/or Time the boiler will first need to be set for either Service Engineer Access Level or Installer Access Level

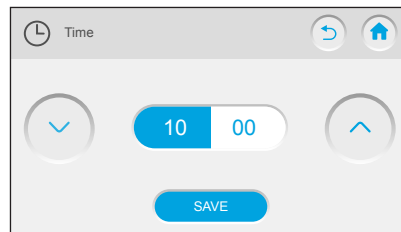
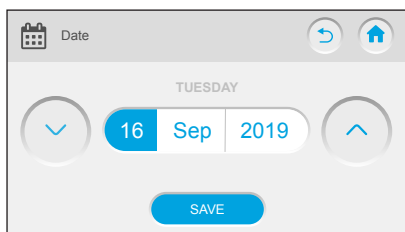


#### Date & Time



To change the Date press **Date**

To change the Time press **Time**



Press **up** and **down** until the Day is shown correctly

Press on the Month and then press Up and Down until the Month is shown correctly

Press on the Year and then press Up and Down until the Year is shown correctly

**SAVE**

Press **up** and **down** until the Hours is shown correctly

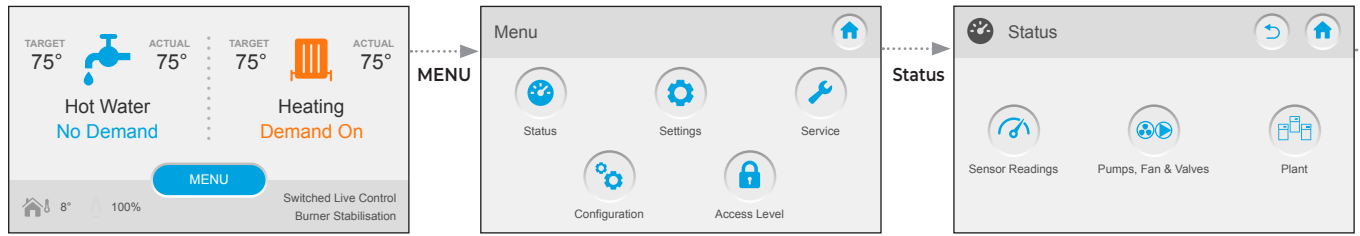
Press on the Minutes and then press Up and Down until it is shown correctly

**SAVE**

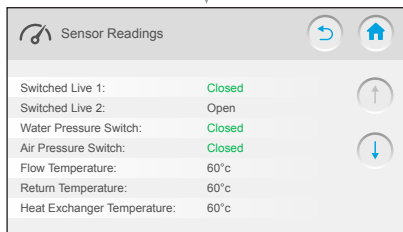
## SECTION 2 - INSTALLATION

### 2.40 USER INTERFACE MENU OPERATION: SENSORS, PUMPS, FAN & VALVES

TO SEE CURRENT SENSOR, PUMP, FAN & VALVE STATUS PROCEED AS FOLLOWS

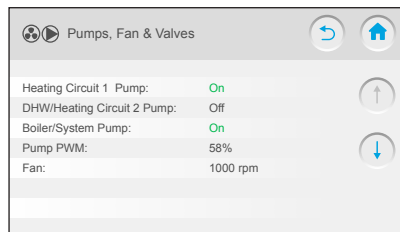


To view sensor readings press  
**Sensor Readings**



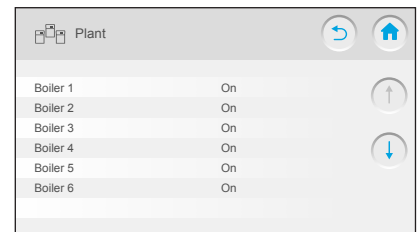
To scroll up and down the list  
press **up** and **down**

To view the status of the Pumps, Fan & Valves press  
**Pumps, Fan & Valves**



To scroll up and down the list  
press **up** and **down**

To view the status of other boilers  
within the cascade press **Plant**

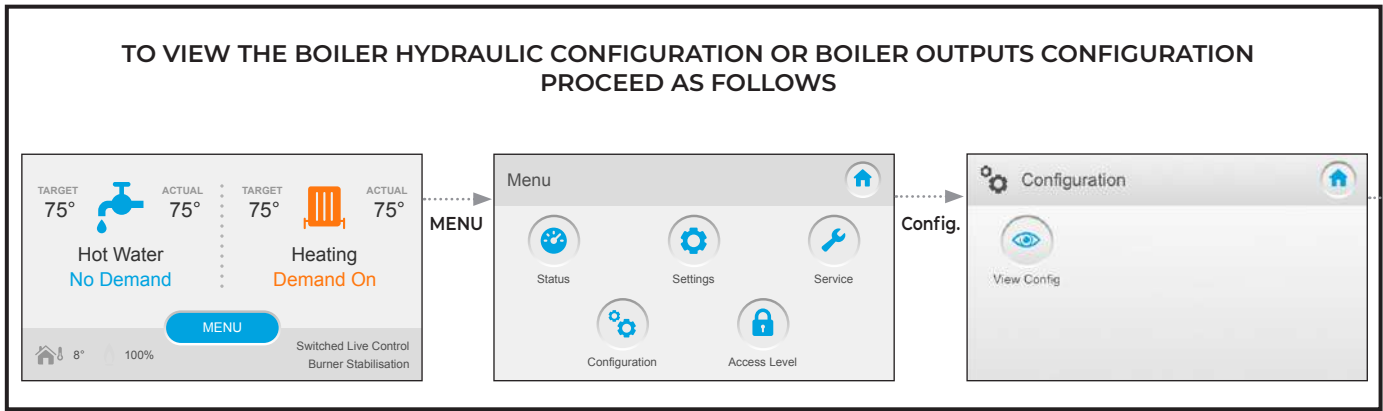


To scroll up and down the list  
press **up** and **down**

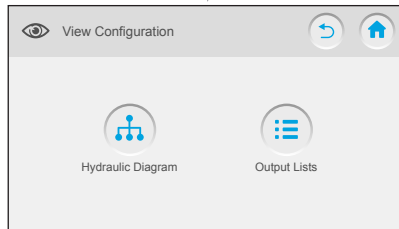


## SECTION 2 - INSTALLATION

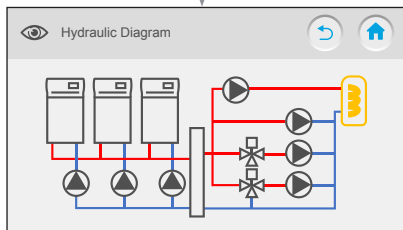
### 2.41 USER INTERFACE MENU OPERATION: VIEW CONFIGURATION



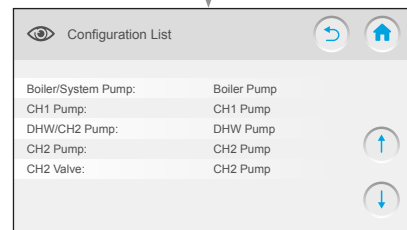
#### View Configuration



To view the boiler hydraulic configuration press **Hydraulic Diagram**



To view the boiler outputs configuration press **Outputs List**



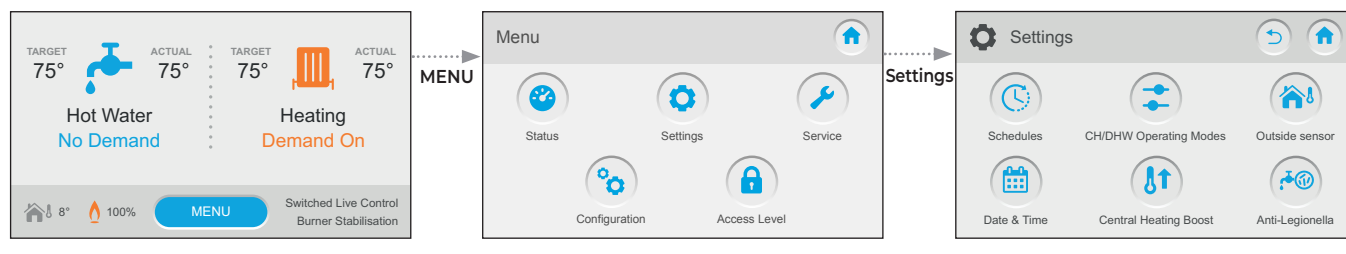
## SECTION 2 - INSTALLATION

### 2.42 USER INTERFACE MENU OPERATION: ANTI-LEGIONELLA

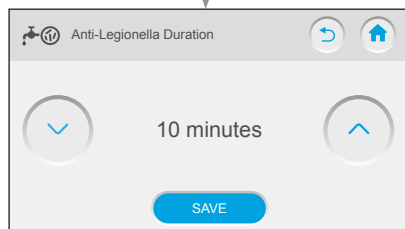
**Note** that to change the Anti-legionella settings the boiler will first need to be set for either Service Engineer Access Level or Installer Access Level.

Anti-Legionella settings are only applicable if a DHW circuit has been configured.

TO ENABLE/DISABLE/CHANGE ANTI-LEGIONELLA TEMPERATURE, DURATION, FUNCTION AND TIME  
PROCEED AS FOLLOWS

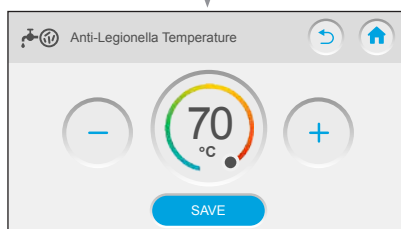


Anti-legionella **Duration**



To adjust the anti-legionella timer use the down/up buttons then press **SAVE**

Anti-legionella **Temperature**



To adjust the anti-legionella temperature use the -/+ buttons then press **SAVE**

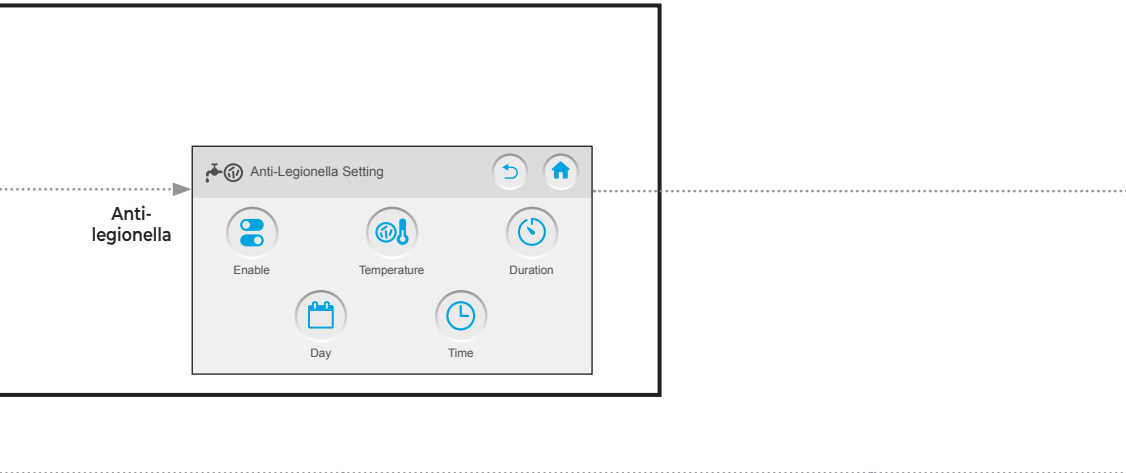
Anti-legionella **Enable**



To Disable the Anti-Legionella press **No** and then **SAVE**

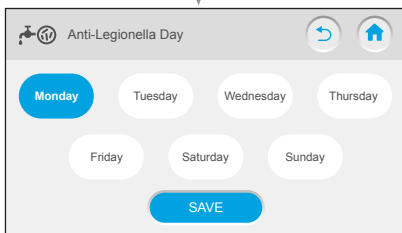
To Enable the Anti-Legionella press **Yes** and then **SAVE**

## SECTION 2 - INSTALLATION

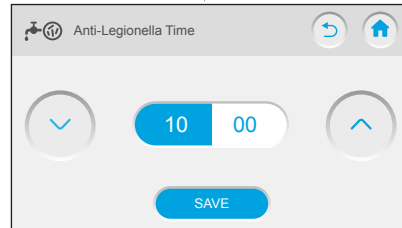


Anti-legionella **Day**

Anti-legionella **Time**



To change the day on which the anti-legionella functions runs select the day then press **SAVE**



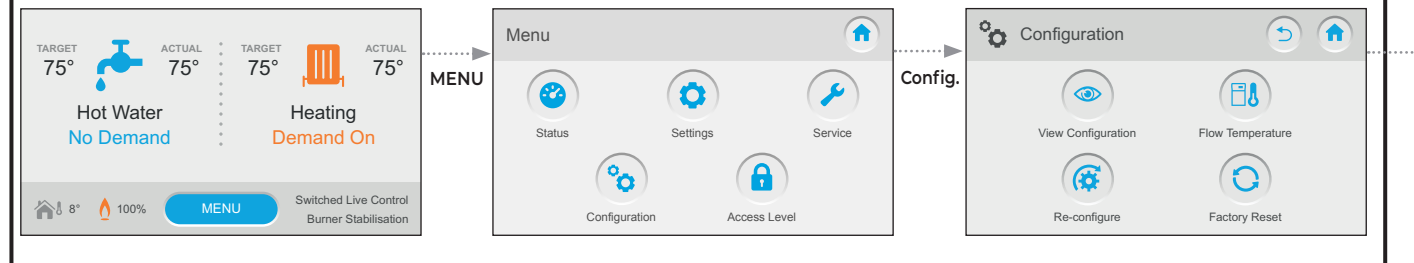
To change the time at which the anti-legionella functions runs press the hour/minutes figure and use the down/up buttons then press **SAVE**

## SECTION 2 - INSTALLATION

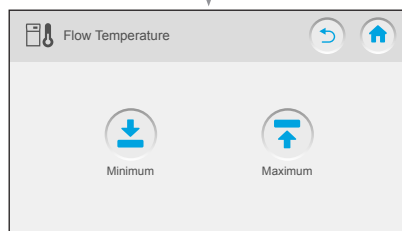
### 2.43 USER INTERFACE MENU OPERATION: MAXIMUM AND MINIMUM FLOW TEMPERATURE

**Note** that to change the Maximum or Minimum Flow Temperature the boiler will first need to be set for Installer Access Level

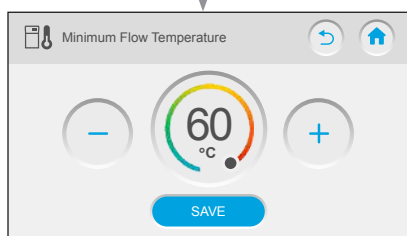
TO CHANGE THE MINIMUM AND MAXIMUM FLOW TEMPERATURE SETPOINT PROCEED AS FOLLOWS



#### Flow Temperature

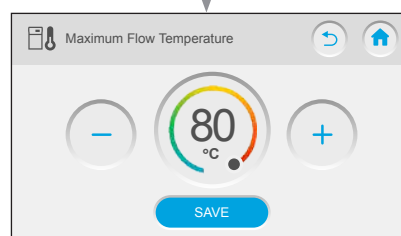


To change the Minimum Flow Temperature Setpoint press **Minimum**



Press + and - until the desired Minimum Flow Temperature Setpoint is shown and then press **SAVE**

To change the Maximum Flow Temperature Setpoint press **Maximum**



Press + and - until the desired Maximum Flow Temperature Setpoint is shown and then press **SAVE**

## 2.44 COMMISSIONING AND TESTING

### A. ELECTRICAL INSTALLATION

1. Checks to ensure electrical safety should be carried out by a competent person.
2. ALWAYS carry out the preliminary electrical system checks, i.e. earth continuity, polarity, resistance to earth and short circuit, using a suitable meter.

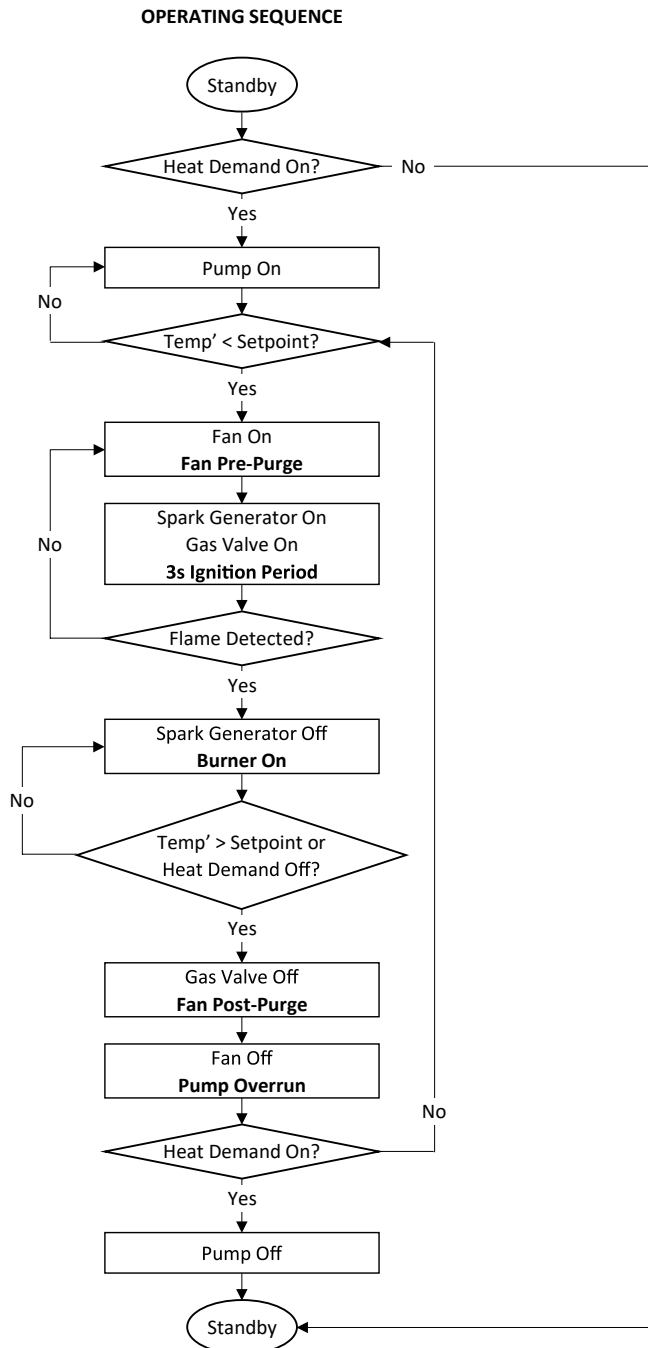
**WARNING.** Whilst effecting the required gas soundness test and purging air from the gas installation, open all windows and doors, extinguish naked lights and **DO NOT SMOKE**

### B. GAS INSTALLATION

1. The whole of the gas installation, including the meter, should be inspected and tested for soundness and then purged in accordance with the recommendations of the relevant standards listed on page 6.

In IE refer to I.S.820:2019.

## 2.45 INITIAL LIGHTING



1. Check that the system has been filled and the boiler is not air locked - air in the boiler could damage the heat exchanger. For this reason if an automatic air vent has been fitted it must never be isolated.
2. Check that all the drain cocks are closed and any valves in the flow and return are open.
3. Check that the GAS SERVICE COCK IS OPEN.
4. Switch the electricity supply ON and check that all the external controls are calling for heat.
5. The boiler will commence the ignition sequence. The Boiler Pump is energised. The fan is run up to starting speed and the air pressure switch is actuated. The fan then carries out a pre-purge before moving to ignition speed. A spark is started and the gas valve opens. After 3s the spark is stopped and 2s later, if a flame has been detected the boiler is held at a low stabilisation rate for the first 54s. After the stabilisation period the boiler modulates to achieve the set flow temperature at a restricted ramp up rate. As the boiler approaches the target flow temperature the gas rate will be modulated to maintain the desired temperature.

If after 5 ignition attempts the boiler has failed to light then it will lock out. Press reset to restart the ignition sequence.

#### Gas Rate

6. The gas valves are preset at the factory to nominal values. Dependant on site installation conditions (e.g. flue length) the boiler performance can vary slightly. To check the performance, operate the boiler and measure the flue CO<sub>2</sub> values at maximum and minimum rates, whilst adjusting the gas valve if necessary. (Refer to Frames 3.5 and 3.6).
7. Operate the boiler for 10 minutes and check the gas rate (Table 1). You should obtain a value at least 90% of the nominal.
8. Set all the boiler parameters (Refer to Frame 2.35) to appropriate settings.

## SECTION 2 - INSTALLATION

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### 3. SERVICING

#### 3.1 GENERAL CHECKS

Make the following checks for correct operation.

1. The correct operation of ANY secondary system controls should be proved. Operate each control separately and check that the main burner or circulating pump, as the case may be, responds.
2. Water circulation system;
  - a. With the system HOT examine all water connections for soundness.
  - b. With the system still HOT, turn off the gas, water and electricity supplies to the boiler and drain down to complete the flushing process.
- c. Refill and vent the system, clear all air locks and again check for water soundness.
- d. Balance the system.
3. Check the condensate drain for leaks and check it is discharging correctly.
4. Finally, set the controls to the Users Requirements.

#### 3.2 HANDING OVER

##### ROUTINE OPERATION

Draw the attention of the boiler owner or his representative to the User Guide. Give a practical demonstration of the lighting and shutting down of the boiler.

Describe the function of the boiler and system controls and show how they are adjusted and used.

Hand these Installation and Servicing Instructions, and Log book to the customer and request them to keep them in a safe place for ready reference. For IE, it is necessary to complete a "Declaration of Conformity" to indicate compliance to the appropriate standard.

**IMPORTANT.** Point out to the owner that the boiler must have regular maintenance and cleaning, at least annually, in order to ensure reliable and efficient operation. Regular attention will also prolong the life of the boiler and should preferably be performed at the end of the heating season.

After servicing, complete the service section of the log book and return to the owner or their representative.

Recommend that a contract for this work should be made with the regional gas authority or a suitably qualified Gas Safe Registered Engineer. In IE servicing work must be carried out by a competent person.

#### 3.3 SAFETY

It is the law that any service work must be carried out by a suitably qualified Gas Safe Registered Engineer.

In IE service work must be carried out by a Competent Person.

**WARNING. Always turn off the gas supply at the gas service cock, and switch off and disconnect the electricity supply to the appliance and any external controls before servicing or replacing components.**

##### IMPORTANT.

After completing the servicing or replacement of components always:

- Test for gas soundness
- Check the water system is correctly filled and free of air. Air in the boiler could cause damage to the heat exchanger
- Check the front panel is correctly fitted, ensuring that a good seal is made. Secure the controls fascia in place
- With the system hot examine all water connections for soundness
- Check the gas rate and measure the combustion CO/CO<sub>2</sub> content. The CO/CO<sub>2</sub> ratio of the flue gas should not be greater than 0.004 ratio & the CO should not exceed 350ppm
- Carry out functional checks as appropriate

## 3.4 SERVICING SCHEDULE

To ensure the continued safe and efficient operation of the appliance it is recommended that it is checked at regular intervals and serviced as necessary. The frequency of servicing will depend upon the installation condition and usage but should be carried out at least annually.

**Ideal Heating** does not accept any liability resulting from the use of unauthorised parts or the repair and servicing of appliances not carried out in accordance with the Company's recommendations and specifications.

**Note.**

*Some aluminium oxide build-up within the heat exchanger assembly is quite usual with this type of condensing boiler. Removal and cleaning is recommended annually, the heat exchanger, sump, condensate collector and condensate trap must be inspected and cleaned.*

1. Light the boiler and carry out function checks, noting any operational faults.
2. Run the boiler for 10 minutes and then check the gas consumption rate. Refer to Frame 3.5 for reference on how to force the burner to maximum and minimum rates.
3. For correct boiler operation the CO/CO<sub>2</sub> ratio of the flue gas should not be greater than 0.004 ratio. If this is the case and the gas input is at least 90% of the nominal, once compliance with the note above is ensured, then no further action is required. If not proceed to 4. Refer to frames 3.7 to 3.12 for guidance.
4. Refer to Frame 3.3.
5. Remove and inspect the fan/venturi assembly. Refer to Frame 3.8.
6. Remove the burner manifold and inspect the electrodes and sightglass. Refer to Frames 3.9 and 3.15.
7. Remove and clean the burner. Refer to Frame 3.10.
8. Inspect the heat exchanger through the burner opening.
9. Remove the sump cover and scrape out any deposits. Refer to Frame 3.11.
10. Clean the condensate trap/s. Refer to Frame 3.12.
11. Remove the flue hose adapter from the condensate collector and clean, ensuring the seal and the end of the hose are free of any debris.
12. Check that the flue terminal and air inlet are unobstructed and that the fluing and ducting are correctly sealed.
13. After servicing refer to Frame 3.3 for final safety checks.

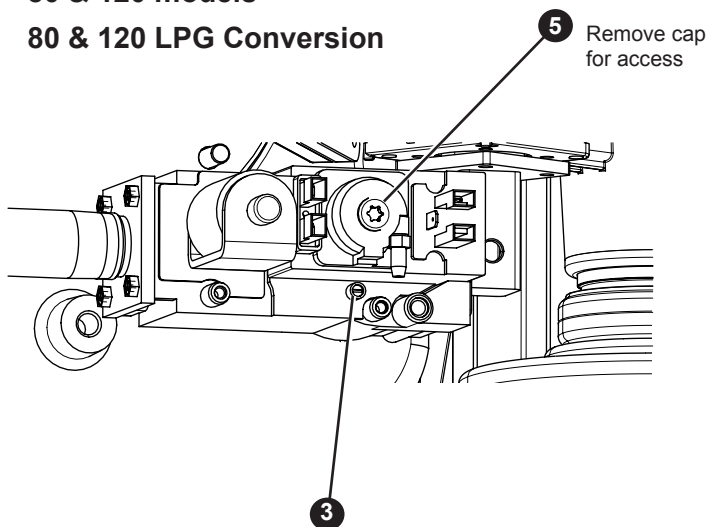
SERVICING

## 3.5 GAS VALVE ADJUSTMENT

**Note.** Boilers operating with Propane must have the dedicated conversion kit installed.

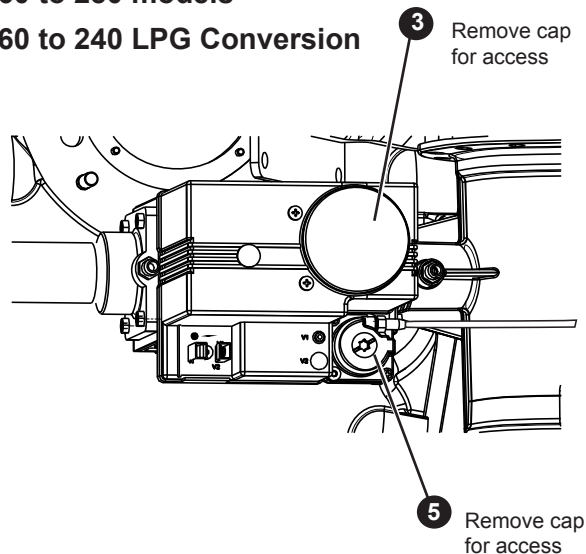
### 80 & 120 models

#### 80 & 120 LPG Conversion



### 160 to 280 models

#### 160 to 240 LPG Conversion



#### Maximum rate adjustment

1. Switch the boiler on and operate for 10 minutes.
2. To ensure the boiler operates at maximum rate without modulating, set the fan speed to maximum following the steps in Fig 3.6.
3. Using the maximum rate adjustment screw, adjust the valve until the CO<sub>2</sub> value measures 9.7% ±0.2 (10.8+/- 0.2 for LPG) (n.b. clockwise reduces CO<sub>2</sub>).



## SECTION 3 - SERVICING

### 3.5 GAS VALVE ADJUSTMENT - CONTINUED

#### Minimum rate adjustment

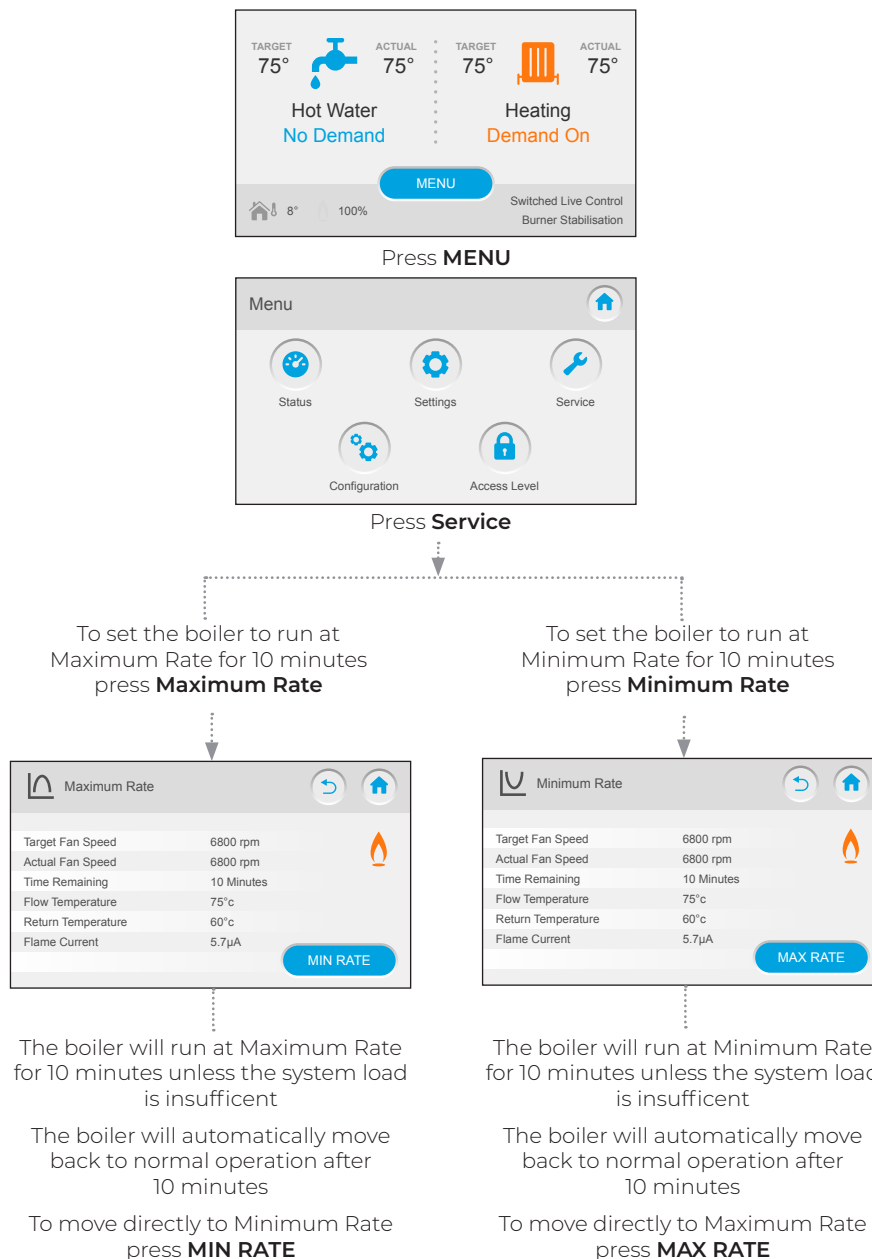
- To ensure the boiler operates at minimum rate without modulating, set the fan speed to minimum following the steps in Fig 3.6.
- Remove the protective cap from the offset adjustment screw and adjust the valve until the CO<sub>2</sub> value measures 9.5% ± 0.2 (10% ± 0.2 for LPG).

(n.b. anticlockwise reduces CO<sub>2</sub>).

Care must be taken when adjusting the offset as this is sensitive when compared to the throttle adjustment.

- Reset the boiler back to maximum rate and measure the CO<sub>2</sub>.
- If this does not measure within 9.7% ± 0.2 (10.8 +/- 0.2 for LPG) repeat steps 3 to 5.
- Press the home button to return to the home screen.
- Seal the adjustment screw with tamper proof paint and replace caps where applicable.

### 3.6 GAS VALVE ADJUSTMENT DIAGRAM



## SECTION 3 - SERVICING

### 3.7 CASING REMOVAL AND ACCESS

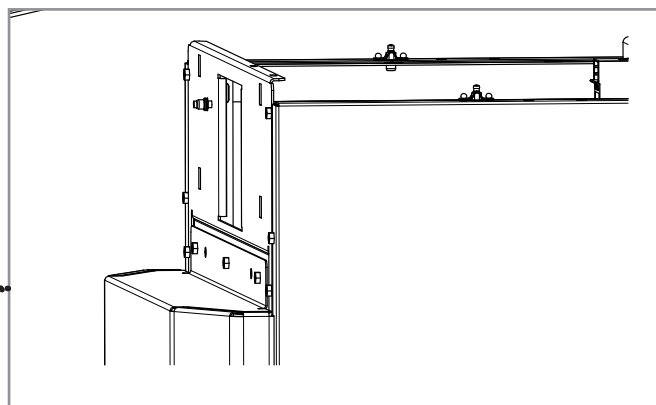
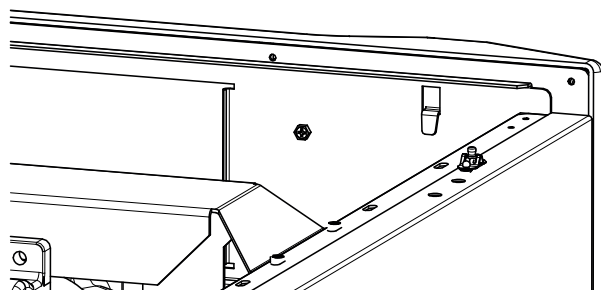
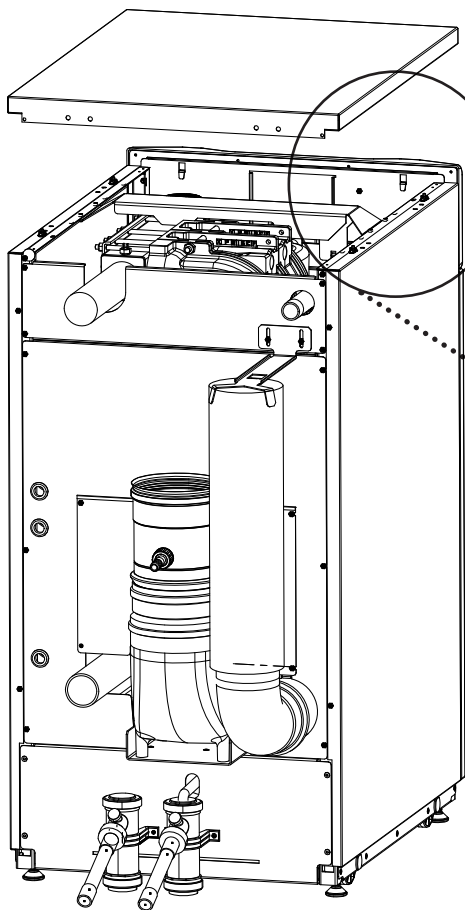
#### Top Panel

1. Remove the two bolts at the rear of the top panel. Lift up from side panel retention studs and remove.

#### Control Pod

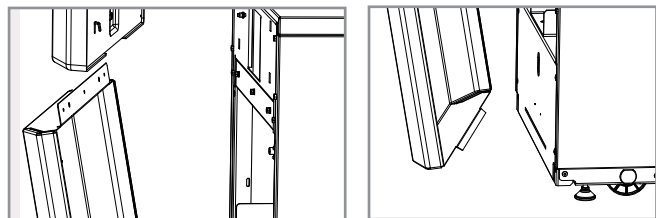
2. Remove the bolt at the rear of the control pod. Disconnect the Electrical harnesses from the rear.

Lift the pod up and remove.



#### Front Panel

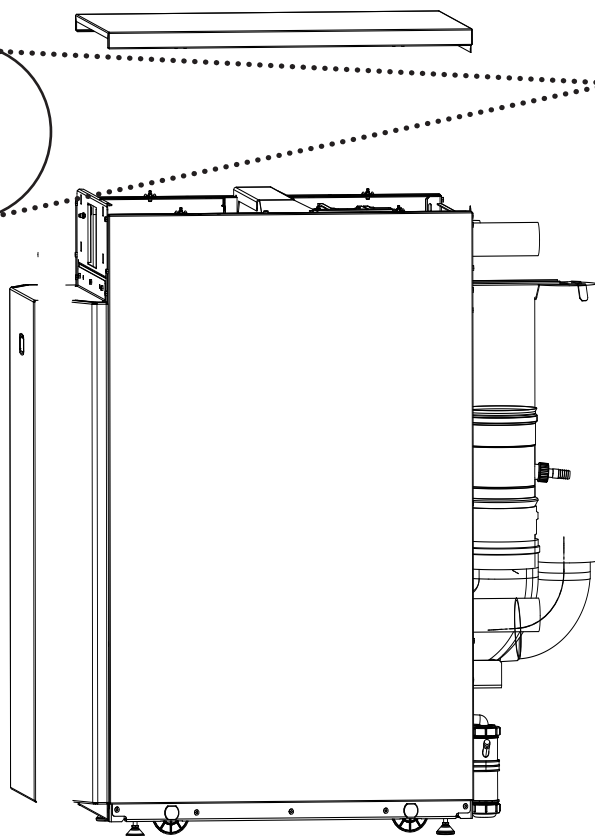
3. Remove the 3 bolts along the top of the front panel. The bolts are visible when the Control pod is removed. Pull the Panel forwards at the top, lift out of bottom slot and remove.



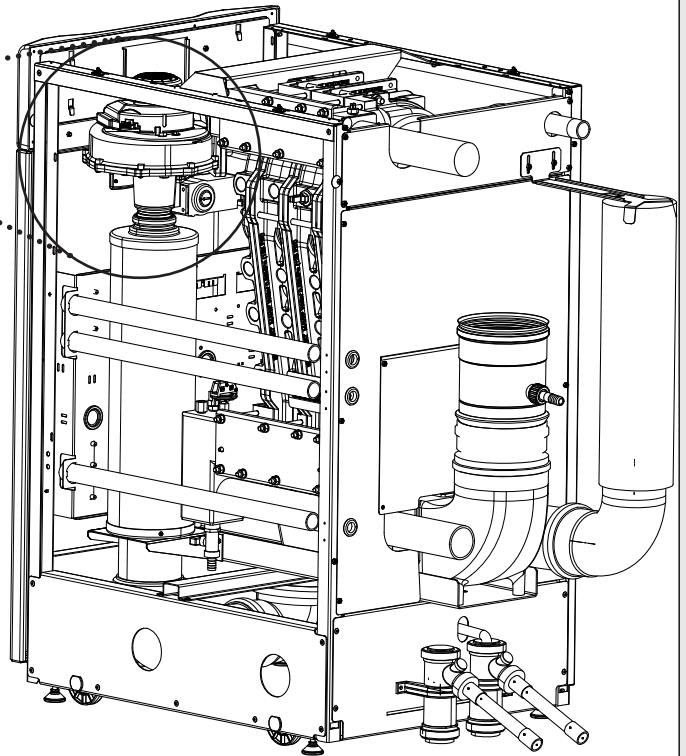
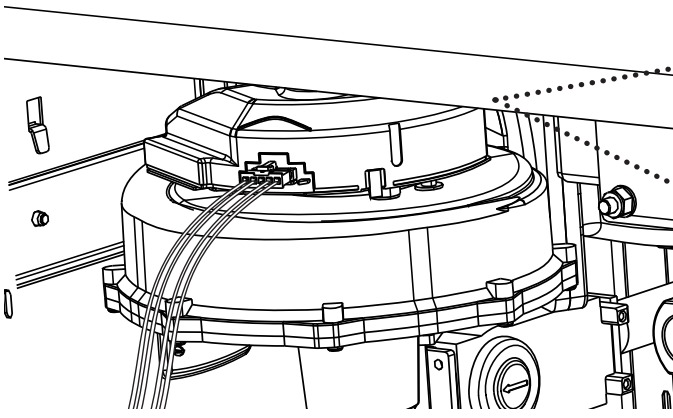
#### Side Panels

4. On the side panel, undo the two screws at the rear and two at the front.

Lift from the frame and remove.



### 3.8 REMOVAL OF FAN / VENTURI INSPECTION

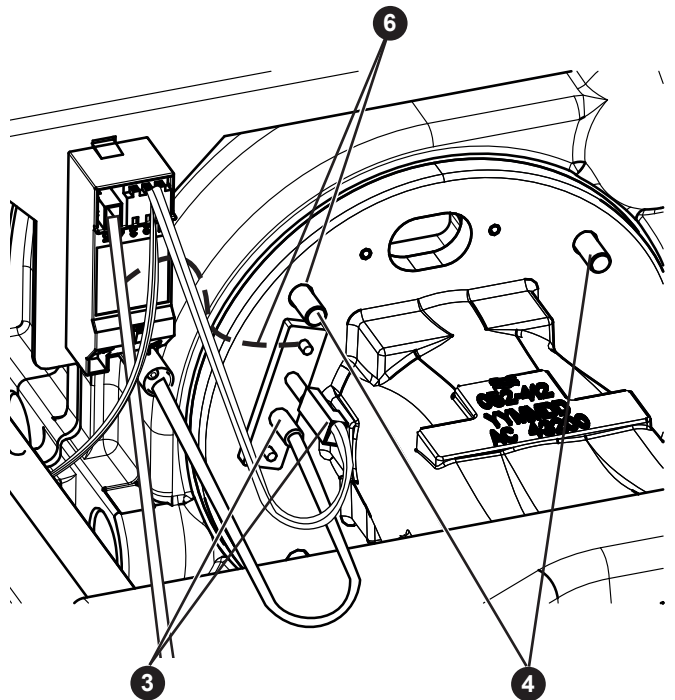


1. Remove the casing front, casing right, casing top and controls fascia panels. (Refer to Frame 3.7).
2. Disconnect the electrical connections from the fan.
3. Remove 4 bolts securing inlet air pipe/silencer to the venturi taking care to retain O ring seal (160-280 only, 80-120 employ push fit).
4. Whilst providing temporary support for the gas valve remove the 4 screws securing the gas valve (160-280) or gas valve outlet elbow (80-120) to the venturi.
5. Remove sensing pipe from venturi (160-280 only).
6. Whilst providing temporary support for the fan/venturi, remove the 4 fasteners securing the fan outlet connection. Lift the fan/venturi assembly clear of the boiler taking care to retain the fan outlet gasket.
7. Remove the 4 screws securing the venturi to the fan inlet, taking care to retain the O ring.

8. Re-assemble in reverse order replacing any seals/gaskets which show signs of wear.
9. Refer to Frame 3.3 for final safety checks.

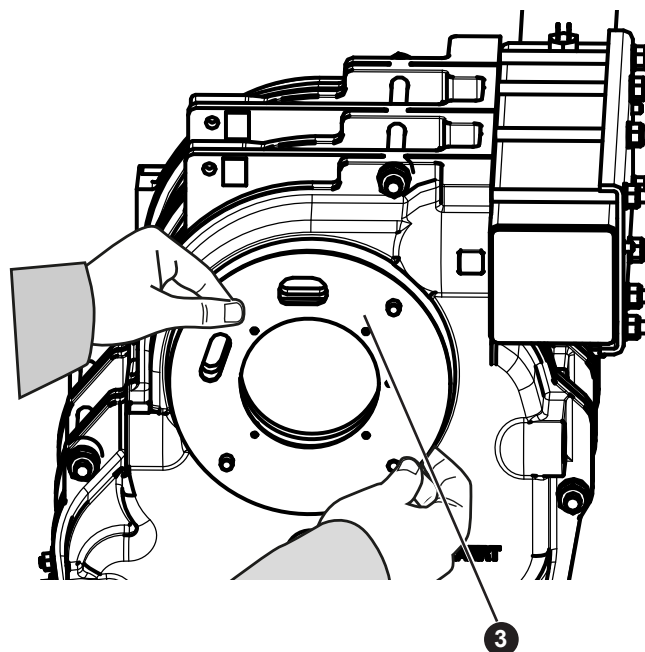
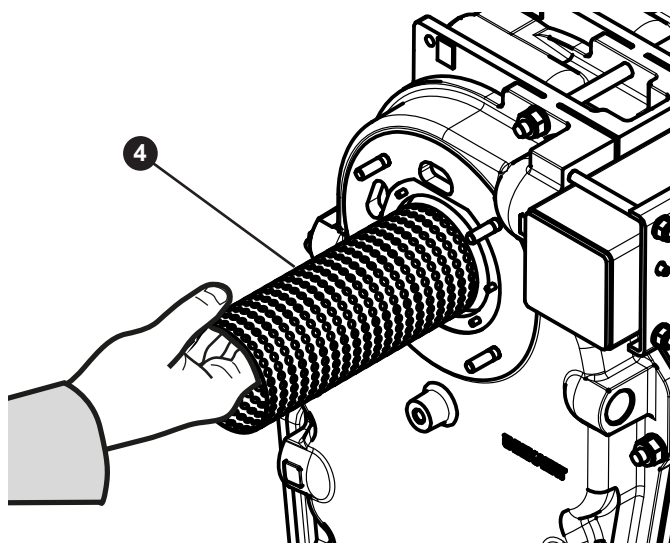
### 3.9 REMOVAL OF BURNER MANIFOLD

1. Refer to Frame 3.7.
2. Refer to Frame 3.8 for removal of fan/venturi assembly.
3. Disconnect the ignition and earth lead from the electrodes.
4. Whilst providing temporary support for the burner manifold remove the 4 retaining nuts.
5. Withdraw the burner manifold from the boiler taking care not to damage the electrodes.
6. Re-assemble in reverse order, replacing any seals/gaskets which show signs of wear. The nyloc nuts should be renewed. Ensure the short earth lead is secured under the top LH nut.
7. Refer to Frame 3.3 for final safety checks.



**3.10 REMOVAL / CLEANING OF BURNER**

1. Refer to Frame 3.7.
2. Refer to Frame 3.9 for removal of burner manifold.
3. Remove the gasket from the 4 studs.
4. Draw the burner out of the heat exchanger.
5. The burner can be cleaned on the inside surface using a soft brush and/or vacuum. The metal fibre outer surface must not be brushed. If the burner is showing signs of damage it must be replaced.

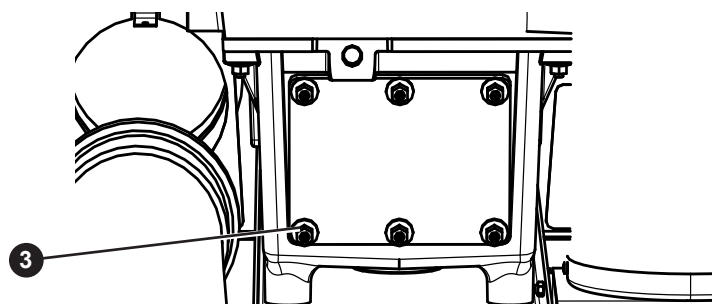


6. Re-assemble in reverse order replacing any seals/gaskets which show signs of wear. When re-fitting the burner there are 2 small lugs cast into the end of the combustion chamber which support the end of the burner.
7. Refer to Frame 3.3 for final safety checks.

SERVICING

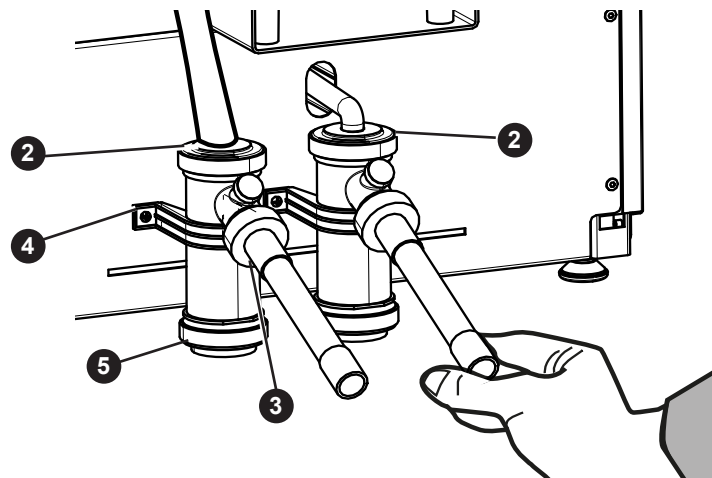
**3.11 REMOVAL OF SUMP COVER**

1. Refer to Frame 3.3.
2. Remove the front panel (Refer to Frame 3.7).
3. Remove the 6 nuts and withdraw the sump cover plate taking care to retain the gasket.
4. Scrape out any deposits within the sump.
5. Re-assemble in reverse order replacing the sump cover plate gasket if it is showing signs of wear.
6. Refer to Frame 3.3 for final safety checks.



**3.12 CLEANING CONDENSATE TRAP**

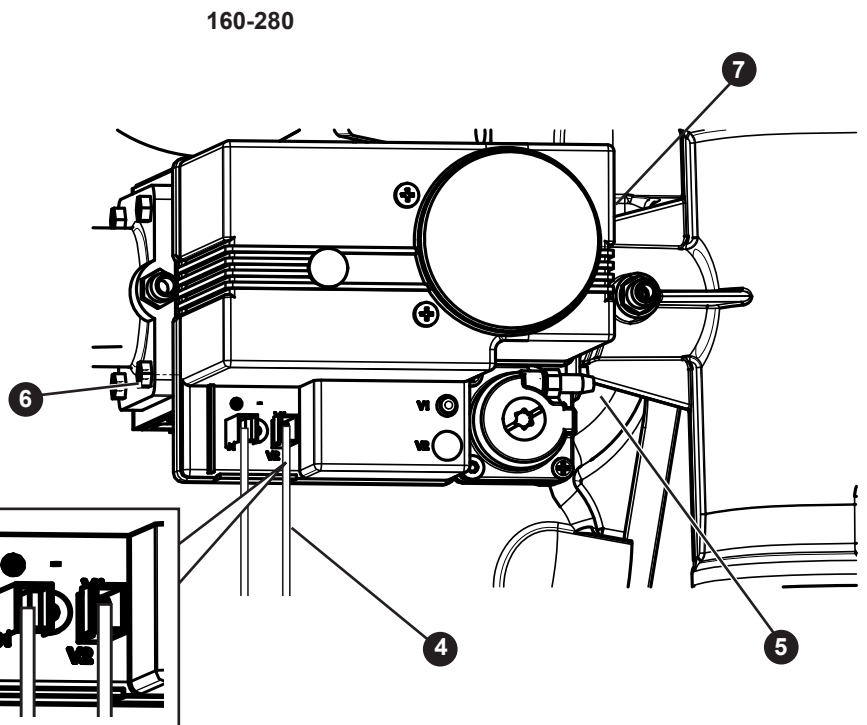
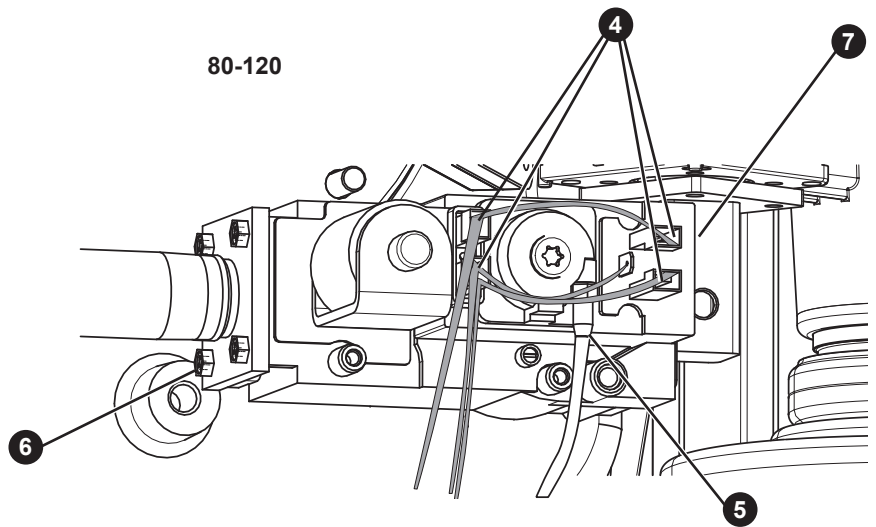
1. Refer to frame 3.7.
2. Unscrew the top fitting of the condensate trap.
3. Unscrew the condensate outlet fitting.
4. Unscrew bracket and remove trap.
5. Unscrew the base of the trap and drain into a bucket.
6. Remove all debris, flushing with water if necessary.
7. Re-fit the base of the trap and ensure the trap is filled with water to prime it before operation of the boiler.
8. Re-fit in reverse order.



## SECTION 3 - SERVICING

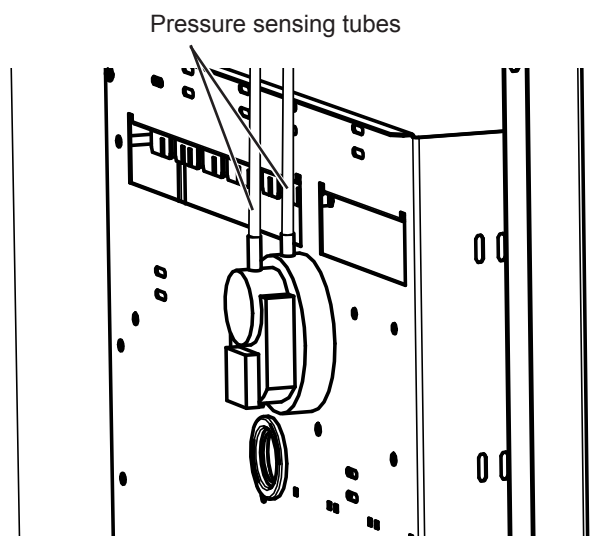
### 3.13 GAS VALVE REPLACEMENT

1. Refer to Frame 3.3 for safety checks.
2. Remove the boiler front and control fascia panels. (Refer to Frame 3.7).
3. Remove the 4 screws securing the controls fascia support bracket and withdraw.
4. Disconnect the electrical connections from the gas valve.
5. Disconnect the pressure sensing tube from the gas valve.
6. Whilst providing temporary support for the inlet gas pipe, remove the 4 screws securing the inlet flange.
7. Whilst providing temporary support for the gas valve, remove the 4 screws securing the gas valve outlet.
8. Withdraw the gas valve taking care to retain the inlet and outlet O rings.
9. Re-assemble in reverse order. Replace gas valve inlet/outlet O rings if showing signs of wear.
10. Refer to instruction sheet with spare gas valve for correct setting procedure.
11. Refer to Frame 3.3 for final safety checks.



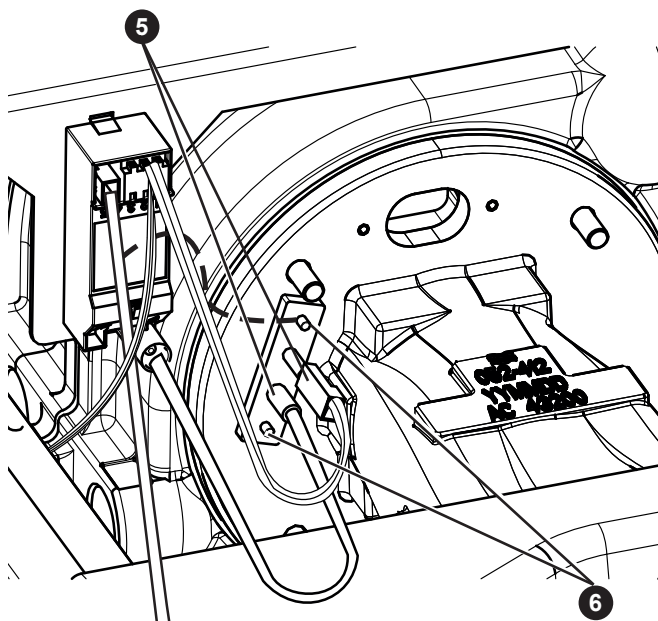
### 3.14 AIR PRESSURE SWITCH REPLACEMENT

1. Refer to Frame 3.3 for safety checks.
2. Remove the boiler front panels. (Refer to Frame 3.7).
3. Remove the 2 electrical connections from the air pressure switch (no polarity) which is located at the top rear of the main control panel.
4. Disconnect the pressure sensing tubes.
5. The air pressure switch can now be unclipped from its supporting cradle.
6. Re-assemble in reverse order. Connect the sensing tube from the T-piece to P1 and the sensing tube from the gas valve outlet elbow (80-120) or venturi gas valve connections (160-280) to P2.
7. Refer to Frame 3.3 for final safety checks.



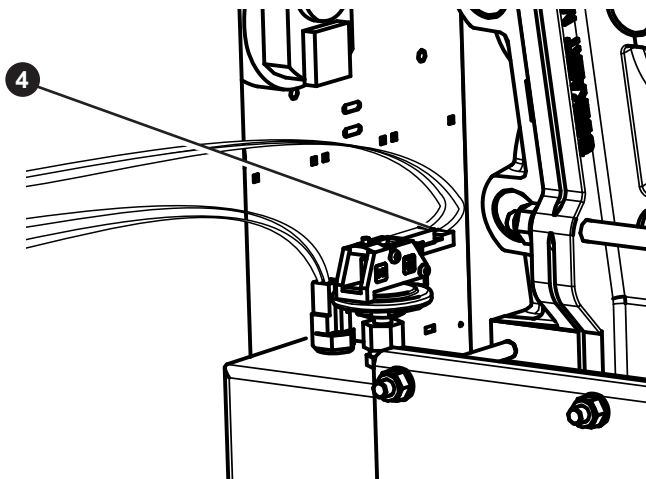
### 3.15 IGNITION/DETECTION ELECTRODE TESTING/REPLACEMENT

1. Refer to Frame 3.3 for safety checks.
2. Remove front boiler panels. Refer to Frame 3.7.
3. The flame current can be viewed from the boiler user interface menu (see Frame 2.37)
4. A reading below 6.5uA indicates a fault.
5. To replace the ignition/detection electrode remove the controls fascia, pull off the HT and earth leads from the spark/detection electrode.
6. Remove the 2 nuts and washers.
7. Check the electrode gap is 4.0mm.
8. Replace the electrode using the new gasket provided.
9. Re-assemble in reverse order.
10. Refer to Frame 3.3 for final safety checks.



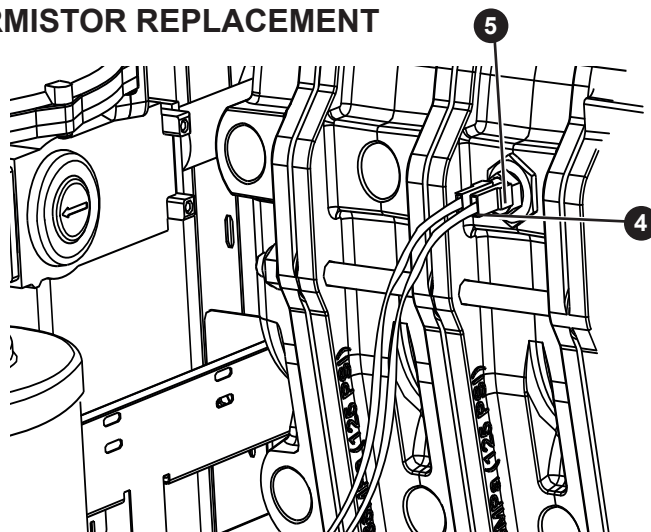
### 3.16 WATER PRESSURE SWITCH REPLACEMENT

1. Refer to Frame 3.7.
2. Remove the boiler front, control fascia, top and right side panels. (Refer to Frame 3.3 for safety checks).
3. Isolate water circuit and drain boiler.
4. Pull off the electrical connections (no polarity) from the pressure switch.
5. Unscrew the water pressure switch.
6. Fit the new water pressure switch.
7. Re-assemble in reverse order.
8. Re-fill the system ensuring all the air in the heat exchanger is vented.
9. Refer to frame 3.3 for final safety checks.



### 3.17 FLOW / RETURN / HE BLOCK / FLUE THERMISTOR REPLACEMENT

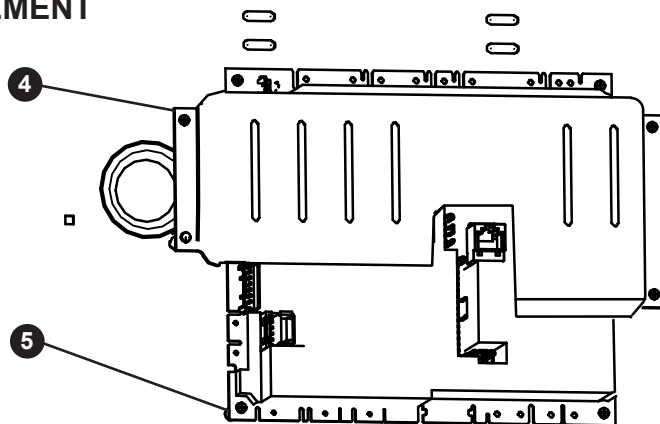
1. Refer to Frame 3.3 for safety checks.
2. Remove the boiler panels as appropriate. (Refer to Frame 3.7).
3. Isolate water circuit and drain boiler.
4. Pull off the electrical connections from the thermistor.
5. Unscrew the thermistor.
6. Fit the new thermistor with built in 'O' ring seal. Do not overtighten.
7. Re-assemble in reverse order.
8. Refill the system ensuring all the air in the heat exchanger is vented.
9. Refer to Frame 3.3 for final safety checks.



## SECTION 3 - SERVICING

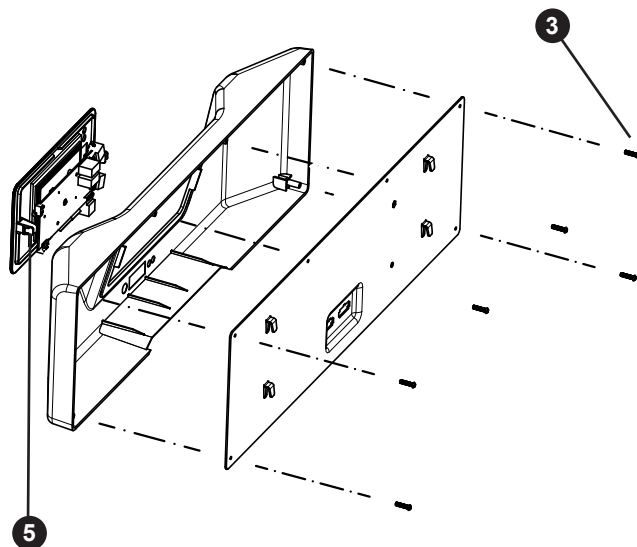
### 3.18 BOILER CONTROL MODULE REPLACEMENT

1. Refer to Frame 3.3 for safety checks.
2. Remove the front panel (Refer to Frame 3.7).
3. Disconnect the electrical connections from the PCB module.
4. Remove the clear PCB module cover from the 4 mounting pins.
5. Remove the PCB module from the 4 mounting pins.
6. Re-assemble in reverse order.
7. Refer to Frame 3.3 for final safety checks.



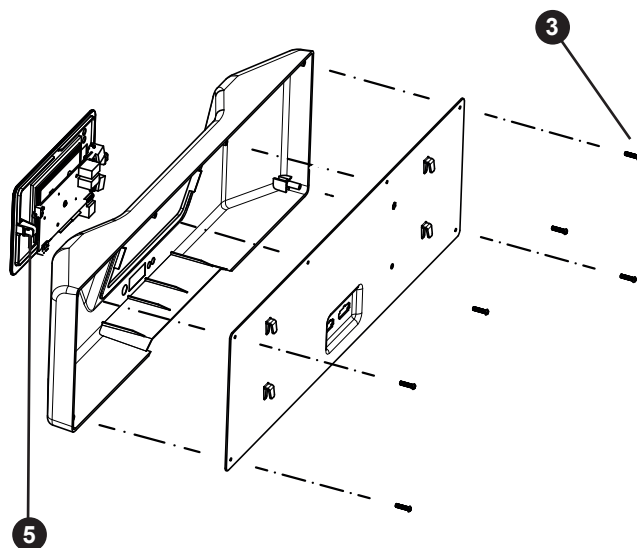
### 3.19 HMI POD REPLACEMENT

1. Refer to Frame 3.3 for safety checks.
2. Remove the top panel and HMI pod. (Refer to Frame 3.7)
3. Remove the HMI pod rear steel panel by removing the 6 retention screws.
4. Disconnect the electrical cables from the HMI PCB Board.
5. Press the retention clips inwards on the HMI assembly to remove from the HMI pod. An adhesive gasket is in place so care must be taken.
6. Re-assemble in reverse order using the replacement HMI pod.
7. Refer to Frame 3.3 for final safety checks.



### 3.20 HMI ASSEMBLY REPLACEMENT

1. Refer to Frame 3.3 for safety checks.
2. Remove the top panel and HMI pod. (Refer to Frame 3.7)
3. Remove the HMI pod rear steel panel by removing the 6 retention screws.
4. Disconnect the electrical cables from the HMI PCB Board.
5. Press the retention clips inwards on the HMI assembly to remove from the HMI pod. An adhesive gasket is in place so care must be taken.
6. Clean any remaining adhesive from the HMI pod in preparation for the new HMI assembly.
7. Ensure the adhesive backing has been removed on the new HMI assembly fascia gasket.
8. Re-assemble in reverse order using the replacement HMI assembly and ensuring the adhesive gasket is pressed down along the edges of the fascia surround.
9. The HMI touchscreen has a protective screen fitted which needs removing. Safely and responsibly dispose of the protective screen.
10. Refer to Frame 3.3 for final safety checks.



# FAULT FINDING

## 4. FAULT FINDING

Before attempting any electrical fault finding ALWAYS carry out the preliminary electrical system checks as detailed in the Instructions for the British Gas Multimeter or other similar commercially available meter.

The preliminary electrical system checks are the FIRST electrical checks to be carried out during a fault finding procedure.

On completion of any service/fault finding task which has required the breaking and remaking of electrical connections the following checks MUST be repeated:

- a Earth continuity
- b Polarity
- c Resistance to earth

Detailed instructions on the replacement of faulty components are contained in the 'Servicing' section of these Installation & Servicing Instructions.

Before carrying out fault finding ensure that all external controls are calling for heat. There should be 230V  $\pm$  10% available at the control box connection.

The boiler control module has replaceable fuses protecting the 230V and 24V circuits. A common reason for the 230V fuse to blow would be if the pump connected to the boiler was drawing more than 1 amp.

If the 230V fuse has blown, the display will be blank. Check for short circuits and pump loads before replacing the fuse.

Only carry out the following tests if you are gas safe qualified.

Ideal Technical Help Line: 01482 498663 Spares: 01482 498665

### Imax Xtra 2 Fault Finding Screens (appear automatically if a fault occurs)

Fault Number	Fault	Suggested Corrective Actions
0	No Active Fault	A blocking fault occurred and has automatically reset. Refer to fault history for details.
10	Outside Sensor Fault	Check Outside Sensor Wiring Check Outside Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C)
20	Flow Sensor Fault	Check Flow Sensor wiring continuity Check Flow Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C) Check connector pins quality
26 353	Header Sensor	Check Header Sensor Wiring Check Header Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C)
28	Flue Sensor Fault	Check Flue Sensor wiring continuity Check Flue Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C) Check connector pins quality Check for flue blockages Check water flow through boiler
30	CH Circuit 1 Sensor	Check CH Circuit 1 Sensor Wiring Check CH Circuit 1 Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C)
32	CH Circuit 2 Sensor	Check CH Circuit 2 Sensor Wiring Check CH Circuit 2 Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C)
40	Return Sensor Fault	Check Return Sensor wiring continuity Check Return Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C) Check connector pins quality
50	DHW Sensor Fault	Check DHW Sensor Wiring Check DHW Sensor (25k $\Omega$ @ 5°C, 12k $\Omega$ @ 20°C)
81	LPB Wiring Fault	Check wiring to LPB module Check LPB module
82	Slave Boiler Address Fault	Check all Slave Boiler addresses are different
83	BSB Wiring Fault	Check wiring between primary PCB and user interface PCB Check wiring to extension modules Check extension modules Check user interface PCB Check primary PCB



## FAULT FINDING

### Imax Xtra 2 Fault Finding Screens Continued

84	Extension Module Address Fault	Check all Extension Module addresses are different
91	Primary PCB Fault	Replace primary PCB
98	CH Circuit 1 Mixing Valve Fault	Check wiring to CH Circuit 1 Mixing Valve Check CH Circuit 1 Extension Module
99	CH Circuit 2 Mixing Valve Fault	Check wiring to CH Circuit 2 Mixing Valve Check CH Circuit 2 Extension Module
100	More Than 1 Master Boiler	Check no slave boilers have address 0
105	Service Due	Contact Ideal Heating 01482 498660
109	Overheat Blocking	Check pump wiring Check for 240Vac to pump Check pump impellor Check isolation valves Fill system to 1.0bar & vent system Fill system to 1.0bar Check temperature differential
152	Primary PCB Setup Fault	Reconfigure primary PCB
153	Primary PCB Setup Fault	Reconfigure primary PCB
183	Primary PCB Setup Fault	Reconfigure primary PCB
110	HV Interlock	Check interlock link wire and plug on terminal i5 (pink) Check main PCB connector X14
111	Service Due	Contact Ideal Heating 01482 498660
119	Low Water Pressure	Check water pressure sensor wiring Check water pressure sensor
121	CH Circuit 1 Temperature Not Reached	Check CH Circuit 1 Pump wiring Check CH circuit 1 pump Check CH circuit 1 mixing valve wiring Check CH circuit 1 mixing valve Check for blockages in CH circuit 1
122	CH Circuit 2 Temperature Not Reached	Check CH Circuit 2 Pump wiring Check CH circuit 2 pump Check CH circuit 2 mixing valve wiring Check CH circuit 2 mixing valve Check for blockages in CH circuit 2
125	Overheat Blocking	Check pump wiring Check for 240Vac to pump Check pump impellor Check isolation valves Fill system to 1.0bar & vent system Fill system to 1.0bar Check temperature differential

## FAULT FINDING

### Imax Xtra 2 Fault Finding Screens Continued

126	DHW Temperature Not Reached	Check DHW pump wiring Check DHW pump Check for blockages in DHW Circuit
127	Ant-Legionella Temperature Not Reached	Check DHW pump wiring Check DHW pump Check for blockages in DHW Circuit
128	Flame Loss	Check flue seal fitment Check flue system connectivity Check detection electrode Check gas valve for blockage
133	Ignition Lockout	Check gas supply during ignition Check 240Vac or 240Vrac to gas valve Check 240Vac to spark generator Check spark generator Clean spark electrode Set spark electrode gap to 3.5mm
146	Mains Frequency Fault	If boiler supplied from local generator then ensure local generator is supplying 50Hz otherwise check primary PCB
151	No Earth To Boiler	Check incoming wiring to boiler Check internal wiring to primary PCB
160	Fan Fault	Check fan wires are connected to fan & PCB Check wiring continuity
386		
129		
162	Air Pressure Switch Fault	Check flue for blockages Check condensate pipe for blockages Check/clean burner Check air pressure switch sensing pipes Check air pressure switch wiring Check air pressure switch
166		
387		
193	LV Interlock	Check state of LV interlock input
260	CH Circuit 3 Sensor	Check CH Circuit 3 Sensor Wiring Check CH Circuit 3 Sensor (25kΩ @ 5°C, 12kΩ @ 20°C)
270	High Heat Exchanger Temperature	Check pump wiring Check 240Vac at pump Check pump impellor Check isolation valves Check Heat Exchanger (25kΩ @ 5°C, 12kΩ @ 20°C)
317	Mains Frequency Fault	If boiler supplied from local generator then ensure local generator is supplying 50Hz otherwise check primary PCB
325	Same sensor configured multiple times	Ensure the same sensor is not configured twice
326	Same valve configured multiple times	Ensure the mixing valve function is not configured twice
327	Same valve configured multiple times	Ensure the mixing valve function is not configured twice

## FAULT FINDING

### Imax Xtra 2 Fault Finding Screens Continued

328	Same sensor configured multiple times	Ensure the same sensor is not configured twice
330	Sensor Input BX1 not configured	Configure Sensor Input BX1
331	Sensor Input BX2 not configured	Configure Sensor Input BX2
332	Sensor Input BX3 not configured	Configure Sensor Input BX3
333	Sensor Input BX4 not configured	Configure Sensor Input BX4
335	Sensor Input BX21 not configured	Configure Sensor Input BX21
336	Sensor Input BX22 not configured	Configure Sensor Input BX22
337	Sensor Input B1 not configured	Configure Sensor Input B1
338	Sensor Input B12 not configured	Configure Sensor Input B12
351	Primary Pump Address Error	Correctly Set Primary Pump Address
373	0-10V Pump Module Fault	Check wiring to 0-10V pump module Check 0-10V pump module
384	False Flame Lockout	Check detection electrode
385	Low Mains Voltage	Check mains supply
388	DHW Sensor not configured	Configure DHW Sensor
391	Room Thermostat 1 Fault	Check wiring to Room Thermostat 1 Check Room Thermostat 1
392	Room Thermostat 2 Fault	Check wiring to Room Thermostat 2 Check Room Thermostat 2
393	Room Thermostat 3 Fault	Check wiring to Room Thermostat 3 Check Room Thermostat 3
427	Flue Gas Damper not configured	Configure Flue Gas Damper
431	Heat Exchanger Sensor	Check Heat Exchanger Sensor wiring continuity Check Heat Exchanger Sensor (25kW @ 5°C, 12kW @ 20°C) Check connector pins quality
432	No Earth To Boiler	Check incoming wiring to boiler Check internal wiring to primary PCB
433	Heat Exchanger Temperature too High	Check pump wiring Check for 240Vac to pump Check pump impellor Check isolation valves
		Fill system to 1.0bar & vent system Fill system to 1.0bar & reset lockout

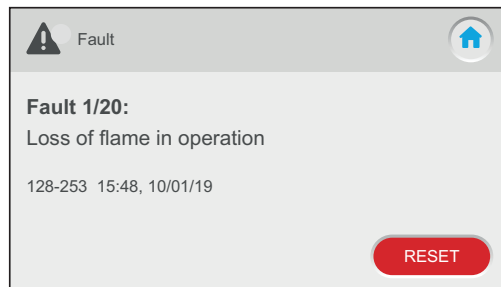
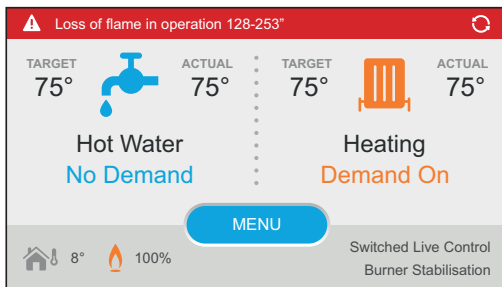
# FAULT FINDING

## 4.1 TECHNICAL CHARACTERISTICS - TEMPERATURE SENSORS

The table below gives the relationship between temperature and resistance for the following sensors; flow thermistor, return thermistor, flue thermistor, heat exchanger thermistor, outside temperature sensor and DHW tank sensor.

Temperature in °C	Resistance in ohm
10	19,905
20	12,493
30	8,056
40	5,327
50	3,604
60	2,489
70	1,753
80	1,256
90	915
100	680

## 4.2 FAULT REPORTING



If an error is present on the Imax Xtra 2 Boiler then this will be displayed in the fault banner, located at the top of the normal operating page.

The user can access the fault, to access additional information, by pressing the fault banner. After this has been done the user will be taken to the following page.

On this page the user can see the time and date on which the error occurred.

## 4.3 FAULT RESET

If the fault that occurs in a lockout fault, as opposed to a blocking fault, then the user will have to reset the Imax after the fault has been cleared, to unblock the burner.

To do this simply push the RESET button located on the page above. The fault will then clear.

## SPARE PARTS

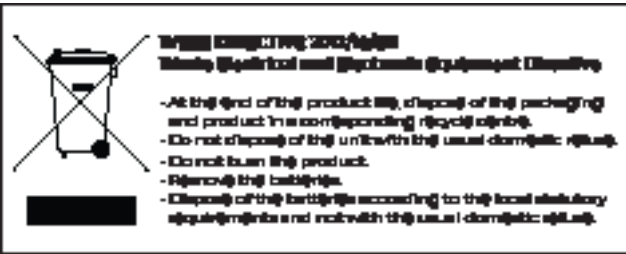
When replacing any part on this appliance use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal. Failure to do so could affect safety or performance of this appliance.

Comprehensive spares parts information and details of approved Ideal Parts Distributors are available on [idealheating.com](http://idealheating.com)

**Our Parts team are also available to help with your Ideal Spare Parts enquiries on 01482 498665.**

When calling, and to ensure we can provide you with the most accurate parts information, please ensure you have the following to hand;

- Boiler Model
- Appliance GC Number
- Boiler Serial Number



The code of practice for the installation, commissioning & servicing of central heating systems

At Ideal Heating we take our environmental impact seriously, therefore when installing any Ideal Heating product please make sure to dispose of any previous appliance in an environmentally conscious manner. Households can contact their local authority to find out how. See <https://www.gov.uk/managing-your-waste-an-overview> for guidance on how to efficiently recycle your business waste.

### Technical Training

Our Expert Academy offer a range of training options designed and delivered by our experts in heating. For details please visit: [expert-academy.co.uk](http://expert-academy.co.uk)

Ideal Boilers Ltd., pursues a policy of continuing improvement in the design and performance of its products. The right is therefore reserved to vary specification without notice.

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Ideal Consumer Helpline: 01482 498660  
Ideal Parts: 01482 498665

[idealheating.com](http://idealheating.com)

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HEATING



# USER GUIDE

**IMAX XTRA 2  
80 120 160 200 240 280  
80P 120P 160P 200P 240P**

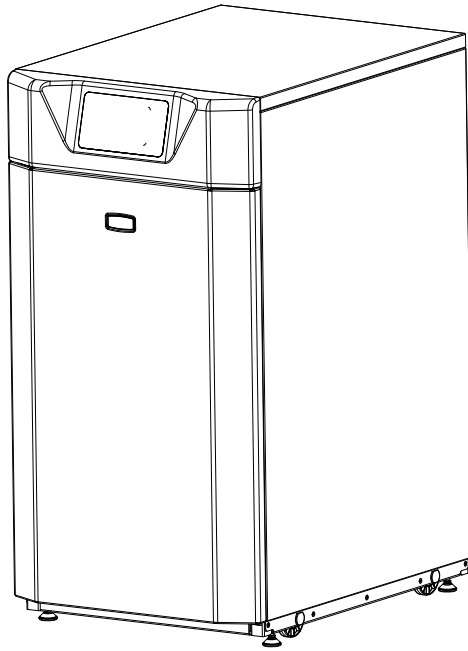
When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal Heating.

For the very latest copy of literature for specification and maintenance practices visit our website [idealheating.com](http://idealheating.com) where you can download the relevant information in PDF format.

## Imax Xtra 2

Natural Gas & Propane

Destination Countries: GB, IE



### Introduction

The Imax Xtra 2 boilers are fully automatically controlled, floor standing, fanned, super efficient condensing appliances.

Due to the very high efficiency, condensate is produced from the flue gases and this is drained to a suitable disposal point through the plastic waste pipe at the bottom of the boiler. A condensate 'plume' will also often be visible at the flue terminal.

### Safety

#### Current Gas Safety (Installation & Use) Regulations or rules in force.

In your own interest, and that of safety, it is the law that this boiler must be installed and maintained by a Gas Safe registered installer or in IE a competent person, in accordance with the above regulations.

The appliance should be serviced at least once a year by a Gas Safe registered installer or in IE a competent person.

*It is essential that the instructions in this booklet are strictly followed, for safe and economical operation of the boiler.*

### Electricity Supply

The appliance must be earthed.

Supply 230 V - 50 Hz. The fusing should be 13A for 80-280kW.

This appliance is intended to be connected to the supply via a double-pole switch, having a 3mm contact separation in both poles, serving only the boiler and system controls. Alternatively, a 3-pin UNSWITCHED socket may be used.

All Gas Safe Register installers carry a Gas Safe Register ID card, and have a registration number. Both should be recorded in the Log Book. You can check your installer by calling Gas Safe Register direct on 0800 4085500.

### Important Notes

- This appliance must not be operated without the casing correctly fitted and forming an adequate seal.
- Do not store objects around or on the boiler, and keep access clear at all times.
- Do not obstruct ventilation ducts, grilles or openings in the boiler room, room space or compartment that the appliance is installed in, or the passage of combustion and ventilation to the boiler.
- Do not turn off the boiler if it is to be left unattended in frosty weather.
- If it is known or suspected that a fault exists on the boiler then it **MUST NOT BE USED** until the fault has been corrected by a Gas Safe registered installer or in IE a competent person.
- Flammable materials must not be placed in close proximity to the appliance. Materials giving off flammable vapours must not be stored in the same room as the appliance.

In cases of repeated or continuous shutdown a Gas Safe registered installer or in IE a competent person should be called to investigate and rectify the condition causing this and carry out an operational test after each intervention on the device. Only the manufacturers original parts should be used for replacement.

### Minimum Clearances

#### Rear:

700mm or adequate space from the rear of the jacket to make the flue connections and access to the flue sample point, drain connection, flue and any safety or control devices.

Note:- The installer should provide reasonable clearance to the rear of the boiler to allow for servicing and maintenance activities to be completed in a safe manner.

#### Left Side:

150mm.

#### Right Side:

150mm.

#### Front:

600mm minimum and 1000mm maximum; except, access doors may be closer, but not less than 200mm and 600mm must still be available for service across the width of the boiler.

#### Top:

500mm.

### To light the boiler refer to Frame 1.11

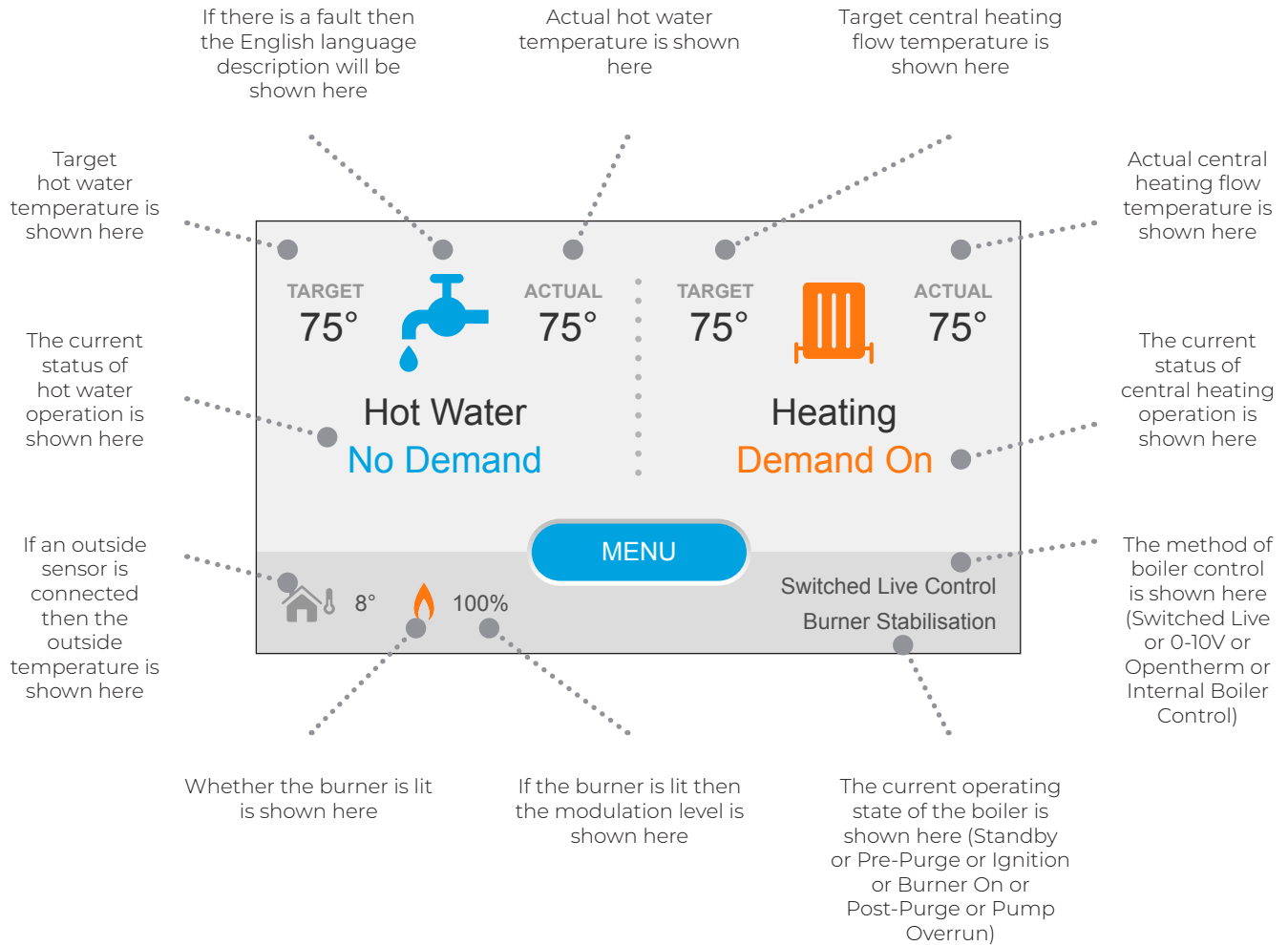
1. CHECK THAT THE ELECTRICITY SUPPLY TO THE BOILER IS OFF.
2. Switch on the electricity supply to the boiler and check that all external controls, e.g. programmer, room thermostat etc. are on. Allow the boiler to carry out a self check.

The boiler will commence the ignition sequence, supplying heat to the system when required.

**CAUTION. To avoid the possibility of injury during the installation, servicing or cleaning of this appliance care should be taken when handling edges of sheet steel components.**

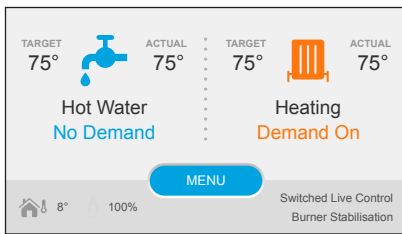


# 1 IMAX XTRA 2 USER INTERFACE MENU OPERATION

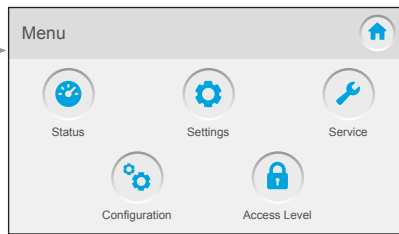


## 2 USER INTERFACE MENU OPERATION: CENTRAL HEATING SCHEDULES

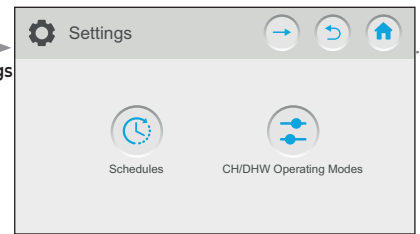
TO VIEW A CENTRAL HEATING SCHEDULE OR CHANGE A ROOM TEMPERATURE SETPOINT OR CHANGE CENTRAL HEATING ON/OFF TIMES PROCEED AS FOLLOWS



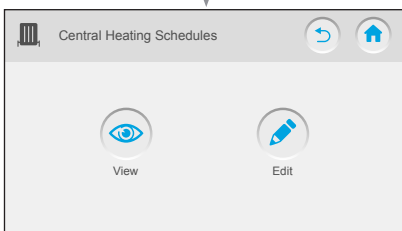
MENU



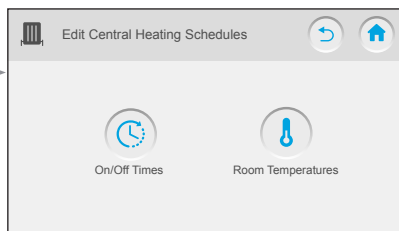
Settings



Schedules



Edit



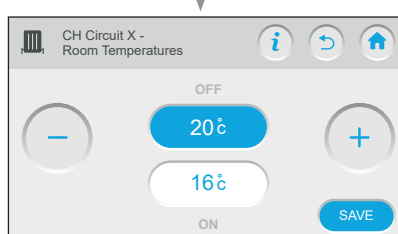
On/Off Times

View

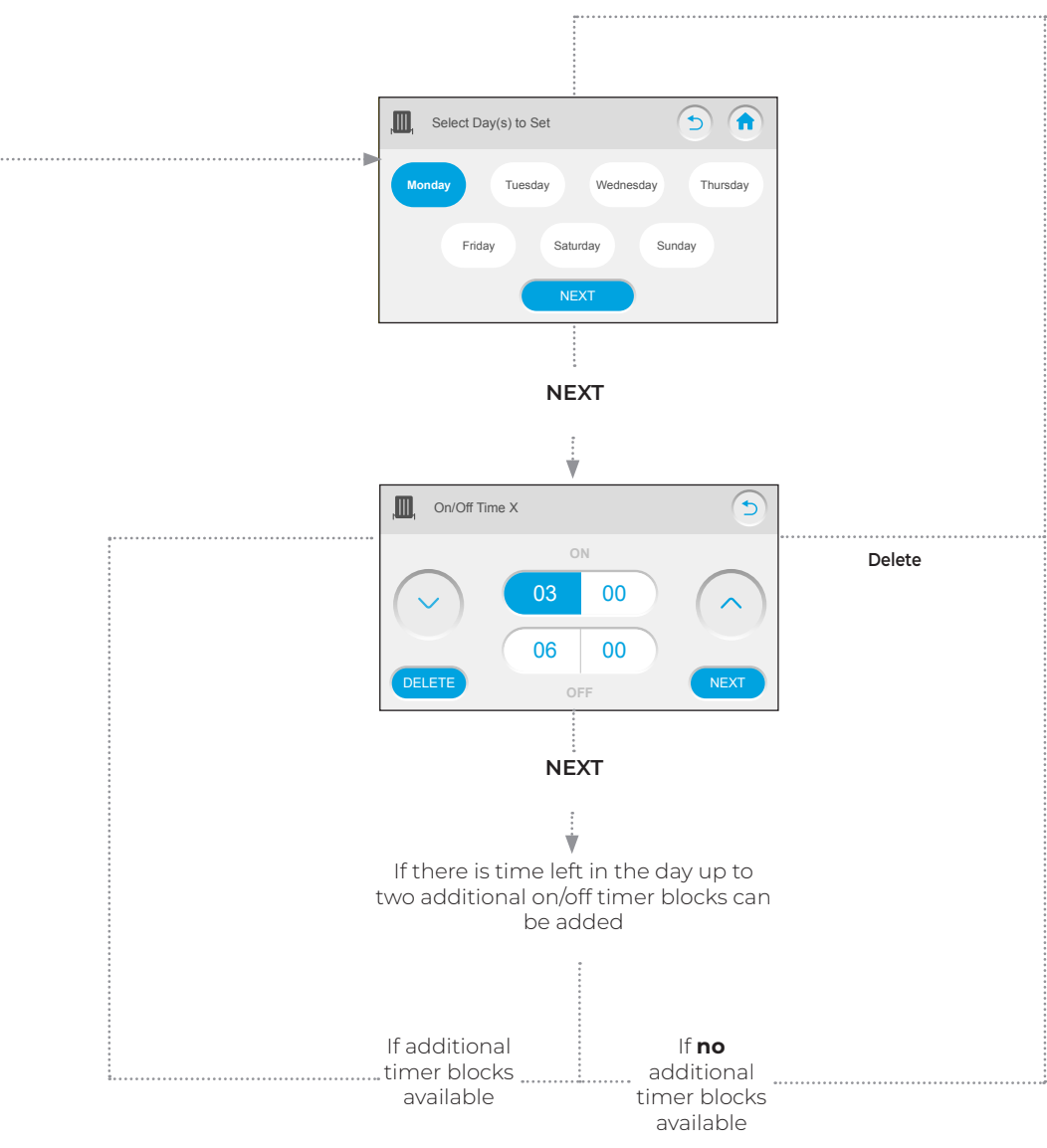
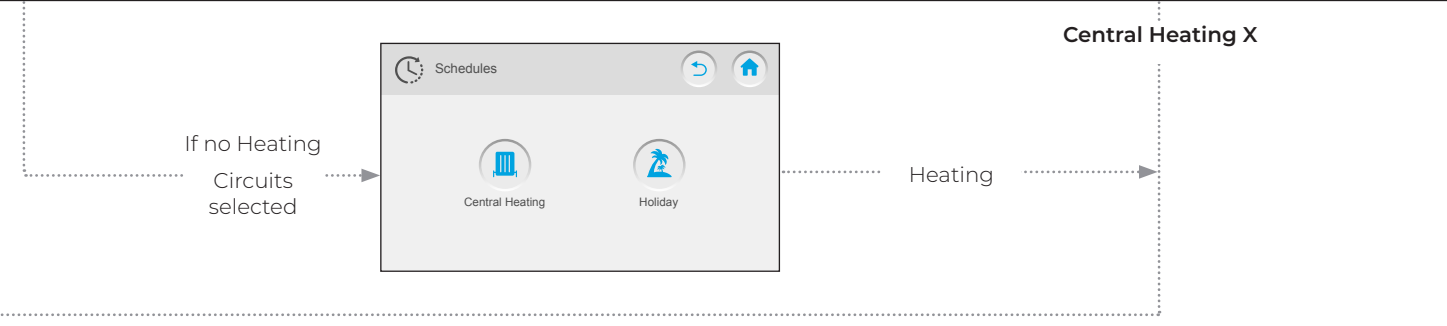
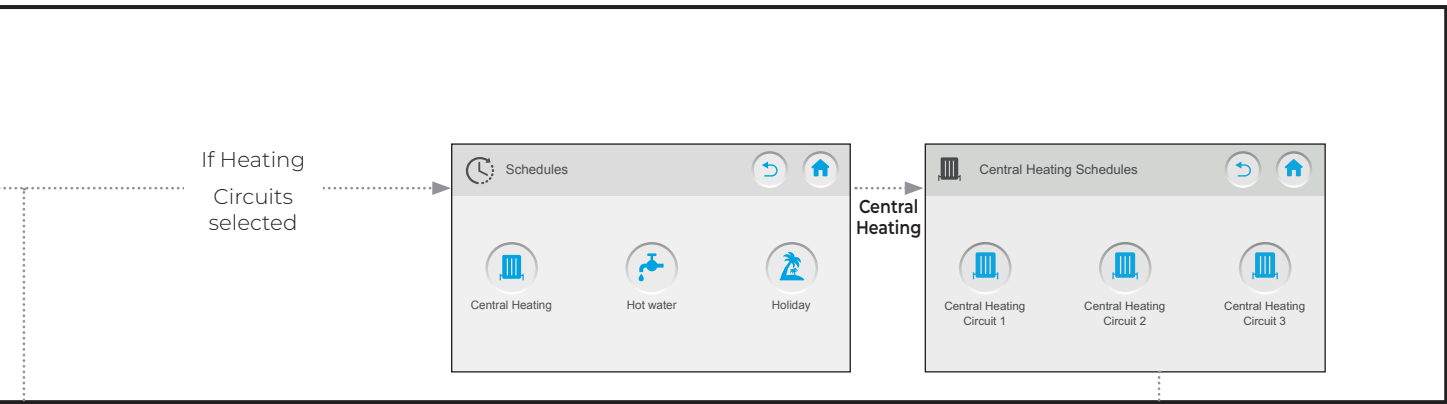
Central Heating Circuit X Schedule

Monday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Tuesday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Wednesday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Thursday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Friday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Saturday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00
Sunday	06:00 - 08:00	12:00 - 13:00	16:00 - 22:00

Room Temperature

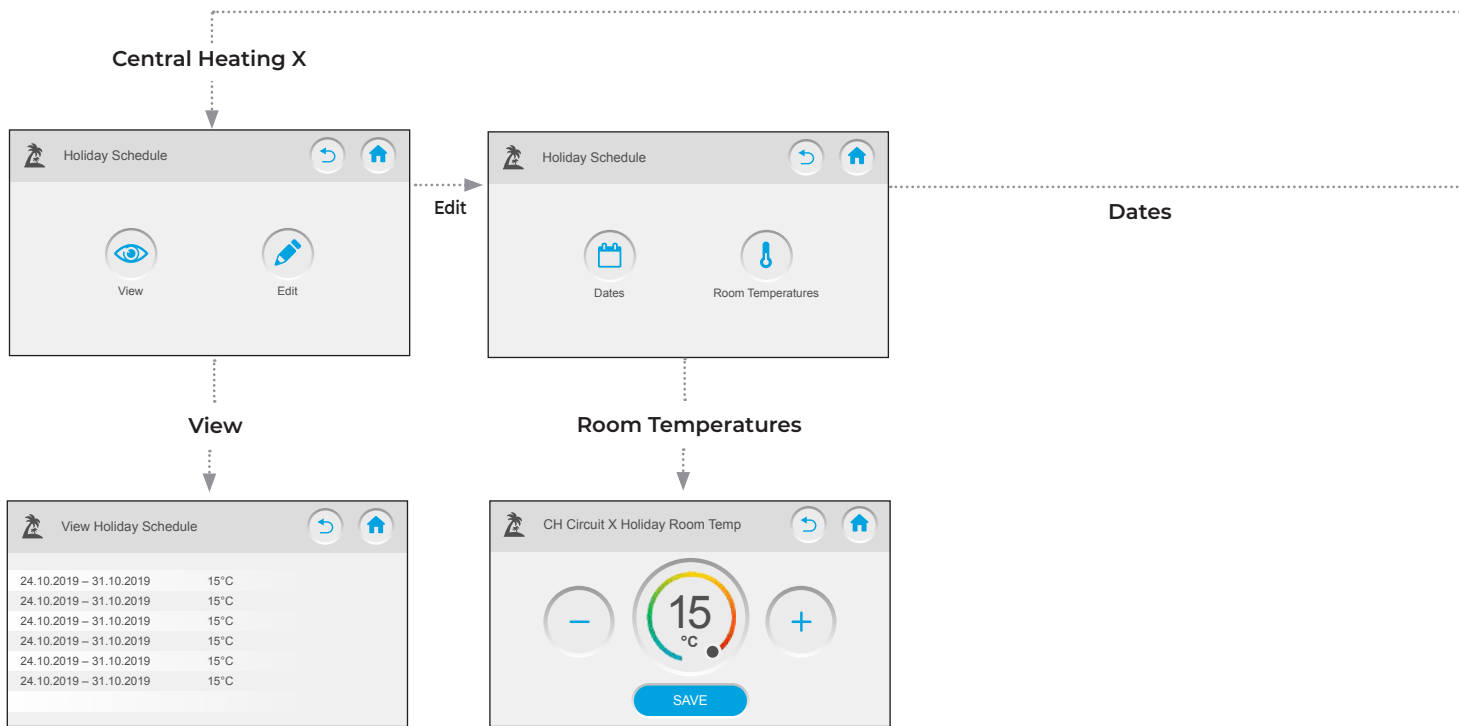
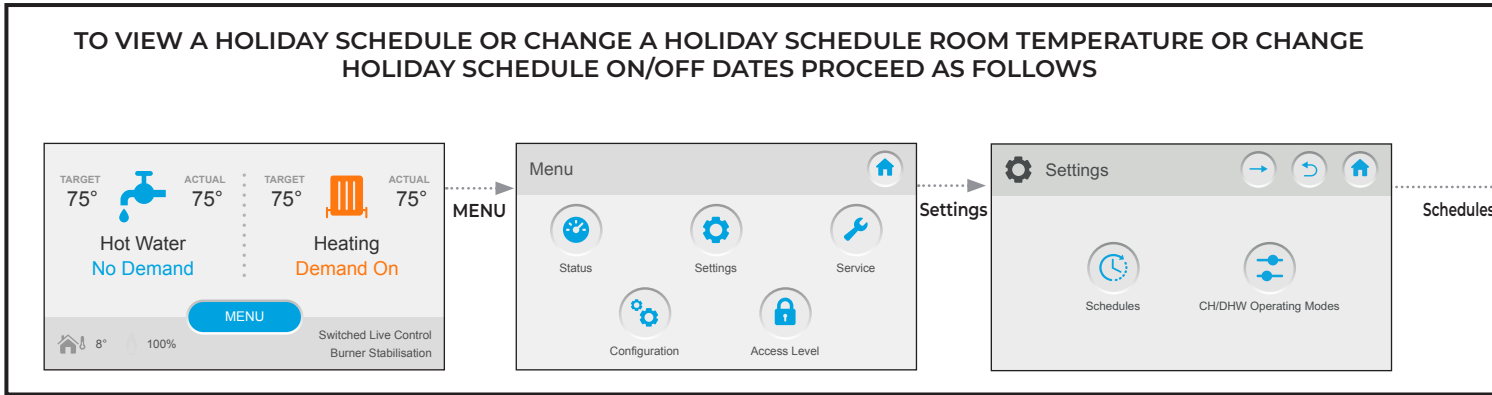


The ON temperature is the setpoint temperature during an "on period", the OFF temperature is the setpoint temperature during an "off period"

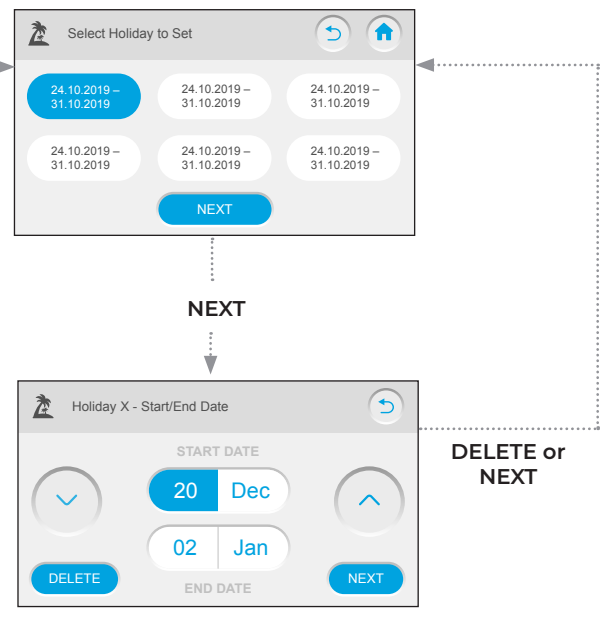
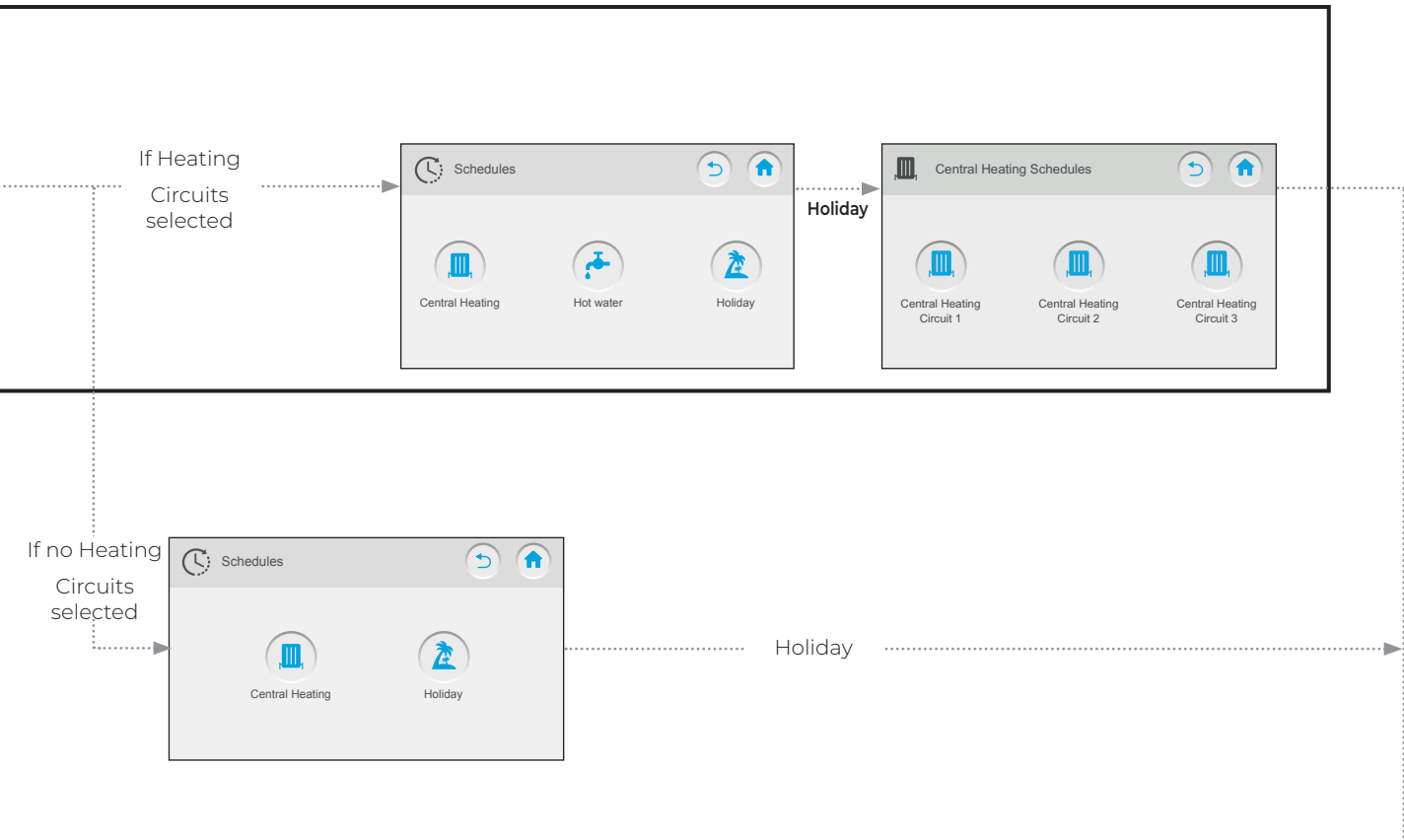


### 3 USER INTERFACE MENU OPERATION: HOLIDAY

TO VIEW A HOLIDAY SCHEDULE OR CHANGE A HOLIDAY SCHEDULE ROOM TEMPERATURE OR CHANGE HOLIDAY SCHEDULE ON/OFF DATES PROCEED AS FOLLOWS

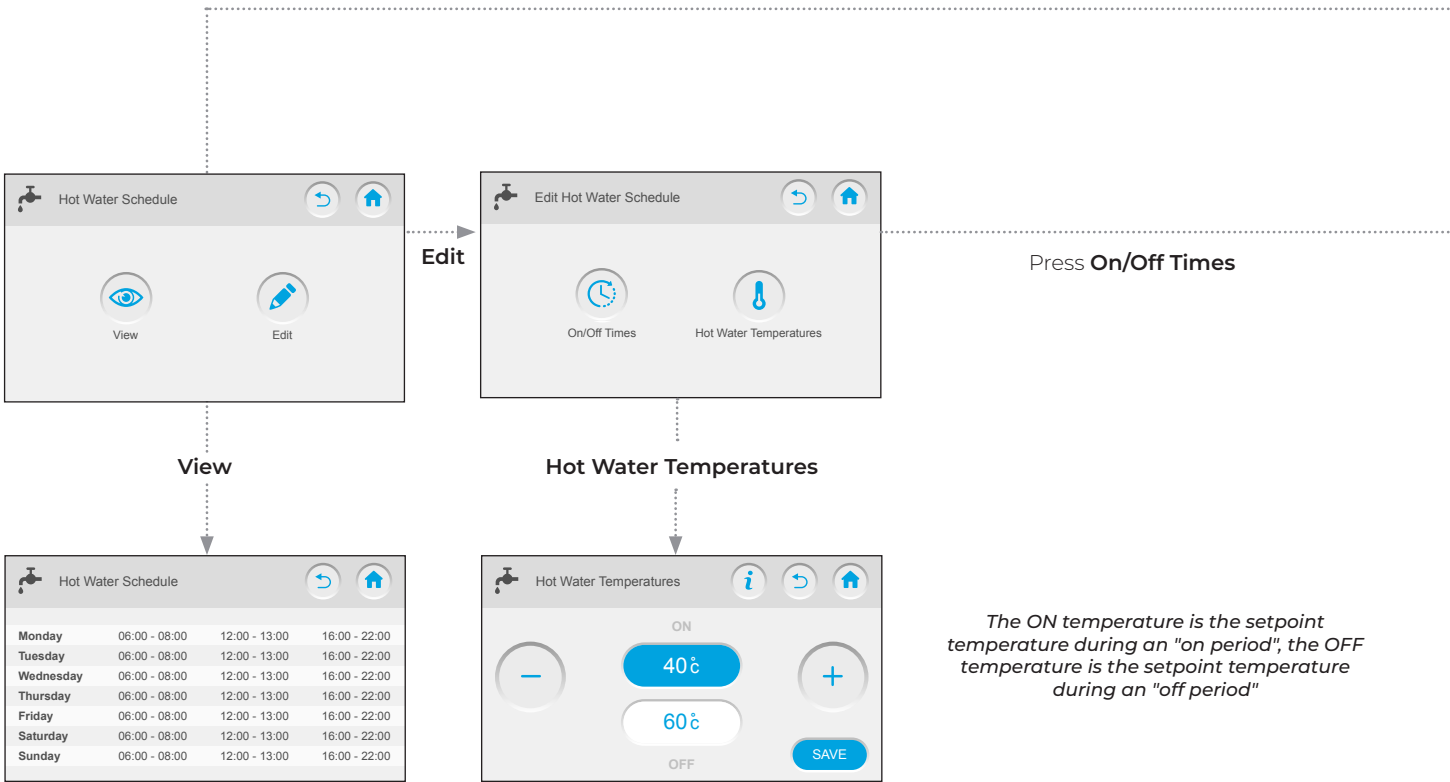
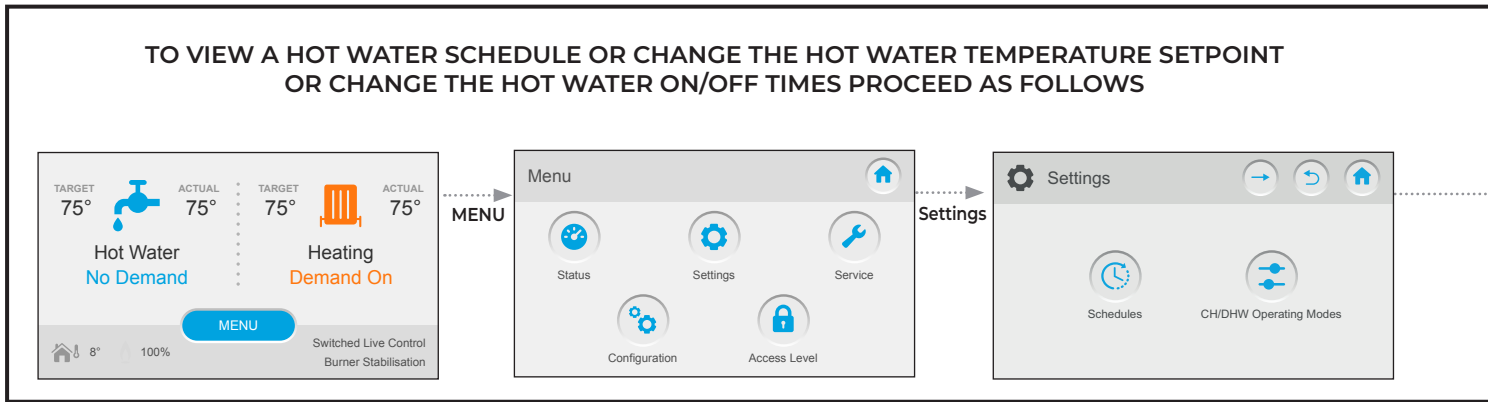


NOTE: Range of holiday temperature adjustment is from 4°C up to room OFF temperature.



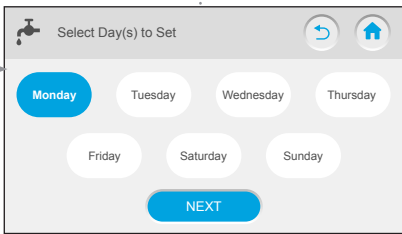
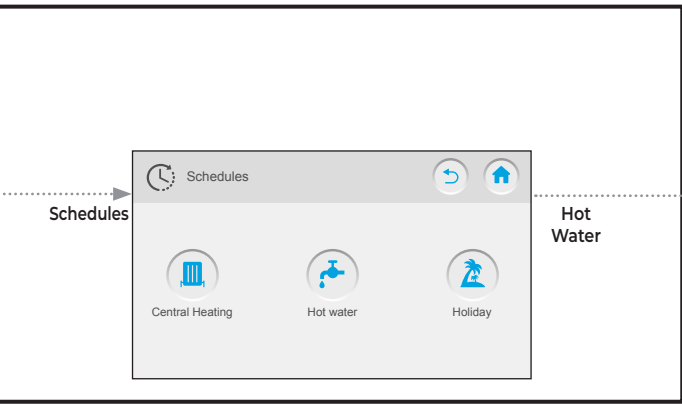
## 4 USER INTERFACE MENU OPERATION: HOT WATER SCHEDULE

TO VIEW A HOT WATER SCHEDULE OR CHANGE THE HOT WATER TEMPERATURE SETPOINT OR CHANGE THE HOT WATER ON/OFF TIMES PROCEED AS FOLLOWS

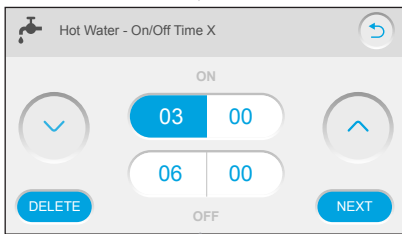


Press **On/Off Times**

*The ON temperature is the setpoint temperature during an "on period", the OFF temperature is the setpoint temperature during an "off period"*



NEXT



Delete

NEXT

If there is time left in the day up to two additional on/off timer blocks can be added

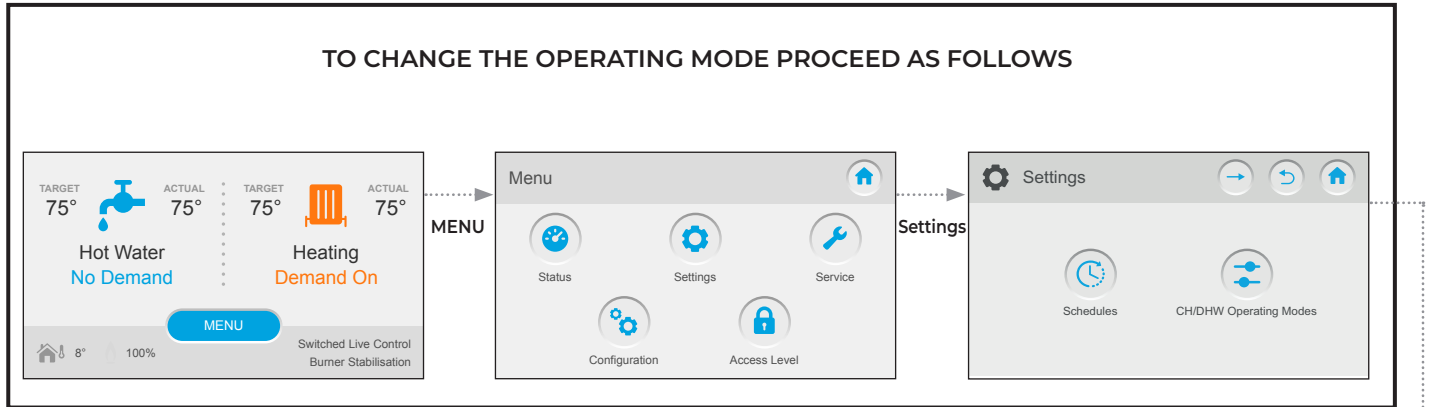
If additional timer blocks available

If **no** additional timer blocks available

## 5 USER INTERFACE MENU OPERATION: OPERATING MODE

**Note** that to access the Operating Mode, the boiler will first need to be set for either Service Engineer Access Level or Installer Access Level

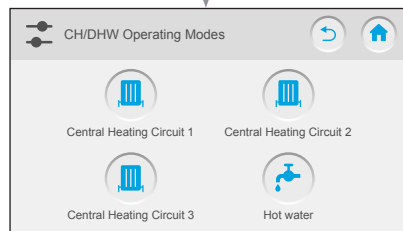
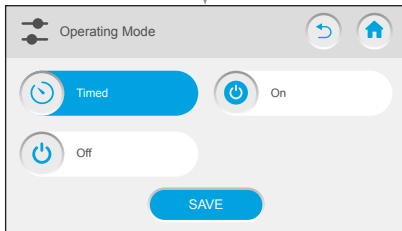
It will only be possible to change the Operating Mode of circuits that have been configured (there may only be 1 Central Heating Circuit)



Operating Modes

If no Heating Circuits selected

If Heating Circuits selected



To set the circuit to Timed operation press **Timed** and then **NEXT**

To set the circuit to On press **On** and then **NEXT**

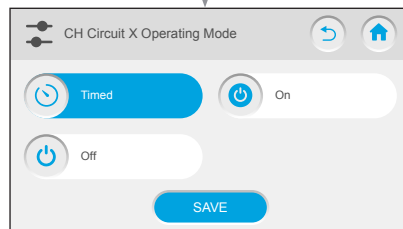
To set the circuit to Off press **Off** and then **NEXT**

To change CH 1 Operating Mode press **Central Heating Circuit 1** and then **NEXT**

To change CH 2 Operating Mode press **Central Heating Circuit 2** and then **NEXT**

To change CH 3 Operating Mode press **Central Heating Circuit 3** and then **NEXT**

To change DHW Operating Mode press **Hot Water** and then **NEXT**



To set the circuit to Timed operation press **Timed** and then **NEXT**

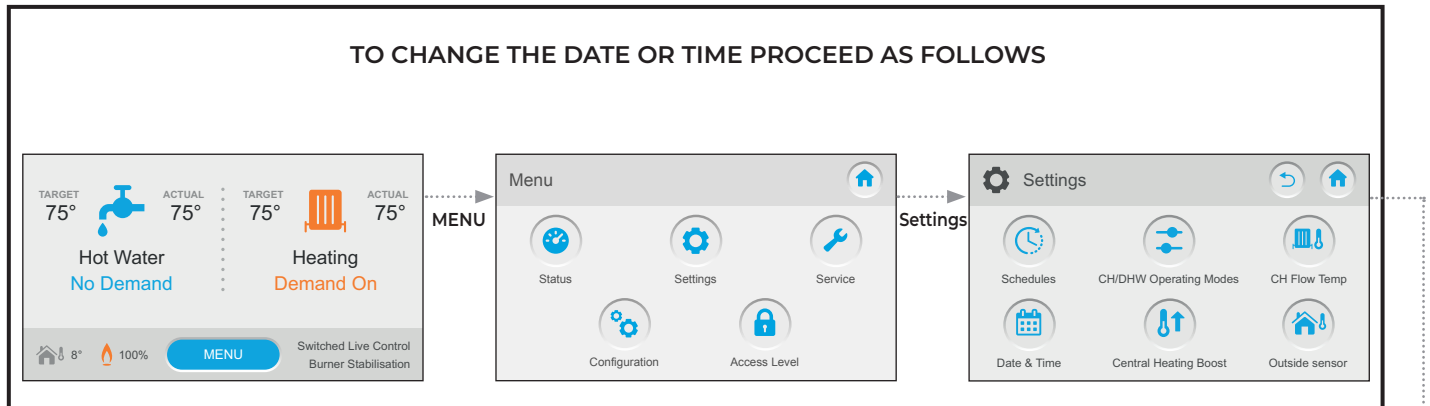
To set the circuit to On press **On** and then **NEXT**

To set the circuit to Off press **Off** and then **NEXT**

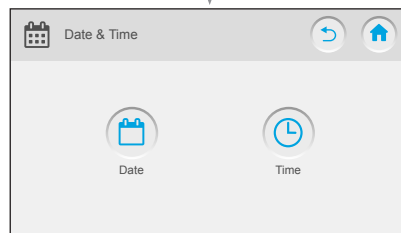


## 6 USER INTERFACE MENU OPERATION: DATE AND TIME AND LANGUAGE

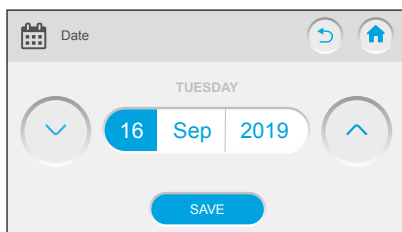
**Note** that to change the Date and/or Time the boiler will first need to be set for either Service Engineer Access Level or Installer Access Level



### Date & Time



To change the Date press **Date**



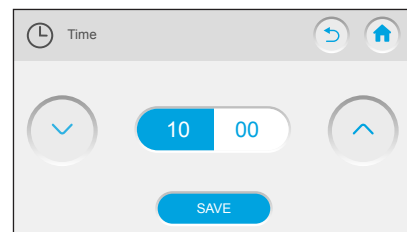
Press **up** and **down** until the Day is shown correctly

Press on the Month and then press Up and Down until the Month is shown correctly

Press on the Year and then press Up and Down until the Year is shown correctly

Press **SAVE**

To change the Time press **Time**



Press **up** and **down** until the Hours is shown correctly

Press on the Minutes and then press Up and Down until it is shown correctly

Press **SAVE**

## To Shut Down the Boiler

### 1. For shorter periods

Set the external controls to OFF. Wait 10 minutes and then isolate the mains supply to the boiler.

### 2. For longer periods

Set the external controls to OFF. Wait 10 minutes and then isolate the mains supply to the boiler. For longer periods the entire system should be drained, including the domestic hot water supply.

## To Relight the Boiler

Refill the system if it has been drained, taking care to ensure no air is in the boiler or system.

Repeat the procedure detailed in 'To light the boiler'.

## Frost Protection

The IMAX XTRA 2 boiler has built into its control system the facility to protect the boiler only against freezing.

**Note.** This may not protect remote parts of the system, in which case a separate frost thermostat should be fitted.

## Boiler Overheat

Boiler overheating is detected by electrical sensors connected to the boiler control module. If the boiler overheats it will shut down and the display will show Overheat Lockout. Press on the fault indication and then press reset to reset the lockout. If the fault recurs turn off the boiler and consult a Gas Safe registered installer or in IE a competent person.

## Condensate Drain

The condensate drain must not be modified or blocked.

Blockage of the condensate drain, caused by debris or freezing, can cause automatic shutdown of the boiler or leakage from the condensate trap mounted at the back of the boiler.

If freezing is suspected and the pipe run is accessible an attempt may be made to free the obstruction by pouring hot water over the exposed pipe and clearing any blockage from the end of the pipe. If this fails to remedy the problem the assistance of a Gas Safe registered installer or in IE a competent person should be sought.

## Escape of Gas

Should a gas leak or fault be suspected contact your local gas supplier without delay.

Do NOT search for gas leaks with a naked flame.

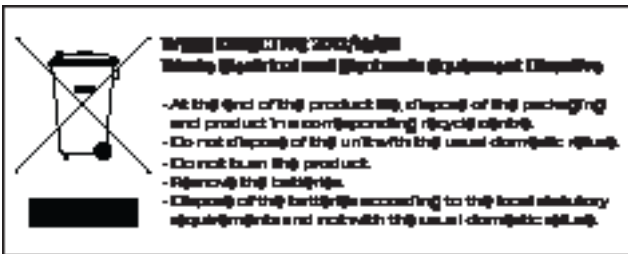
## Cleaning

For normal cleaning simply dust with a dry cloth.

To remove stubborn marks and stains use a damp cloth and mild detergent.

DO NOT use abrasive cleaning materials.

## NOTES



The code of practice for the installation, commissioning & servicing of central heating systems

At Ideal Heating we take our environmental impact seriously, therefore when installing any Ideal Heating product please make sure to dispose of any previous appliance in an environmentally conscious manner. Households can contact their local authority to find out how. See <https://www.gov.uk/managing-your-waste-an-overview> for guidance on how to efficiently recycle your business waste.

### Technical Training

Our Expert Academy offer a range of training options designed and delivered by our experts in heating. For details please visit: [expert-academy.co.uk](http://expert-academy.co.uk)

Ideal Boilers Ltd., pursues a policy of continuing improvement in the design and performance of its products. The right is therefore reserved to vary specification without notice.

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Ideal Parts: 01482 498665

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