

# *XTREME 24*

G.C. 47-291-10

# *XTREME 30*

G.C. 47-291-11

# *XTREME 36*

G.C. 47-291-12



## **INSTALLATION MANUAL**

### **High Efficiency Wall-Mounted Gas Boiler**

Read this installation manual thoroughly before the installation and use of the boiler. Follow all indicated instructions. This installation manual must remain with the boiler.



Smart Opentherm™

**INTERGAS®**



Benchmark places responsibilities on both manufacturers and installers. The purpose is to ensure that customers are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturer's instructions by competent persons and that it meets the requirements of the appropriate Building Regulations. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference. Please read the Benchmark Checklist carefully, page 90, and complete all sections, as required by law, relevant to the appliance and installation. Failure to install and commission according to the manufacturer's instructions and complete the Benchmark Commissioning Checklist will invalidate the warranty for the Gas Boiler installation. The details within the Checklist will be required in the event of any warranty work. On completion the Checklist must be left with the end user. The relevant sections of the Service Record, page 91 & 92, must be completed on each subsequent Service visit.

Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hotwater Industry Council who manage and promote the scheme. Visit [www.centralheating.co.uk](http://www.centralheating.co.uk) for more information.

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To be completed at each annual service, not subsequent.

# 1 PREFACE

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The manufacturer Intergas Heating Ltd accepts no liability whatsoever for damage or injury caused by failure to adhere (strictly) to the safety regulations and instructions, or carelessness during installation of the Intergas wall mounted gas fired boiler and any associated accessories

Intergas Heating Ltd are continuously developing ways to guarantee the quality of its products and to improve them where necessary. In so doing we (Intergas Heating Ltd.) reserve the right to modify at any time the features named within this document.

Read and observe all safety instructions within this instruction manual to prevent unsafe situations, fire, explosion, damage to property or personal injury.

## 1.1 Regulation

The Intergas combination boiler meets the requirements of Statutory Instrument 'The Boiler (Efficiency) Regulations' and is deemed to meet the requirements of:

- ▶ Low Voltage Directive (2014/35/EU)
- ▶ Gas Appliances Regulation (EU) 2016/426
- ▶ Boiler Efficiency Directive (92/42/EEC)
- ▶ EMC Directive (2014/30/EU)
- ▶ RED Directive (2014/53/EU)
- ▶ Ecodesign (2009/125/EC)
- ▶ Energy labelling Regulation (EU) 2017/1369

Intergas declares that the materials used in the manufacturing of this appliance are non hazardous and that no substances harmful to health are contained within the appliance.

## 1.2 Warnings

Intergas accepts no responsibility for the unsatisfactory performance of the appliance or flue arising from the failure to comply with this installation manual. Incorrect installation could invalidate your guarantee and may lead to prosecution.

The appliance cannot be removed from the original place of installation and transferred to another site or re-sold without prior consent from Intergas. You must re-register the appliance with Intergas in order to maintain any remaining warranty.

The boiler must be installed by a competent Gas Safe registered engineer and in accordance with these instructions, It is the installers responsibility to ensure that the installation conforms to the current legislation and Standard Codes of Practice.

**Please read these instructions carefully before installing or using the appliance.**

## 1.3 Manual handling

When moving the boiler always keep your back straight, bend your knees, don't twist, move your feet. Avoid bending forwards or sideways and keep the load as close to your body as possible. Where possible transport the boiler using a suitable trolley, sack truck or get some assistance. Grip the boiler firmly and before lifting establish where the weight is concentrated to determine the centre of gravity, repositioning yourself if necessary.

## 1.4 Pictograms

The following pictograms are used within this installation manual:



### **CAREFUL / IMPORTANT**

**Procedures which, if these are not performed with the required caution, can damage the product, the surrounding or the environment or may result in personal injury.**



### **COMMENT**

**Procedures and/or instructions which, if they are not followed, can negatively affect the operation of the boiler.**



### **SEE**

**Reference to other manuals**

## 1.5 Warnings on the box



### **INSTRUCTION (THIS SIDE UP)**

**Store the appliance upright as indicated on the box.**



### **INSTRUCTION (FRAGILE)**

**This is a fragile piece of equipment: Please handle with care do not to drop.**



### **INSTRUCTION (FRAGILE)**

**This is a fragile piece of equipment: Please provide dry storage for the appliance.**



### **INSTRUCTION (STACK)**

**No more than three boxes should be stacked on top of each other.**

## 1.6 Abbreviations

- ▶ **DHW:** Domestic hot water
- ▶ **CH:** Central heating
- ▶ **CW:** Comfort domestic hot water
- ▶ **HE:** High efficiency
- ▶ **PHS:** Pre Heated Solar water.
- ▶ **LT:** Low temperature (zone).
- ▶ **HT:** High temperature (zone)
- ▶ **OT:** OpenTherm
- ▶ **RF:** Radio frequency
- ▶ **PC:** Personal computer
- ▶ **NTC:** Sensor (Negative temperature coefficient)
- ▶ **PP:** Polypropylene
- ▶ **CAC:** Combination air supply duct and combustible gas flue system (concentric chimney system)

## 2 SAFETY REGULATIONS

### Safety precautions If you smell gas



**A gas leak could potentially cause an explosion. If you smell gas, observe the following rules:**

- ▶ **Prevent flames or sparks:**
  - **Do not smoke, use a lighter or strike matches.**
  - **Do not operate any electrical switches or unplug any equipment.**
  - **Do not use the telephone or ring doorbells.**
- ▶ **Turn off the gas at the meter or regulator.**
- ▶ **Open windows and doors.**
- ▶ **Warn your neighbors and leave the building**
- ▶ **Prevent anyone from entering the building.**
- ▶ **Call the National Gas Emergency Service on 0800 111 999 (From a location away from the gas leak).**  
**L.P.G. boilers: Call the supplier's number on the side of the gas tank or cylinder.**



### 2.1 General

Depending on the year of construction, an Intergas HR boiler may contain part(s) in which ceramic fibers are used. Always use the recommended personal protective equipment when working with ceramic fibers.

It is law that all gas appliances are installed and serviced by a Gas Safe registered competent engineer, if in any doubt please check with Gas Safe (**0800 408 5500**) and in accordance with the following recommendations:

- ▶ Current Gas Safety (Installation and Use) Regulations
- ▶ All current building regulations
- ▶ Building Standards (Scotland) Consolidated
- ▶ I.S.813 Installation of Gas Appliances (Ireland)
- ▶ IET Wiring Regulations (BS 7671)
- ▶ Health and Safety Document (Electricity at Work Regulations)
- ▶ UK Water fittings Regulations and Byelaws
- ▶ Health & Safety Regulations

### 2.2 The installation

The installation must comply with the following British Standards codes of practice:

- ▶ BS 5440: Flueing and Ventilation for gas appliances of rated input not exceeding 70kW (Part 1 Flues)
- ▶ BS 5440: Flueing and Ventilation for gas appliances of rated input not exceeding 70kW (Part 2 Air Supply)
- ▶ BS 5546: 2010 Specification for installation and maintenance of gas-fired water-heating appliances of a rated input not exceeding 70Kw net.
- ▶ BS EN 12828:2012+A1:2014 Heating systems in buildings. Design for water-based heating systems
- ▶ BS EN 806-1:2000 Specifications for installations inside buildings conveying water for human consumption. General (802-2 Design, 806-3 Pipe sizing, 806-4 Installation, 806-5 Operation and maintenance).
- ▶ BS 6798: 2014 Specification for selection, installation, inspection, commissioning, servicing and maintenance of gas-fired boilers of rated input not exceeding 70kW net
- ▶ BS 6891: 2015+A1:2019 Specification for the Installation and maintenance of low pressure gas installation pipework of up to 35mm (R1 1/4) on premises
- ▶ BS 7593: 2019 Code of practice for the preparation, commissioning and maintenance of domestic central heating and cooling water in systems
- ▶ BS 7671: 2018 Requirements for electrical installations, IET Wiring regulations
- ▶ BS 5955-8:2001 Plastic pipework (thermoplastics materials). Specification for the installation of thermoplastic pipes and associated fittings for use in domestic hot and cold services and heating systems in buildings.

Reference should also be made to:

- ▶ Guide to condensing boiler installation assessment procedures for dwellings (SBSA)
- ▶ The institute of Gas Engineers document & managers IGE/UP/7 Gas installations in timber frame and light steel framed buildings.

### 3 GENERAL BOILER INFORMATION

#### 3.1 General

The Intergas Xtreme wall-mounted gas boiler is a room sealed unit. The boiler is intended solely to provide heat for the water in a central heating system and domestic hot water installation and is for domestic use only.

The Intergas Xtreme meets the European directives and additional national regulations that are indicated by CE marking. The associated conformity declaration can be requested from Intergas Heating Ltd (also see **§14**)



The Intergas Xtreme meets the electrical protection class IPX4D.

#### 3.1.1 ErP label

Based on the European ErP Directive (Energy related Products) all newly produced gas fired boilers have to meet minimum standards regarding energy performance.

The Intergas Xtreme carries an European energy label containing specific information regarding energy efficiency class (CH and DHW), noise level and maximum power.

The Intergas Xtreme carries label A for both CH and DHW.

In addition the Intergas Xtreme meets the following DWH capacity profile:

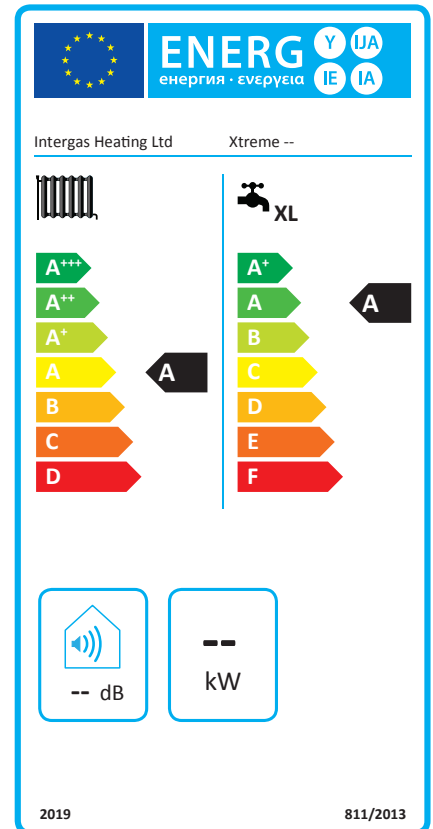
- ▶ Xtreme 24 : L
- ▶ Xtreme 30 : XL
- ▶ Xtreme 36 : XXL

The extensive product fiche can be found in **§12.2**.

#### 3.1.2 Gas category

Gas category	Gas type	Gas inlet pressure (mbar)
II <sub>2H3P</sub>	Natural gas (G20)	20
	LPG (G31)	37

The Intergas Xtreme is factory-set for H-gas, G20. The boiler may optionally be converted to another gas type (as in **§3.1.2**) using a conversion set (see **§9.8**).





## 3.2 Operation

The Intergas Xtreme is a modulating high efficiency boiler. This means that the output is adjusted according to the desired heating capacity. Two separate copper circuits are infused within the aluminium Bithermic heat exchanger.

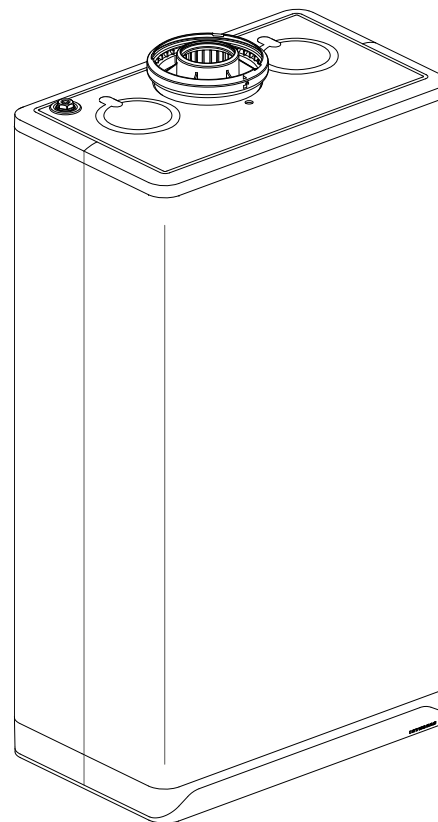
In addition, the Intergas Xtreme has a second heat exchanger (Passive flue gas heat recovery unit). This second heat exchanger is integrated in the flue of the boiler so that the efficiency of domestic hot water is increased

even further. The residual heat from the flue gases during operation is used to preheat the domestic hot water.

By applying this technology, less energy is required to raise the water temperature to the preset level, thus achieving an extremely high domestic hot water efficiency.

The boiler has a printed circuit board with microprocessor control, this allows constant calculations to take place during any demand for either heating or hot water, these calculations are based on many factors and measuring points within the boiler.




The microprocessor manages and takes control of the modulating output, ensuring optimum efficiency is maintained at all times during production.



## 3.3 Data plate

### Identification of the product

You will find the unit details on the data plate on the bottom of the boiler. The data plate contains, important information and the boiler specification (boiler type and model name), and the serial number:

**** -yymm****	Production code - Serial number YY = year of production, mm = month of production
PIN	Product Information Number
	Data related to Domestic Hot Water
	Data related to Central Heating
	Information regarding electrical power supply (Voltage, mains frequency, elmax, IP-class)
PMS	Permissible overpressure in CH circuit in bar
PWS	Permissible overpressure in DHW circuit in bar
Qn HS	Input related to gross caloric value in kilowatts
Qn Hi	Input related to net caloric value in kilowatts
Pn	Output in kilowatts
BE, CH, DE, ES, FR, GB, IE, IT, MT	Countries of Destination (EN 437)
I2E(s), I2H, IIELL3P, II2H3P, II2Esi3P	Approved unit categories (EN 437)
G20-20 mbar G31-37 mbar	Gas group and gas connection pressure as set at the factory (EN 437)
B23, .....C93(x)	Approved flue gas category (EN 15502)
Tmax	Maximum flow temperature in °C
IPX4D	Electrical protection class

### 3.4 Control panel

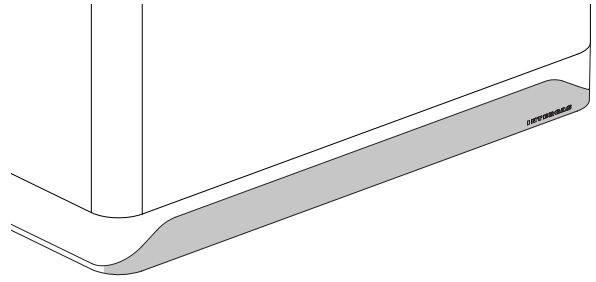
The boiler has a fully integrated touch screen control panel that also displays information about the operational status, temperature settings, demand symbols and fault codes.

The display has multiple functions and options please refer to section §9 for further detail.



#### COMMENT

- ▶ **The touch screen is very sensitive only use a finger tip and not any sharp objects.**



### 3.5 Operational modes

The boiler has a number of operational modes:

#### The boiler is switched off.

The boiler is switched off but is connected to the mains power. In this mode, the display view is characterised by:

- ▶ Displaying the power LED [•].
- ▶ Displays the pressure within the central heating system on left hand side [tB].
- ▶ Displaying a line on the right display [-].



*Boiler is switched off  
(mains voltage is present)*

#### The boiler is switched on and is ready for a heat demand.

The boiler is switched on and is ready to answer a request for either domestic hot water or hot central heating water. In this mode, the display view is characterised by:

- ▶ Displaying the power LED [•]. All other symbols and values are not displayed.



*Boiler is switched on  
(ready for heat demand)*

#### The boiler is operating and producing domestic hot water.

The boiler is operating and supplying domestic hot water to a tap or shower etc. The display view is characterised by:

- ▶ Displaying the power LED [•].
- ▶ Displaying the flame i.e. burner is switched on [!].
- ▶ Displaying the tap symbol [R].



*Boiler is in operation (domestic hot water)*

#### The boiler is operating and producing central heating water.

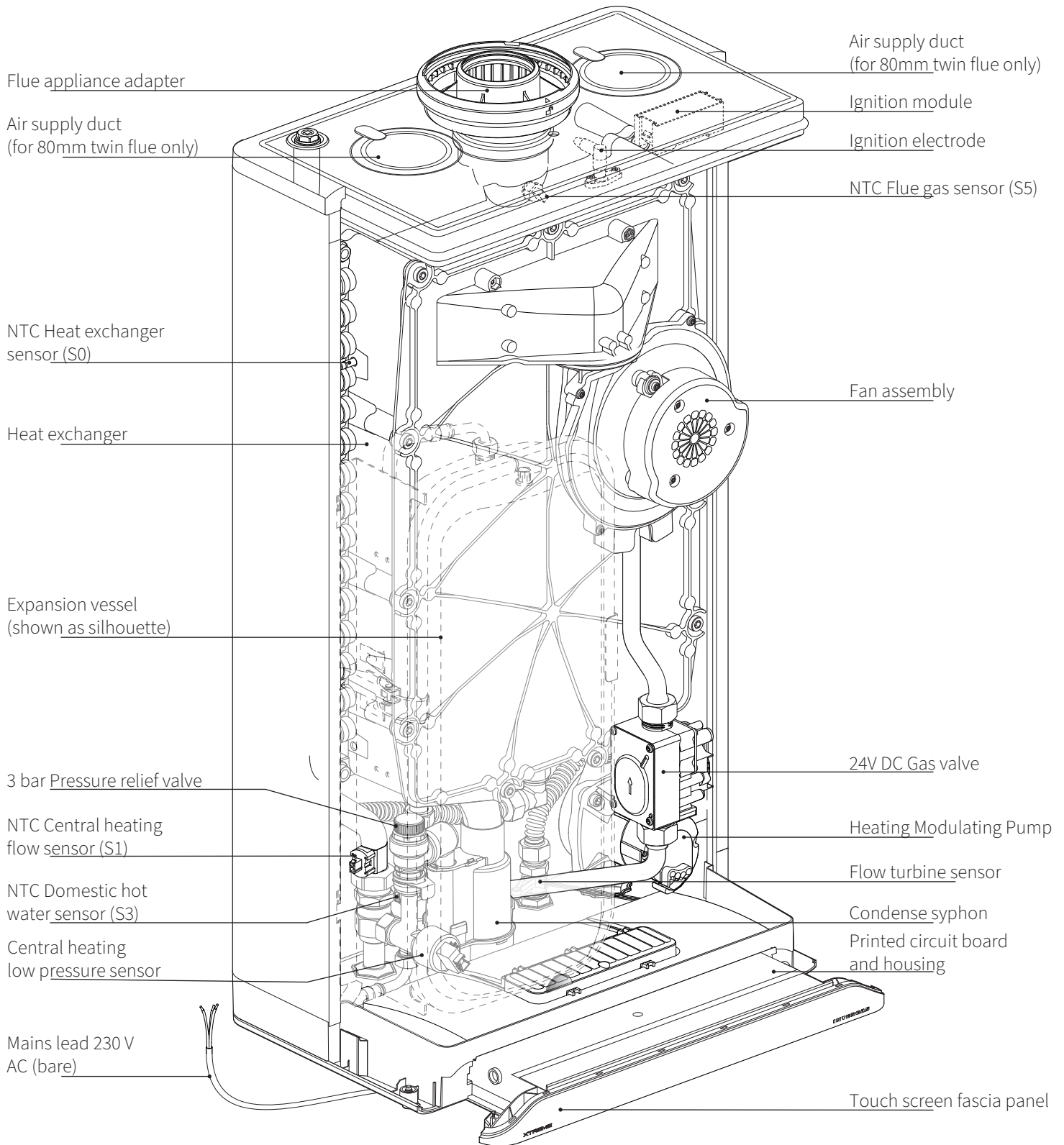
The boiler is operating and supplying central heating water. The display view is characterised by:

- ▶ Displaying the power LED [•].
- ▶ Displaying the flame i.e. burner is switched on [!].
- ▶ Displaying the radiator symbol [|||||].



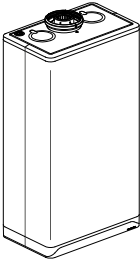
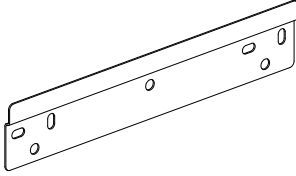
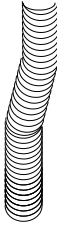


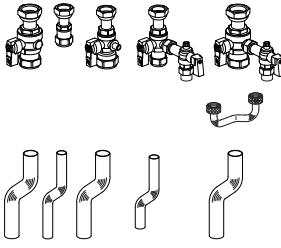
*Boiler is in operation (central heating water)*

## 4 MAIN COMPONENTS



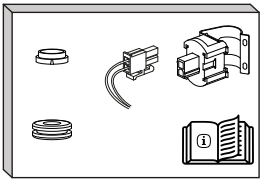
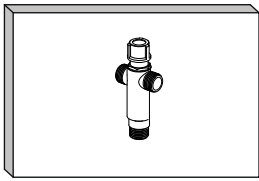
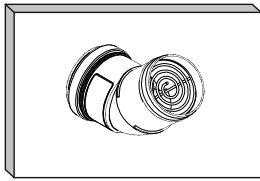
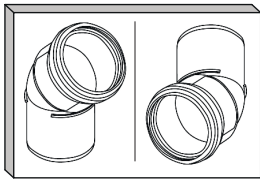
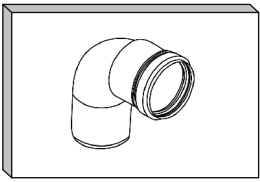
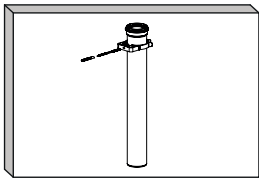
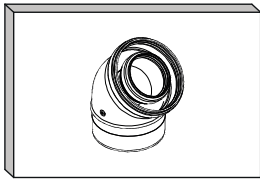
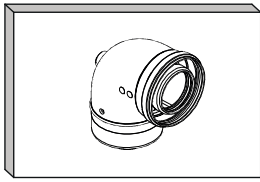
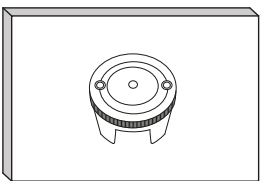
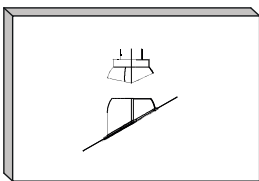
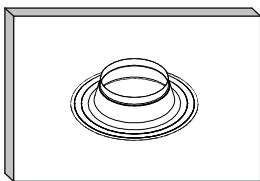
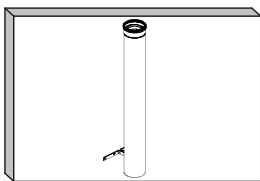
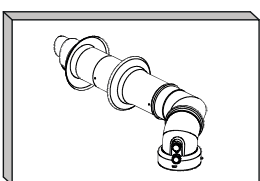
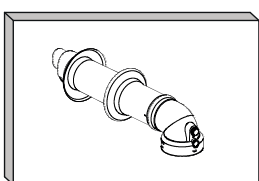
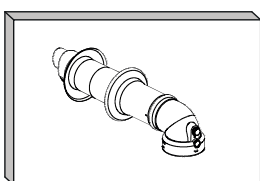
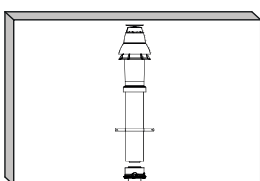
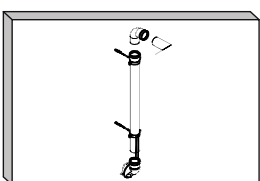
## 4.1 Standard scope of delivery

Check whether the package is undamaged. Unpack the boiler and check whether all components are present. Also check for any damages to the boiler or accessories and, if present, immediately notify the supplier.

		
Boiler	Wall bracket & fixings	Flexible condensate hose
		
Installation and operation instruction	Guarantee card	Connection set

## 4.2 Accessories

Original Intergas accessories can be ordered separately at your local stockist. Instructions about the correct way to assemble and use these accessories are provided with the product ordered and are therefore not included within this installation manual.

			
Item no 090347 Post-Heating Solar Boiler conversion set	Item no 842177 Thermostatic mixing valve	Item no 081295 Plume terminal bend	Item no 081285 Elbow 60° (2 per box) (for plume management kit)
			
Item no 081284 Elbow 90° (for plume management kit)	Item no 081286 Extension L=1000mm inc. wall bracket (for plume management kit)	Item no 084661 Bend 45°	Item no 084660 Bend 90°
			
Item no 203207 Outdoor sensor (For use with weather compensation)	Item no 087910 60/100 flue weather slate (pitched roof)	Item no 087372 60/100 flue weather slate (flat roof)	Item no 082975 60/100 extension L=1000mm inc. wall bracket
			
Item no 081298 Horizontal telescopic offset wall terminal <sup>1</sup>	Item no 082980 Horizontal non telescopic straight wall terminal <sup>1</sup>	Item no 081297 Horizontal telescopic wall terminal <sup>1</sup>	Item no 0821973 Vertical roof terminal (inc. boiler adapter 60/100)
			
Item no 081294 Plume management kit (inc. 2x wall brackets)			

<sup>1</sup> Only to be used in combination with the base adapter on the boiler

## 5 INSTALLER IMPORTANT POINTS

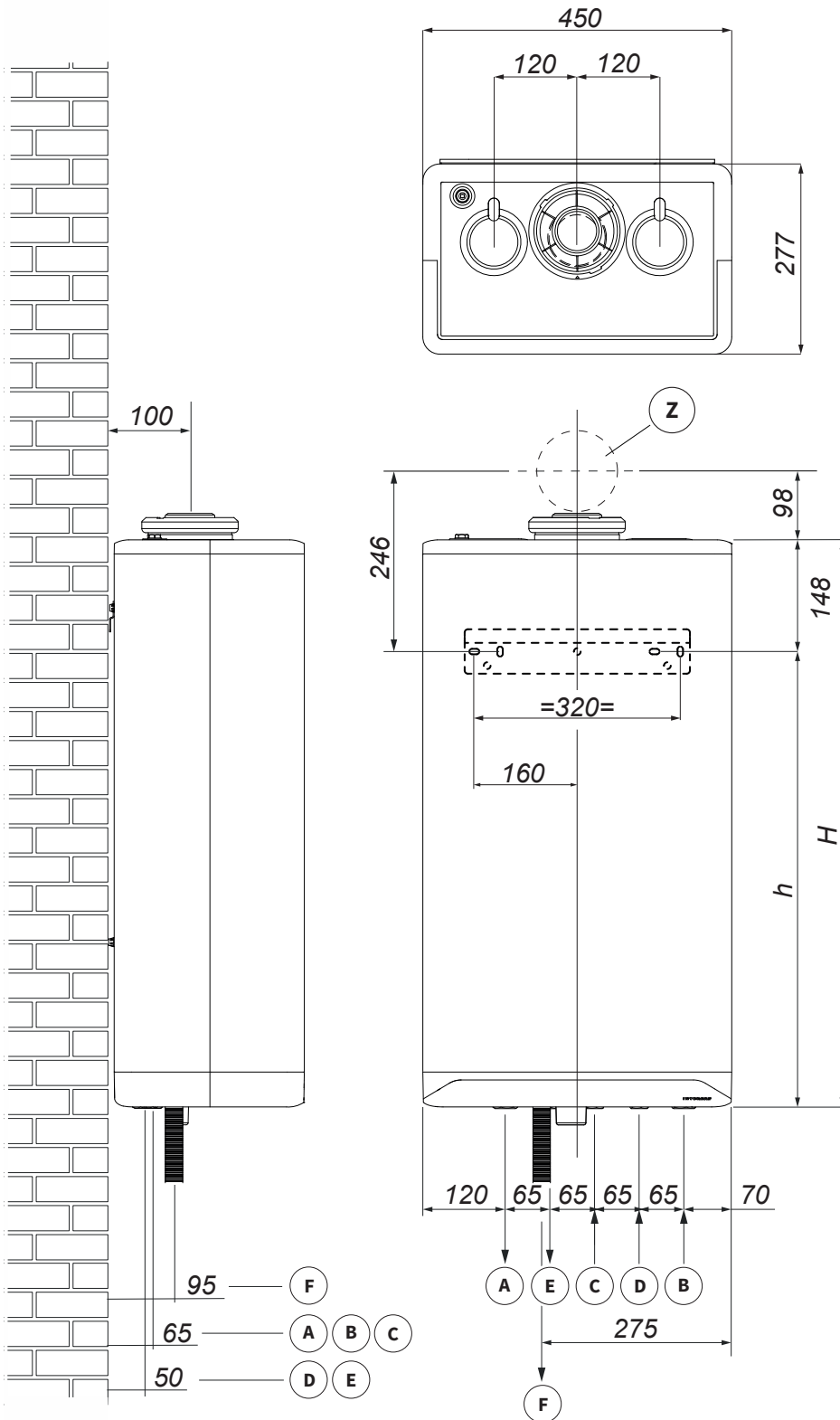
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### Please read all instructions before fitting this appliance

- ▶ The installer must instruct the user on the operation of the boiler, fault code diagnosis and how to reset the boiler, location of the filling loop and how to re-pressurise the system if the water pressure drops to below 0.5 bar.
- ▶ The installer must hand over these installation and user instructions ensuring the Benchmark Commissioning Checklist has been completed correctly.
- ▶ The attending engineer must complete the service record on the Benchmark Checklist after each service and/or replacing any parts within the boiler.
- ▶ It is required under Gas Safe Regulations for the installation to be notified and to register the installation with Gas Safe, and Building Control (Gas Safe Notification).
- ▶ You must register the boiler with Intergas heating ltd within 30 days of the installation to validate any warranty supplied with the boiler, via post, website or MiReg if you are the installer.
- ▶ When commissioning the boiler, check the gas inlet working pressure is 20mbar (NG) or 37mbar for (LPG) on P1 of the boiler gas valve. min 17mb (NG) 30mb (LPG) with all connected appliances operating at full rate)
- ▶ Combustion analysis with a correctly calibrated and certificated electronic analyser is essential for safe commissioning of the boiler, this must be documented within the Benchmark commissioning checklist.
- ▶ A pressure reducing valve set to 3.5 bar must be fitted if the mains water supply pressure is above 5 bar, this should be located no closer than 3 metres proximity to the boiler for expansion purposes.
- ▶ In areas where the water hardness is 200ppm or above, appropriate protection must be taken in accordance with BS 7593 & in line with building regulations Part L. (See Warranty Provisions on page 88, point 15).  
Intergas recommend Hydroflow HS38a wired into the boiler or HS38b which can be powered separately.
- ▶ The end user / home owner should be advised to keep this installation manual in a safe place, preferably near the appliance for servicing and future reference, it is a legal requirement that any attending engineer can check the validity of the Benchmark commissioning checklist (Benchmark certificate).
- ▶ It is important to protect the boiler during the installation. In particular, do not allow any dust or debris to enter the flue connection at the top of the appliance.
- ▶ Before operating the boiler please ensure that the copper pipework you are installing is connected to the appropriate tappings on the boiler. (Plastic pipework where appropriate must be a minimum distance of 1000mm away from the boiler connections as per BS 5955-2008).
- ▶ It is important to chemically treat and thoroughly flush the heating circuits, prior to commissioning the boiler, in order to remove any residue fluxes and debris from within them, (please isolate the appliance). The system flush must be carried out to BS 7593:2019 and an appropriate inhibitor added to the correct dosage, dependant on the system capacity, as indicated on the product used.
- ▶ Intergas recommend water treatment in accordance with the Benchmark Guidance on Water Treatment in Central Heating Systems, we recommend the use of FERNOX, SENTINEL or ADEY inhibitors. It is most important that correct concentration of water treatment is maintained for the life of the boiler, a water sample is required upon installation and to be verified by the aforementioned manufacturers should we attend a warranty call a water sample may be required to keep the warranty valid. (BS 7593:2019)
- ▶ As per BS 7593:2019 Intergas recommend the fitting of an approved magnetic type filter to the heating return pipework under the boiler (Intergas Nickel plated brass system filter recommended).
- ▶ This boiler has been factory set but adjustment may be required to the heating output in order to match the individual heating demand. This can be done by changing parameter **P010** (= max. power CH) or parameter **P070** (= max. power domestic water). See **§9.1.5** "To modify a parameter".
- ▶ Please do not use the pressure relief valve as a means of flushing, draining the boiler or system.
- ▶ After domestic hot water production a preset time delay will occur this is designed to prevent the boiler from cycling thus enhancing the overall efficiency further.  
Note: an anti-cycle delay time can be set up to a maximum of 15 minutes by adjusting parameter **P036** as described in **§9.3**.
- ▶ When required an external expansion vessels should be inverted with the water side facing downwards and connected to the heating return (not the flow side) this will allow correct draining of system and help prolong the life of the vessel diaphragm. (precharge air pressure should be set as per the internal vessel of the boiler i.e. 0.75bar +/- 0.2bar).
- ▶ If you experience any problems please refer to the installation and commissioning guidelines within the avboiler instruction manual. (If necessary, please contact Intergas Heating Ltd).

## 6 INSTALLATION

### 6.1 Overall dimensions of boiler including the wall bracket



Connections		
A	Central heating flow	22mm with isolation valve fitted
B	Central heating return	22mm with isolation valve fitted
C	Gas flow	22mm with isolation valve fitted
D	Domestic cold water - Inlet	15mm with isolation valve fitted
E	Domestic hot water - Outlet	15mm with isolation valve fitted
F	Condense syphon outlet	Ødn25
Z	Flue / Chimney appliance connection	Ø60/100 (concentric, wall terminal)

Overall dimensions		
h =	618 mm	Xtreme 24
	618 mm	Xtreme 30
	678 mm	Xtreme 36
H =	766 mm	Xtreme 24
	766 mm	Xtreme 30
	826 mm	Xtreme 36

#### 6.1.1 Mounting the wall bracket

Due to the size and weight of the appliance it is not recommended to install the boiler on a stud wall as this may also cause noise issues.

Refer to the installation dimensions and clearances on the boiler template supplied with this appliance.

## 6.2 Installation location

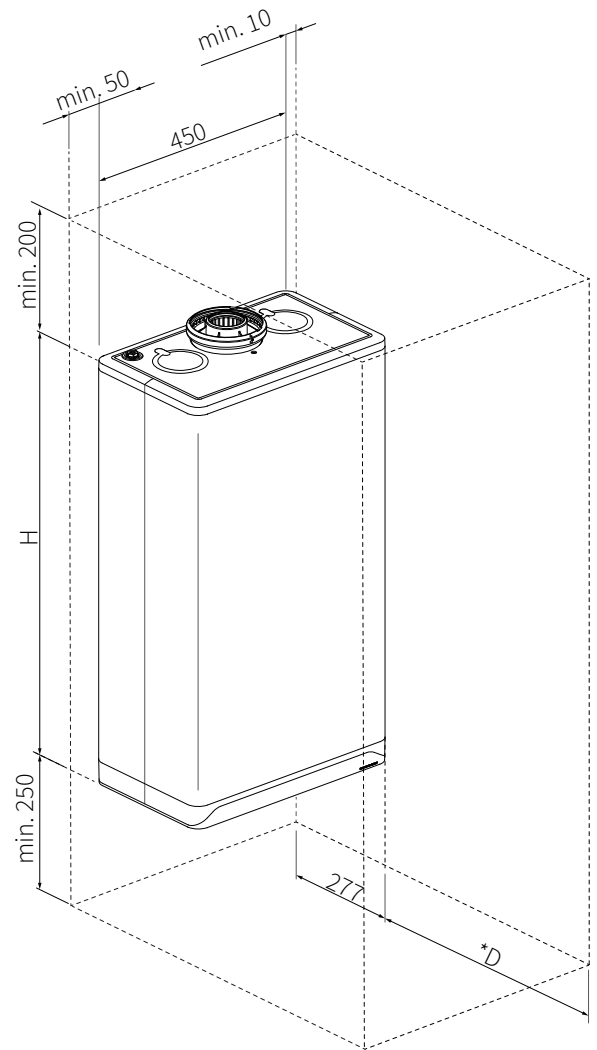
The boiler must be installed on a solid brick wall that has sufficient strength to be able to withstand the weight of the boiler when filled with water (see Technical data).

The appliance must be connected to a 3 amp fused spur within one (1) meter of the boiler. The condense discharge from the boiler must be connected to an internal drain or waste system where possible to prevent freezing during any adverse weather conditions.

Any unheated area's i.e. a loft space or garage must be treated as external and therefore adequate frost protection measures must be taken for the boiler and any pipework etc. (see **§6.3**)

Make sure the boiler is easily accessible by ensuring that the adjacent clearances are adhered to.

Further dimensions		
*D =	600 mm	Xtreme 24,30,36
	* 5mm clearance from a closing door 600mm for servicing clearances	
H =	766 mm	Xtreme 24
	766 mm	Xtreme 30
	826 mm	Xtreme 36



### 6.2.1 Installation within a kitchen area or wall cabinet

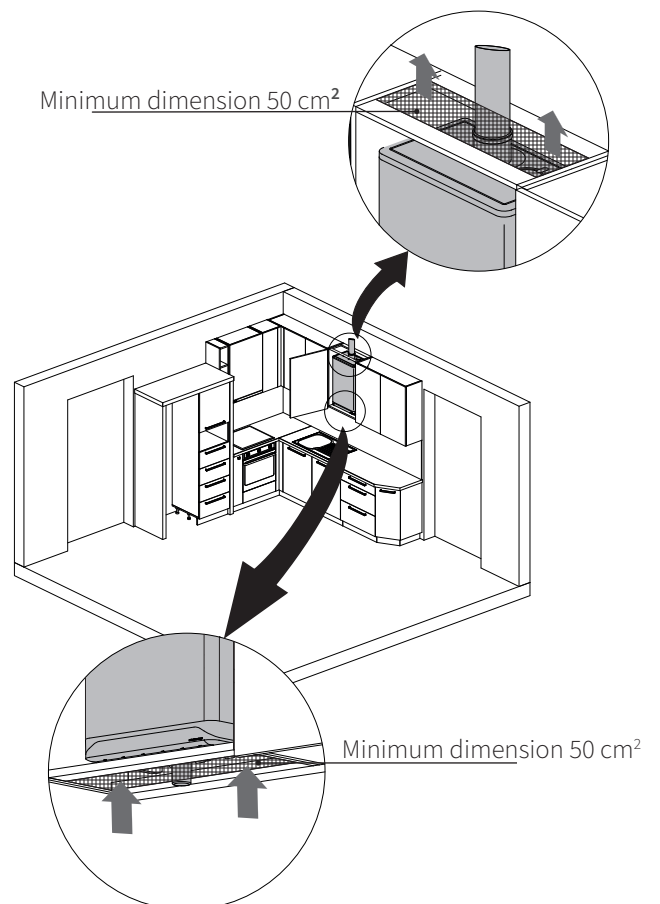
The boiler can be installed between two kitchen wall units or inside a cabinet that is of sufficient size.

There must be sufficient ventilation above and below the boiler for cooling purposes (as per the adjacent diagram). Any decor panels or grills used to aid ventilation must be removable for servicing and maintenance purposes.



#### CAREFUL

▶ **The appliance must not be installed above any heat source as this will invalidate any warranty supplied with the boiler.**





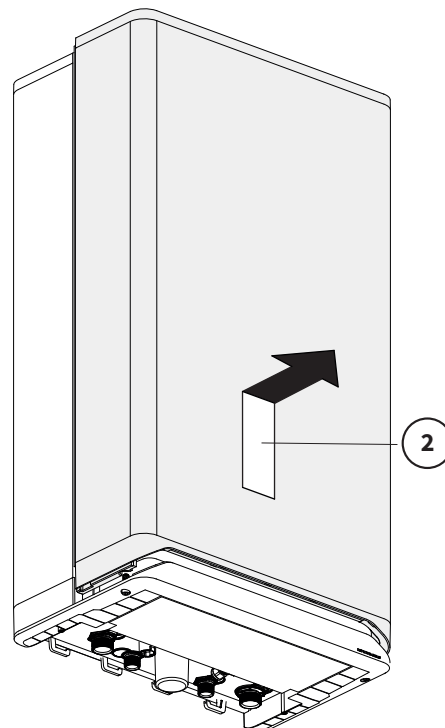
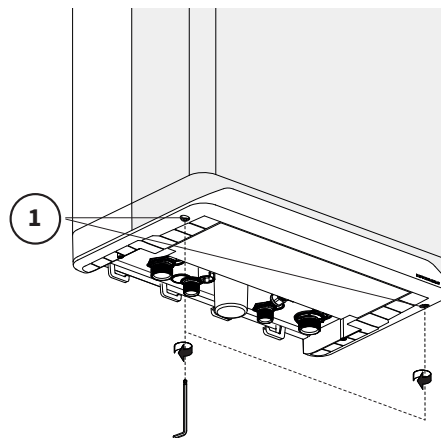
## 6.2.2 Removing/installing the front panel

- ▶ The front cover of the boiler must be removed to perform various maintenance activities however you must be a competent Gas Safe registered engineer before carrying out the following procedure!
- ▶ Loosen both screws (1) under the boiler by using a 5 mm allen key. (They are captive and therefore will not drop out of the lower housing).
- ▶ Slide the front cover (2) upward and then remove it by pulling it towards you.



### COMMENT

- ▶ **The front cover has a rubber seal around the inner edge sometimes making it very stiff to slide off so please ensure the boiler is secured to the wall correctly before attempting this procedure!**



### Replacing the room sealed front cover.

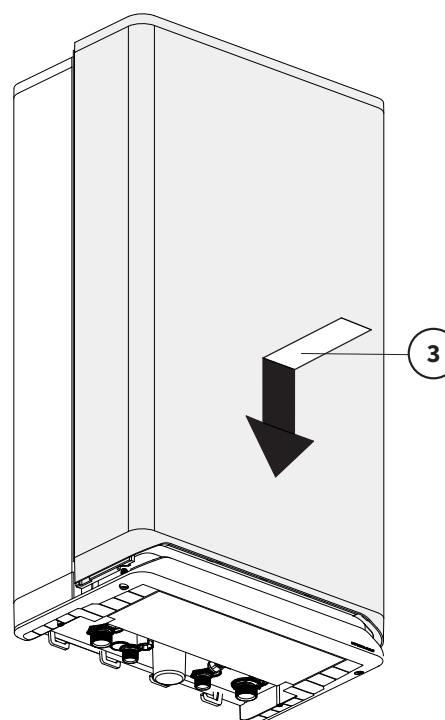
To replace the front panel, proceed as follows:

- ▶ Position the front panel (3) against the boiler and slide it downwards until it is correctly connected to the lower fascia panel.
- ▶ Hand tighten screws under the boiler using a 5 mm allen key (do not over tighten).



### CAREFUL

- ▶ **This is a room sealed cover and therefore extremely important that it is fitted correctly, failure to do so could lead to products of combustion entering the room / environment where it is situated.**



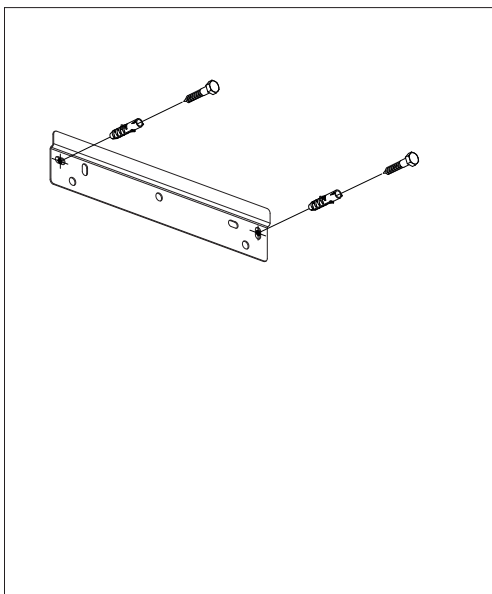
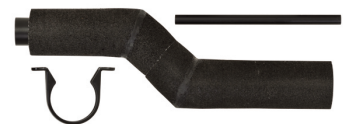
## 6.3 Installing the boiler

1. Attach the wall bracket.
2. Lift the boiler (2 person lift) and slide it down onto the wall bracket.
3. Remove the syphon cup.
4. You must fill the syphon cup just over half full with water.
5. Replace the cup and install the supplied black flexible hose onto boiler outlet union.
6. Connect the flexible hose to a 22 mm O.D solvent weld pipe. To minimize the risk of freezing the condensate pipe should be connected internally and terminate to an internal soil stack, (ref.: TB115 Gas Safe & HHIC).
7. Install the flue system (see §7.6).
8. Install the required pipework as per the following sections.
9. Should the condensate be terminated to an external soil pipe, drain, rainwater system or soakaway then we only recommend the **Condensate PRO** system which is available from Intergas Heating Ltd via your normal stockists or heating supplies. <https://condensatepro.co.uk>

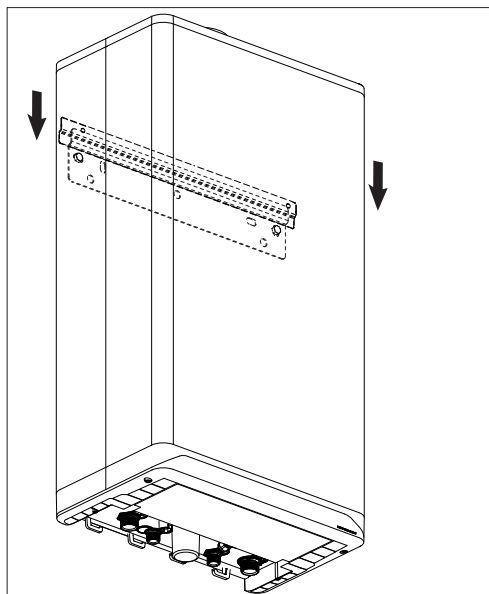


### COMMENT

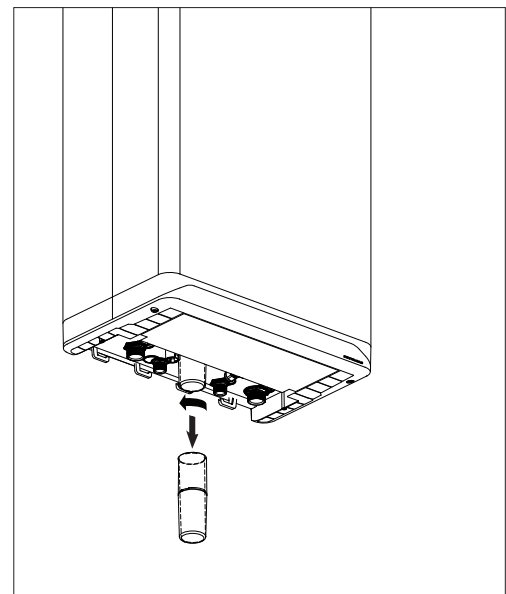
- ▶ **The Intergas Xtreme has a boiler-specific syphon cup. Ensure that the correct version is ordered upon replacement. (Item no 510054)**



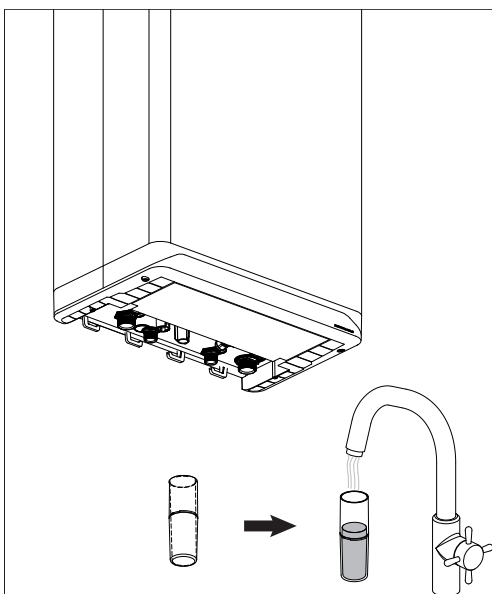
1. Mount the wall bracket (ensure its level)



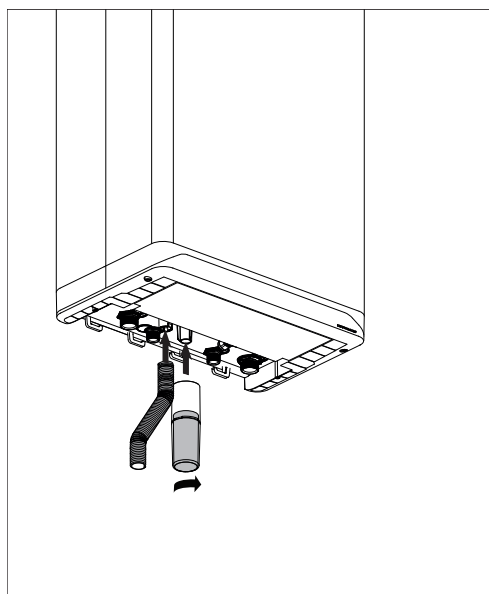
2. Hang the boiler onto the wall bracket



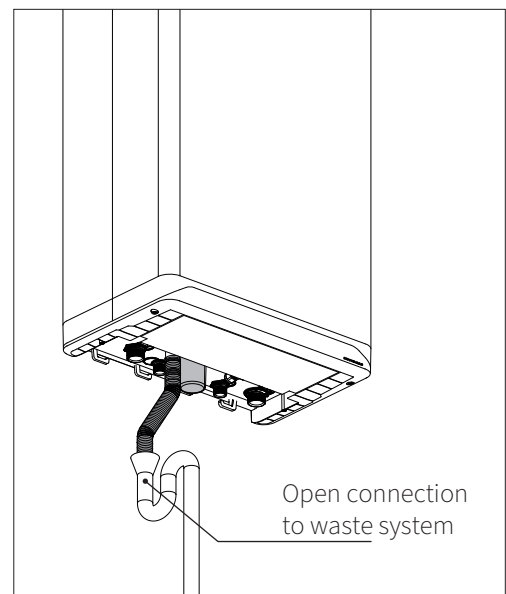
3. Twist and pull to remove the condensate syphon cup



4. Fill the condensate syphon cup



5. Replace the condensate syphon cup and attach the supplied flexible hose



6. Connect the flexible hose to the waste system via a tundish or similar.

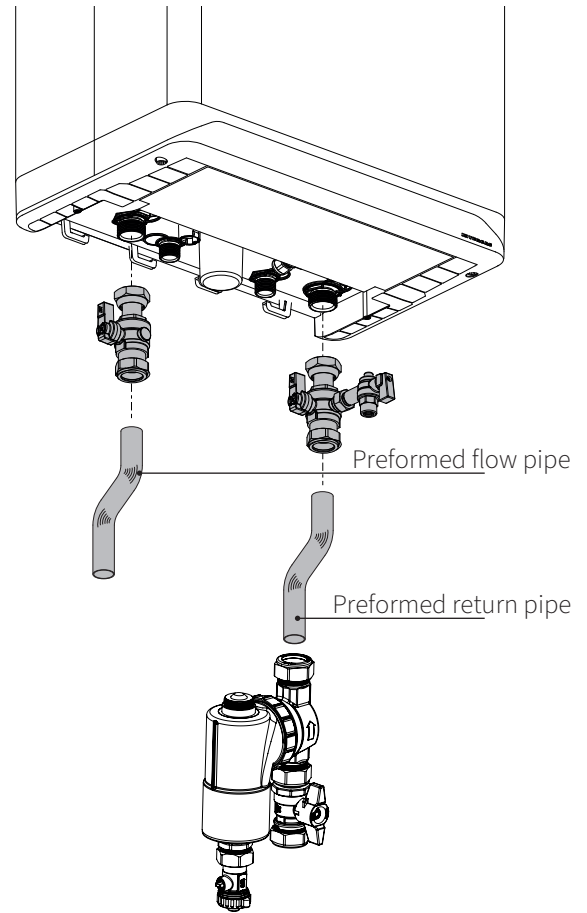
## 7 CONNECTION

### 7.1 Connecting to the central heating system circuit

- ▶ Flush the central heating system thoroughly as per BS 7593:2019.
- ▶ Fit the flow and return pipes to the isolation valves using the supplied 3/4" fibre washers, noting that the filling link valve attaches to the return side as per the adjacent drawing.
- ▶ The pipework must be correctly supported with full wrap over type clips / brackets.
- ▶ Do not over tighten the connections onto the boiler as this can cause stress damage and possible internal boiler leakage.

The CH system should include the following:

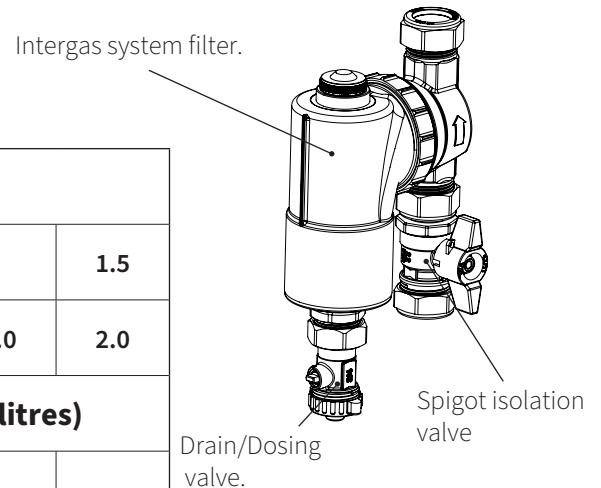
- ▶ As per BS 7593:2019 a magnetic type filter such as the Intergas system filter, should be fitted onto the return pipework as shown in the adjacent diagram.
- ▶ When installing the Intergas system filter, the supplied spigot valve should be fitted to the bottom union to enable combined isolation with the boiler return valve
- ▶ The drain / dosing valve at the bottom of the filter housing facilitates the easy draining of the appliance, with the spigot valve and heating flow valve both closed at the same time.
- ▶ A drain tap at the lowest point(s) of the installation.
- ▶ A full bore spring loaded single check valve, in the return pipework next to the boiler whenever the pipework rises above the appliance. This prevents the occurrence of thermosyphoning (radiators getting warm) during DHW production.



#### 7.1.1 Expansion vessel

The appliance is fitted with an expansion vessel adequate for a typical heating system with 8 radiators installed. For larger volume systems, an additional expansion vessel must be fitted. Refer to the below table or contact Intergas for further advice in these cases.

SAFETY VALVE SETTING (bar)	3.0					
VESSEL CHARGE PRESSURE (bar)	0.75		1.0		1.5	
INITIAL SYSTEM PRESSURE (bar)	1.0	1.5	2.0	1.5	2.0	2.0
TOTAL WATER CONTENT of SYSTEM	EXPANSION VESSEL VOLUME (litres)					
LITRES						
25	3.5	6.5	13.7	4.7	10.3	8.3
50	7.0	12.9	27.5	9.5	20.6	16.5
75	10.5	19.4	41.3	14.2	30.9	24.8
100	14.0	25.9	55.1	19.0	41.2	33.1
125	17.5	32.4	68.9	23.7	51.5	41.3
150	21.0	38.8	82.6	28.5	61.8	49.6
175	24.5	45.3	96.4	33.2	72.1	57.9
200	28.0	51.8	110.2	38.0	82.4	66.2
For syst. volumes other than those given above, mult. the syst. volume by the factor across	0.140	0.259	0.551	0.190	0.412	0.33



### 7.1.2 Thermostatic radiator valves

If the radiators have thermostatic radiator valves or valves that can be closed to isolate the flow completely from the return, a minimum amount of water circulation (6ltrs/min \*) must be maintained by installing a manual fixed bypass as this will not interfere with the pump modulation, (\* see **§9.5**).

### 7.1.3 Underfloor heating

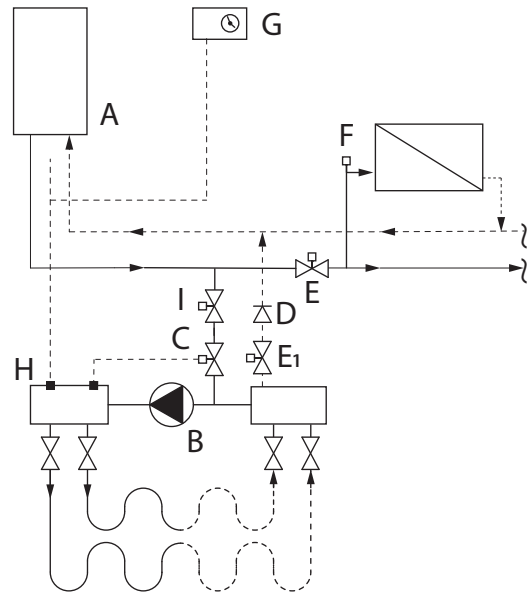
#### Underfloor heating with pump

For effective operation of the DHW supply any undesired circulation through the appliance as a result of a second pump in the CH circuit must be avoided. Connect the underfloor heating system in a hydraulically neutral manner to the appliance, or install the CH circuit with an normally open zone valve (I) to prevent flow through the appliance heat exchanger when there is no CH demand.

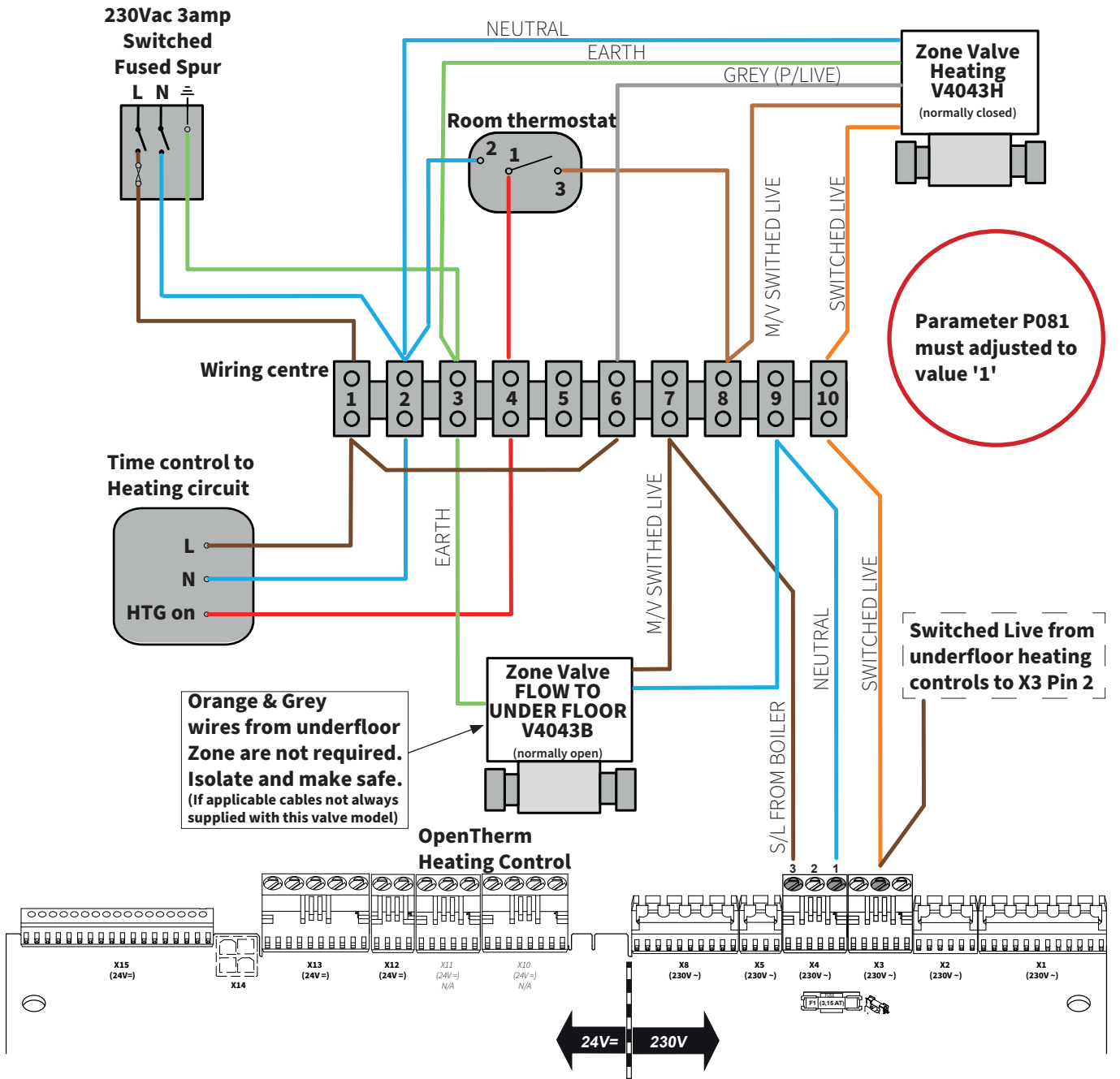
See **§9.5** for minimum permissible water circulation through the boiler heat exchanger.

#### Underfloor heating connection diagram

- A. Boiler
- B. Under floor circulation pump
- C. Thermostatic mixing valve
- D. Spring-operated non-return valve
- E. Normally closed 230V~ zone valve (Radiators)
- E<sub>1</sub>. Normally closed 230V~ zone valve (Under floor)
- F. Radiators (Fitted with TRV's except room stat location)
- G. Programmable room thermostat
- H. Limit thermostat
- I. Normally open 230V~ zone valve (powered via X4 terminal 3)



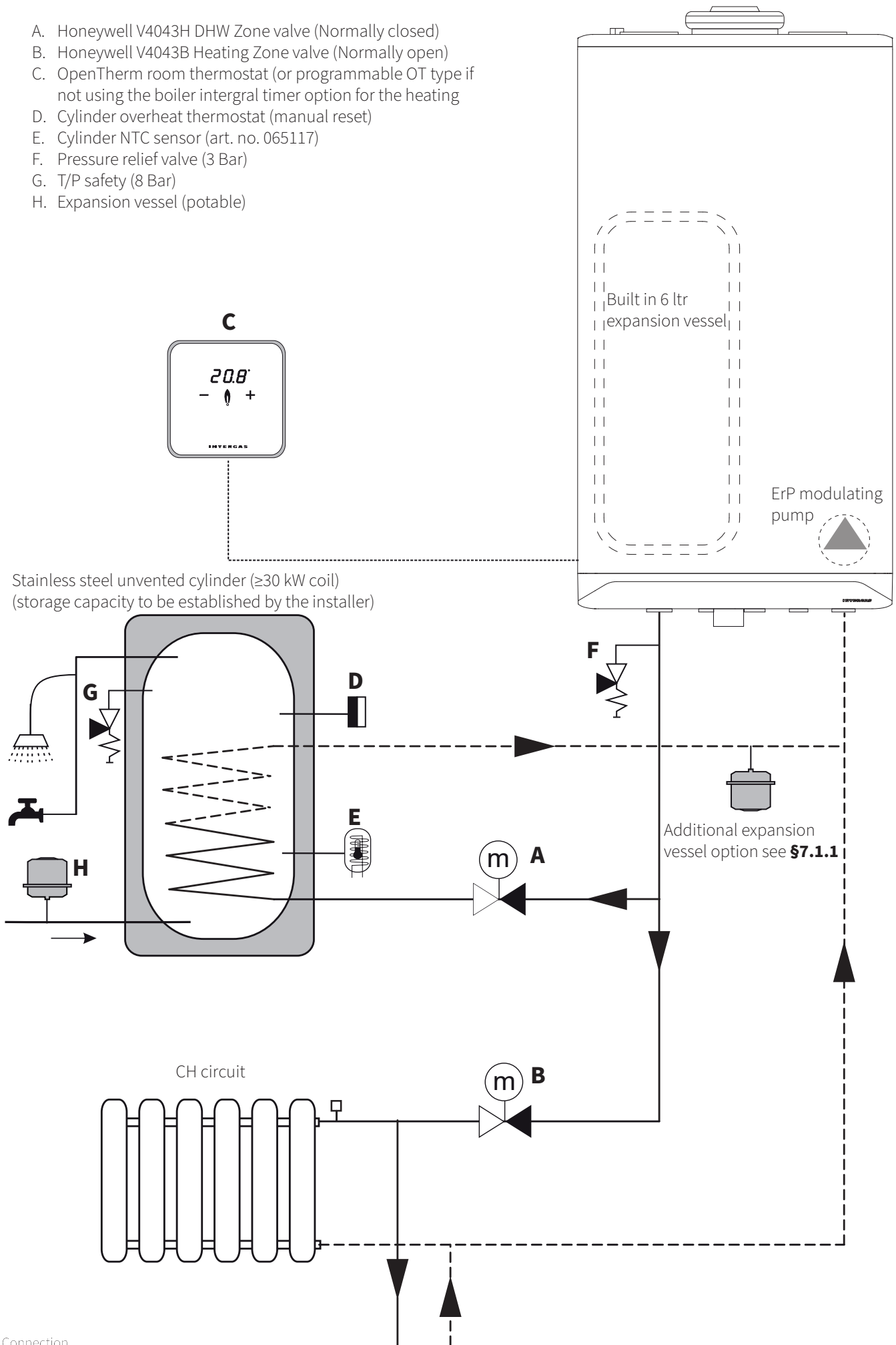
# Underfloor option wiring diagram



## 7.1.4 X-Plan zone Hydraulic diagram

### Key to Hydraulic & Wiring diagrams

- A. Honeywell V4043H DHW Zone valve (Normally closed)
- B. Honeywell V4043B Heating Zone valve (Normally open)
- C. OpenTherm room thermostat (or programmable OT type if not using the boiler integral timer option for the heating)
- D. Cylinder overhear thermostat (manual reset)
- E. Cylinder NTC sensor (art. no. 065117)
- F. Pressure relief valve (3 Bar)
- G. T/P safety (8 Bar)
- H. Expansion vessel (potable)



### 7.1.5 X-Plan wiring diagram (Unvented cylinder option)

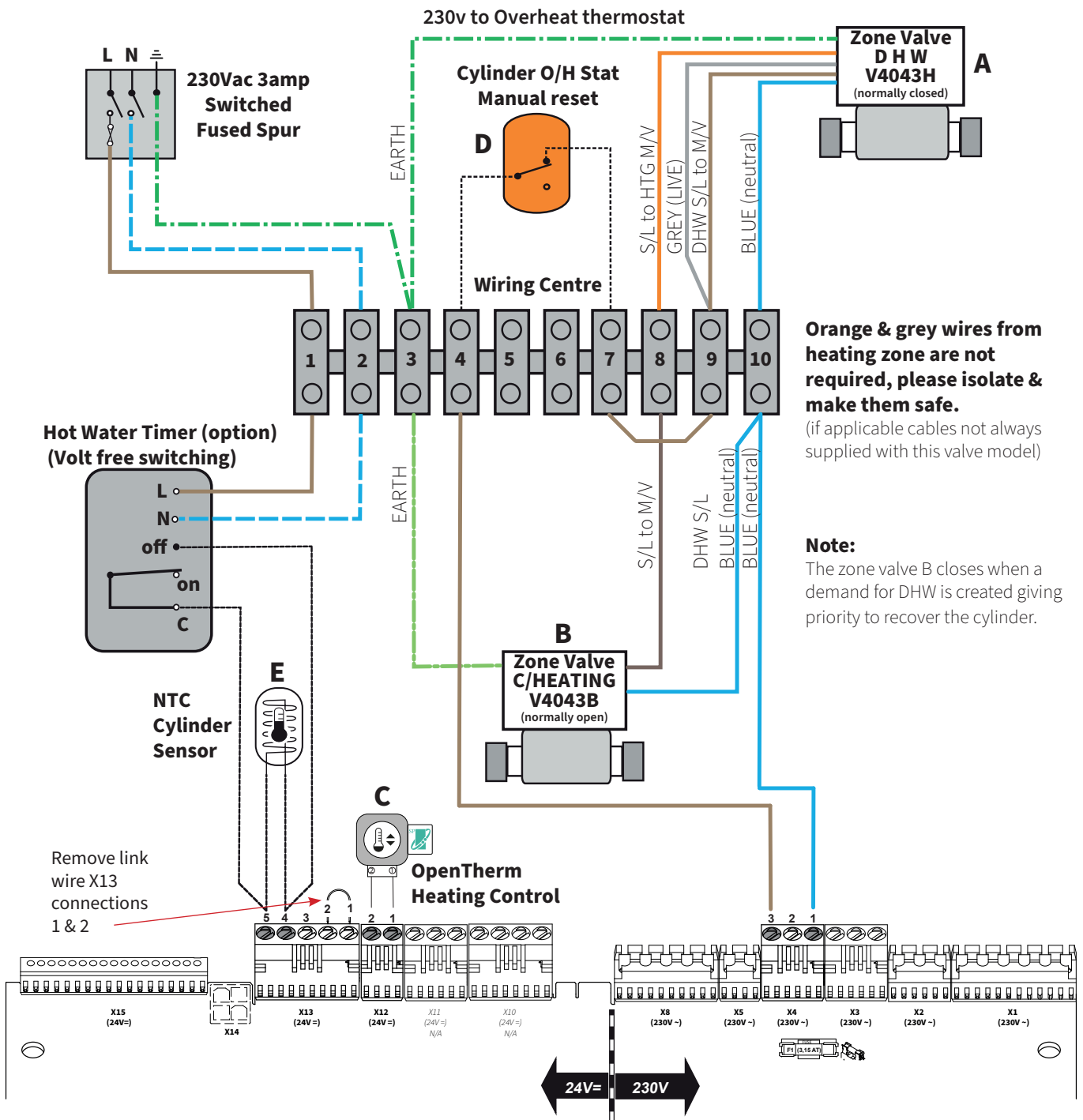
#### Comments

- ▶ The unvented cylinder must comply with G3 regulations regarding the safety controls which are normally supplied as a kit with the vessel.
- ▶ The over heat protection (with manual reset) is wired through our OpenTherm circuit to prevent the boiler from creating a hot water demand should this safety control operate.
- ▶ For rapid recovery a 30 kW rated coil or greater is recommended (this should be specified when ordering your vessel).

Parameter **P001** change to **option 1**

Parameter **P081** change to **option 3**

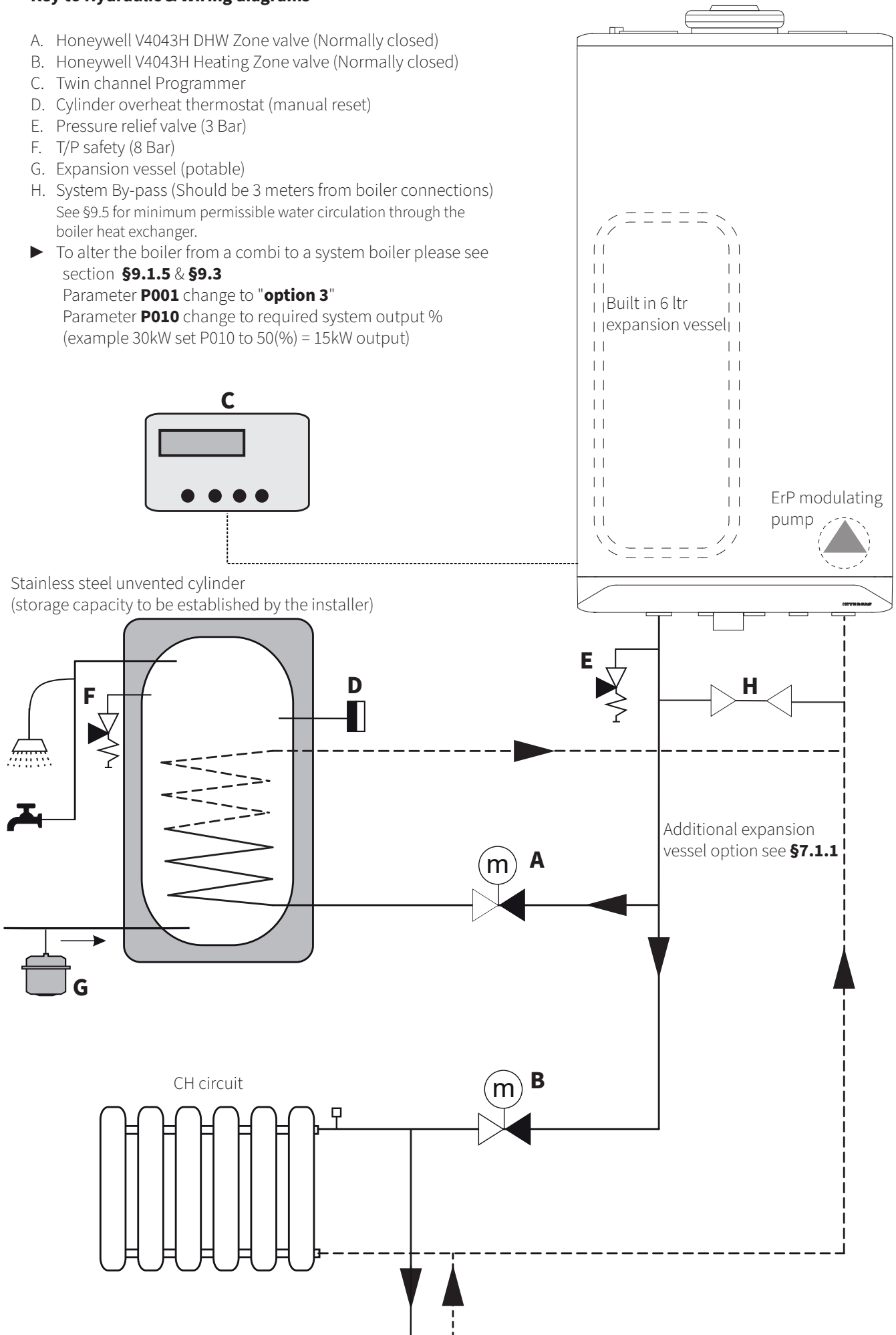
Parameter **P070** adjust **output to cylinder coil rating (% of kW)**



## 7.1.6 S-Plan zone hydraulic diagram

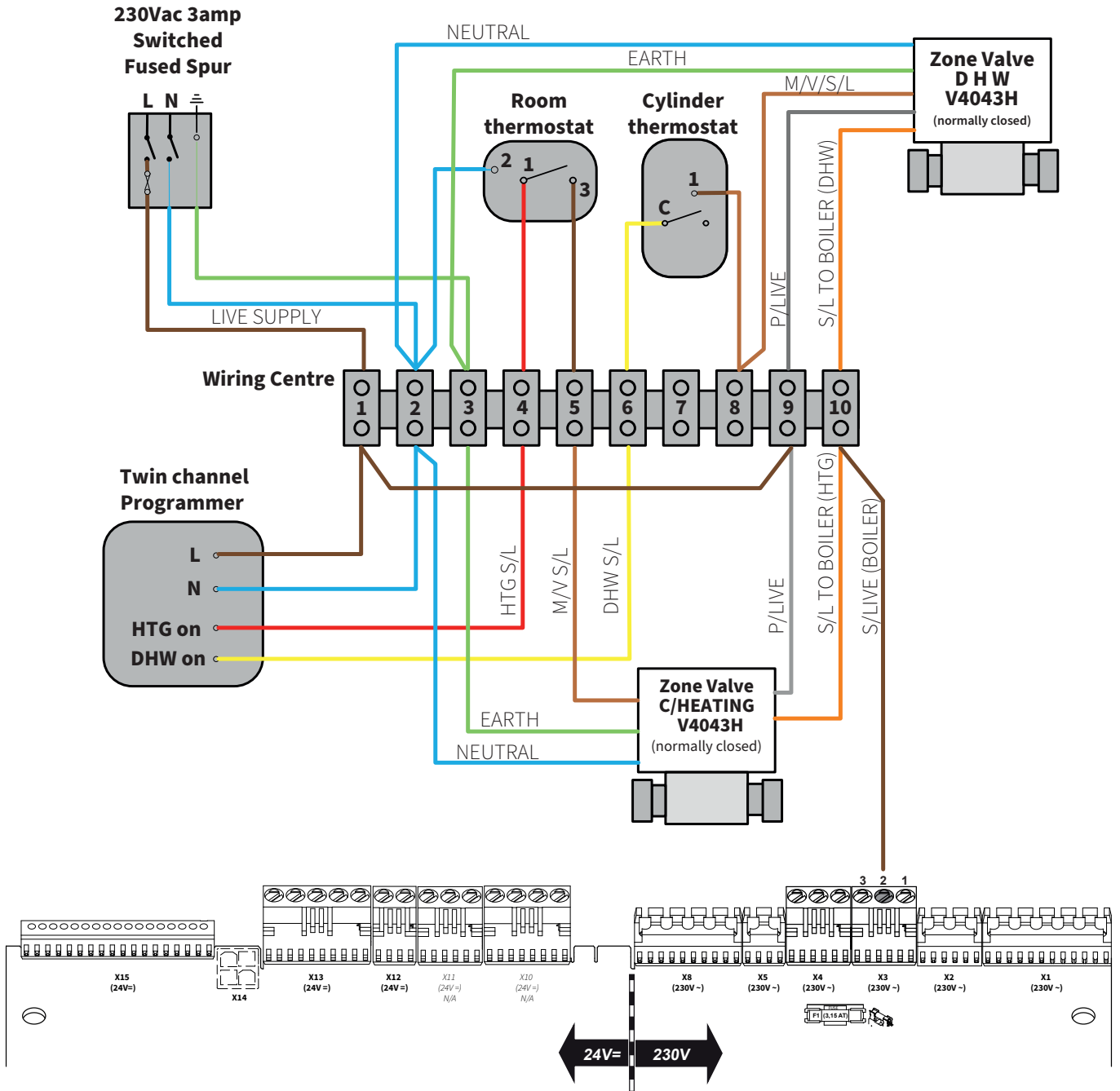
### Key to Hydraulic & Wiring diagrams

- A. Honeywell V4043H DHW Zone valve (Normally closed)
  - B. Honeywell V4043H Heating Zone valve (Normally closed)
  - C. Twin channel Programmer
  - D. Cylinder overheat thermostat (manual reset)
  - E. Pressure relief valve (3 Bar)
  - F. T/P safety (8 Bar)
  - G. Expansion vessel (potable)
  - H. System By-pass (Should be 3 meters from boiler connections)  
See §9.5 for minimum permissible water circulation through the boiler heat exchanger.
- To alter the boiler from a combi to a system boiler please see section **§9.1.5 & §9.3**  
Parameter **P001** change to "option 3"  
Parameter **P010** change to required system output %  
(example 30kW set P010 to 50(%) = 15kW output)





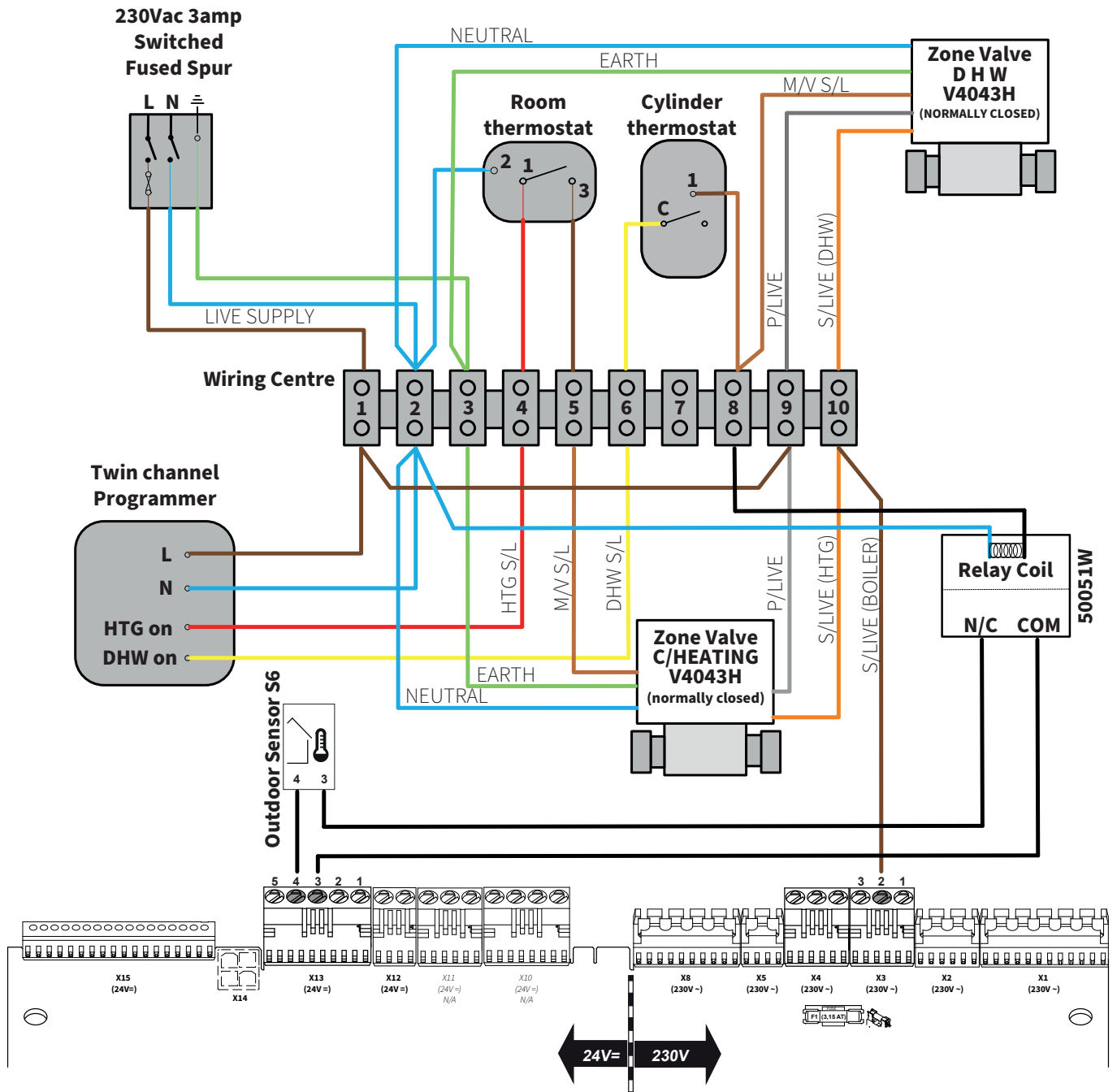
7.1.7 S-Plan zone wiring diagram



Note:-

With all wiring diagrams when using a digital type room thermostat the Neutral wire from the wiring centre (2) to room thermostat (2) will not be required.

7.1.8 S-Plan wiring diagram (With outside weather compensation kit)



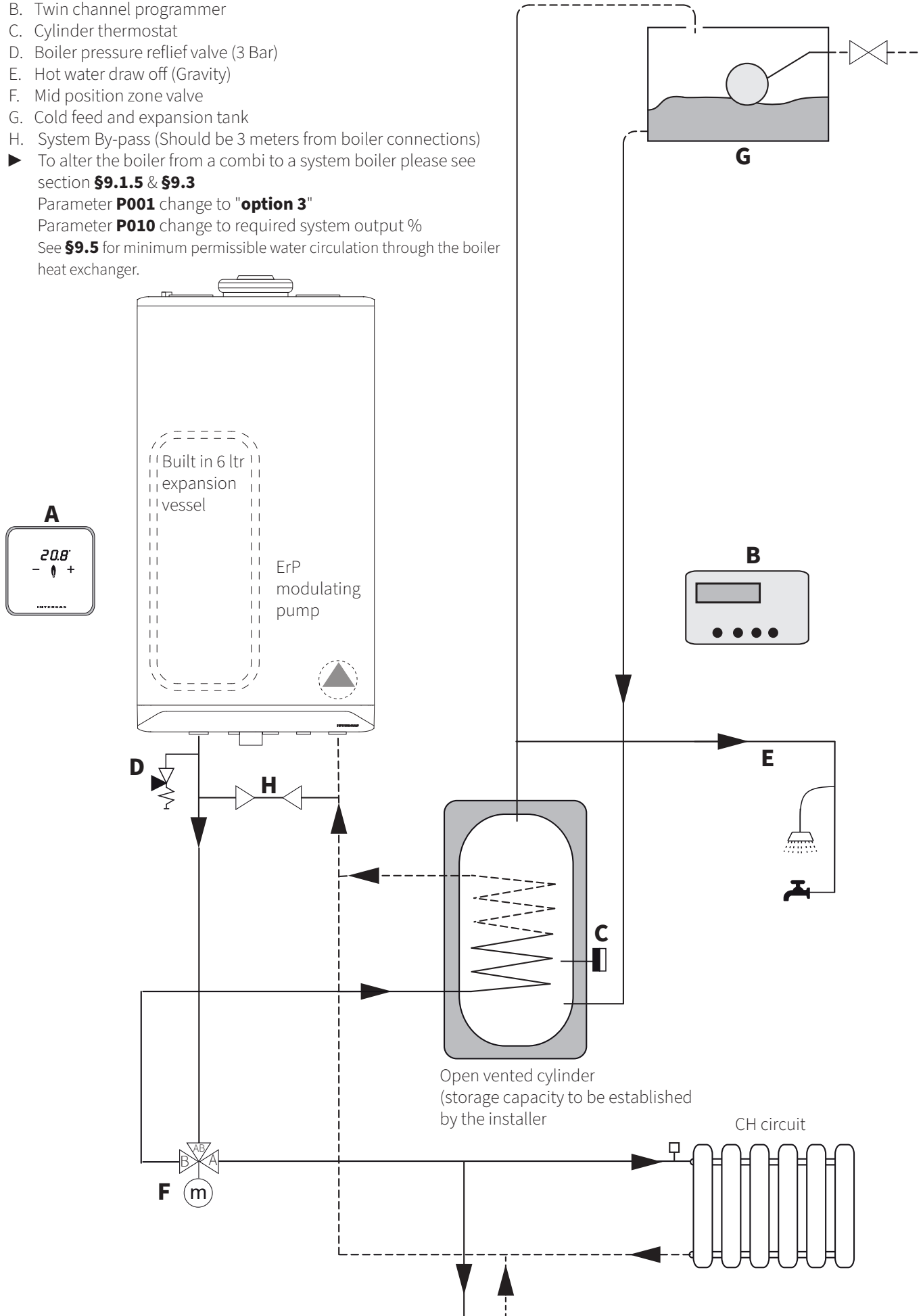
Note:-

With all wiring diagrams when using a digital type room thermostat the Neutral wire from the wiring centre (2) to room thermostat (2) will not be required.

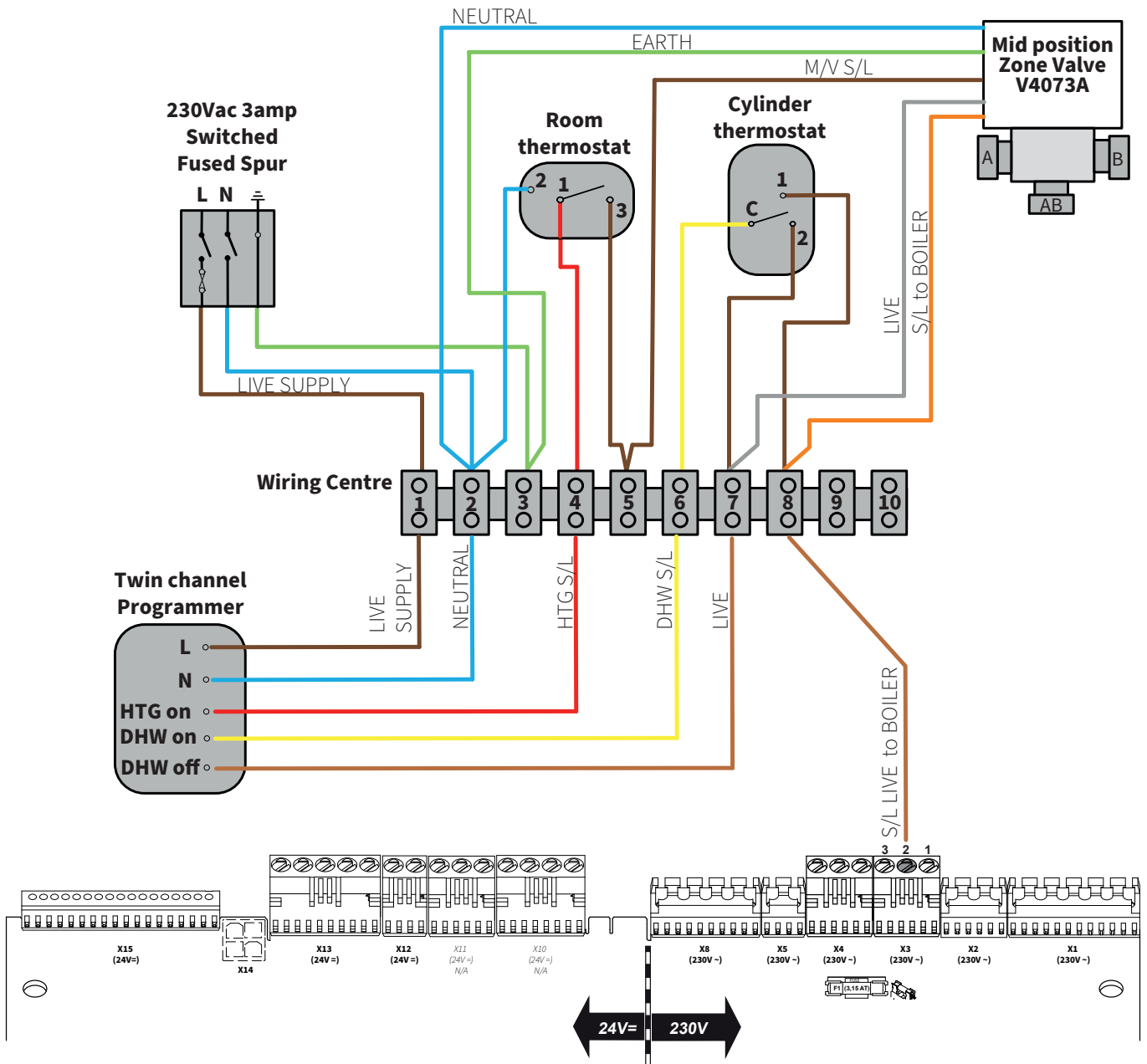
## 7.1.9 Y-Plan zone hydraulic diagram

### Key to Hydraulic & Wiring diagrams

- A. Room thermostat
  - B. Twin channel programmer
  - C. Cylinder thermostat
  - D. Boiler pressure relief valve (3 Bar)
  - E. Hot water draw off (Gravity)
  - F. Mid position zone valve
  - G. Cold feed and expansion tank
  - H. System By-pass (Should be 3 meters from boiler connections)
- To alter the boiler from a combi to a system boiler please see section **§9.1.5 & §9.3**  
 Parameter **P001** change to "option 3"  
 Parameter **P010** change to required system output %  
 See **§9.5** for minimum permissible water circulation through the boiler heat exchanger.



### 7.1.10 Y-Plan wiring diagram



Note:-

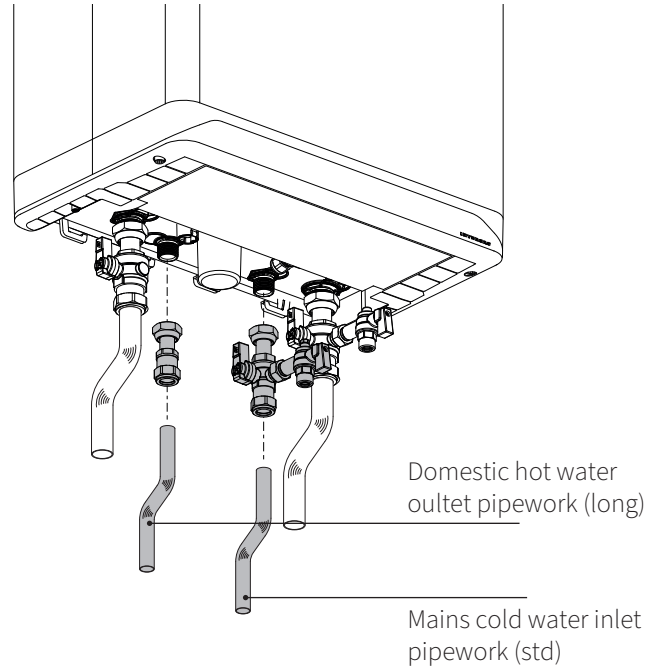
With all wiring diagrams when using a digital type room thermostat the Neutral wire from the wiring centre (2) to room thermostat (2) will not be required.

## 7.2 Connection to the domestic hot water

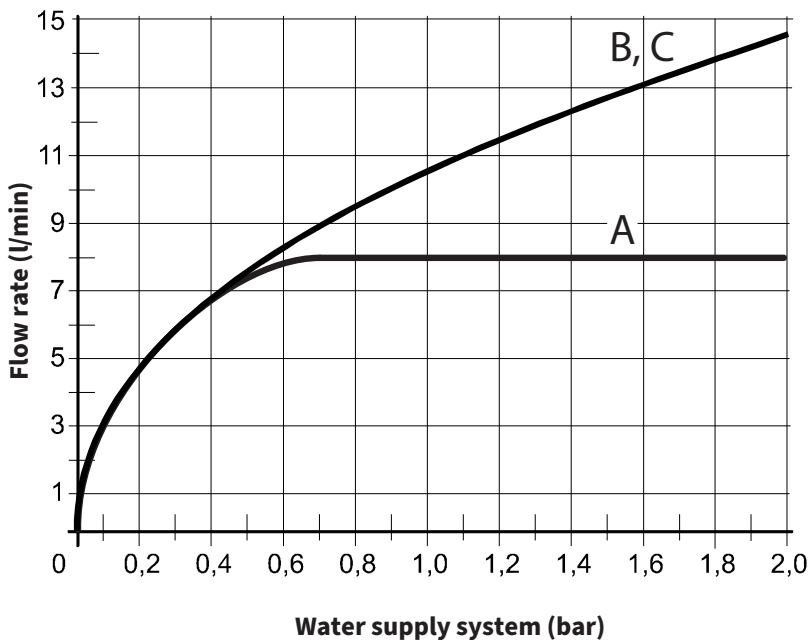
- ▶ Flush the pipework thoroughly to clean any debris or residue remaining from the installation (please refer to current Standard Codes of Practice).
- ▶ Using the supplied isolation valve, fibre washer and std 15mm copper tail connect the mains inlet cold water.
- ▶ Using the supplied swivel union, fibre washer and Long 15mm copper tail connect the domestic hot water outlet.
- ▶ Do not over tighten the connections onto the boiler as this can cause stress damage and possible internal boiler leakage.

### Comments

- ▶ The pipework should be kept to the minimum lengths possible and where possible long radius or formed bends to facilitate reduced frictional losses or high resistance circuits.
- ▶ The appliance has built-in frost protection, however this will not protect the entire system, as that will require an external frost protection kit. (The power & Gas supply must be switched on for the frost protection to operate at approximately 5°C to 15°C).
- ▶ The Xtreme 24 is equipped with a flow restrictor with a nominal value of 8 l/min. The Xtreme 30 and Xtreme 36 do not have this feature.
- ▶ The Xtreme 36 & 30 have increased flow rates due to their increased outputs, so a flow limiter is not normally required.
- ▶ Where the mains water is 5 bar or greater then a 3 bar pressure reducing valve must be fitted no closer in proximity to the boiler than 3 metres (for expansion purposes).
- ▶ In hard water areas of 200ppm or above a scale reducer must be installed on the mains cold water inlet, Intergas recommend the Hydroflow HS38 powered via X4 connections 1 & 2.



### 7.2.1 DHW circuit resistance graph (dependant on fittings used and water circuit lengths)



- A. Xtreme 24
- B. Xtreme 30
- C. Xtreme 36

## 7.2.2 Boiler with heat pump option

The boiler is suitable for use in combination with a heat pump unit.

If the outlet temperature of a heat pump boiler is lower than 55°C, then the Intergas Xtreme will create a demand to increase this depending on the boiler's target temperature setting.

### Operational principle:

The domestic hot water outlet connection of the heat pump unit is connected to the input of the thermostatic mixing valve (see the adjacent diagram). If the DHW temperature of the boiler is higher than the set temperature of the mixing valve, the heat pump boiler will be stopped. (The mixing valve does not fully close, a small amount (approximately 10%) will always pass through the Intergas Xtreme.

As soon as the outlet temperature of the heat pump unit becomes lower than the set temperature of the mixing valve, the flow through the Intergas Xtreme will increase. If the flow becomes sufficient > 2.5lts/min then the Intergas Xtreme boiler will start producing domestic hot water.

When the outlet temperature of the heat pump unit has become lower than the set temperature of the mixing valve < 12°C, almost the entire domestic hot water flow diverts through the Intergas Xtreme. This time approximately 10% of the flow is now taken from the heat pump unit. The domestic hot water flow rate will be limited to the maximum possible through the Intergas Xtreme (see **§7.2.1**)

### Connection diagram for Xtreme boiler with heat pump unit

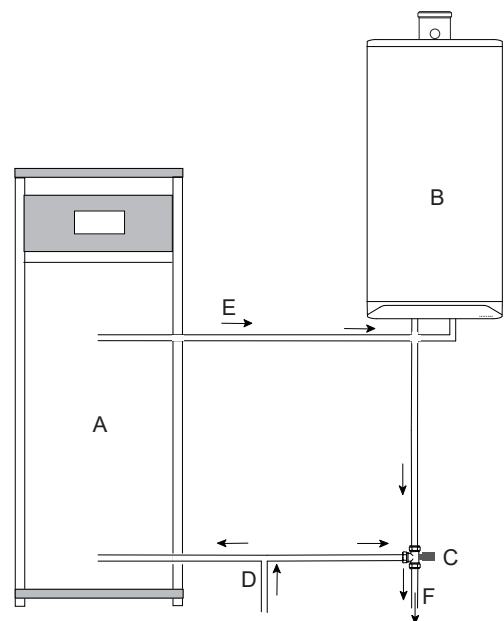
- A. Heat pump unit
- B. Xtreme Boiler
- C. Mixing valve (Set to 55°C) max 60°C
- D. Mains cold water inlet (service valve required)
- E. DHW outlet from heat pump unit
- F. DHW outlet (mixed supply) for consumer

### Installation:

The combination must be configured according to the adjacent connection diagram. The following points are important to guarantee a correct operation of the combination.

### Thermostatic mixing valve:

The thermostatic mixing valve used is a valve that meets the specific requirements to which the combination heat pump unit and Intergas Xtreme are subject. For the correct operation of the combination, the mixing valve has a fixed maximum temperature setting.



**Domestic hot water inlet pressure:**

For a flow volume of 15 litres per minute, the initial pressure must be a minimum of 2.3 bar. The maximum static domestic hot water pressure for the Xtreme is 5 bar. A pressure reducing valve (set to 3bar) must be installed to prevent excessive build up, it must be located no closer in proximity to the boiler than 3 meters (for expansion purposes).

**Maximum flow volume:**

If the domestic hot water flow is greater than 20 litres per minute, the Intergas Xtreme will start a domestic hot water demand, regardless of the outlet temperature of the heat pump unit.

**Maximum temperature setting of the heat pump unit:**

The outlet temperature of the heat pump unit must not be set higher than 60°C.

**Position of thermostatic mixing valve:**

To prevent the thermostatic mixing valve being influenced too much by the surrounding air temperature, the valve must be placed in a position and as close as possible to the domestic hot water connection of the boiler (maximum distance of 500 mm). This prevents the boiler from igniting every time an outlet tap or shower is operated.

**Influence of water flow:**

To prevent the flow by the Intergas Xtreme being influenced during operation of the valve, the domestic hot water 'out' pipework of the combination must run straight (see connection diagram [F]).

**7.2.3 Boiler with Pre-Heated Solar Boiler**

A connection set and a thermostatic mixing valve are available to order for this purpose.

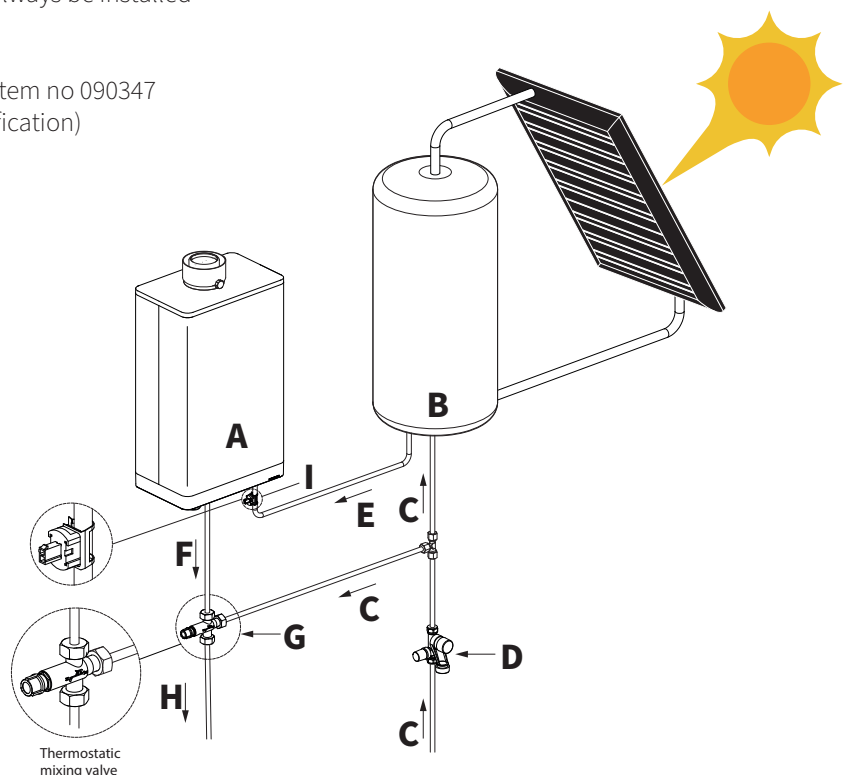
**Comment:**

The NTC cold water sensor must be wired to Connection X13 4/5. When combined with a solar energy system, a thermostatic mixing valve, set at 55°C (max 60°C), must always be installed after the boiler for safety reasons.

- ▶ Pre-heated Solar boiler conversion set item no 090347
- ▶ Thermostatic mixing valve (TMV3 classification)

**Connection diagram:**

- A. Intergas Xtreme boiler
- B. Solar thermal store
- C. Mains cold water inlet
- D. Safety group (pressure reducing & pressure relief valve).
- E. Hot out to cold inlet max. 80°C
- F. Domestic hot water outlet
- G. Thermostatic mixing valve 35°C-65°C (set at 55°C) TMV3
- H. Domestic hot water mixed outlet
- I. Inlet water NTC sensor



## 7.3 Electrical connection



### CAREFUL

- ▶ A fused spur must be located no more than 1 metre from the appliance.
- ▶ For installation within a moisture bound area i.e a bathroom or kitchen then please consult the current electrical regulations for safe separation distances.
- ▶ When working on the electrical circuit always isolate the 230v supply.
- ▶ Should the mains power cord be replaced, this must be ordered directly from Intergas.

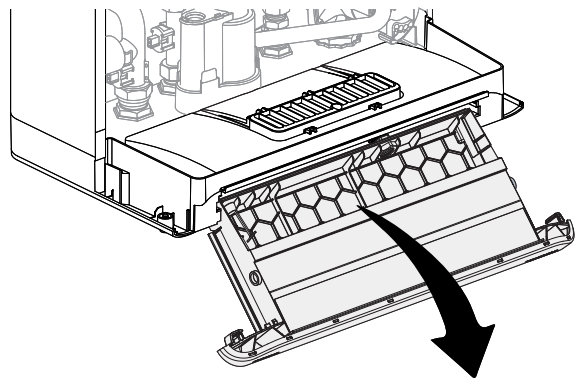
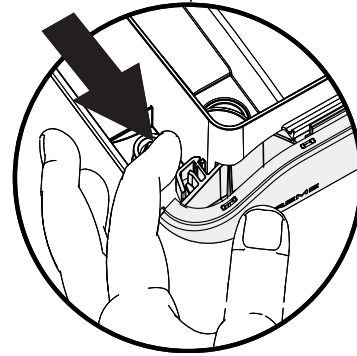
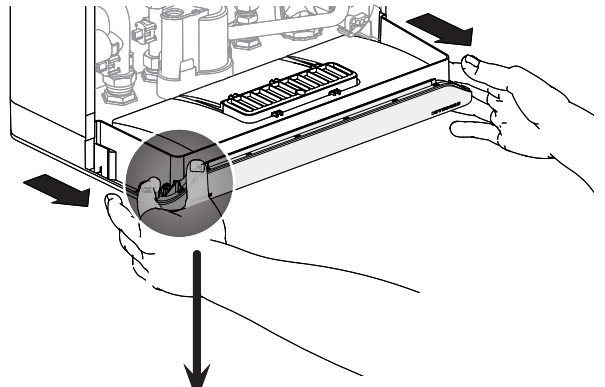
### To gain access to the electrical connections or PCB:

- ▶ Remove the front panel (see §6.2.2) and pull the PCB housing forward; then tilt it downwards.
- ▶ Consult the electrical schematic in §12.1 for all boiler connections.



### CAREFUL

- ▶ The Xtreme complies with IPX4D water ingress protection. Any cables routed through the PCB housing must have grommets or glands fitted to ensure this integrity is maintained.
- ▶ After the desired connections have been made, slide the PCB housing back into the boiler (until the left and right safety clips are locked) then replace the front room sealed cover on the boiler; see §6.2.2
- ▶ After making the desired connections re-establish the power supply to the boiler.



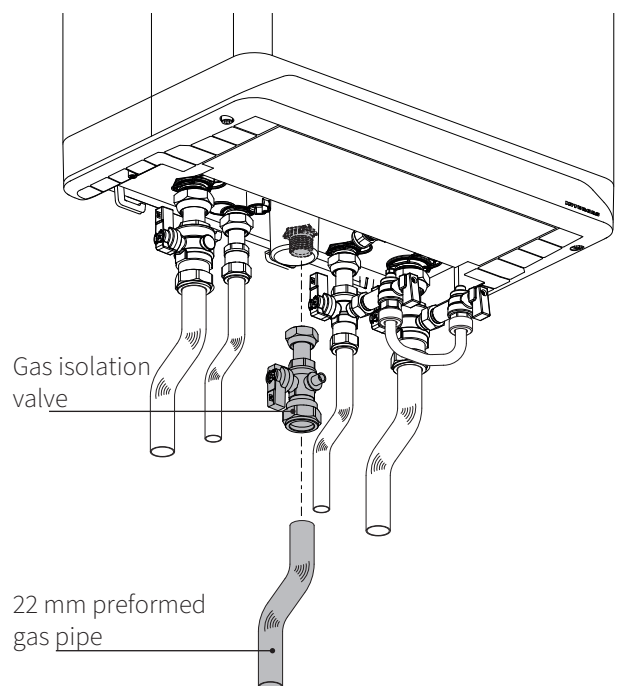
## 7.4 Gas connection

- ▶ Using the supplied gas isolation valve & fibre washer connect the preformed gas pipe to the installation supply pipework and fully tighten.
- ▶ Ensure that the gas pipework is correctly supported with wrap over type clips.
- ▶ Open the main gas valve and boiler isolation valve then purge the system of air.
- ▶ Carry out a full tightness test checking all connections for any leakage (any leaks must be rectified before proceeding).



### CAREFUL

- ▶ Before starting any work on the boiler, always close the gas isolation valve.
- ▶ The boiler is intended exclusively to be installed on a domestic gas supply with a meter that includes an ECV and pressure governor.
- ▶ When pollution in the gas is to be expected a gas filter must be placed in the gas installation pipework to the boiler.





## 7.5 Connecting room thermostat

The boiler is suitable for connection to the following room thermostats:

- ▶ OpenTherm (OT) thermostat/Intergas Comfort Touch
- ▶ On/off thermostat (TPI)
- ▶ RF thermostat; see §9.1.4

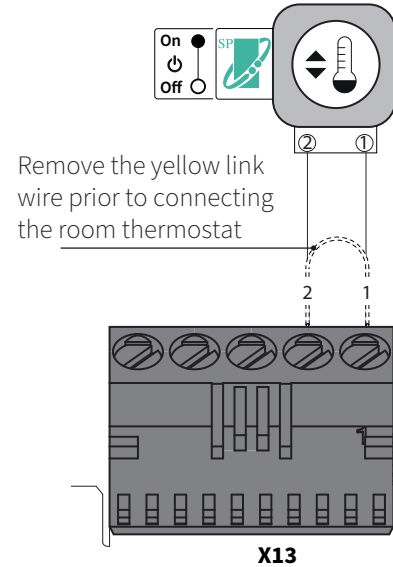
### 7.5.1 Connecting Modulating OpenTherm thermostat

The boiler is supplied with an OpenTherm connection X13 1/2. This allows the connection of the Intergas Comfort Touch as well as other modulating OpenTherm thermostats without any additional modifications. The Xtreme is also suitable for **OpenTherm Smart Power**.

- ▶ Position the thermostat in a room that functions as a reference point (in general, the living room or hall).
- ▶ Remove the link and connect the modulating thermostat to terminals 1/2 X13 (also see §12.1); the polarity of the wires is not important in this situation.

If you would like to make use of the \*domestic hot water on/off switch function of the OpenTherm thermostat, the DHW comfort function must be set to 'eco' or 'on' (see §9.1.2) and parameter **P074** must be set to 0.

\*Dependant on model type and availability for further information, consult the manufacturers instructions for the OT room thermostat installed.



**X13**  
Connecting Intergas Comfort Touch, OpenTherm and/or on/off volt free TPI room thermostat

### 7.5.2 Connecting on/off volt free TPI room thermostat

The boiler is suitable for connection to a 2-wire on/off room thermostat.

- ▶ Position the thermostat in the room that functions as a reference point (in general, the living room or hall).
- ▶ Remove the link and connect the TPI room thermostat to terminals 1/2 X13 (also see §12.1); the polarity of the wires is not important in this situation.

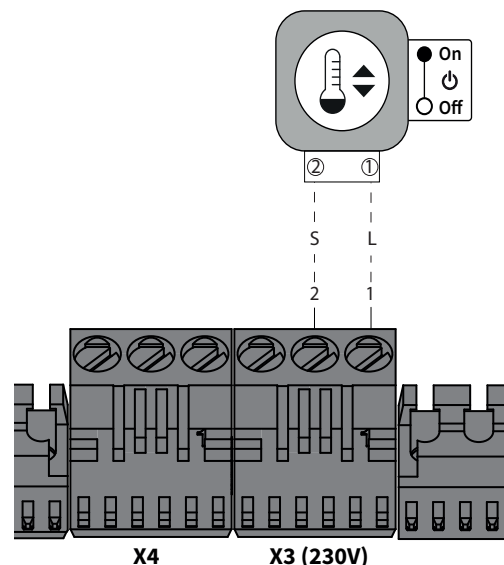


- ▶ **If both OpenTherm and on/off TPI thermostats are connected, the on/off TPI thermostat will have priority over the OpenTherm thermostat.**

### 7.5.3 Connecting 230V room thermostat

This should be wired to connector X3 1/2.

- ▶ Position the thermostat in the room that functions as a reference point (in general, the living room or hall).
- ▶ Connect the 2-wire room thermostat to terminals 1/2 X3 (also see §12.1); the polarity is not important in this situation however terminal 1 (L) is the supply from the PCB 90 to 230v ac, terminal 2 (S) is the demand signal from the room thermostat to the boiler.



**X4 X3 (230V)**  
Connecting 230V room thermostat



- ▶ **IMPORTANT (HIGH VOLTAGE)**  
**Isolate the appliance from the electrical supply before connecting the thermostat.**

### 7.5.4 Connecting outdoor sensor

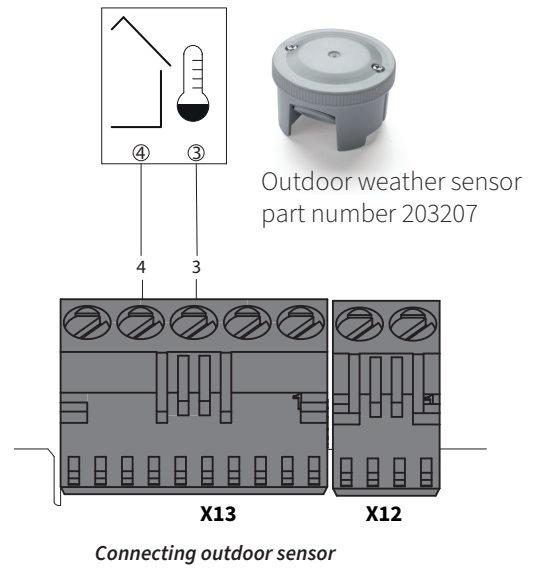
The boiler has the facility to operate with an Intergas outdoor weather sensor, part number 203207. The outdoor sensor must be used in combination with an on/off or OpenTherm room thermostat.

In principle, any on/off or OpenTherm room thermostat can be combined with an Intergas outdoor weather sensor.

With an on/off thermostat, the boiler will adjust the flow temperature according to the room target temperature.

With an OpenTherm thermostat, the flow temperature is controlled via the actual internal & external temperatures, this modulates the burner using load control to give a more precise output from the boiler saving energy.

- ▶ Connect the outdoor sensor to X13 terminals 3/4 (also see §12.1).  
For the heating line graph, see §9.7 Outside weather compensation.



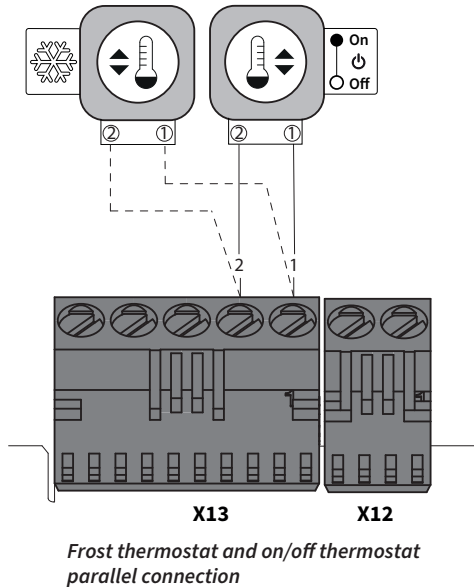
### 7.5.5 Frost protection

- ▶ To prevent freezing of the condensate pipework and the boiler, it must be installed in a frost-free area..
- ▶ The boiler is equipped with a frost protection system. Should the temperature of the water within the heat exchanger drop below 5 °C, the pump will run and if required it will ignite the burner until the temperature of the water is up to approximately 15 °C.

#### Comment

With the on/off TPI room thermostat fitted as per §7.5.2 you must locate the frost stat in an area that will be subject to the coldest conditions, ideally a radiator fitted within the frost-sensitive area must be open on both lock shield & wheel head valves.

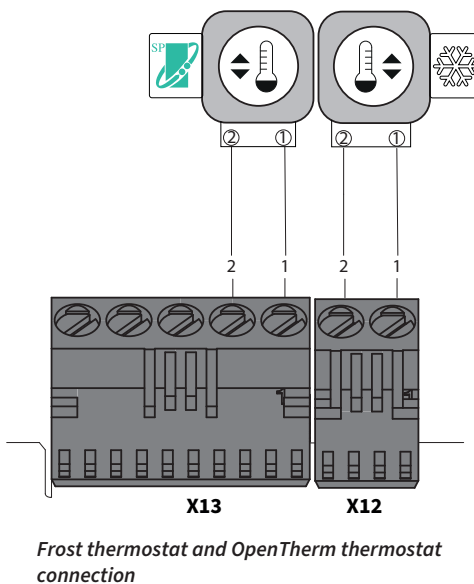
- ▶ The ideal place to site a frost thermostat is the coldest area within the property (for example, a garage or roof space).
- ▶ Connect the frost thermostat in parallel with an on/off room thermostat or RF thermostat onto Connector X13 1/2 (also see §12.1)



#### CAREFUL

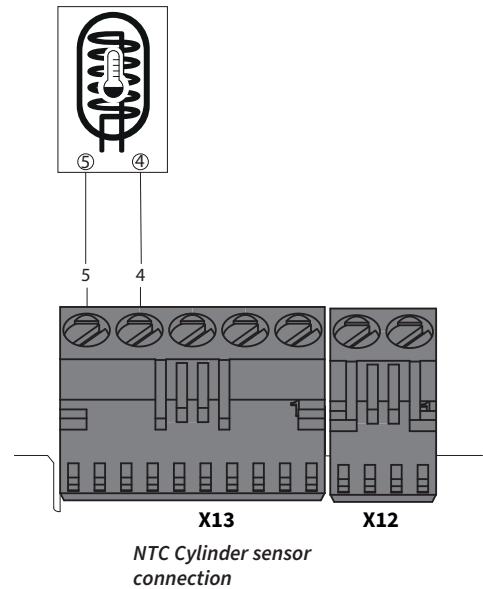
- ▶ **With the use of an OpenTherm thermostat, a frost thermostat must not be connected in parallel on Connector X13. In this situation, connect the OpenTherm thermostat to Connector X13 and the frost thermostat to Connector X12.**

If the (external) frost thermostat is used for the installation and it is connected to the boiler as shown, it will not be active when the boiler is switched off or the power removed.



### 7.5.6 Connecting boiler sensor/thermostat

- ▶ The DHW NTC cylinder sensor can be wired to connector X13 4/5 (also see **§7.1.4 & §7.1.5 (Unvented cylinder option)**).



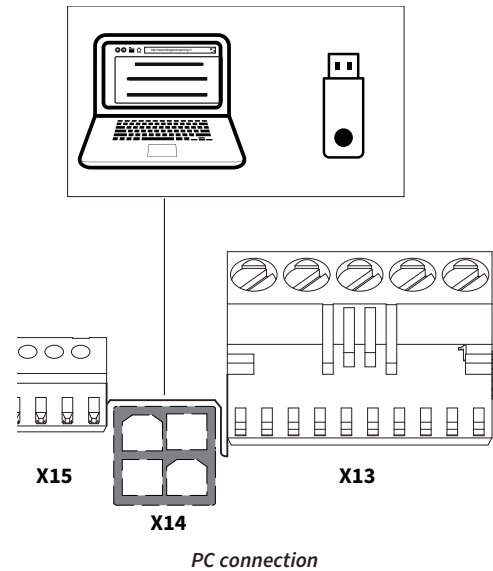
### 7.5.7 PC interface

The boiler PCB has an interface for a PC. The PC can communicate with the boiler via an IDS cable, or wirelessly through the Intergas USB dongle, providing the appropriate software has been installed. This facility allows the attending engineer to monitor complete functionality of the appliance, change parameters and view historic fault codes.

Engineers must be fully conversant with this utility, training is available from Intergas Heating Ltd.

NOTE: IDS cable and USB dongles are subject to availability (Windows operating system not ISO compliant).

- ▶ Connect the cable to Connector X14 (also see **§12.1**).



### 7.5.8 Comfort Touch

It is possible to combine the appliance with the Intergas OpenTherm Comfort Touch Gateway kit this is available in two options:-

Part number 032034 R.F Gateway inc white Comfort touch thermostat (wired to boiler X13 1/2)

Part number 032044 R.F Gateway inc black Comfort touch thermostat (wired to boiler X13 1/2)

This set consists of a Intergas gateway and a connection set.

The Intergas gateway provides a connection between an Internet router and the boiler, so that the boiler can be monitored and managed via a web server using the Comfort Touch service app. The Comfort Touch is available via the regular merchant.

If the end user also wants to make use of the Comfort Touch possibilities of the appliance, the set is also available with a Honeywell Round thermostat, part number 032164 R.F Gateway inc Honeywell round R.F thermostat (paired to boiler RF module)

For the end user, a consumer version of the Comfort Touch app is available.

The Comfort Touch service and consumer app can be downloaded from both the Google Play Store and the Apple App Store.



Comfort Touch App

## 7.6 Flue and air supply duct



- ▶ **For the installation of the flue and air supply duct material, see the manual included with the materials. Further technical information and specific assembly instructions are available upon request.**
- ▶ **Only plastic PP flue material is allowed.**



- ▶ **Make sure that the socket connections of the flue and air supply duct materials are correctly sealed. Incorrect connection of the flue and the air supply duct can lead to hazardous situations or result in personal injury. Check all flue components for tightness.**
- ▶ **Do not use screws or nails to mount the flue system as leakage can occur only use the correct support brackets at the recommended distances.**
- ▶ **Do not use any sort of grease when connecting the flue system. Use water instead. The sealing rubbers can be adversely affected when grease is applied and can also become disconnected.**
- ▶ **Do not mix any components, materials or ways of connecting from different manufacturers as they must be approved by Intergas Heating Ltd.**

### 7.6.1 Flue, materials and compounds

#### Flue materials

Execution	Diameter	Material	Remark
Rigid Concentric	Ø100/60 mm	▶ Plastic T120	Plastic; Approved material with lip ring sealing.
Rigid single wall	Ø80 mm	▶ Plastic T120	Plastic; Approved material with lip ring sealing.
Flexible Concentric	Ø100/60 mm	▶ Plastic T120	

#### Air supply materials

Execution	Diameter	Material	Remark
Rigid single wall	Ø80 mm	▶ Plastic T120	Plastic; Approved material with lip ring sealing.
Flexible	Ø100/60 mm	▶ Plastic T120	Plastic; Approved material with lip ring sealing.

## 7.7 Pipeline lengths

As the resistance of the flue and air supply duct pipes increases, the capacity of the boiler will decrease. The allowed decrease in capacity is a maximum of 5%.

The resistance of the air supply duct and the flue depends on the length and diameter of the piping system and all associated components. For each boiler category, the total allowed pipeline length of the air supply duct and flue is given.

The specification of the pipeline length in metres assumes Ø80 mm piping.

### 7.7.1 Replacement lengths

Elbow of 90°	R/D=0.5	4 m
Bend of 45°	R/D=0.5	2 m

Boiler	Length
Intergas Xtreme 24	100 m
Intergas Xtreme 30	85 m
Intergas Xtreme 36	80 m

### 7.7.2 Example calculation

Piping	Pipeline length	Total pipeline length
Flue	L1+L2+L3+(2x4m)	16 m
Air supply duct	L4+L5+L6+(2x4m)	16 m

#### Comments

- ▶ The total pipeline length is:  
The sum of the straight pipeline lengths + the sum of all the bends which equates to a total of 33 metres as per the adjacent drawing.
- ▶ If the equivalent length of the air supply duct and flue gas duct combined are less than the maximum permissible quoted then the twin flue system meets the requirements at this point.

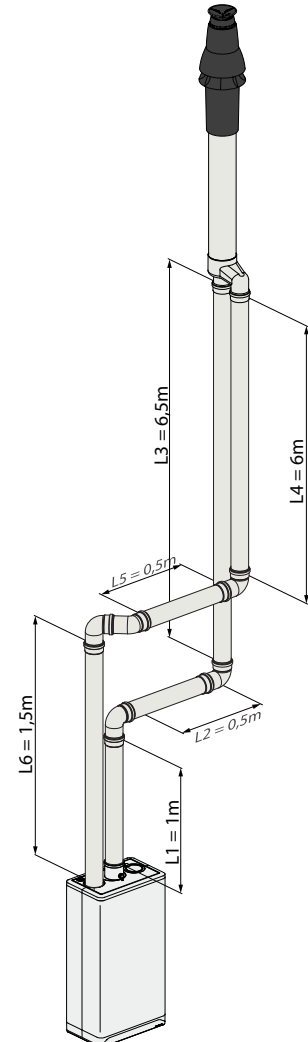
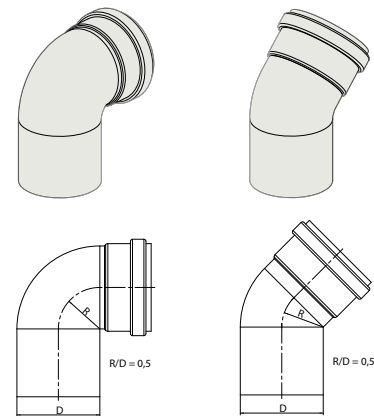
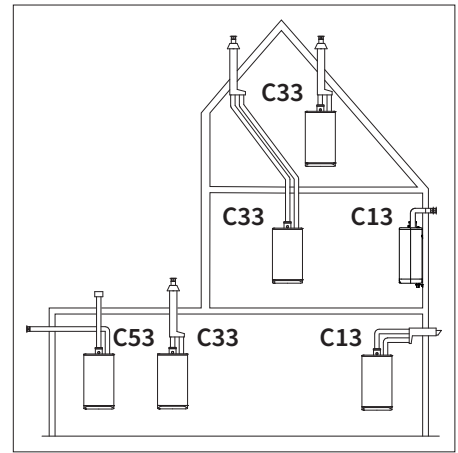
#### Twin Flue General assembly guide

##### Flue gas section assembly

- ▶ Connect the 80mm vertical adaptor 090767 to the boiler (optional extra).
- ▶ Slide the combustion outlet pipe into the adaptor on the boiler.
- ▶ Working from the boiler, slide each extension spigot into the previous socket and continue with each extension or bend.
- ▶ The flue must be bracketed every metre and every change in direction.
- ▶ Each bend should have a bracket fitted either side.
- ▶ Connect the final section to the chosen terminal outlet.
- ▶ The flue gas section must be installed with a fall of 5mm/mtr back towards the boiler.

##### Air supply section assembly

- ▶ Remove either of the air induction caps by lifting the tab and rotating it anticlockwise by 90°.
- ▶ Slide the first air inlet pipe section into the boiler induction socket.
- ▶ Working from the boiler, slide each extension spigot into the previous socket and continue with each extension and bend.
- ▶ The air duct must be bracketed every metre and every change of direction.
- ▶ Each bend should have a bracket fitted either side.
- ▶ Connect the final section to the chosen terminal outlet.
- ▶ The air supply section must be installed with a fall away from the boiler\*.  
(\*Not applicable to vertical flue/air sections)



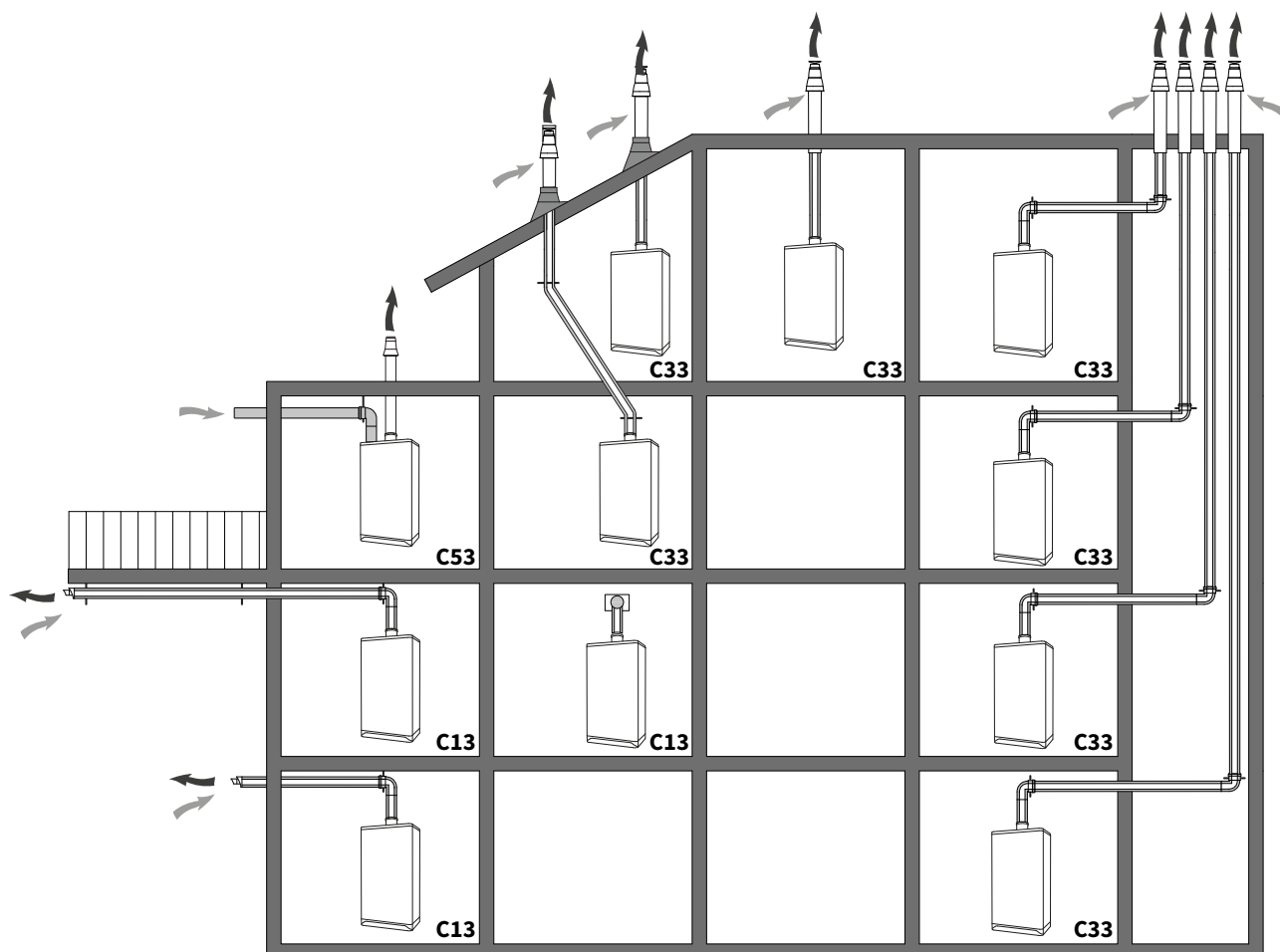
## 7.8 General layout of the flue

The following drawing shows possible situations schematically.



### COMMENT

► The following schematic drawings serve as examples and the details may differ from the actual situation.



Note for flue systems		
Cat.	Note according to CE	Materials
C13	The terminal is located in the façade; the inlet for the air supply duct is located in the same pressure area as the terminal. Example: combined façade terminal	Terminal
		Other components
C33	The terminal is located above the roof; the inlet for the air supply duct is located in the same pressure area as the terminal of the flue piping.	Terminal
		Terminal at the prefab chimney
		Other components
C53	Closed unit, connected to separate air supply duct and flue channels, terminated in various pressure zones. See the installation manual for the possibilities.	Intake grille
		Other components and exhaust cap

## 7.8.1 Horizontal wall terminal 60/100mm C13



### COMMENT

- ▶ **PP Pipes for the connection of the air supply duct and the flue from the boiler to the wall terminal 076355 must have a diameter of Ø80 mm.**
- ▶ **The individual flue pipe (Ø80) and/ or the internal pipe of the combi-pipe wall terminal / extension pipe must be approved by Intergas heating ltd.**

### Allowed pipeline length

#### ▶ Twin-pipe

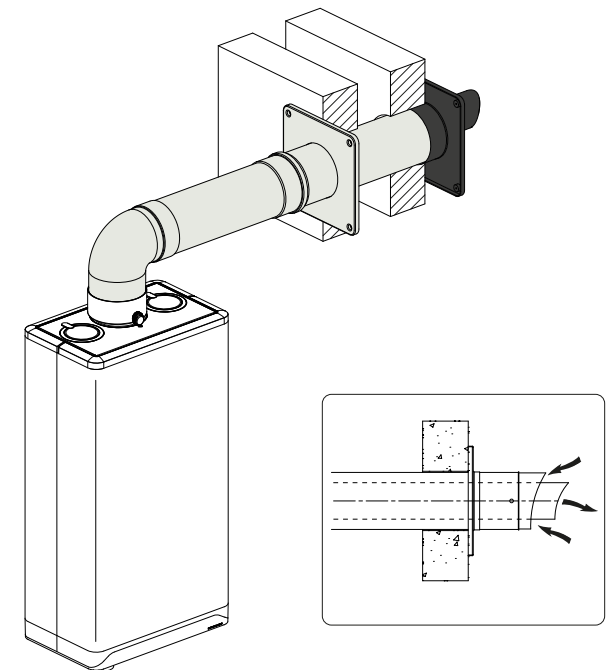
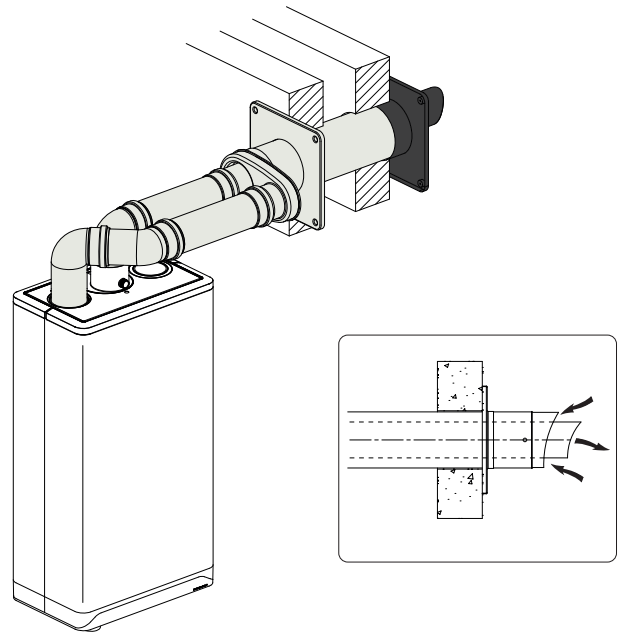
Air supply duct and flue pipe together, excluding the length of the combi-pipe wall terminal.

Boiler	Length
Intergas Xtreme 24	100 m
Intergas Xtreme 30	85 m
Intergas Xtreme 36	80 m

#### ▶ Concentric

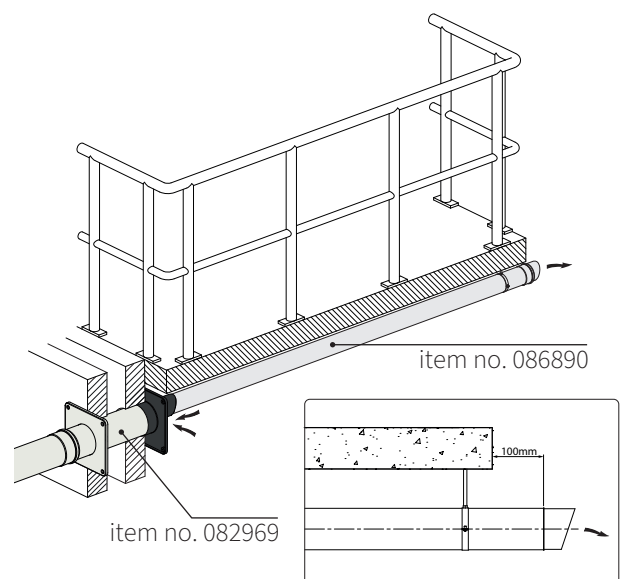
Air supply duct and combustible gas exhaust pipe together, excluding the length of the combi-pipe wall terminal.

Boiler	C13	
<b>Ø60/100</b>	Intergas Xtreme 24	10 m
	Intergas Xtreme 30	10 m
	Intergas Xtreme 36	10 m



### Assembly of combi-pipe horizontal terminal

- ▶ Create an opening of Ø130 mm at the location of the terminal.
- ▶ Shorten the wall terminal to the required length.
- ▶ Assemble the concentric flue system.
- ▶ Slide the wall terminal in through the opening and attach to the concentric flue.
- ▶ Seal the flue through the wall with sand & cement and fit the supplied decorative covers to the opening both inside & out.
- ▶ The terminal should be positioned level however any further extensions must slope back to the boiler 5mm/mtr.
- ▶ The balcony kit option 086890 can be used to extend the terminal away from under the walkway, to install twist and remove the 60mm flue outlet from the existing 60/100mm terminal and discard, now install the new PMK outlet into the 60/100mm terminal, then insert the 1000mm long extension (can be cut to length) use the supplied bracket to support the PMK add then insert the new terminal end.



## 7.8.2 Flue terminal positions 60/100mm

### Concentric Flue 60/100

The boiler utilises a special concentric flue adapter which can only be used with the elbow that is part of the horizontal flue kits.

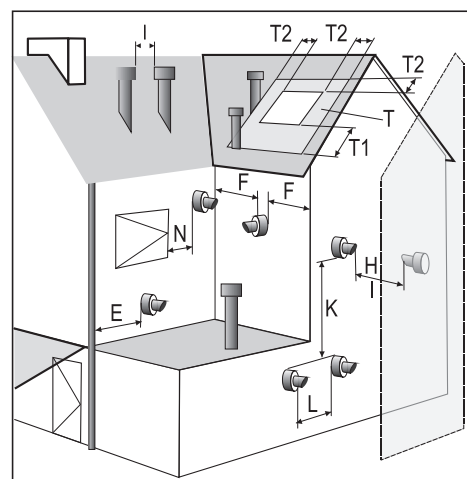
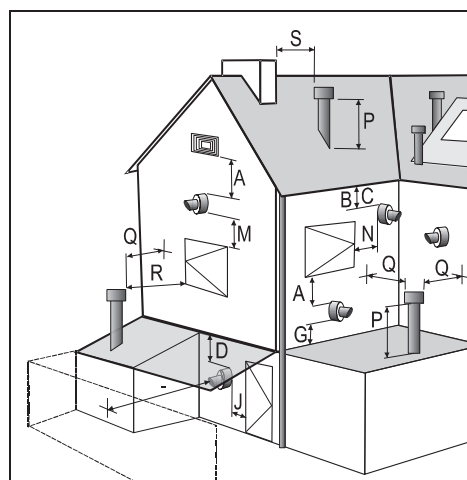
The flue is not supplied with the boiler and should be purchased separately from your supplier. This flue may be routed to the rear, left or right of the appliance by means of the 90 degree bend, which is supplied in the flue kit.

#### Note

Only use a pproved Intergas flue products with this boiler, which can be sourced from your boiler or Intergas stockist, with C33 type applications a vertical flue adapter will be required to connect to the boiler.

### Flue Terminal position

	Terminal Position	Min. distance
A	Directly below an open able window or other opening e.g. air brick	300mm
B	Below gutters, soil pipes or drain pipes can be reduced to 25mm, as long as the flue terminal is ectended to clear any overhang. External flue joints must be sealed with suitable sicon seal.	25mm
C	Below eaves	200mm
D	Below balconies or car front roofs	200mm
E	From vertical drain pipes and soil pip	25mm
F	From internal or external corners	300mm
G	Above ground, roof or balcony level, Terminal guards must be fitted if less than 2 metres from the ground.	300mm
H	From a surface facing a terminal	600mm
I	From a terminal discharging towards another terminal	1200mm
J	From an opening in a carport (e.g. door, window) into a dwelling	1200mm
K	Vertically from a terminal on the same wall	1500mm
L	Horizontally from a terminal on the same wall	300mm
M	Above an opening, air brick, opening windows, etc.	300mm
N	Horizontally to an opening, air brick, opening windows, etc.	300mm
P	Above roof level (to base of terminal)	300mm
Q	From adjacent wall to flue	300mm
R	From an adjacent opening window	1000mm
S	From another roof terminal	600mm
-	Distance to a boundary, unless it will cause a nuisance. BS 5440:Part1 recommends that care should be taken in sitting terminal in relation to boundary lines. A PMK or Deflector may be fitted.	600mm
T	Terminals adjacent to windows or openings on pitched and flat roofs: The flue should not penetrate this area.	
T1		2000mm
T2		600mm



#### Note

Intergas cannot be held responsible for atmospheric conditions when siting flue terminals it is the installers responsibility to ensure products of combustion cannot enter the building under adverse or normal weather conditions.





**CAUTION**

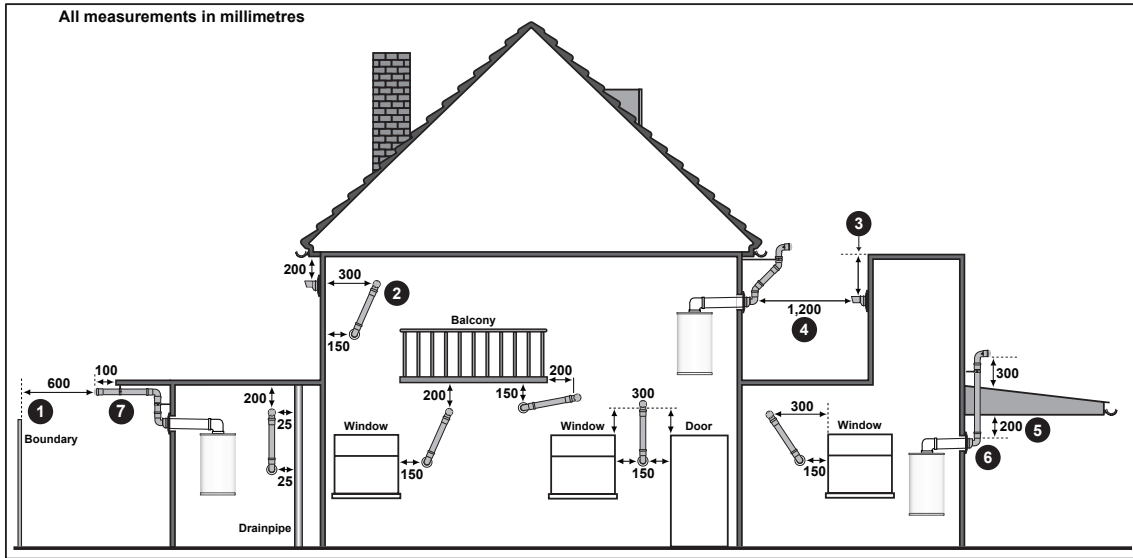
Once the flue has been installed and the appliance commissioned, the installer should observe the plume direction. Particular attention should be drawn to plume vapour re-entering the boiler via the air intake. If this occurs, it is highly possible the flue is fitted within a negative pressure area and therefore a plume management kit (PMK) must be fitted.

**To reduce the telescopic flue length further:**

Separate the telescopic flue, with the terminal end, mark the length required (min. 130mm) for the terminal and cut square, taking care not to damage the tubes.

Remove any burrs and chamfer the outer edge of the tubes to assist ease of connection and prevent seal damage. The aluminum tape is not required when reducing the terminal to a single section.

**7.8.3 PMK terminal positions 60mm**



	<b>Terminal Position</b>	<b>Min. distance</b>
1	600mm distance to a boundary or surface facing a boundary, unless it will cause a nuisance. BS5440:Part1 recommends that care is taken when siting terminals in relation to boundaries. Adjacent to a boundary line.	600mm 300mm
2	Internal/external corners. The air intake clearance can be reduced to 150 mm providing the flue exhaust outlet has a 300 mm clearance.	(Air) 150mm (Exhaust) 300mm
3	The flue cannot be lower than 1,000 mm from the top of the light well due to the build up of combustion products.	1000mm
4	1,200 mm between air intake and facing terminal.	1200mm
5	Clearance no less than 200 mm from the lowest point of the balcony or overhang.	200mm
6	1,200 mm from an opening in a car port on the same wall i.e. door or window leading into dwelling.	300mm
7	Balcony kit option. Using a Plume Management Kit the air intake measurement can be reduced to 150 mm providing the flue exhaust outlet has a 300 mm clearance. Plume kits running horizontally must have a 10° fall back to the boiler for proper disposal of condensate. For details on specific lengths see relevant boiler Technical & Specification information.	(Air) 150mm (Exhaust) 300mm
	300 mm minimum clearances to a opening e.g. window. However the minimum clearance to an opening in direction that the plume management is facing, must be increased to 1,500 mm. Where the flue is less than 150 mm to a drain pipe and plume re direction is used the deflector should not be directed towards the drainpipe.	



## 7.8.4 Vertical roof terminal for twin-pipe 80mm flue system C33



### IMPORTANT

- ▶ PP Pipes for the connection of the air supply and the flue ducts from the boiler to the vertical Terminal must have a diameter of Ø80 mm.
- ▶ All the flue pipe components and any terminal used must be approved by Intergas heating ltd.

- ▶ Intergas Twin-pipe vertical terminal (086883)

### Permissible equivalent pipeline length

#### ▶ Twin-pipe

Air supply duct and flue pipe combined, excluding the length of the Twin-pipe wall terminal or the twin-pipe wall terminal.

Boiler	Length
Intergas Xtreme 24	100 m
Intergas Xtreme 30	85 m
Intergas Xtreme 36	80 m

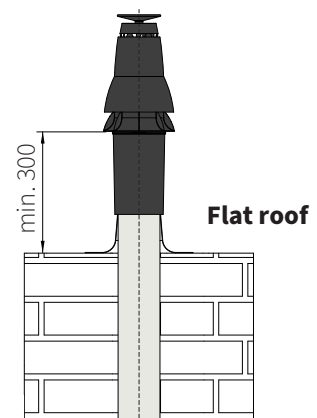
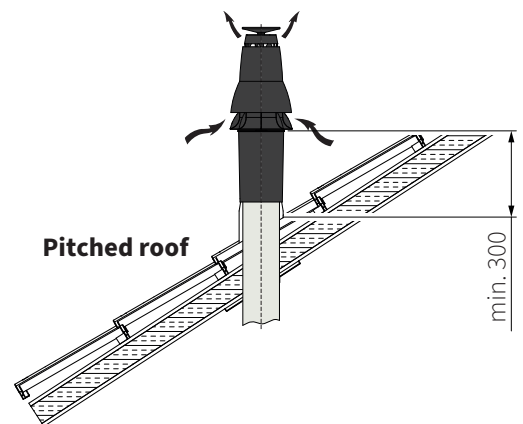
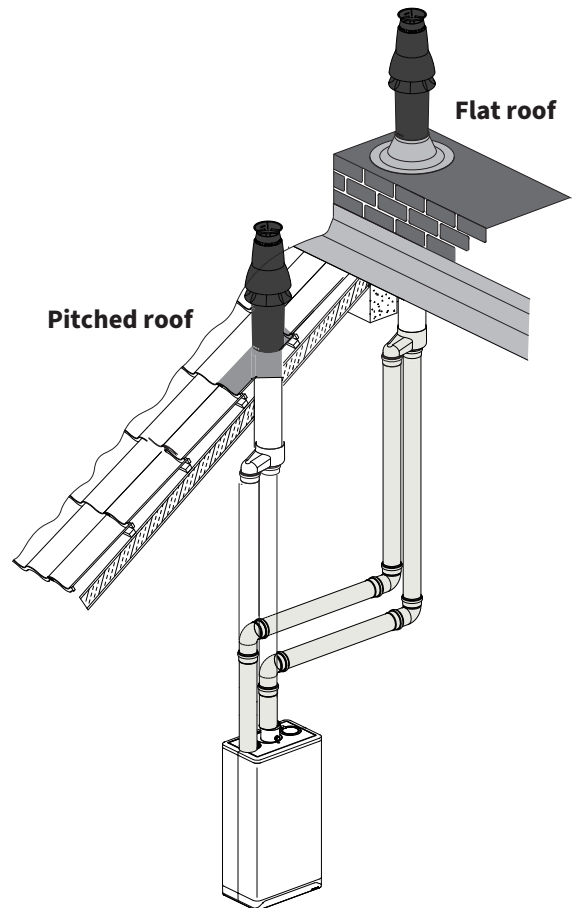
#### ▶ Concentric

Air supply duct and combustible gas exhaust pipe, excluding the length of the Twin-pipe wall terminal.

Boiler	C33	
Ø60/100	Intergas Xtreme 24	10 m
	Intergas Xtreme 30	10 m
	Intergas Xtreme 36	10 m

### Assembly of twin-pipe vertical terminal

- ▶ On a sloping roof, install a pitched weather slate (art no. 087910) then slide the terminal through the slate and adjust to vertical. Seal around the storm collar and adjusting section onto the slate with a suitable clear silicone sealant, that is specifically designed for external conditions (not supplied).
- ▶ On a flat roof, install a flat roof weather slate (art no. 087372) then slide the terminal through the slate and ensure it is vertical. Seal around the storm collar using a suitable clear silicone sealant, that is specifically designed for external conditions (not supplied).
- ▶ Install the 80/80 twin pipe manifold onto the bottom of the vertical terminal and secure everything in place with the supplied bracket.



## 7.8.5 Vertical roof terminal and air supply duct from the facade C53



### IMPORTANT

- ▶ **The air supply duct in the facade must have an Intergas intake grille (part number 082856).**
- ▶ **All the flue pipe components and any terminal used must be approved by Intergas heating ltd.**

### Permissible equivalent pipeline length

Air supply duct and flue pipe combined, excluding the length of the terminal section.

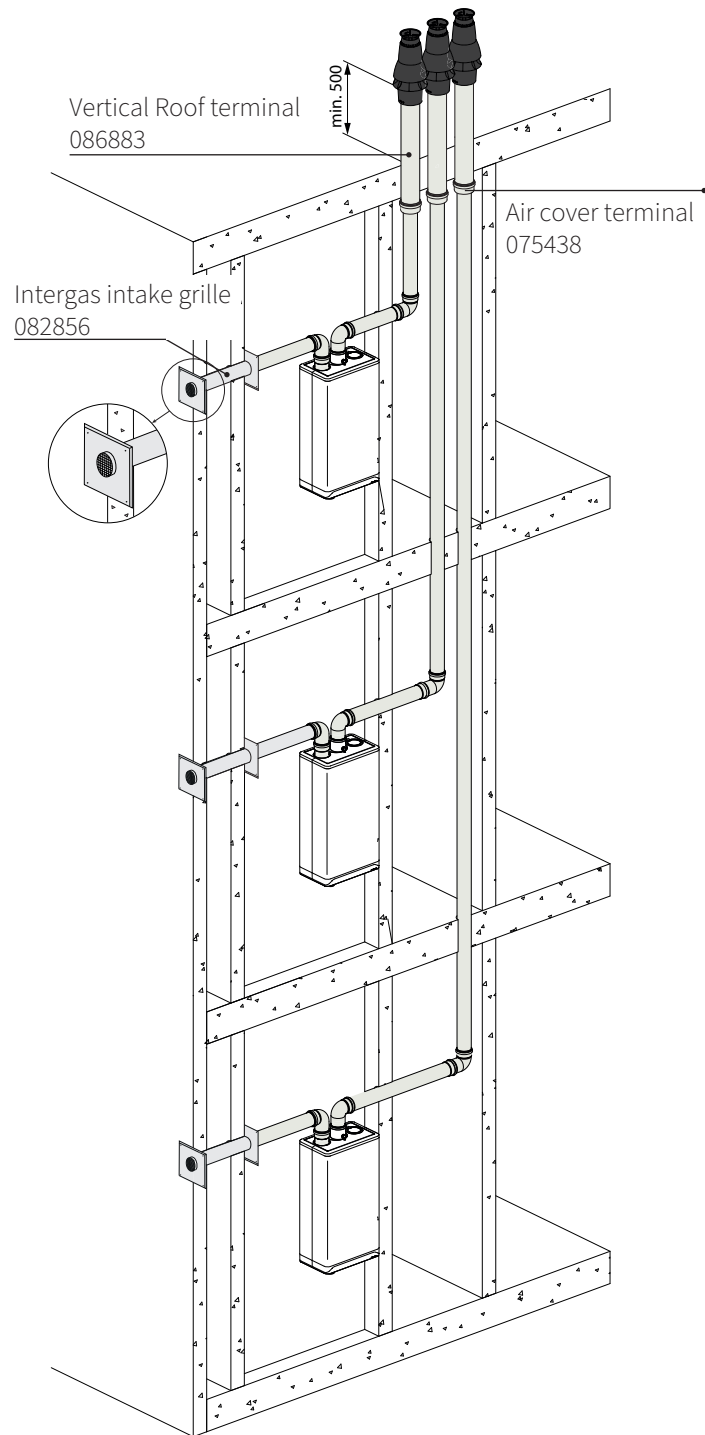
Boiler	Length
Intergas Xtreme 24	100 m
Intergas Xtreme 30	85 m
Intergas Xtreme 36	80 m

### Assembly of horizontal air supply duct

- ▶ The air supply can be made in an arbitrary location in the façade.
- ▶ At the location of the supply, core an opening of Ø90 mm.
- ▶ Shorten the air supply duct pipe to the desired length out of the wall so the cover plate can sit flush.
- ▶ Attach the Intergas air intake terminal to the wall using the 4 x screws and plugs provided
- ▶ Slide the air supply onto the terminal and attach the decorative plate to the internal plaster wall face.
- ▶ The air supply duct **MUST BE** angled away from the appliance to prevent rain entering the boiler during adverse weather conditions.

### Assembly of vertical flue terminal

- ▶ On a sloping roof, install a pitched weather slate (part number 087909) then slide the terminal through the slate and adjust to vertical. Seal around the storm collar and adjusting section onto the slate with a suitable clear silicone sealant, that is specifically designed for external conditions (not supplied).
- ▶ On a flat roof, install a flat roof weather slate (part number 075333) then slide the terminal through the slate and ensure it is vertical. Seal around the storm collar using a suitable clear silicone sealant, that is specifically designed for external conditions (not supplied).
- ▶ The terminal must be at least 500 mm above the roof surface secure everything in place with the supplied bracket.



## 7.8.6 Clamping the flue system (twin and concentric)

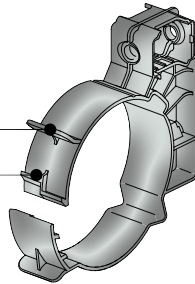


### IMPORTANT

- ▶ These regulations are typical for both concentric and twin flue systems.
- ▶ The flue system must be secured to a solid structure.
- ▶ The flue system should have a continuous fall back to the boiler (1.5° to 3°).
- ▶ Only use Intergas approved brackets.
- ▶ Every bend or change of direction must be secured by using the approved bracket (excluding the appliance bend).
- ▶ If the length of the pipes before and after the first elbow, are no more than 250mm, a support bracket must be used and positioned on the elbow! (See illustration D)
- ▶ Every extension must be secured per metre with a bracket.
- ▶ This bracket must be clamped around the pipe ensuring free movement for expansion and contraction purposes.
- ▶ Make sure bracket is locked correctly depending on its location i.e.  
 position "A" = pipe location  
 position "B" = elbow location.

A = bracket on pipe

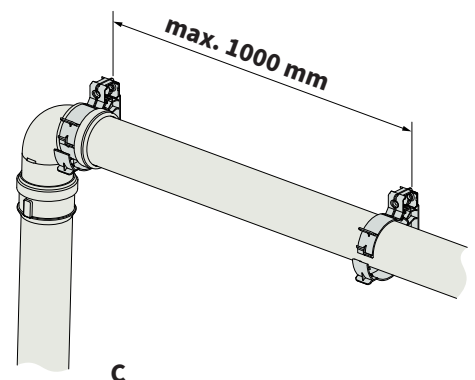
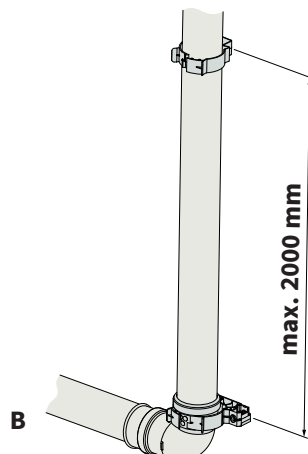
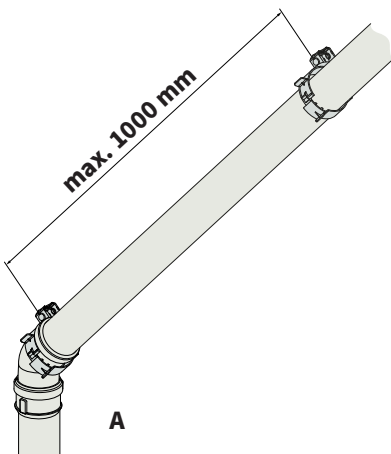
B = bracket on elbow



### Maximum distance between brackets

Flue system	Orientation	Horizontal/ non-vertical	Vertical
Safe-PP		1000 mm	2000 mm
Concentric		1000 mm	2000 mm

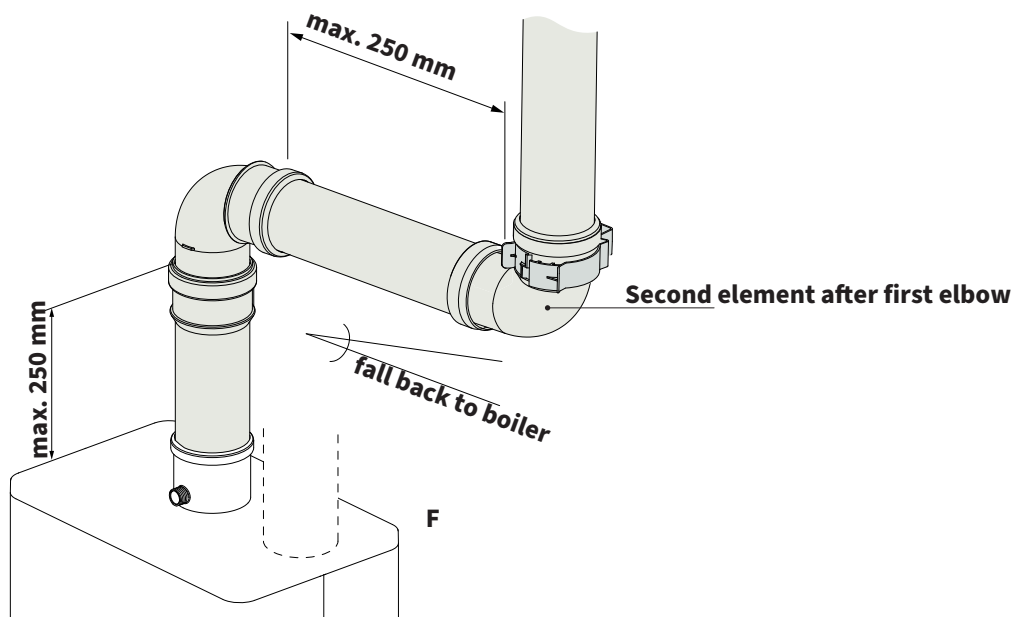
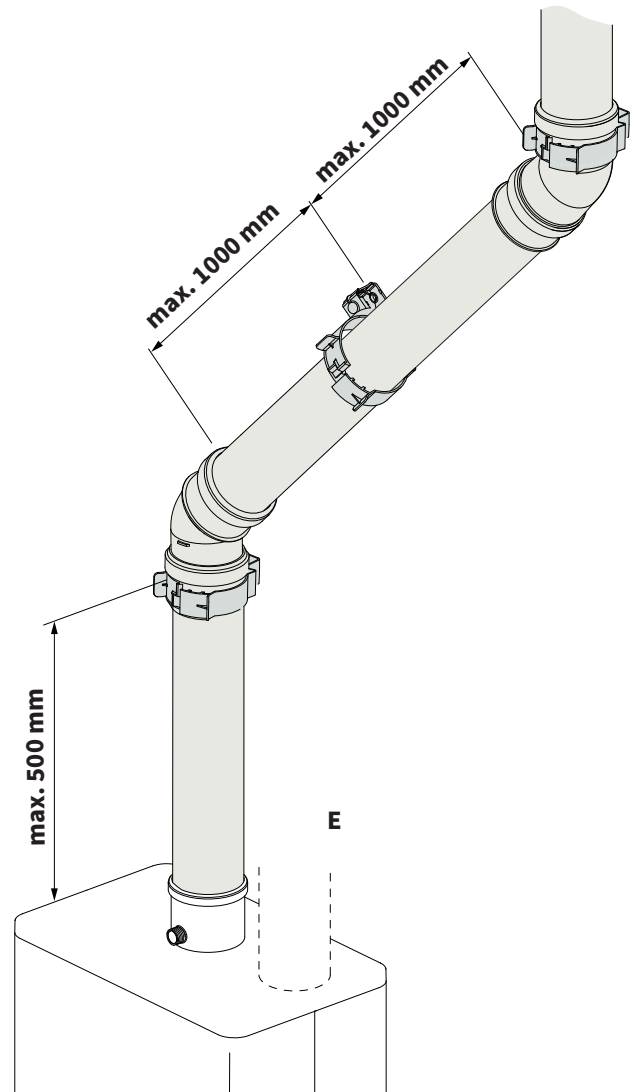
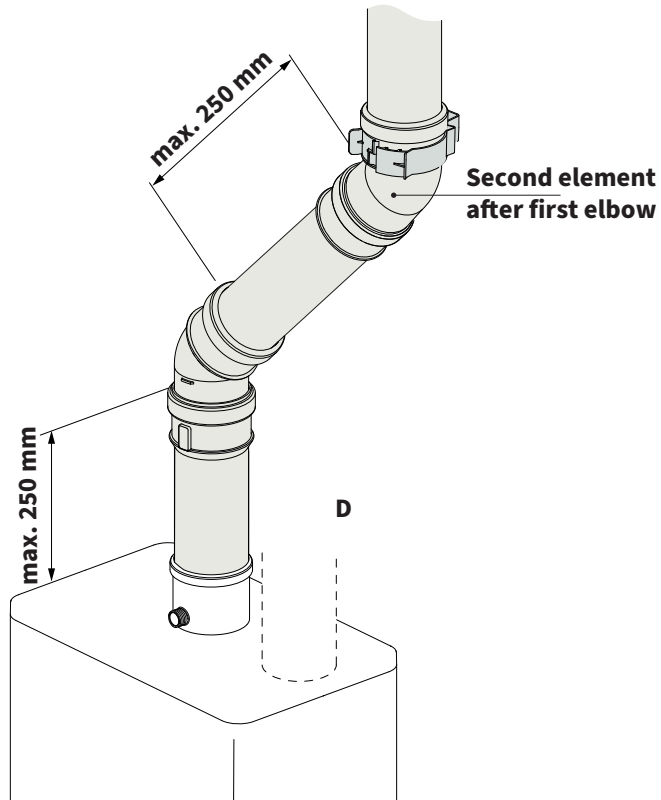
- ▶ Distribute the length between brackets evenly.
- ▶ Each flue system has to contain at least 1 bracket.
- ▶ The distance between the boiler and the first bracket must not be more than 500 mm.





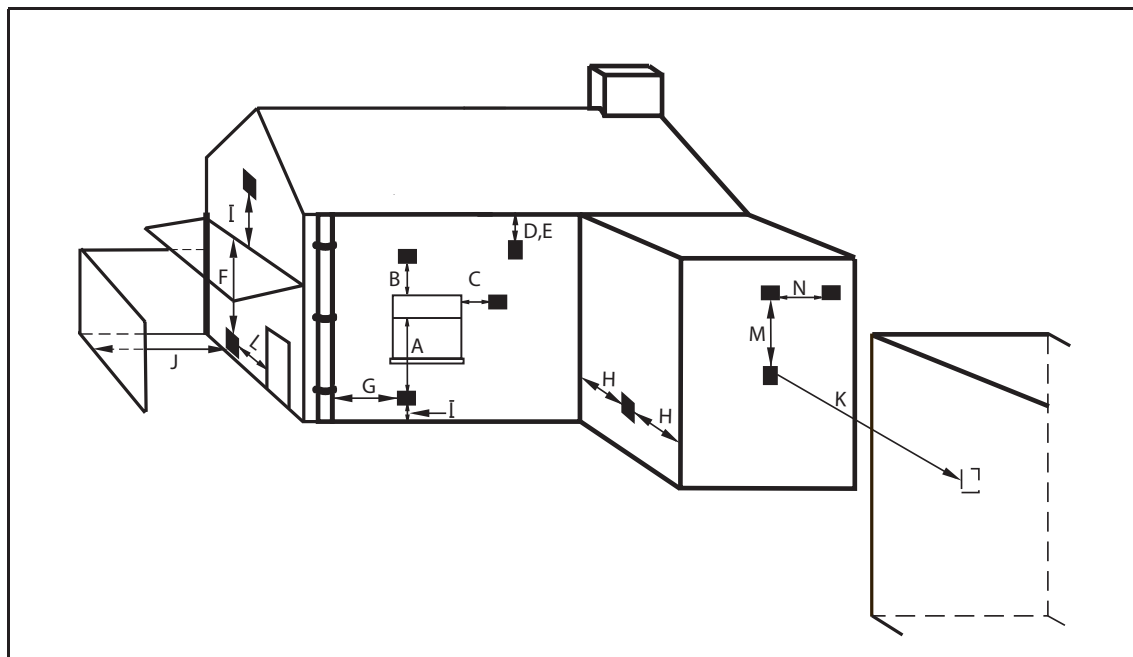
**COMMENT**

► These examples are typical for both twin and concentric flue bracket positioning.



## 7.8.7 Twin flue terminal positions

### Terminal positions

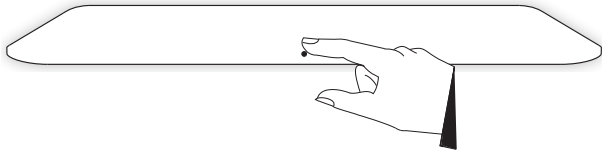


	<b>Terminal Position</b>	<b>Flue Min. Distance</b>	<b>Air Min. Distance</b>
A	Directly below to an openable window or other opening e.g. air brick	300mm	50mm
B	Directly above an opening	300mm	50mm
C	Horizontally to an opening	300mm	50mm
D	Below gutters, soil pipes or drain pipes	75mm	75mm
E	Below eaves	200mm	50mm
F	Below balcony or car port roof, Terminal guards must be fitted if less than 2 metres from the ground	200mm	50mm
G	Above ground or balcony or roof, Terminal guards must be fitted if less than 2 metres from the ground.	150mm	25mm
H	From internal or external corners or to boundary	300mm	50mm
I	Above ground or balcony or roof, Terminal guards must be fitted if less than 2 metres from the ground.	300mm	50mm
J	From a surface or boundary facing a terminal	600mm	100mm
K	From a terminal discharging towards another terminal	1200mm	100mm
L	From an opening in a car port (e.g. door, window) into a dwelling	1200mm	100mm
M	Vertically from a terminal on the same wall	1500mm	1500mm
N	Horizontally from a terminal on the same wall	300mm	300mm

## 8 OPERATION

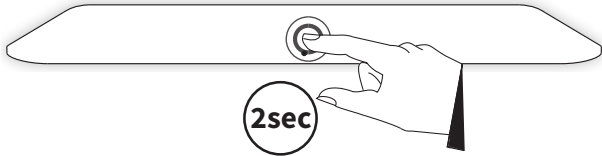
### 8.1 Using the control panel

Gently **touch and release** the white power LED symbol



**Power on / power off mode.**

Gently **touch and hold** the white power LED symbol for 2 seconds



### 8.2 Boiler preparation

#### 8.2.1 Filling and venting the central heating system

- ▶ Connect the power cable to a 3 amp fused spur supplied via a type "A" RCD.
- ▶ Switch on the power supply to the boiler, A **2** may momentarily appear on the right display; this means that the internal sensors are being checked. The firmware version will be momentarily shown on the left display. The boiler enters standby power off mode, characterised by a line – on the right display and the central heating system



- ▶ **When the central heating pressure is lower than 0.5 bar, this will be indicated by a flashing display (if the boiler is in central heating demand).**
- ▶ **If the central heating pressure is below 0.2 bar then the demand will no longer be met.**

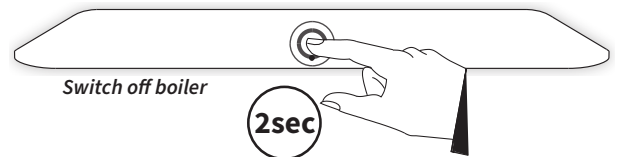
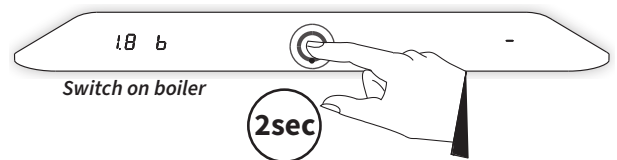
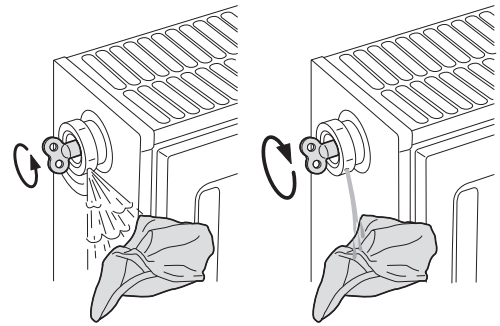
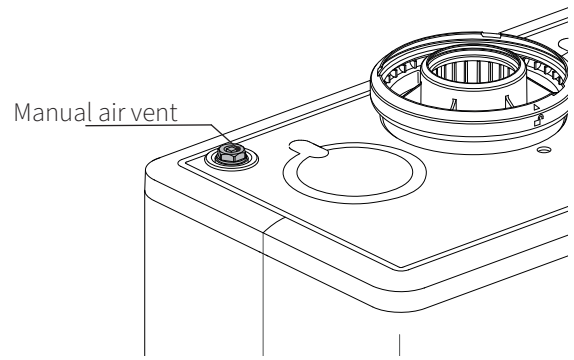


#### **WARNING**

- ▶ **When an additive is introduced to the central heating water, this must be suitable for the materials used in the boiler, such as copper, brass, steel, stainless steel, plastic and rubber. Intergas recommend products manufactured from :**
  - Fernox Tel 0330 100 7750
  - ADEY Innovations Tel 01242 546 777
  - Altecnic Caleffi Group Tel 01785 218 200

pressure on the left display.

- ▶ Connect all the pipework then fill the heating system with mains water via the filling loop provided to a maximum pressure of 1.5 bar (The pressure can be viewed with the power supply on and the boiler witted off, by touching and holding the power LED for 2 seconds).
- ▶ Vent the appliance with the manual air vent screw on the top left hand side of the boiler.
- ▶ Vent the air out the entire system with the manual air vent screws on the radiators.
- ▶ Top up the CH installation pressure as required back to 1.5 bar.
- ▶ Check the system for any leaks and repair any found.
- ▶ Switch on the boiler by touching the control panel just above the power LED and holding this for 2 seconds.
- ▶ Put the boiler in operation using the room thermostat or Service mode (see **§9.1.5**) and check the water is circulating around the system correctly.

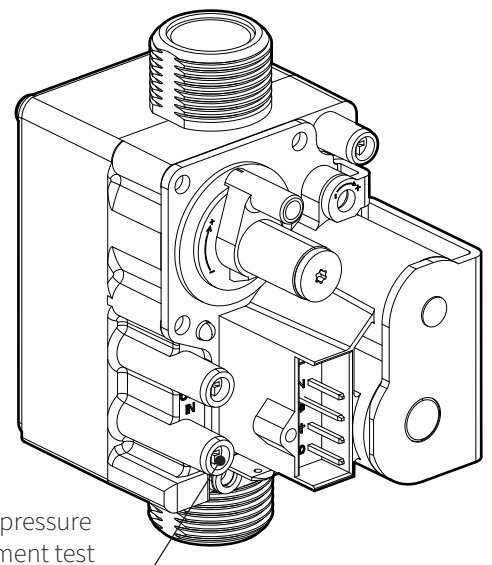


### 8.2.2 Domestic hot water facility

- ▶ Open the cold water main isolation valve under the boiler.
- ▶ Vent the heat exchanger and the pipework by opening all domestic hot water outlets. Leave the outlets open until all the air has dispersed from the system then close each one in turn.
- ▶ Check all connections and pipework for any leaks, repair any found as required.
- ▶ With the boiler switched on run a domestic hot water outlet and check the boiler is operating correctly (Only after the Gas supply has been commissioned correctly).

### 8.2.3 Gas supply



- ▶ Purge the gas installation pipework to ensure no air remains.
- ▶ Complete a full tightness test any leaks must be repaired and retested prior to operating the boiler.
- ▶ Check the inlet working pressure via P1 at maximum output (H) which must be  $\geq 17\text{mB}$  with all other appliances at full rate and gas-air control at minimum output to ensure the correct CO<sub>2</sub> levels (see **§9.9**).

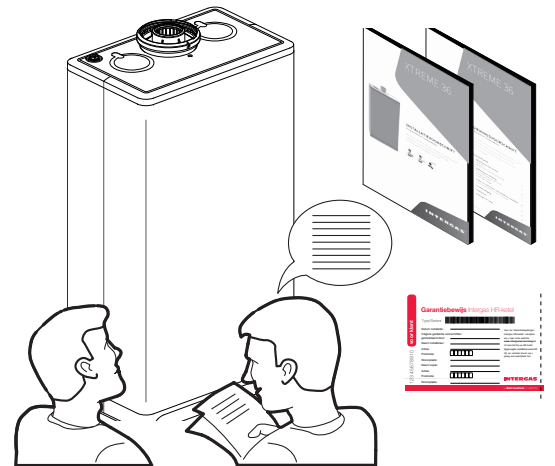
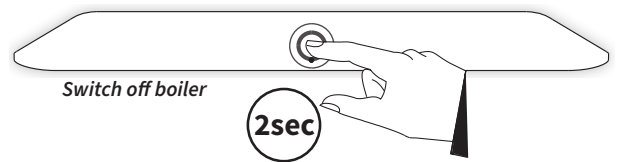
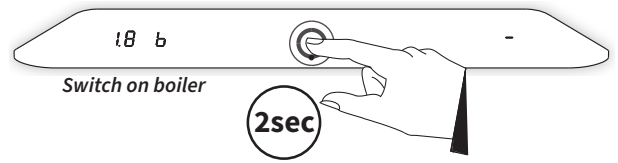




## 8.3 Commissioning procedure

After filling the heating and hot water systems correctly, the boiler can be commissioned by following the below procedure for this:

- ▶ Switch on the boiler by touching just above the power LED and holding this for 2 seconds.
- ▶ Adjust the pump setting depending on the set maximum capacity and the heating circuit resistance.  
To adjust the pump capacity of the boiler; see **§9.6**
- ▶ Adjust the temperature on the room thermostat to higher than the actual room temperature so the boiler creates a heating demand (Timer must be set to on).  
Symbols  and  light up.
- ▶ Heat up the system.
- ▶ Check whether the set central heating output is sufficient to achieve the room target temperature. If necessary, the maximum central heating output can be adjusted; see **§9.3** (parameter **P010**) and **§9.5**
- ▶ Check whether the set minimum and maximum values of the pump output have been adjusted correctly; see **§9.3**
- ▶ Switch off the boiler by touching just above the power LED and holding this for 2 seconds.
- ▶ Vent the system again once cool and top-up the pressure if required (see **§8.2.1**).
- ▶ Now switch on the boiler again by touching just above the power LED and holding this for 2 seconds.
- ▶ Check the heating and the domestic hot water facility for correct operation.
- ▶ Instruct the end user about filling and venting and the operation of the heating and the domestic hot water.
- ▶ Hand the installation instructions and warranty registration card to the customer / end user.
- ▶ The combustion readings must be checked at high rate & low rate to ensure they are within tolerance (they must only be adjusted at low rate if required) see **§9.9**
- ▶ The heating system must be chemically flushed and treated to BS7593:2019 as per our "Terms & conditions" failure to comply will invalidate the warranty supplied with this product, a system filter should be installed on the return pipework.



### Comments

- ▶ The boiler has microprocessor control technology which ignites the burner and continuously monitors the flame, modulates the fan and pump with each demand for central heating output.
- ▶ The modulating pump operates during a demand for heating, it has an overrun facility preset in parameter **P033** and it is advised not to adjust this setting.
- ▶ The pump automatically runs once every 24 hours for 10 seconds to prevent it becoming stuck during the summer months, this operation takes place 24 hours after the last heat demand.
- ▶ Please note the pump does not operate during domestic hot water operation.

## 8.4 Clock function

The boiler is equipped with a digital clock and offers the possibility to program both CH and DHW operations separately.

To activate the clock program the following parameters have to be set:  
For CH operation parameter **P040** = 1 (This is factory set to 1 "active")  
For DHW operation parameter **P087** = 1 (This is factory set to 0 "Inactive")

- ▶ In CH operation 6 periods can be programmed to switch from CH off or CH on.
- ▶ In DHW operation 4 periods can be programmed to switch the pre-heat function of the heat exchanger from on to off.

Additionally the following special modes can be chosen:

### **In CH operation**

#### ▶ **P-on (Program on):**

The boiler will respond only on CH demands within the chosen time slots. If the clock program does not contain any valid switching points, the boiler will remain in standby. The actual time is shown on the left display indicating that the clock program is active.

#### ▶ **T-on (Temporary on):**

The clock program will be temporary overruled. The boiler will respond to every CH demand until the next "off" switching point (t-ON will be displayed on the left side).

#### ▶ **On (Continuous on):**

The boiler will respond to every CH demand without any time limit.

#### ▶ **Off:**

The boiler will not respond to any CH demand. (Heating operation is subject to the room thermostat set point and boiler flow target temperature, outside weather compensation, if fitted, can restrict the flow temperature for energy saving purposes, depending upon curve set-point and outside temperature at that time ).

### **In DHW operation**

#### ▶ **P-on (Program on):**

The appliance's DHW comfort function is switched on continuously within the chosen time slots. In this mode the heat exchanger will be kept up to temperature to assure rapid delivery of DHW. If the clock program does not contain any valid switching points, the heat exchanger will continuously be kept up to temperature.

#### ▶ **On (Continuous on):**

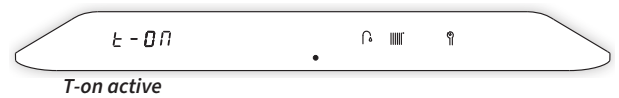
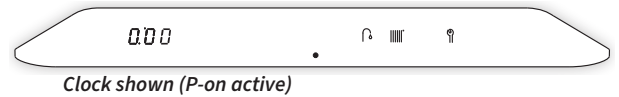
The appliance's DHW comfort function is switched on continuously. The heat exchanger will be kept up to temperature.

#### ▶ **Eco:**

The appliance's DHW comfort function is self learning within the chosen time slots. The appliance will adapt to the pattern of DHW usage. As a result, the temperature of the heat exchanger will not be maintained during the night or during long absence. If the clock program does not contain any valid switching points, the self learning feature is maintained.

#### ▶ **Off:**

The temperature of the heat exchanger is not maintained, as a result of the delivery of domestic hot water takes slightly longer. If you don't require rapid delivery of DHW then the comfort function can be switched off.



### **Note**

For setting and adjusting the clock and timer function. See **§9.2**

## 8.5 Shutting down the boiler



### **CAREFUL**

▶ **Only drain the boiler and the system if the mains voltage has been interrupted and there is a chance of freezing.**

- ▶ Switch the power off to the boiler.
- ▶ Remove the 3 amp fuse from the wall spur.
- ▶ Turn off the gas isolation valve under the boiler.
- ▶ Drain the boiler completely.
- ▶ Drain the heating system at the lowest point.
- ▶ Turn off the mains cold water supply isolation valve under the boiler.
- ▶ Drain the boiler by disconnecting the domestic hot water connections under the boiler and the pipework at the lowest point.

## 9 SETTINGS AND ADJUSTMENTS

The operation of the boiler can be influenced by the various (parameter) settings within the PCB. Access of these menus, can be made and modified via the touch screen display.

NOTE. Some of the settings are only accessible after entering the installer's code (see §9.1.5 and §9.3).



▶ The boiler has a touch screen display panel. Symbols will illuminate when they are operable and they will be extinguished when they are no longer available.



- ▶ **8.8.8.8 :** Left display / Desired temperature in °C / Central heating pressure / Fault code / Time / Information menu
- ▶ **- :** - (Minus) button
- ▶ **+** : + (Plus) button
- ▶ **🔥 :** Boiler operating (burner is switched on)
- ▶ **• :** Power LED
- ▶ **↶ :** DHW demand / DHW comfort setting / Adjusting domestic hot water setting
- ▶ **||||| :** Central heating demand / Adjusting maximum central heating temperature
- ▶ **🔑 :** Service button
- ▶ **➡ :** Enter button
- ▶ **B. :** Right display / operational code

### 9.1 Navigate the settings

There are several menus to navigate through that are accessible via the touch screen panel. The following menus are available:

- ▶ **Main menu**  
First line menu from which all other menus are accessible.
- ▶ **Domestic hot water menu**  
Menu in which the domestic hot water-related settings can be modified or set.
- ▶ **Central heating menu**  
Menu in which the central heating-related settings can be modified or set.
- ▶ **RF menu**  
Menu in which specific RF room thermostats can be assigned to the boiler.
- ▶ **Service menu**  
Menu in which the test programs can be activated and the (installer's) parameters can be modified (installer's code required).
- ▶ **Info menu**  
Menu in which the current boiler characteristics can be obtained.

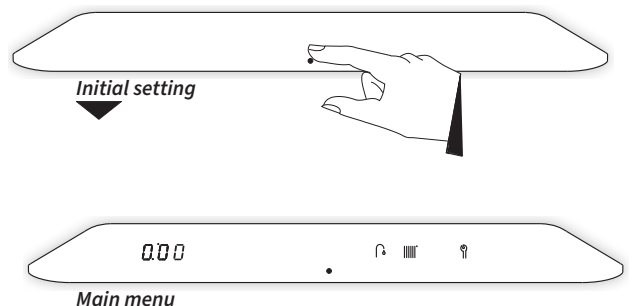
#### 9.1.1 Main menu

The main menu is accessible by gently tapping just above the power LED. The main menu can be viewed with the boiler switched on or switched off on the fascia (230v power must be switched on). The main menu will be displayed for 1 minute, without intervention, it will then return to its original status.


The following symbols will light up:

- ▶ The domestic hot water symbol ↶
- ▶ The central heating symbol |||||
- ▶ The Service symbol 🔑

The clock time will be displayed on the left side if enabled.




## 9.1.2 Domestic hot water menu

The domestic hot water menu has 2 settings and is accessible by gently tapping on the Domestic Hot Water symbol  from the main menu.

Within the domestic hot water menu:



- ▶ The domestic hot water temperature can be adjusted
- ▶ The DHW comfort function can be altered

The following symbols will illuminate:



- ▶ The Minus symbol  $-$
- ▶ The Plus symbol  $+$
- ▶ The Enter symbol 

The Central Heating symbol  will be extinguished.

The left section will illuminate and will display the current preset domestic hot water temperature.

By tapping on the domestic hot water symbol  once you enter the temperature adjustment menu, by tapping on the DHW symbol  again, you enter the comfort setting menu.

### To adjust the domestic hot water temperature setting:

1. Tap the Domestic Hot Water symbol . The target temperature is displayed on the left side of the fascia.
2. Using the Plus  $+$  and Minus  $-$  buttons, set the desired temperature (for example, 55°C).
3. Tap the Enter button  to confirm (or wait 30 seconds).  
A **P** appears on the right display (all other symbols are extinguished), which means the setting has been stored.
4. The display returns to the main menu.

For a swifter supply of domestic hot water, the boiler has a DHW comfort function with the following options:

#### ▶ P-On:

The DHW comfort function is activated within the chosen time settings. The heat exchanger will then maintain the preset temperature during these times.

#### ▶ On:

The DHW comfort function is permanently on. The heat exchanger will continuously maintain the preset temperature.

#### ▶ Eco:



The DHW comfort function of the boiler will self learn. The boiler will adapt itself to the pattern of usage for domestic hot water. This means that the heat exchanger will not maintain temperature during the night or with long absences.

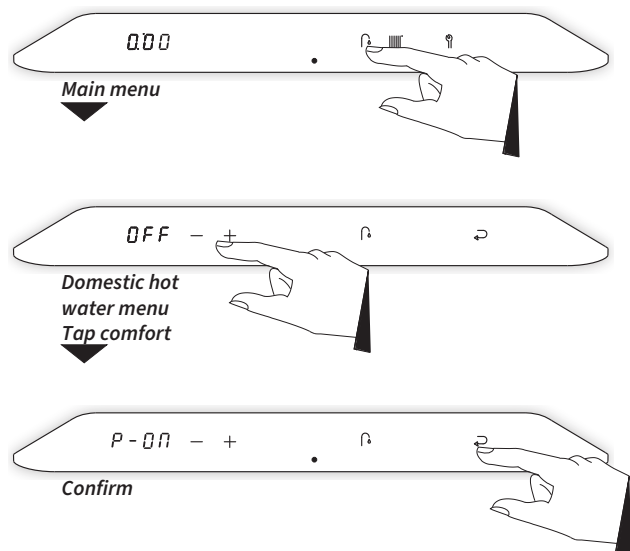
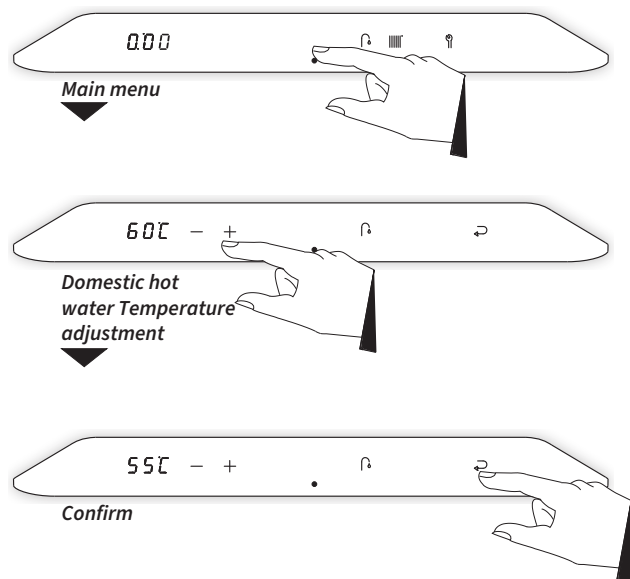
#### ▶ Off:

The heat exchanger is not preheated, the boiler will now act as a normal combination boiler and only operate when there is a demand for DHW.


**NOTE:** during the winter when the heating is operating the heat exchanger will already be at a sufficient temperature to facilitate swift DHW supply.

### To adjust the DHW comfort function:

1. Tap the Domestic Hot Water button 2x . The preset comfort setting is displayed on the left of the fascia.
2. Using the Plus  $+$  and Minus  $-$  symbols, set the desired comfort setting (for example, P-On).
3. Tap the Enter button  to confirm (or wait 30 seconds).  
A **P** appears on the right display (all other symbols are extinguished), this confirms the chosen setting has been stored.
4. The display returns to the main menu.




### 9.1.3 Central heating menu

The central heating menu has 3 settings and is accessible by gently tapping on the Central Heating symbol  from the main menu.

Within the central heating menu:

- ▶ the maximum temperature of the central heating water can be adjusted
- ▶ access to the RF menu
- ▶ the timer function can be adjusted



The following symbols will illuminate:

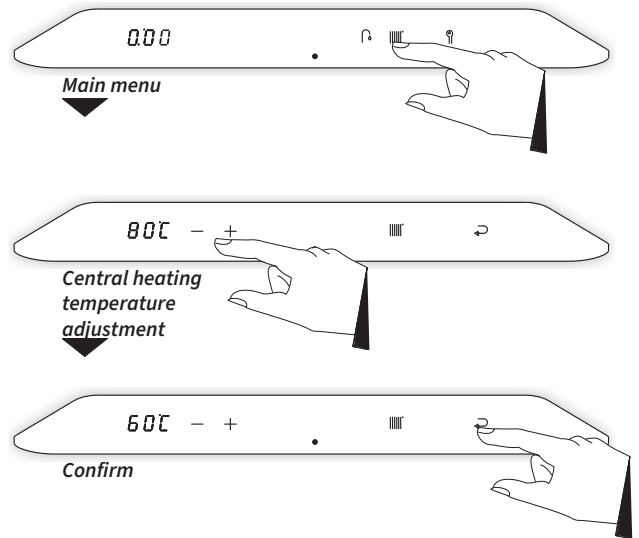
- ▶ The Minus symbol  $-$
- ▶ The Plus symbol  $+$
- ▶ The Enter symbol 

The Domestic Hot Water symbol  will be extinguished.

The left section will illuminate and the current preset temperature of the central heating water will be displayed.


#### To adjust the central heating water temperature setting:

1. Tap the Central Heating symbol . The target temperature is displayed on the left side of the fascia.
  2. Using the Plus  $+$  and Minus  $-$  symbols, set the desired temperature (for example, 60°C).
  3. Tap the Enter button  to confirm (or wait 30 seconds).
- A **P** appears on the right display (all other buttons are extinguished), which means the setting has been stored.
4. The display returns to the main menu.





### 9.1.4 RF menu

The Xtreme range of boilers have a built-in Ramses 2 RF transmitting/receiving module, this allows the boiler to wirelessly communicate with Honeywell OpenTherm room thermostats T87RF2025 Round, CMS927 & CMS727. Assignment of the thermostat and additional settings can be made via the RF menu.

The RF menu is accessible by touching and holding the Central Heating symbol  for 2 seconds. The following adjustments can then be made:

- ▶ Assign RF thermostat
- ▶ Remove assignment between boiler and RF thermostat

The following symbols will illuminate:

- ▶ The Service symbol 
- ▶ The Enter symbol 


The left display will illuminate and, depending on the assignment of the boiler, will show 'rF1-' or 'rF1'.

#### rF1-:

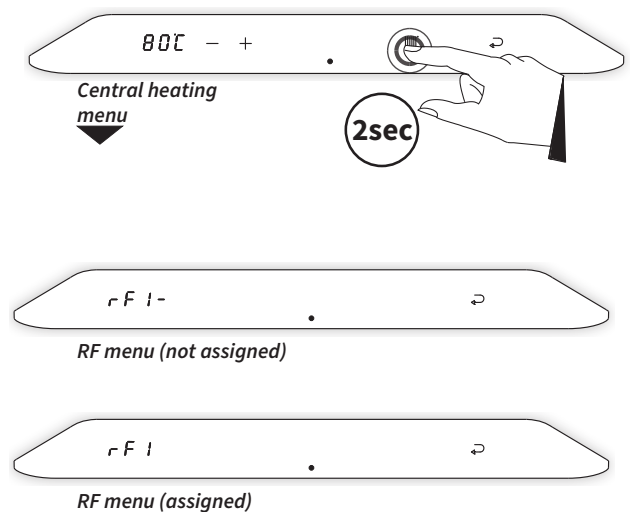
Boiler and thermostat are not assigned.

#### rF1:



Boiler and thermostat are assigned.

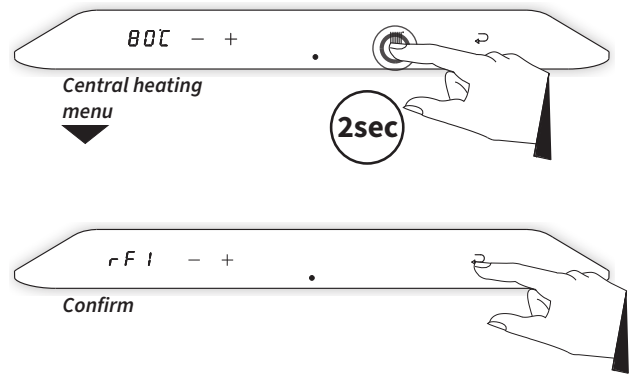
Tap the Enter symbol  (or wait 1 minute) to save and return to the main menu.

To exit the RF menu without saving your settings tap the fascia display just above the power LED, this will take you back to the original menu or standby mode.






### To adjust an RF room thermostat:

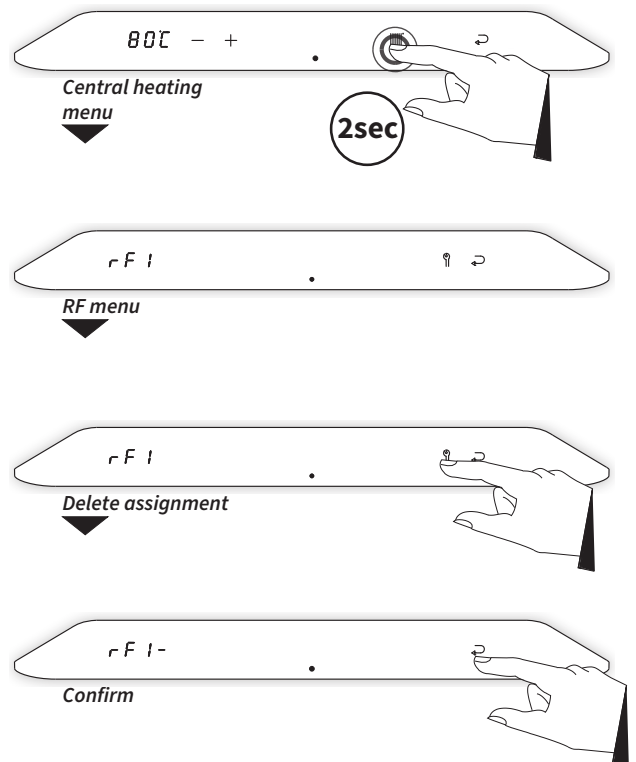
1. Touch the Central Heating symbol  and hold for 2 seconds.
2. The method of assignment is dependent on the type of room thermostat and is described within the installation manual and operation instructions of the wireless room thermostat. **Both the appliance and the thermostat must be in pairing mode to be able to pair.**  
<https://youlearn.honeywellhome.com>
3. After a successful assignment, 'rF1' appears in the left display. Tap the Enter symbol  to save.




### To remove an assignment:

1. Touch the Central Heating symbol  and hold for 2 seconds.
2. 'rF1' appears in the left display.
3. Tap the Service symbol  to remove the assignment.
4. 'rF1-' appears in the left display.
5. Tap the Enter symbol  to confirm the removal and return to the main menu.
6. Make a new assignment if desired as described above.

**NOTE:** Removing an assigned room thermostat will disable the central heating operation until a new one is assigned or a hard wired control is fitted (see **S7.5**)




### 9.1.5 Service menu



The service menu is accessible by first touching the display just above the power symbol then press and hold the service symbol  for 2 seconds.

Within the service menu:

- ▶ the test programs can be activated
- ▶ access to the (installer's) parameters
- ▶ access to the info menu

The following symbols will illuminate:

- ▶ The Minus symbol  $-$
- ▶ The Plus symbol  $+$
- ▶ The Enter symbol 




The Domestic Hot Water symbol  and the Central Heating symbol  will be extinguished.

#### Test programs


The boiler has a test mode facility within the PCB.

By activating a test program, the boiler will operate with a fixed fan speed without any of the control functions intervening however, the safety functions remain active.


The following test programs are available:

<p><b>Program 'L'</b> Burner on at minimum output. Press  and <math>-</math> together once.</p>
<p><b>Program 'h'</b> Burner on at maximum range rated central heating output. Press  and <math>+</math> together once.</p>
<p><b>Program 'H'</b> Burner on at maximum output. Press  and <math>+</math> twice.</p>
<p><b>Switching off test program</b> Press <math>+</math> and <math>-</math> together once.</p>


#### To activate the 'L' test program:

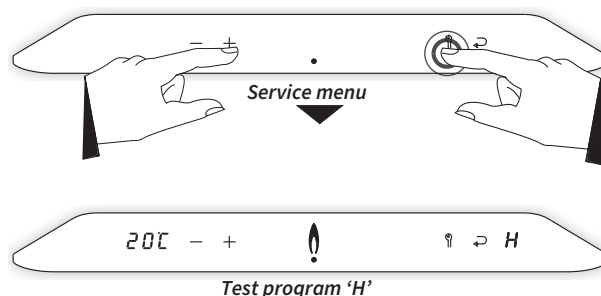
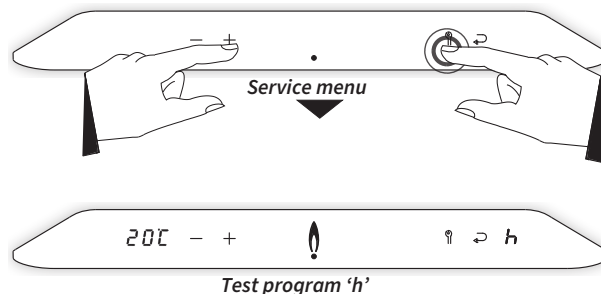
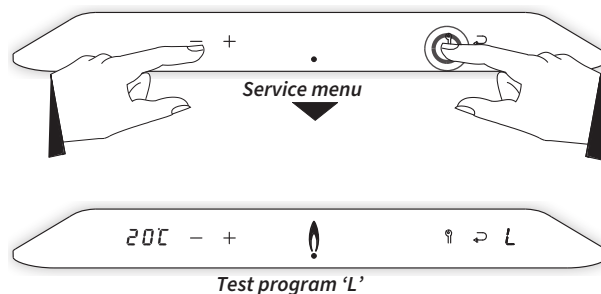
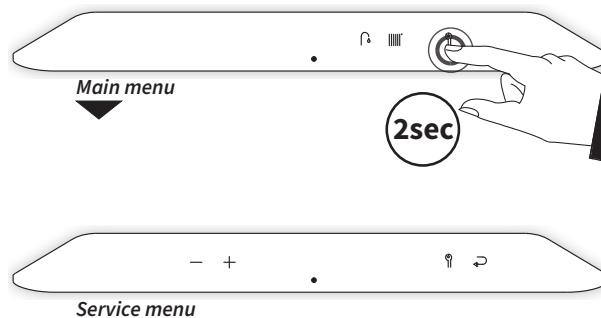
1. Press the Service symbol  and the Minus button  $-$  once at the same time. The symbol 'L' will appear on the right of the display.
2. Tap the Minus button  $-$  and the Plus button  $+$  at the same time to terminate the program.

#### To activate the 'h' test program:

1. Press the Service symbol  and the Plus symbol  $+$  once at the same time. The symbol 'h' will appear on the right of the display.
2. Tap the Minus symbol  $-$  and the Plus symbol  $+$  at the same time to terminate the program.

#### To activate the 'H' test program:

1. Press the Service symbol  and the Plus symbol  $+$  twice at the same time. The symbol 'H' will appear on the right of the display.
2. Tap the Minus symbol  $-$  and the Plus symbol  $+$  at the same time to terminate the program.





### (Installer's) parameters

The (installer's) parameters within the PCB are factory set as detailed within table in §9.3.














These parameters can only be modified using the installer's access code.

The installer's code is shown on the left display and is preceded by the letter **C**.

The parameters are also shown on the left display and are preceded by the letter **P**.

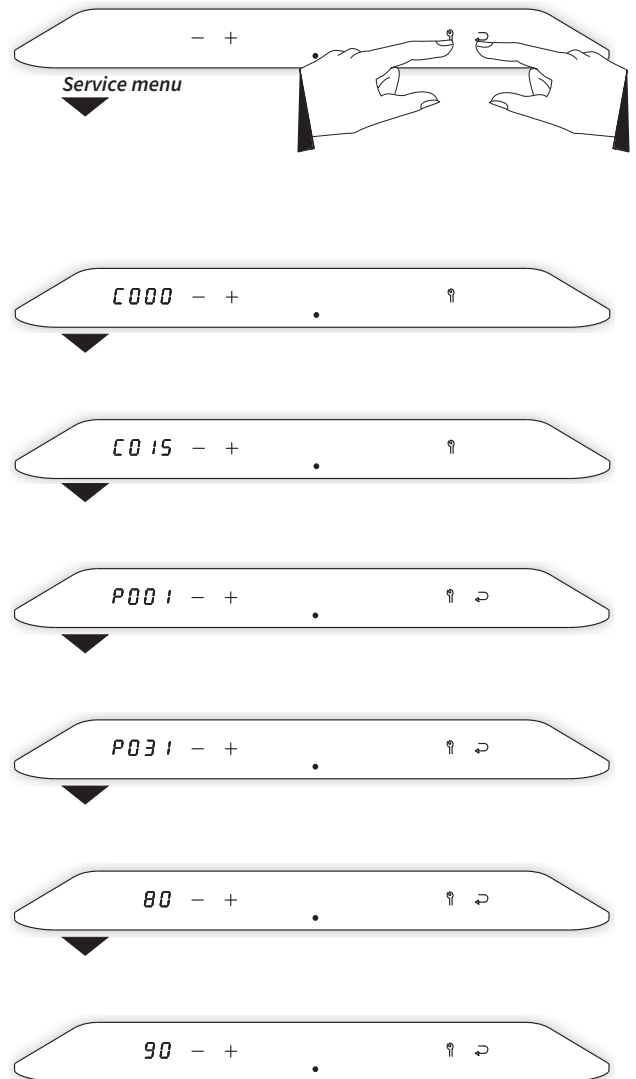
#### To modify a parameter:

##### (for example, modify parameter P031 from 80 to 90)


1. Tap the Service symbol  and the Enter symbol  **at the same time**. The Enter symbol  is extinguished and all other buttons remain on. 'C000' appears in the left display.
2. Using the Plus symbol  and the Minus symbol , set the installer's code (**C015**) and tap on the Service symbol . Parameter 'P001' will now be shown on the left display.
3. Using the Plus button  and the Minus button , set the desired parameter (in this example, 'P031') and tap on the Service button . The current value of the relevant parameter will be shown on the left display (in this example, '80').
4. Using the Plus symbol  and the Minus symbol , set the desired value of the parameter (in this example, '90').
5. Tap the Service symbol . Repeat Steps 3 and 4 to set any additional parameters.
6. Tap the Enter symbol  to confirm. A **P** appears on the right display (all other symbols are extinguished), which means the settings have been stored.
7. The display returns to the initial setting and is ready for any heat demand.



By tapping just above the power LED during any parameter modification will cancel the procedure without saving any modifications made. The display will return to the initial setting and is ready for any heat demand.



## 9.1.6 Info menu

The info menu is accessible by touching the Service symbol  from the service menu and holding it for 2 seconds. (Note if you are not in the service menu you will need to touch the service symbol and hold it for 2 x 2 seconds). Via the info menu certain boiler operational statistics can be viewed.

The following symbols will illuminate:

- ▶ The minus symbol —
- ▶ The plus symbol +

Respectively the right and left display will display the relevant infocode and its corresponding value.

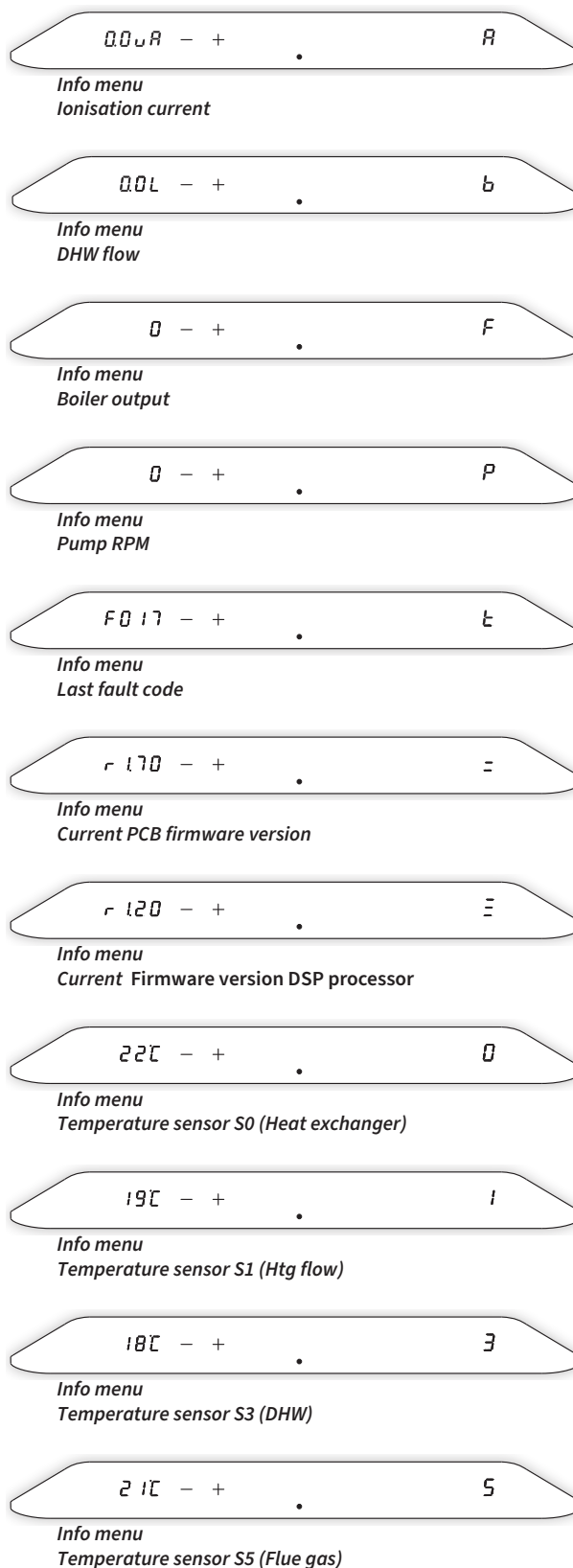
By tapping the plus symbol + and the minus symbol — the following characteristics are displayed in succession:

### Left display

- ▶ Ionisation current in  $\mu\text{A}$
- ▶ Domestic hot water flow in litres/minute
- ▶ Boiler output in kW
- ▶ Pump RPM in %
- ▶ Last fault code
- ▶ Current PCB Firmware version
- ▶ Current Firmware version DSP processor
- ▶ Temperature sensor S0 (Heat exchanger)
- ▶ Temperature sensor S1 (Htg flow)
- ▶ Temperature sensor S2 (not present)
- ▶ Temperature sensor S3 (DHW)
- ▶ Temperature sensor S4 (not present)
- ▶ Temperature sensor S5 (Flue gas)
- ▶ Temperature sensor S6 (Outdoor sensor option)
- ▶ Temperature sensor S7 (Cylinder sensor option)




### Right display

A  
b  
F  
P  
t  
=  
=  
0  
1  
2  
3  
4  
5  
6  
7





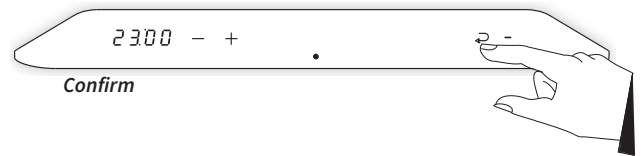
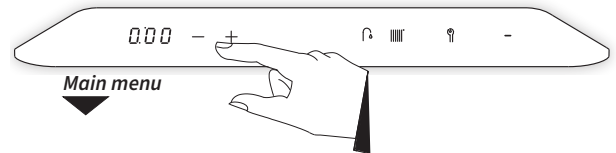
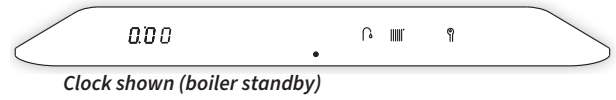
## 9.2 Setting and adjusting the clock functions

### Show actual time












- ▶ With the boiler in standby or operating, gently tap just above the power LED to access the main menu (also see **§9.1.1**). The actual time is shown in the left display. The symbols ,  and  will also illuminate.
- ▶ If the boiler is switched off when accessing the main menu the symbols **—** and **+** will also illuminate.

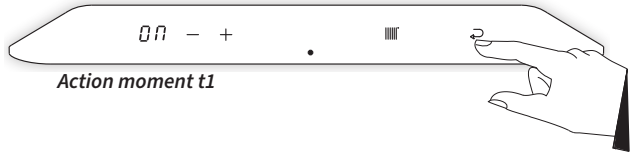
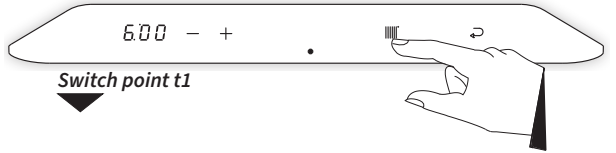
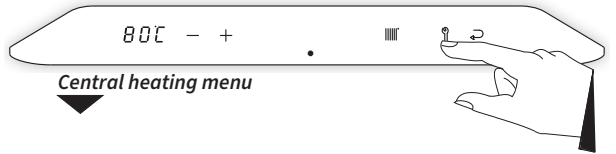
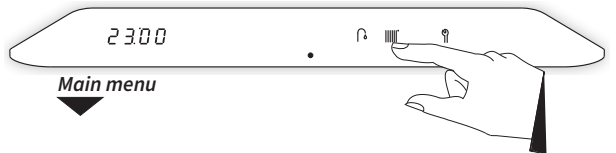
### Clock setting and adjusting

- ▶ Ensure parameter P087 is set to 1 (clock active) default = 1
- ▶ Ensure the boiler is switched off by touching and holding just above the power LED and holding this for 2 seconds.
- ▶ Tap just above the power LED to access the main menu. Adjust the clock to the correct time by pressing either the **—** or **+** symbol.
  - Note:** Holding the **—** or **+** symbol for more than 1 second will make the clock time adjustment scroll faster.
- ▶ Tap the Enter  symbol to confirm.
  - Note:** By tapping just above the power LED instead of the Enter  symbol the display returns to the main menu without saving any changes.









### 9.2.1 Programming the CH on / off times

- ▶ With the boiler in standby or operating, gently tap just above the power LED to access the main menu. The symbols ,  and  illuminate.
- ▶ Tap on the Central Heating  symbol.
- ▶ Tap on the Service  symbol.
- ▶ The symbols **—**, **+**,  and  are displayed. Also the first switching period "t1" illuminates on the left display.
- ▶ Tapping the **+** or **—** symbol will scroll between the 6 different on/off switching periods.
- ▶ Choose a switching period (for instance "t1") and tap on the Central Heating  symbol.
- ▶ Tap on the **+** or **—** symbol to set the time and tap the Central Heating symbol again to set the desired action, use the **+** or **—** symbol to select either **On / Off** or **—**. The options are as follows:
  - ▶ **On:** Start period CH on providing there is a demand from the room thermostat.
  - ▶ **Off:** End period CH off. No heating demand will be provided (boiler frost protection only).
  - ▶ **—**: No action. The time period set will be ignored during this section resulting in no On or Off period.
- ▶ Tap on the Central Heating  symbol to select the next switching period. Set the switching time and the corresponding action and repeat this, if required, for all 6 switching periods.
- ▶ Tap the Enter  symbol to confirm. The switching times and actions will be saved in the boiler PCB. (After 2 minutes of inactivity changes made will also be saved). A **P** appears in the right display before it returns to the Central Heating menu.
  - Note:** By tapping just above the power LED instead of the Enter  symbol the display returns to the Central Heating menu without saving any changes.
























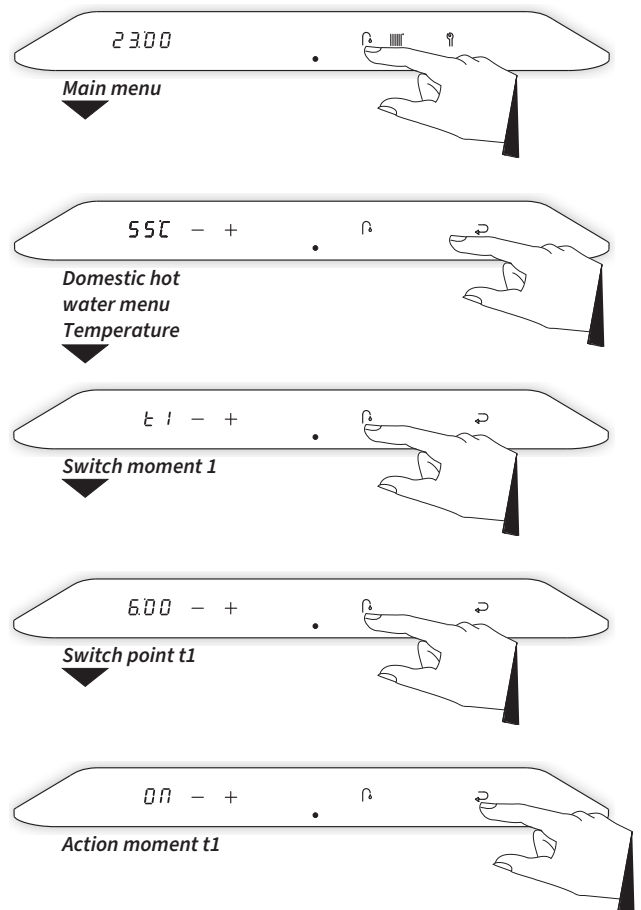
## To operate the boiler with the programmed times

- ▶ With the boiler in standby or operating gently tap just above the power LED to access the main menu (also see §9.1.1)
- ▶ Tap on the Central Heating  symbol. The current temperature of the domestic hot water is illuminated in the left display. Tap the Central Heating  symbol again to activate the programmed time settings.
- ▶ Using the Plus  or Minus  symbol, set the desired program option (P-on, T-on, On or Off).
- ▶ Tap the Enter  symbol to confirm. The chosen program option will be saved in the boiler PCB. (After 2 minutes of inactivity any changes made will automatically be saved. A **P** appears in the right display and then returns to the Central Heating menu.






Note: By tapping just above the power LED instead of the Enter  symbol the display returns to the Central Heating menu without saving any changes.


### 9.2.2 Programming the DHW pre-heat on / off times

- ▶ With the boiler in standby or operating gently tap just above the power LED to access the main menu. The symbols ,  and  illuminate.
  - ▶ Tap the Domestic Hot Water symbol . The set temperature is shown on the left display. Tap the Domestic Hot Water symbol  again to switch to the clock program setting
  - ▶ Tap on the Service  symbol.
  - ▶ The symbols , ,  and  are displayed. Also the first switching period "t1" illuminates on the left display.
  - ▶ Tapping the  or  symbol will scroll between the 4 different on/off switching periods.
  - ▶ Choose a switching period (for instance "t1") and tap on the Domestic Hot Water symbol .
  - ▶ Tap on the  or  symbol to set the time and tap the Domestic Hot Water symbol  again to set the desired action, use the  or  symbols to select either **On / Off** or **-**. The actions to be set are as follows:
    - ▶ **On:** Start period, DHW pre heat will now keep the heat exchanger at the preset temperature.
    - ▶ **Off:** End period, DHW pre heat is now deactivated so the heat exchanger will not be kept at temperature.
    - ▶ **-**: No action. The time period set will be ignored during this section resulting in no On or Off period.
  - ▶ Tap on the Domestic Hot Water symbol  to select the next switching period. Set the switching time and the corresponding action and repeat this, if required, for all 4 switching periods.
  - ▶ Tap the Enter  symbol to confirm. The switching times and actions will be saved in the boiler PCB. (After 2 minutes of inactivity changes made will also be saved). A **P** illuminates in the right display before it returns to the Central Heating menu.
- Note: By tapping just above the power LED instead of the Enter  symbol the display returns to the Central Heating menu without saving any changes.



### To operate the preheat with the programmed times

- ▶ With the boiler in standby or operating gently tap just above the power LED to access the main menu (also see **§9.1.1**).
- ▶ Tap on the domestic hot water symbol . The current temperature is illuminated in the left display. Tap the Domestic Hot Water symbol  again to activate the programmed time settings.
- ▶ Using the Plus  or Minus  buttons, set the desired program setting (P-on, On, Eco or Off).
- ▶ Tap the Enter  symbol to confirm. The chosen program setting will be saved in the boiler PCB. (After 2 minutes of inactivity changes made will automatically be saved). A **P** illuminates in the right display before it returns to the Central Heating menu.

Note: By tapping just above the power LED instead of the Enter  symbol the display returns to the Domestic Hot Water menu without saving any changes.

## 9.3 Parameters

Parameter	Setting	Set value	Description/Setting range
<b>P001</b>	Boiler type	0	0 = Xtreme Combination 1 = Xtreme System boiler + cylinder 2 = Xtreme Instantaneous water heater 3 = Xtreme System boiler
<b>P010</b>	Set maximum central heating output	75 ----- 100	75 = Xtreme 36 100 = Xtreme 24 / Xtreme 30 25% to 100% (see <b>§9.5</b> )
<b>P030</b>	Central heating pump setting	0	0 = overrun active 1 = continuous <sup>1</sup>
<b>P031</b>	Maximum capacity of modulating central heating pump	65	Value displayed as a percentage (%)
<b>P032</b>	Minimum capacity of modulating central heating pump	35	Set 15% of parameter <b>P031</b>
<b>P033</b>	Central heating pump overrun after central heating demand	1	0 to 15 minutes
<b>P034</b>	Central heating pump overrun after boiler operation	1	0 to 15 minutes (n/a for Combi boiler)
<b>P035</b>	Pump modulation	1	0 = off 1 = on
<b>P036</b>	Anti-cycle time central heating	5	Delay time for central heating only 0 to 15 minutes (this does not delay DHW production)
<b>P040</b>	Activate clock program CH operation	1	0 = inactive 1 = active
<b>P057</b>	Response for OpenTherm room thermostat	1	0 = do not respond to heat demand if requested temperature is lower than 30°C 1 = respond to heat demand with minimum flow temperature limited at 30°C 2 = respond to heat demand with maximum set flow temperature (on/off function)
<b>P059</b>	Maximum setting value of flow temperature	80	10°C to 90°C
<b>P070</b>	Set maximum DHW output	100	20% to 100%
<b>P074</b>	Number ECO days (During pre-heat)	7	0 to 10 days
<b>P075</b>	Max flow temp during DHW production	80	60°C to 90°C
<b>P077</b>	Waiting time central heating demand after DHW operation	0	0 to 15 minutes
<b>P081</b>	Setting of three-way valve or electric shut-off valve	0	0 = powered during central heating demand 1 = powered during DHW operation
<b>P087</b>	Activate clock program DHW operation	0	0 = inactive 1 = active

<sup>1</sup> DHW comfort function off.

## 9.4 Switching DHW comfort function on and off

It is possible to switch on and off the DHW comfort function from an OpenTherm room thermostat (provided the thermostat supports this function). To do this, the boiler must be set at the 'eco' setting and the parameter **P074** must be set to 0. The self-learning character of the control is therefore switched off. (See section **§9.4** for further options).

## 9.5 Adjusting the maximum central heating output

The maximum central heating output is factory-set. If this needs to be adjusted to suit the requirements of the property, then the output can be modified via parameter **P010**.

See the table below:

Setting central heating output.

P010	Desired central heating output in kW (approx.)			Minimum flow quantity (ltrs/min)		
	Xtreme					
	24	30	36	24	30	36
100	13.8	19.4	25.7	6.6	9.3	12.3
75	10.6	14.6	19.3	5.1	6.9	9.2
50	7.3	9.8	12.8	3.5	4.7	6.1
35	5.4	7.0	9.0	2.6	3.3	4.3
25	-	5.1	6.4	-	2.4	3.1

*Note:*  
The output during combustion will slowly increase or decrease as per the "set" flow target temperature (modulation on  $T_{flow}$ ).

## 9.6 Adjusting pump capacity

The Xtreme boiler has an ErP pump that modulates based on the central heating output demand. The minimum and maximum output of the pump can be adjusted with the parameters **P031** and **P032**. See section **§9.3**.

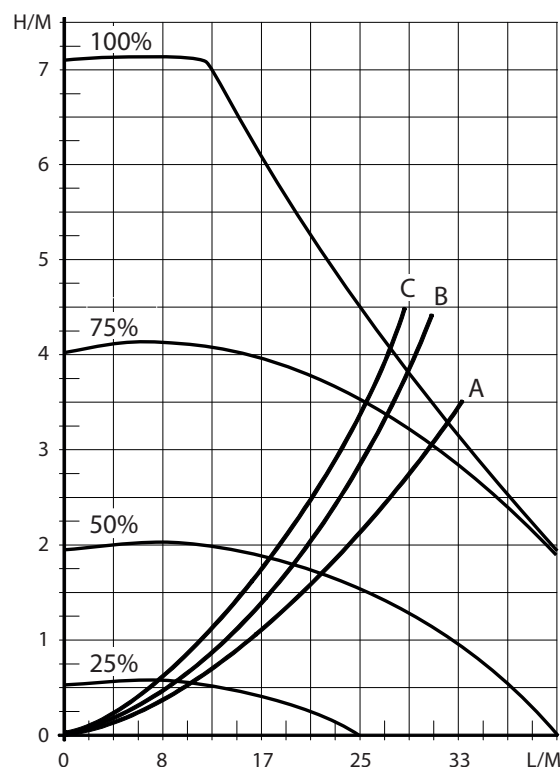
The set value of parameter **P031** (max. pump setting) is a percentage of the maximum pump capacity and is linked to parameter **P010** maximum central heating system output. The set value of parameter **P032** (min. pump setting) is linked to the minimum central heating output.

The pump capacity must be set so that the temperature differential ( $\Delta t$ ) between the flow and return is correct for the system design criteria.

If the central heating load modulates between the minimum and maximum value, the pump capacity will modulate proportionately with it.

### Pressure loss graph boiler central heating side

- A. Xtreme 24
- B. Xtreme 30
- C. Xtreme 36



## 9.7 Outside weather compensation

When an optional Intergas outdoor sensor is connected, the heating flow temperature will be automatically controlled according to the set heating curve, depending on the outside temperature at that time.

The weather-dependent control functions solely with an on/off room thermostat. When using an OpenTherm room thermostat, the outside temperature will be relayed, but the heating line of the central heating boiler will not be active.

Taking the graph as an example and using the factory setting A. With an outside temperature of  $-9^{\circ}\text{C}$  the boiler will achieve an approximate heating flow temperature of  $80^{\circ}\text{C}$ . Adjusting the OTC to example B. will result in an approximate heating flow temperature of  $60^{\circ}\text{C}$ .

### Heating line

X: T outside in  $^{\circ}\text{C}$

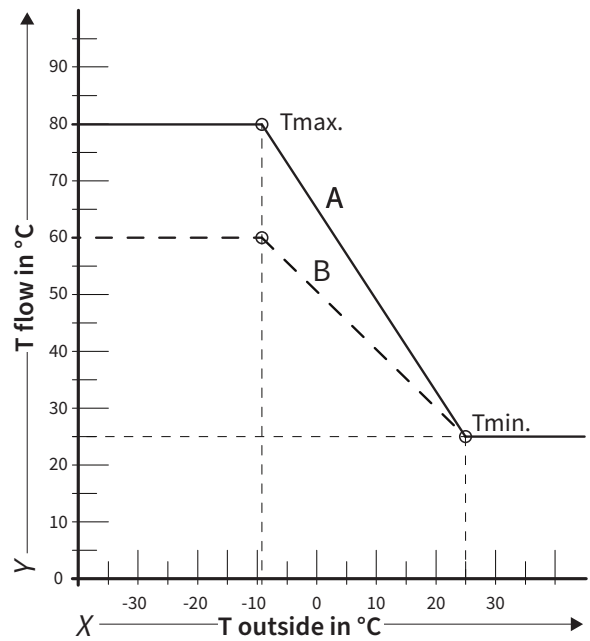
Y: T flow in  $^{\circ}\text{C}$

A. Factory setting

( $T_{\text{max CH}} = 80^{\circ}\text{C}$ ,  $T_{\text{min CH}} = 25^{\circ}\text{C}$ ,  $T_{\text{min out}} = -9^{\circ}\text{C}$ ,  $T_{\text{max out}} = 25^{\circ}\text{C}$ )

B. Example

( $T_{\text{max CH}} = 60^{\circ}\text{C}$ ,  $T_{\text{min CH}} = 25^{\circ}\text{C}$ ,  $T_{\text{min out}} = -9^{\circ}\text{C}$ ,  $T_{\text{max out}} = 25^{\circ}\text{C}$ )





## 9.8 Conversion to another gas type



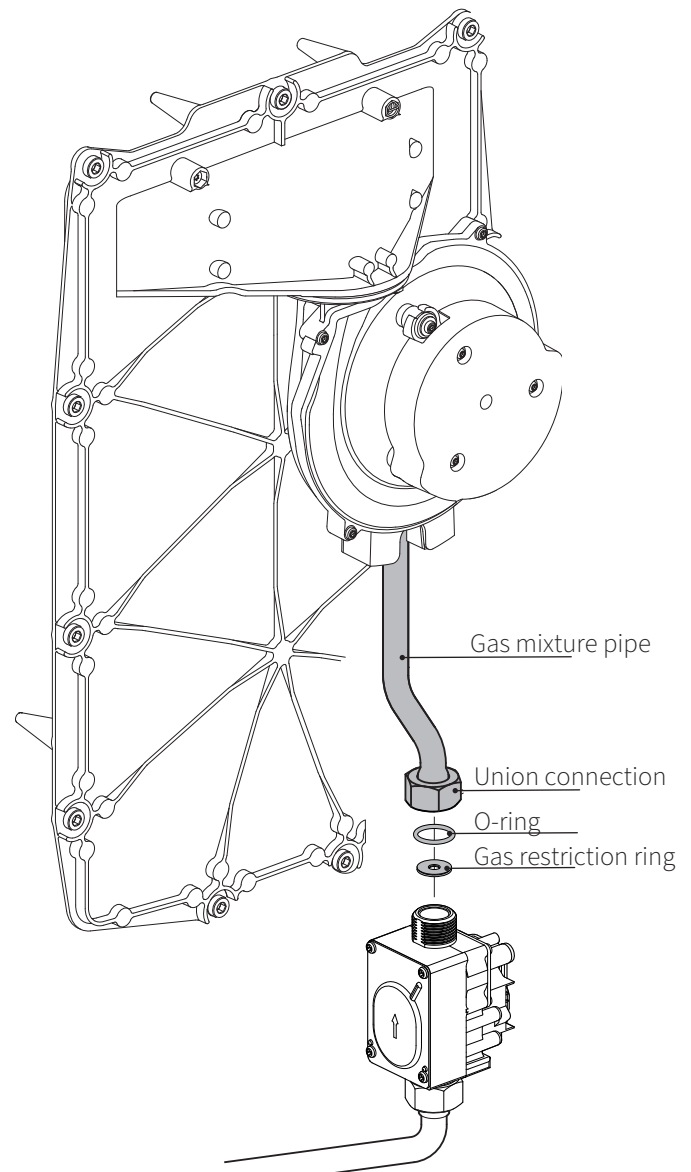
### IMPORTANT

- ▶ **Only qualified competent gas safe registered engineers may work on the boiler and Intergas training is recommended before undertaking the following procedure.**

If the boiler is connected to a different gas type than originally set by the manufacturer, then the gas restriction ring must be replaced. Conversion kits for other gas types are available to order.

### Changing / replacing the gas restriction ring

- ▶ Switch off the boiler and isolate the power supply.
- ▶ Close the gas isolation valve supplied with the boiler and test to ensure there is no let-by (the valve must be replaced if faulty or letting by before continuing with the conversion).
- ▶ Remove the room sealed front casing of the boiler.
- ▶ Disconnect the union above the gas valve and rotate the gas mixture pipe clear of the gas valve.
- ▶ Replace the O-ring seal and gas restriction ring with the ones supplied in the new conversion kit (ensuring they are the correct type for the gas category being supplied to the boiler).
- ▶ Reassemble in reverse order.
- ▶ Open the boiler gas isolation valve.
- ▶ Check the gas connections prior to the gas valve for tightness.
- ▶ Reestablish the power to the boiler.
- ▶ Briefly operate the boiler checking all unions above the gas valve for tightness with a calibrated electronic gas leak detector or leak detection fluid .
- ▶ Now check the adjustment of the gas/air proportion (see **§9.10 to §9.10.3**).
- ▶ Place the supplied, fuel category sticker, over the existing one on the gas valve.
- ▶ Place the second supplied, fuel category sticker near the data plate under the boiler.
- ▶ After adjusting the mixture correctly and completing all gas safety checks, as per regulation 26(9), then replace the room sealed front cover to check the flue integrity at full gas rate ("H" in the display).



## 9.9 Gas/air control



### IMPORTANT

- ▶ **Only qualified competent gas safe registered engineers may perform adjustments to the gas/ air ratio control on the gas valve.**

The gas/air control valve is factory set to optimise combustion for the gas type used. The gas type (Natural Gas or LPG) is detailed on the data plate situated under the boiler

The boiler must only be operated with the gas category specified on the aforementioned data plate.

The boiler may optionally be converted to another gas type using a conversion set. See **§9.8 Conversion to another gas type.**

For the correct gas restriction ring, see the table below.

**Table 1: Gas restriction rings**

Boiler type Xtreme	Fan Venturi Insert number	Gas category	
		Natural gas G20 20 mbar	LPG G31 30 & 50 mbar
		Gas restriction ring number	
<b>24</b>	528	392	315
<b>30</b>	500	450	370
<b>36</b>	500	450	370

By default, the boiler is set to natural gas G20 unless otherwise stated on the boiler carton and data label.

To ensure correct operation of the gas air control valve a calibrated electronic flue gas analyser must be used, taking the measurement directly from the flue sampling test point with the appliance firstly at high (min 10 minutes) and then minimum output (for this, see **§9.10.1** and **§9.10.2**). Any adjustments to the valve must only be corrected at minimum out (see **§9.10.3**).



### IMPORTANT

- ▶ **Inspection of the gas/air control valve must be carried out with room sealed casing opened.**
- ▶ **The measurement must be performed based on O<sub>2</sub> ; in other words, the flue gas analyser must have an O<sub>2</sub> sensor.**
- ▶ **The deviation of the flue gas analyser may be a maximum of ± 0.3% (based on O<sub>2</sub> ).**
- ▶ **Any extreme weather conditions i.e. high winds can influence the results of the test.**
- ▶ **Any readings that are out of tolerance during maximum output cannot be corrected by adjusting the gas valve. The boiler must be meticulously inspected for gas quality / type, correct components used (especially the gas restriction ring and the fan including venturi).**
- ▶ **When replacing components and/or converting to another gas type, the operation of the gas air control valve must always be checked.**

## 9.10 Inspection of the gas air control valve


### 9.10.1 Measuring the flue gas at maximum output

- A. Switch off the boiler (see **§8.2.1**).  
A dash – will appear on the right display and the central heating pressure will be visible on the left display.
- B. Remove the room sealed cover of the boiler by loosening the 2x 5mm Allen key screws (1) and then sliding it up and forward (2).
- C. Remove the cap of the flue gas sampling test point (3) on the appliance connector on top of the boiler.
- D. Place the sampling probe of the calibrated electronic flue gas analyser into the flue gas sampling point (3).



#### IMPORTANT

- ▶ **Make sure that the flue gas analyser is calibrated. The start-up procedure of the flue gas analyser must be completed before the analyser probe is placed in the flue gas measurement point.**
- ▶ **The analyser probe must completely seal off the flue gas measurement point to provide a reliable measurement.**
- ▶ **The end of the analyser probe must be located entirely in the flue gases (middle of the flue gas pipe).**

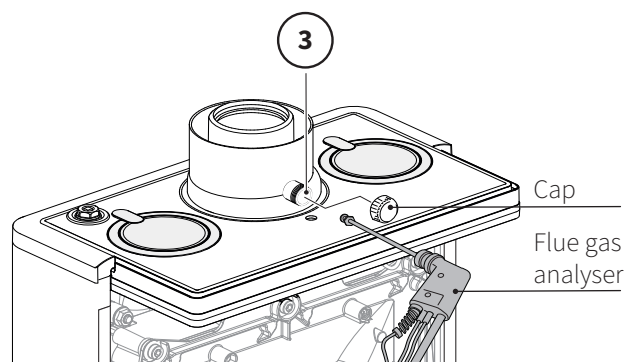
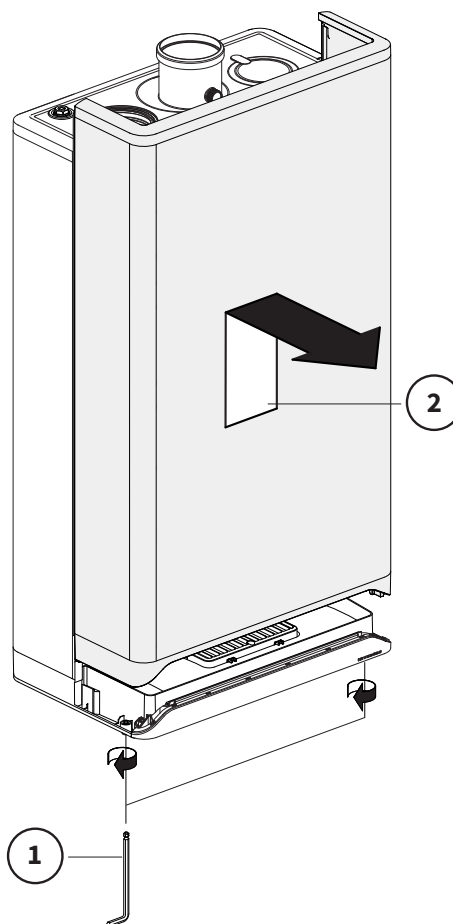
- E. Switch on the boiler by touching above the power light for 2 seconds.
- F. Switch on the boiler to maximum output. To do this, hold the Service symbol  and at the same time tap the Plus symbol + twice until the capital letter **H** appears on the right display.
- G. Wait until the readout of the flue gas analyser is stable (at least 10 minutes).



#### IMPORTANT

- ▶ **Make sure that the capital letter **H** appears on the right display. This provides assurance that the boiler is operating as maximum load.**

- H. Note the measured  $\text{CO}_2(\text{H})$  value.  
 $\text{CO}_2(\text{H}) = \text{measured maximum output } \text{CO}_2 \text{ value}$
- I. Check according to Table 2 whether the measured maximum output  $\text{CO}_2(\text{H})$  % is between the indicated upper and lower limits.
- J. The flue gas performance measurement must also be checked at minimum output (see **§9.10.2**).



**Table 2: Allowed CO<sub>2</sub>(H) limits at maximum output (open casing)**

Value limits	Gas category	
	Natural gas G20	LPG G31
	CO <sub>2</sub> [%]	CO <sub>2</sub> [%]
Upper limit	9.6	10.8
Lower limit	8.6	9.8



**IMPORTANT**

▶ Any readings that are out of tolerance during maximum output cannot be corrected by adjusting the gas valve. The boiler must be meticulously inspected for gas quality / type, correct components used (especially the gas restriction ring and the fan including venturi).

**9.10.2 Measuring the flue gas at minimum output**

Before measuring the flue gases at minimum output, the measurement at maximum output must be completed.

See **§9.10.1**

The measured CO<sub>2</sub> (H) % at maximum output is important to determine equilibrium, this must be completed before checking the minimum output %.

- Switch on the boiler at minimum output. To do this, tap simultaneously the Service symbol and the Minus symbol — until the capital letter **L** appears on the right display.
- Wait until the readout of the flue gas analyser is stable (at least 10 minutes).
- Note the measured CO<sub>2</sub>(L) value.  
*CO<sub>2</sub>(L) = measured minimum output CO<sub>2</sub> value*
- Check according to Table 3 whether the measured minimum output CO<sub>2</sub>(L) value is between the indicated upper and lower limits.
- If the minimum output measurement falls outside the limits given in Table 3a or 3b, continue at **§9.10.3** to adjust the gas valve. If the setting is correct, continue to Step F.



▶ The CO<sub>2</sub> upper limit is the CO<sub>2</sub>(H) value that was noted during the maximum output measurement. (See **§9.10.1**)

**Table 3: Allowed CO<sub>2</sub>(L) limits at minimum output (open casing)**

Value limits	Gas category	
	Natural gas G20	LPG G31
	CO <sub>2</sub> [%]	CO <sub>2</sub> [%]
Upper limit	CO <sub>2</sub> (H)	CO <sub>2</sub> (H) - 0.3
Lower limit	8.4	9.4





### IMPORTANT

- ▶ **The gas air control is correctly set if the measured value at minimum output falls within the indicated upper and lower limits. Adjustment of the gas air control is not necessary in this case. The setting at minimum output must be adjusted using the method described in §9.10.3 Minimum output correction if the measured value is outside the indicated limits.**





### Example (Natural gas G20)

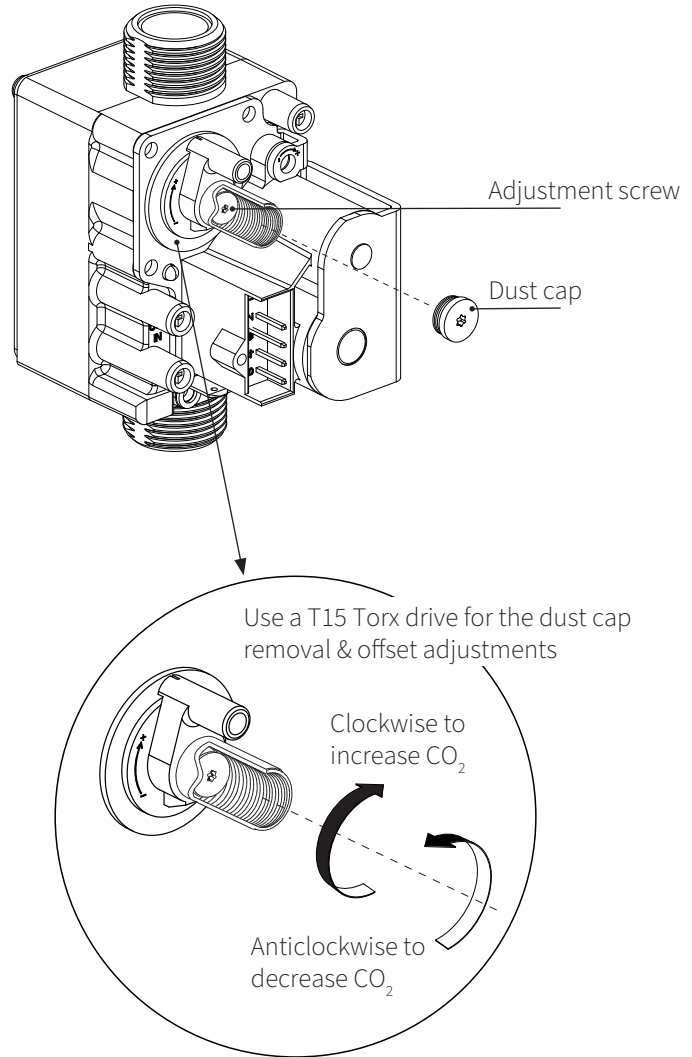
- ▶ **During maximum output a CO<sub>2</sub>(H) value of 9.0 % has been measured. In this case the CO<sub>2</sub>(L) value at minimum output must be  $8.7 \pm 0.1$  % (=  $0.5 \times \text{CO}_2(\text{H}) + 4.2$ ) as stated in the table 4 and 5. When measuring the gas-air ratio at minimum output (L) and the value is out of this range then it must be adjusted, as described in §9.10.3**

- F. Reattach the room sealed cover and tighten the 2 screws by hand.  
Check the CO value at minimum output. The maximum allowed CO measurement value is 160 ppm.
- G. Switch the boiler to maximum output. To do this, hold the Service symbol  and at the same time tap the Plus symbol  twice **+** until the capital letter **H** appears on the right display. Check the CO value at maximum output. The maximum allowed CO measurement value is 160 ppm.
- H. Switch off the boiler.
- I. Remove the probe of the flue gas analyser from the flue gas sampling point and carefully replace the cap on the adapter above the boiler.
- J. Switch on the boiler again.
- K. Check the gas integrity of the flue gas sampling point.
- L. Carry out a flue integrity test via the air sampling point on the boiler adaptor.

### 9.10.3 Minimum output correction

Before the minimum output correction is performed, the maximum output and minimum output measurements must be completed. The measured  $\text{CO}_2(\text{H})$  value at maximum output is important for determining the correct value for the setting at minimum output (see §9.10.1 and §9.10.2).

- Remove the dust cap of the gas valve so that the adjustment screw is accessible.
- Switch on the boiler at minimum output. To do this, tap simultaneously the Service button  and the Minus button  until the capital letter **L** appears on the right display.
- Wait until the readout of the flue gas analyser is stable (at least 3 minutes).
- Measure the  $\text{CO}_2(\text{L})$  value.
- Using the adjustment screw B, set the correct  $\text{CO}_2(\text{L})$  value. For the correct  $\text{CO}_2(\text{L})$  setting value, see Tables 4a, or 4b.
- Re-attach the cover screw of the gas valve so that the adjustment screw is sealed.
- Check the measurements at both maximum output and minimum output noted in §9.10.1 and §9.10.2 (start with Step F in §9.10.1) to ensure the correct flue gas emission levels are obtained.



- ▶ **Select the correct table depending on the applicable gas category:**  
**4a: natural gas (G20)**  
**4b: LPG 3P (G31)**
- ▶ **The maximum output measurement value is important for a correct adjustment. This measurement value was noted during the maximum output measurement  $\text{CO}_2(\text{H})$  (see §9.10.1).**
- ▶ **Turning the adjustment screw to the right increases  $\text{CO}_2$ . Turning to the left decreases  $\text{CO}_2$ .**
- ▶ **Turn the adjustment screw with small steps and wait after each turn until the measurement stabilises.**

**Table 4a: Checking  $\text{CO}_2(\text{L})$  levels for Natural gas (open casing)**

Natural Gas	G20 (20 mbar)
Measured value at maximum output (see §9.10.1)	Setting value minimum output (= $0.5 \times \text{CO}_2(\text{H}) + 4.2$ )
$\text{CO}_2(\text{H})$ [%]	$\text{CO}_2(\text{L})$ [%]
9.6	→ $9.0 \pm 0.1$
9.4	→ $8.9 \pm 0.1$
9.2	→ $8.8 \pm 0.1$
9.0	→ $8.7 \pm 0.1$
8.8	→ $8.6 \pm 0.1$
8.6	→ $8.5 \pm 0.1$

**Table 4b: Checking  $\text{CO}_2(\text{L})$  levels for LPG (open casing)**

LPG	G31 (37 mbar)
Measured value at maximum output (see §9.10.1)	Setting value minimum output (= $\text{CO}_2(\text{H}) - 0.3$ )
$\text{CO}_2(\text{H})$ [%]	$\text{CO}_2(\text{L})$ [%]
10.8	→ $10.5 \pm 0.1$
10.6	→ $10.3 \pm 0.1$
10.4	→ $10.1 \pm 0.1$
10.2	→ $9.9 \pm 0.1$
10.0	→ $9.7 \pm 0.1$
9.8	→ $9.5 \pm 0.1$





- ▶ **Example (when using natural gas G20)**  
**During maximum output, a  $\text{CO}_2(\text{H})$  level of 9.0% is measured. In this instance a minimum output  $\text{CO}_2$  value must be  $8.7 \pm 0.1\%$ .**


## 10 FAULTS

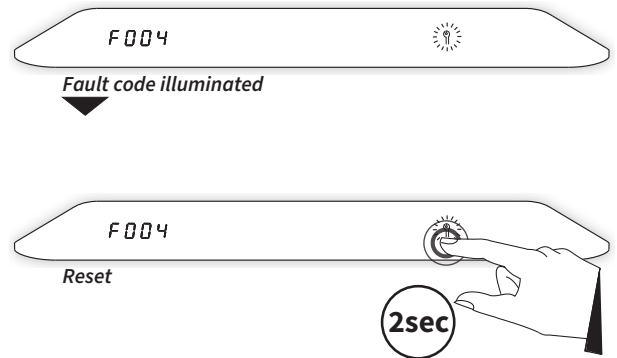
### 10.1 Fault codes

#### Viewing fault codes

If the boilers PCB detects a fault, this is indicated by a flashing service symbol  on the display. A fault code, such as **F004**, is illuminated on the left display. The service symbol  remains flashing until the boiler has reset or where required the faulty component has been replaced.

#### Resetting the boiler

The boiler can be reset by touching the flashing Service button  and holding it for 2 seconds. If the fault code reoccurs an Intergas trained engineer should be requested.



#### IMPORTANT

▶ **Using the fault code table below to establish the cause of the issue before attempting to reset the boiler.**

**NOTE: A reset is not possible when a component is outside its tolerance values.**

The following fault codes can be established:

Fault code	Description	Possible cause / solution
<b>F000</b>	Sensor S0 is defective.	▶ Replace heat exchanger sensor S0.
<b>F001</b>	Temperature is too high during central heating demand.	<ul style="list-style-type: none"> <li>▶ Vent the heating system &amp; boiler heat exchanger (see <b>§8.2.1</b>).</li> <li>▶ Pump does not operate (check power, impellor, replace pump).</li> <li>▶ Check wiring to the CH flow sensor S1 (ensure its connected and not damaged).</li> <li>▶ Check the CH flow sensor S1 (is located and installed correctly)</li> <li>▶ Check for the correct operation of CH flow sensor S1.</li> <li>▶ Replace central heating flow sensor S1.</li> </ul>
<b>F002</b>	Temperature too high during DHW demand.	<ul style="list-style-type: none"> <li>▶ Check wiring to the DHW sensor S3 (ensure its connected and not damaged).</li> <li>▶ Check the DHW sensor S3 (is located and installed correctly).</li> <li>▶ Check for the correct operation of DHW sensor S3.</li> <li>▶ Replace domestic hot water sensor S3.</li> </ul>
<b>F003</b>	Flue gas temperature is too high.	<ul style="list-style-type: none"> <li>▶ Check heat exchanger for contamination or debris.</li> <li>▶ Check the flue / chimney for blockages.</li> </ul>
<b>F004</b>	No flame during start-up.	<ul style="list-style-type: none"> <li>▶ Gas valve is faulty or no power from PCB (24v dc pins 1 &amp; 5).</li> <li>▶ Gas inlet working pressure below 17mbar (20mbar recommended).</li> <li>▶ Condensation drain is blocked or frozen.</li> <li>▶ Check ignition module, ignition pin, lead or spark gap.</li> <li>▶ No power to Ignition unit.</li> <li>▶ Poor earth to boiler or ionisation pin.</li> </ul>
<b>F005</b>	Flame failure during normal operation.	<ul style="list-style-type: none"> <li>▶ Condensation drain is blocked or frozen.</li> <li>▶ Gas inlet working pressure below 17mbar (20 mbar recommended).</li> <li>▶ Check ignition module, ignition pin, lead or spark gap.</li> <li>▶ Check adjustment of gas valve (See <b>§9.10.1</b>).</li> <li>▶ Check the flue integrity for possible re-circulation or blockages</li> <li>▶ Poor earth to boiler or ionisation pin.</li> </ul>
<b>F006</b>	Flame simulation.	<ul style="list-style-type: none"> <li>▶ Replace faulty gas valve.</li> <li>▶ Replace faulty PCB.</li> </ul>

<b>Fault code</b>	<b>Description</b>	<b>Possible cause / solution</b>
<b>F007</b>	No or insufficient ionisation current.	<ul style="list-style-type: none"> <li>▶ Check ionisation/ignition pin is clean and correctly located.</li> <li>▶ Check ionisation/ignition pin wiring is connected not damaged.</li> <li>▶ Replace ionisation/ignition pin.</li> </ul>
<b>F008</b>	Incorrect fan speed detected	<ul style="list-style-type: none"> <li>▶ Check fan wiring.</li> <li>▶ Check and/or replace fan assembly .</li> <li>▶ Replace PCB.</li> </ul>
<b>F009</b>	Internal PCB fault.	<ul style="list-style-type: none"> <li>▶ Replace PCB.</li> </ul>
<b>F010, F011</b>	Heat exchanger Sensor S0 fault.	<ul style="list-style-type: none"> <li>▶ Check wiring to heat exchanger sensor S0 (ensure its connected and not damaged).</li> <li>▶ Check heat exchanger sensor S0 resistance values are correct.</li> <li>▶ Check for the correct location of heat exchanger sensor S0.</li> <li>▶ Replace heat exchanger sensor S0.</li> </ul>
<b>F012</b>	Flue gas sensor fault S5.	<ul style="list-style-type: none"> <li>▶ Check wiring to flue gas sensor S5 (ensure its connected).</li> <li>▶ Check flue gas sensor S5 resistance values are correct .</li> <li>▶ Check for the correct location of flue gas sensor S5.</li> <li>▶ Replace flue gas sensor S5.</li> </ul>
<b>F014</b>	Heat exchanger sensor S0 mounting fault.	<ul style="list-style-type: none"> <li>▶ Heat exchanger sensor S0 is not mounted correctly. Attach the sensor correctly.</li> </ul>
<b>F015</b>	Heating sensor S1 mounting fault.	<ul style="list-style-type: none"> <li>▶ Central heating flow sensor is not mounted correctly. Attach the sensor correctly.</li> </ul>
<b>F016</b>	DHW sensor S3 mounting fault.	<ul style="list-style-type: none"> <li>▶ Domestic hot water sensor S3 is not mounted correctly. Attach the sensor correctly.</li> </ul>
<b>F018</b>	Flue and/or air supply duct is blocked/restricted.	<ul style="list-style-type: none"> <li>▶ Check the flue and the air supply duct including seals or gaskets.</li> <li>▶ Clean the flue and/or the air supply duct.</li> </ul>
<b>F019</b>	Boiler memory module fault.	<ul style="list-style-type: none"> <li>▶ Check BMM wiring or connector for damage.</li> <li>▶ Replace BMM.</li> </ul>
<b>F027</b>	Short circuit of outdoor weather compensation sensor S6.	<ul style="list-style-type: none"> <li>▶ Check wiring to outdoor sensor and ensure its connected correctly and not damaged.</li> <li>▶ Check the outdoor sensor resistance values are correct.</li> <li>▶ Replace the outdoor sensor.</li> </ul>
<b>F028</b>	Reset error.	<ul style="list-style-type: none"> <li>▶ Check the reset button for unintentional operation (e.g. cleaning of control panel).</li> <li>▶ Replace the PCB.</li> </ul>
<b>F029</b>	Gas valve fault.	<ul style="list-style-type: none"> <li>▶ Check the gas valve wiring, coil resistances.</li> <li>▶ Replace the PCB.</li> </ul>
<b>F031</b>	CH flowsensor fault S1.	<ul style="list-style-type: none"> <li>▶ Check wiring of central heating flow sensor for damage and ensure its connected correctly.</li> <li>▶ Ensure the central heating flow sensor resistance values are correct.</li> <li>▶ Check for the correct operation of central heating flow sensor S1.</li> <li>▶ Replace central heating flow sensor S1.</li> </ul>



#### **IMPORTANT**

- ▶ **Any replacement components must be original Intergas parts.**
- ▶ **Using 3rd party components or installing them incorrectly can lead to serious consequences, with a risk to health, occupants or buildings.**



## 10.2 Other faults

### 10.2.1 No heat (central heating)

Possible causes	Analysis	Solution
The power LED is not illuminated.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the power supply. Check the fuse; see Electrical schematic <b>§12.1</b> .
The right display shows a line (—). The boiler is off.	→ <b>Yes</b> ↓ <b>No</b>	→ Switch on the boiler by touching just above the power LED and holding this for 2 seconds
Room thermostat / weather-dependent control is not connected or is defective.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the wiring. Check OpenTherm, On/Off connection of the boiler, or the connection between the central heating boiler and the OpenTherm room thermostat. Replace the thermostat. Replace the weather-dependent control.
No electricity (24V).	→ <b>Yes</b>	→ Replace defective programmer. Check the wiring according to the schematic. Check Connector X13.

### 10.2.2 Central heating does not reach the correct temperature

Possible causes	Analysis	Solution
System water pressure is too low.	→ <b>Yes</b> ↓ <b>No</b>	→ Top up the system via the filling loop. See <b>§8.2.1</b>
Room thermostat is turned down.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the setting and adjust it if necessary.
Temperature is set too low.	→ <b>Yes</b> ↓ <b>No</b>	→ Increase the central heating temperature; see central heating demand. If an outdoor sensor is present: check the sensor location or for damage, check curve setting. See <b>§9.7</b> )
Poor or no flow in the system.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the $\Delta t$ ( $\pm 20^{\circ}\text{C}$ ) between central heating flow and return. Ensure no air locks are in system also check pump speed setting parameter <b>P031, P032</b> .
The boiler output is not correctly set.	→ <b>Yes</b> ↓ <b>No</b>	→ Adjust the boiler capacity. See <b>§9.5</b> and <b>§9.6</b> .
No heat transfer due to debris within the central heating boiler/system.	→ <b>Yes</b> ↓ <b>No</b>	→ Flush and clean the heating system via the central heating circuit to BS 7593 and install a return magnetic filter.
Flue and/or air supply duct is blocked or restricted.	→ <b>Yes</b>	→ Check and (if necessary) clean the flue and the air supply duct.

### 10.2.3 Central heating system remains too warm

Possible causes	Analysis	Solution
Room thermostat / weather-dependent control is defective or has a short circuit.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the wiring or batteries if applicable. Check OpenTherm, On/Off connection of the boiler, or the connection between the central heating boiler and the RF room thermostat. Replace the thermostat. Replace the weather-dependent control.
There is thermo-syphon in the central heating circuit (Radiators getting warm when DHW operates with combination boilers).	→ <b>Yes</b>	→ For thermo-syphon Install a check valve in the CH return pipework near the boiler. For under floor heating install a "normally open" zone valve into the flow circuit. (see under floor wiring diagram on our website).

### 10.2.4 No domestic hot water (DHW)

Possible causes	Analysis	Solution
The power LED is not illuminated.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the power supply. Check the fuse; see Electrical schematic <b>§12.1 Electrical schematic.</b>
Flow turbine does not work.	→ <b>Yes</b> ↓ <b>No</b>	→ Replace the flow turbine.
Domestic hot water flow < 2 l/min.	→ <b>Yes</b> ↓ <b>No</b>	→ Increase the domestic hot water flow.
Domestic hot water sensor S3 is defective.	→ <b>Yes</b> ↓ <b>No</b>	→ Replace domestic hot water sensor S3.
No electricity on the flow turbine (5V DC).	→ <b>Yes</b>	→ Check the wiring according to the schematic.

### 10.2.5 Domestic hot tap water does not reach the correct temperature

Possible causes	Analysis	Solution
Domestic hot water flow is too high.	→ <b>Yes</b> ↓ <b>No</b>	→ Reduce the domestic hot water flow.
Setting for domestic hot water temperature is too low.	→ <b>Yes</b> ↓ <b>No</b>	→ Increase the domestic hot water temperature; see <b>§9.1.2 Domestic hot water menu.</b>
Insufficient heat transfer due to lime scale or contamination within the DHW water circuit.	→ <b>Yes</b> ↓ <b>No</b>	→ De-scale or flush the domestic hot water circuit within the boiler heat exchanger.
The central heating system becomes warm while operating the domestic hot water.	→ <b>Yes</b> ↓ <b>No</b>	→ For thermo-syphon Install a check valve in the CH return pipework near the boiler. For under floor heating install a "normally open" zone valve into the flow circuit. (see under floor wiring diagram on our website) .
Central heating pressure is too low.	→ <b>Yes</b> ↓ <b>No</b>	→ Top up the central heating system via the boiler filling loop until the pressure is between 1 to 1.5bar..
The flue is blocked.	→ <b>Yes</b>	→ Check the flue.

### 10.2.6 Burner ignites loudly

Possible causes	Analysis	Solution
Inlet Gas pressure is too high.	→ <b>Yes</b> ↓ <b>No</b>	→ The Gas meter governor may be defective. In this case, contact the energy company 0800 111999.
Ignition spark gap is incorrect.	→ <b>Yes</b> ↓ <b>No</b>	→ Replace the ignition pin complete with cable.
Gas-air control is not correctly adjusted.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the adjustment; see <b>§9.9 Gas/air control</b> and <b>§9.10 Inspection of the gas air control valve.</b>
The spark is weak	→ <b>Yes</b>	→ Check the ignition cable is connected to the ignition module correctly. Replace the ignition module mounted within the top cover. Replace the ignition pin.
Burner is defective	→ <b>Yes</b>	→ Replace the burner.

### 10.2.7 Burner resonates

Possible causes	Analysis	Solution
Gas inlet pressure lower than 20 mbar or sometimes lower.	→ <b>Yes</b> ↓ <b>No</b>	→ The Gas meter governor may be defective. In this case, contact the energy company 0800 111999.
There is recirculation of flue gases.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the flue and air supply ducts and seals
Gas-air control is not correctly adjusted.	→ <b>Yes</b> ↓ <b>No</b>	→ Check the adjustment; see <b>§9.9</b> and <b>§9.10</b> .
Burner seal is defective.	→ <b>Yes</b> ↓ <b>No</b>	→ Replace the burner seal.
Burner is defective.	→ <b>Yes</b>	→ Replace the burner.

### 10.3 Notifications

In addition to error codes, the burner control can also show notifications on the display. Notifications are displayed if an anomaly occurs somewhere in the system that does not affect the vital functioning of the system. Notifications disappear if the system can fix the abnormality. Intergas Heating should be consulted if a notification returns repeatedly.

The following notifications are distinguished:

Notification	Description	Possible cause / solution
<b>N030</b>	DHW demand is blocked.	<ul style="list-style-type: none"> <li>▶ Check if parameter P001 is set correctly.</li> <li>▶ Check wiring of domestic hot water sensor S3 for damage and ensure its connected correctly.</li> <li>▶ Ensure the DHW sensor resistance values are correct.</li> <li>▶ Check for the correct operation of domestic hot water sensor S3.</li> <li>▶ Replace domestic hot water sensor S3.</li> </ul>
<b>N152</b>	Power reduction due to flue gas sensor faulty.	<ul style="list-style-type: none"> <li>▶ Check whether flue gas sensor S5 is present and install it if necessary.</li> <li>▶ Check whether it has been mounted correctly.</li> <li>▶ Check the wiring for break / short circuit.</li> <li>▶ Replace flue gas sensor S5.</li> </ul>
<b>N202</b>	Burner switched off due to flue gas temperature limitation.	▶ Flue gas temperature higher as to be expected. Check the fins of the heat exchanger for wear. Replace the heat exchanger if necessary.
<b>N245</b>	Fan speed adapted to CAC protection.	▶ Backflow of flue gasses detected. Fan on low speed to prevent recirculation of flue gasses. Check the flue gas non-return valve.

# 11 MAINTENANCE

The boiler and the system must be inspected annually by an qualified competent gas safe registered engineer. The boilers heat exchanger should be cleaned and inspected as stated below at each service interval.

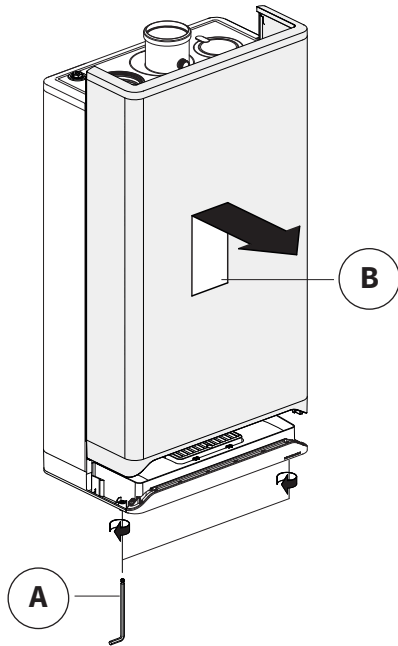


## CAREFUL

- ▶ After completion of the Annual service procedure all 26 (9) safety checks must be performed and the results recorded within the service & interim boiler work pages, at the back of this manual.
- ▶ Some components can be very hot during and just after operating the appliance.
- ▶ For Health & Safety reasons the use of PPE is recommended during the below procedure.

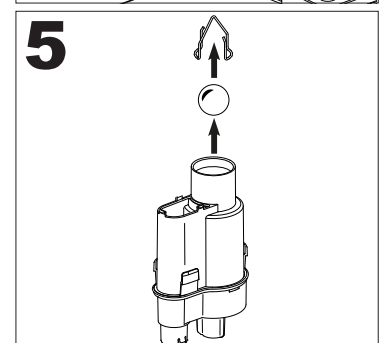
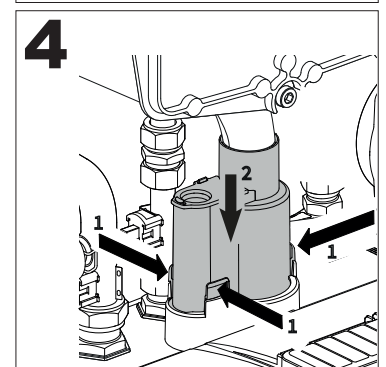
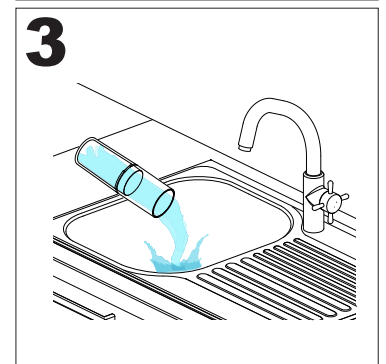
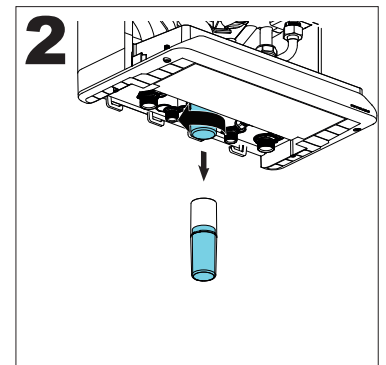
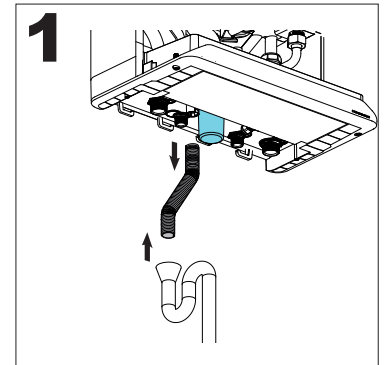
### 11.1 Annual service procedure

- ▶ Switch off the appliance and isolate the power supply at the fuse spur, make safe the appliance before continuing (Ref TB118).
- ▶ Close the boiler gas isolation valve (test for let-by).
- ▶ Remove the room sealed cover of the boiler by loosening the two Allen screws (A) and then lifting the panel up and forward (B)
- ▶ Wait until the boiler has cooled down. This can be done by opening a domestic hot water tap (with the power switched off).



### 11.2 Annual service continued (syphon maintenance)

- ▶ Detach the syphon cup (1) by rotating it a quarter turn to the left (anticlockwise) and then pulling it out downwards.
- ▶ Remove the flexible hose (2) from the syphon base and the sewage connection.
- ▶ Empty the syphon cup (3).
- ▶ Detach the syphon base (3) by pressing the three securing clips in, while simultaneously pushing the syphon base downwards (4).
- ▶ Remove the circlip and the plastic ball from the syphon base (5).
- ▶ Clean the following components with water:
  - the inside of syphon base
  - plastic ball
  - circlip
  - syphon cup
  - opening of the exhaust manifold



- ▶ Return the plastic ball to the syphon base and attach the circlip.
- ▶ Check that the ball and circlip have been installed correctly (6). Make sure that the top of the circlip is about 6 cm below the edge of the syphon base.
- ▶ Replace the O-ring (art. no. 086154) at the bottom of the exhaust manifold.
- ▶ Attach the syphon base to the bottom by pushing it high enough so that the securing clips click over the lip (7).



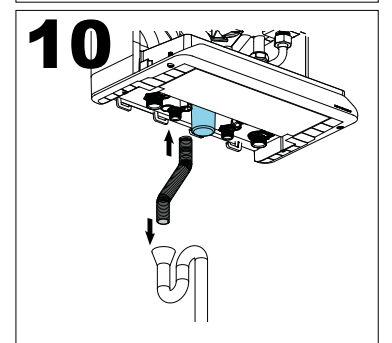
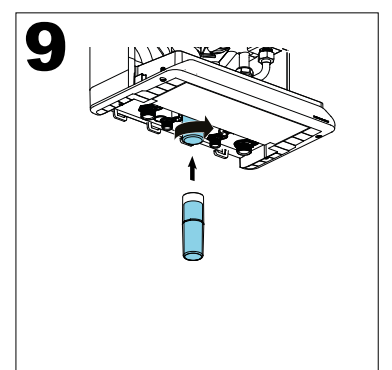
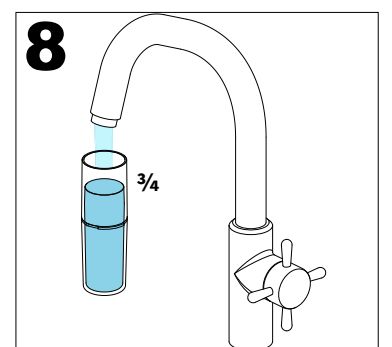
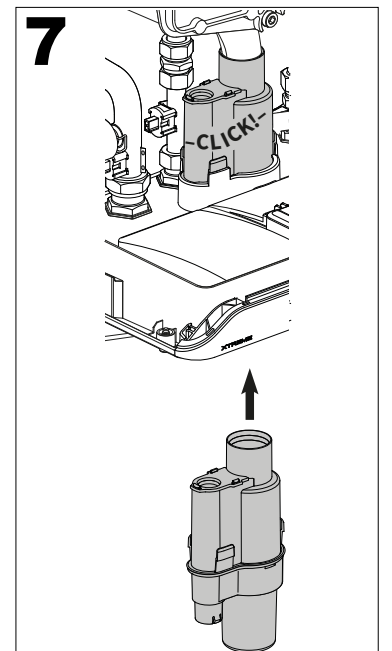
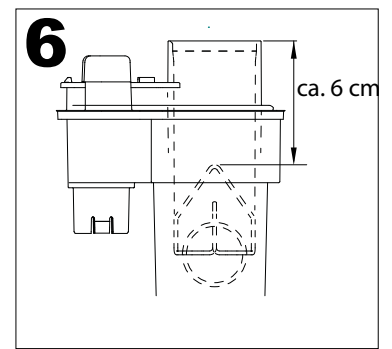
#### IMPORTANT

- ▶ **Make sure that the syphon base is returned to its original position, firmly locked into the bottom with no gaps. Incorrectly attaching the syphon base (or not attaching it at all) will result in products of combustion leaking into the room creating a dangerous situation.**

- ▶ Make sure that the syphon cup is filled with  $\frac{3}{4}$  full of water (8) before placing it back, slide it into the syphon base and rotate it a quarter turn to the right (clockwise) so that it is correctly secured (9).
- ▶ Slide the ribbed hose onto the syphon base and into the waste connection.

#### NOTE

- ▶ To assist the replacement of the syphon base and syphon cup silicone lubricant is recommended on the following seals,
  - Exhaust manifold O-ring seal
  - Syphon base outer seal
  - Syphon cup O-ring seal



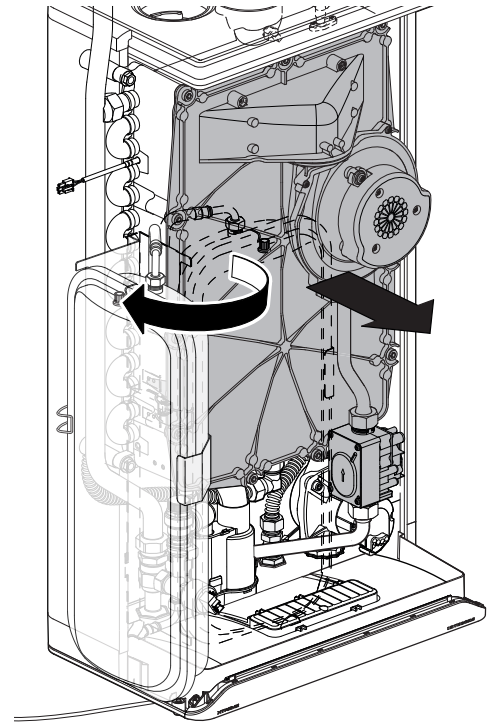
### 11.3 Annual service continued (internal maintenance)

- ▶ Lift and rotate the expansion vessel to the left side.
- ▶ Disconnect the electrical connector to the fan assembly.
- ▶ Loosen both unions and the electrical connector then remove the gas valve.
- ▶ Unscrew the 6mm Allen key shoulder bolts of the front cover and remove it forward along with the fan (Being careful not to damage any components). Lay the removed front cover face down on to its foot supports, this is best achieved on a flat heat-proof surface.
- ▶ The burner and the integrated insulation panel do not require cleaning only inspecting. Therefore, never use a brush or compressed air to clean these components (dust hazard).



#### COMMENT

- ▶ **The expansion vessel must be inspected and tested at each annual service and if required repressurise to 0.75 bar (cold and with no system pressure). Ensure the flexible hose is not kinked, leaking or damaged. (Replace if required).**



#### 11.3.1 Annual service continued (cleaning)

- ▶ Clean the slats of the heat exchanger from top to bottom with a brush or Intergas comb (use a vacuum cleaner to remove debris).
- ▶ Clean the underside of the heat exchanger.
- ▶ Only clean the underside of the front panel.



#### CAREFUL

- ▶ **The integrated insulation panel and burner seal contain ceramic fibres use the appropriate P.P.E. dust mask & gloves.**

## 11.4 Annual service (re-assemble)

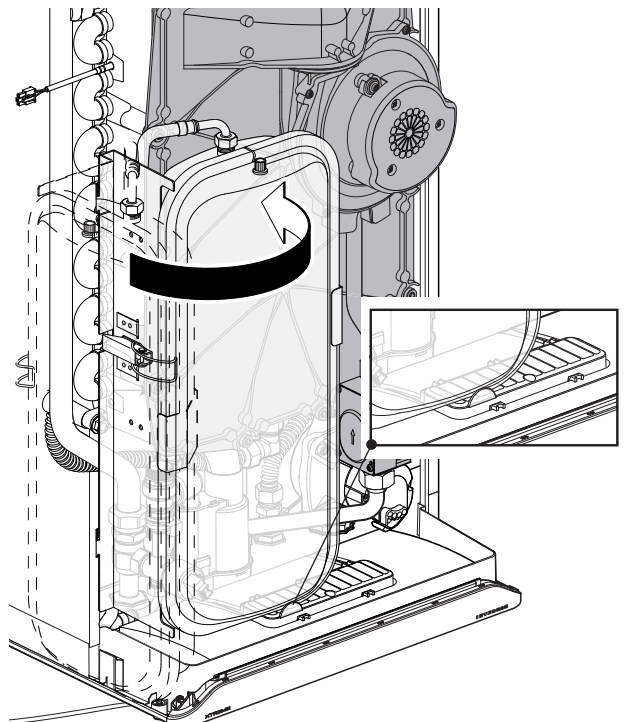
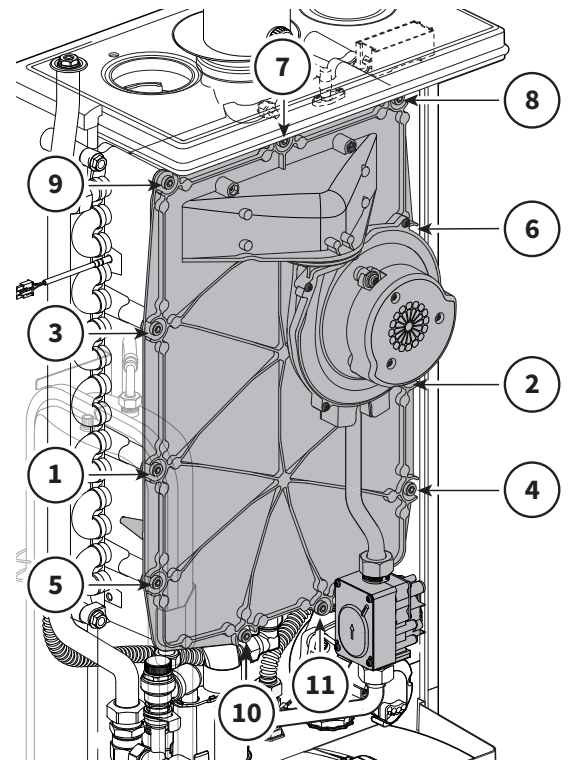
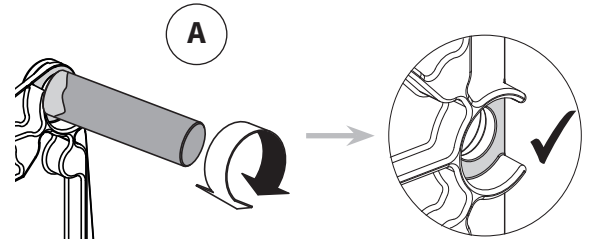


### IMPORTANT

- ▶ **Replace the front plate O-ring at least every 3 years or if damaged/ discoloured.**  
**Art.no: 877927 – Xtreme 24/30**  
**620274 – Xtreme 36**
- ▶ **Check and replace any other worn gaskets.**  
**Also check they are correctly located.**

- ▶ Check whether there is a thin layer of ceramic grease between the flange of the shoulder bolts and the front panel.
- ▶ If there is insufficient grease present, extra must be applied using the foam application tool (A) within the kit (ceramic grease kit available to order).
- ▶ Check whether the gasket around the front panel is correctly located. Place the front panel on the heat exchanger and attach it with the 6mm Allen key shoulder bolts. Tighten the shoulder bolts (1 to 11)\* by hand, working diagonally. The order of tightening is shown in the diagram.
- ▶ Fully tighten the Allen shoulder bolts with a torque wrench set at 10-12 Nm when available to ensure uniformity.
- ▶ Check and tighten the burner bolts diagonally by hand.
- ▶ Replace the gas valve and when necessary replace the seals
- ▶ Reinstall the electrical connector to the gas valve and fan.
- ▶ Open the gas isolation valve and check both of the gas unions for tightness.
- ▶ Check and repair any water leaks within the boiler.
- ▶ Turn the expansion vessel back to its original position. Make sure the vessel is secured by the lip on the cable cover.
- ▶ Check a 3amp fuse is fitted before re-establishing the power.
- ▶ Switch on the boiler.
- ▶ Check the front panel, the fan seal, fan connection to the front panel, also check the flue components for leakage, repair or replace as required.
- ▶ Check the gas/air control (see **§9.9** and **§9.10**) and check the gas outlet on the gas valve for tightness.
- ▶ Refit the room sealed cover and tighten the 5mm Allen bolts under the boiler. (Do not overtighten)
- ▶ Check the domestic hot water facility for correct operation.

\* 1 to 9 bolts on 24 & 30Kw models. (Do not overtighten)  
Clicking noise (expansion) during operation is normally due to overtightening of the front panel bolts or lack of ceramic grease.  
Please check sufficient ceramic grease has been applied and the correct torque setting applied before calling the Intragas service team.



## 11.5 Annual service checklist

No.	Activity	Inspection at every annual service	Maintenance must be carried out at regularly
1	Isolate the boiler from the fused spur and make safe (ref TB118) check the correct 3amp fuse has been fitted.	✓	✓
2	Carry out inspection of boiler for dust and dirt and clean where necessary.	✓	✓
3	Visually inspect the front plate and heat exchange for signs of damage. If damage is evident proceed to column 2.	✓	✓
4	Check the gas inlet pressure on HIGH rate (DHW mode).	✓	✓
5	Check combustion by measuring CO, CO <sup>2</sup> . If the values are outside the tolerances then proceed to a full service in column 2.	✓	✓
6	Close the boiler gas isolation valve.		✓
7	Isolate flow and return valves and drain boiler via the drain off on the return. Check the pressure in the expansion vessel. Recharge if necessary.		✓
8	Remove the front plate and clean the inside of the heat exchanger.		✓
9	Check the front plate seal, replace the seal if damaged, discoloured, 3 years old or later.		✓
10	Check the burner has not delaminated also check the burner seal.		✓
11	Check the ignition pin for clearance and debris.		✓
12	Check the condensate trap, clean and refill.	✓	✓
13	Open the isolation valves on flow and return and refill the water in the boiler between 1.2 to 1.5 bar via the filling loop.	✓	✓
14	Open the gas isolation valve, reconnect the power to the boiler via fused spur.	✓	✓
15	Check visually the ignition and burner performance.	✓	✓
16	Check the boiler for leaks of any kind (gas, flue gas, water, condensate) rectify if necessary.	✓	✓
17	Recheck the CO,CO <sup>2</sup> and adjust if necessary, adjust CO <sup>2</sup> only LOW fire.	✓	✓
18	Complete the Benchmark Service Record on the back pages of the Installation manual.	✓	✓



## 12 TECHNICAL SPECIFICATIONS

Boiler category	C13; C33; C53
Gas inlet pressure	G20: 20 mbar, G31: 37 mbar
Suitable for gas	II <sub>2H3P</sub>

Technical data	Xtreme		
	24	30	36

Domestic hot water				
Nom. input rating (lower value)	kW	3.6 – 25.1	3.6 – 30.5	3.6 – 32.7
Tap threshold	l/min	2		
ΔT 25°C	l/min	15.3	18.7	20.3
ΔT 35°C	l/min	11	13.3	14.5
Domestic hot water temperature (default)	°C	55		
Domestic hot water-sided pressure difference	bar	see <b>§7.2.1</b>		

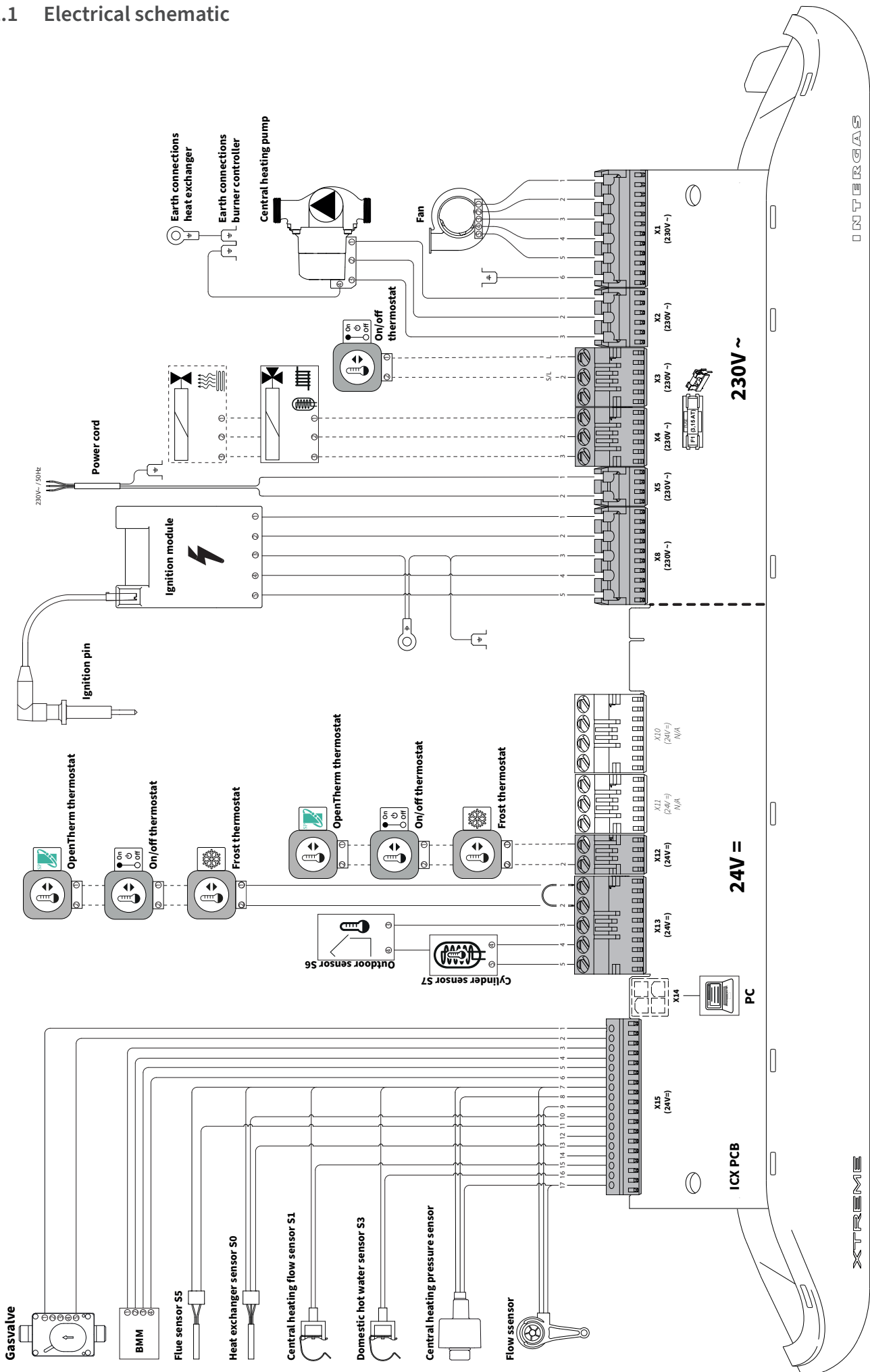
Central heating				
Nom. input rating (lower value)	kW	3.6 – 18.7	3.6 – 23.7	3.6 – 27.0
Nom. output	kW	4.0 – 18.2	4.0 – 23.1	4.0 – 26.6
Max. Central heating water pressure	bar	2.5		
Max. Central heating water temperature	°C	90		




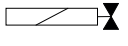
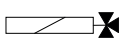


Other data				
Gas consumption (G20)	m <sup>3</sup> /h	0.38 – 2.66	0.38 – 3.23	0.38 – 3.46
Gas consumption (G31)	m <sup>3</sup> /h	0.15 – 1.03	0.15 – 1.25	0.15 – 1.34
Appliance pressure loss (CH)	mWk	See <b>§9.6</b>		
Average flue temperature DHW	°C	35		
Flue mass flow (minimum-maximum)	kg/h	5.9 – 41.6	5.9 – 50.5	5.9 – 54.1
Maximum counterpressure	Pa	250		












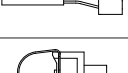

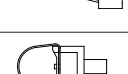



Electric data				
Mains voltage	V	230		
Safety class	IP	IPX4D		
Recorded output: full load	W	115		
Recorded output: standby	W	2		

Overall dimensions and weight				
Height	mm	766	766	826
Width	mm	450		
Depth	mm	277		
Weight (Empty)	kg	33	33	36
Weight (Full)	kg	37	37	40

## 12.1 Electrical schematic



230V~ component			
Connector	Connections	Designation	Description
X1	1-2-3-4-5-6		Fan
X2	1-2-3		Central heating pump
X3	1-2		On/off room thermostat 230V
X4	1-2-3		Shut-off valve underfloor heating or variable output control (1=N (blue), 2=L (brown), 3=T (black))
	1-2-3		Three-way valve (1=N (blue), 2=L (brown), 3=T (black))
X5	1-2		Mains power cord 230V~ 50Hz (1=L (brown), 2=N (blue), $\perp$ = ground (green/yellow))
X8	1-2-3-4-5		Ignition unit

24V = component			
Connector	Connections	Designation	Description
X12	1-2		OpenTherm thermostat
X12	1-2		On/off room thermostat
X12	1-2		Frost thermostat if OT thermostat on X13
X13	1-2		OpenTherm thermostat ( <u>primary</u> connection)
	1-2		On/off room thermostat
	1-2		Frost thermostat
	3-4		Outdoor sensor S6 (12k $\Omega$ / 25°C)
	4-5		Hot water cylinder sensor S7
X14			PC Interface
X15	1-2		Gas valve
	3-4-5-6		BMM (Boiler Memory Module)
	7-11		Flue gas sensor S5
	7-16		Domestic hot water sensor S3
	7-10-13		Heat exchanger sensor S0
	7-15		Central heating flow sensor S1
	7-9-17		Flow sensor
	7-8-17		Central heating low water pressure sensor

## 12.2 Product Fiche according to CELEX-32013R0811, Appendix IV

Supplier			Intergas Heating Ltd Unit 2 Easter Park Worcester Road Kidderminster DY11 7AR		
			Intergas Xtreme		
Type designation	Symbol	Unit	24	30	36
Seasonal energy efficiency class for room heating	-	-	A	A	A
Nominal heat output (capacity)	$P_{rated}$	kW	18	23	27
Seasonal energy efficiency class for room heating	$\eta_s$	%	93	93	93
Annual energy use	$Q_{HE}$	GJ	38	48	58
Noise level	$L_{WA}$	dB	56	56	58
Domestic hot water capacity profile	-	-	L	XL	XXL
Energy efficiency class for water heating	-	-	A	A	A
Domestic hot water efficiency	$\eta_{WH}$	%	89	91	93
Annual electricity use	AEC	kWh	13	13	20
Annual fuel use	AFC	GJ	11	17	21



### IMPORTANT

- ▶ Before installation, read the installation manual and the operation instructions.
- ▶ This appliance is not intended for use by individuals (included children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless supervision of or instruction concerning the use of the appliance is given. Children shall not play with the appliance. Cleaning and user maintenance shall not be undertaken by children.
- ▶ The boiler and system must be inspected annually by an qualified Gas Safe registered engineer and cleaned if necessary. See §11
- ▶ The boiler outer casing must only be cleaned with a damp cloth. Do not use aggressive scrubbing, agents or solvents.

## 12.3 NTC resistances

NTC 12 kOhm							
T [°C]	R [Ω]	T [°C]	R [Ω]	T [°C]	R [Ω]	T [°C]	R [Ω]
-15	76020	15	18300	45	5522	75	1994
-10	58880	20	14770	50	4609	80	1717
-5	45950	25	12000	55	3863	85	1467
0	36130	30	9805	60	3253	90	1266
5	28600	35	8055	65	2752	95	1096
10	22800	40	6653	70	2337	100	952

## 13 SPARES SHORT LIST

Description	Part number
PCB complete with housing	074104
230V EBM NRG130 Fan assembly (complete with 877807 seal & 2 x 312027 M5 nuts)	074304
S0 NTC Temperature sensor (heat exchanger)	230034
S1 NTC Temperature sensor (CH Flow) Clip on 18mm	230054
Modulating Yonos Wilo CH pump	074604
Ignition / Ionisation electrode	210024
Pressure sensor (CH) screw in type	230044
24V Gas valve Siemens VGU76S	074514
240V Ignition module ZAG1	210014
S3 Flowsensor (DHW) clip on 15mm NTC	200177
S5 Flue gas temperature sensor NTC	074704
DHW Flow turbine	074804
DHW HALL sensor (Clip on)	900004
Graphite Seal gas valve (inlet) 21.5/15.5mm	875757
O-ring gas restriction ring 19x2mm	875727
O-ring type front plate seal for 36kW (New type Black Viton replaces 620274)	086474
O-ring type front plate seal for 24 & 30kW (New type Black Viton replaces 877927)	086504
Condensate syphon sediment bowl	510054
Condensate syphon complete	075044
Pressure relief valve (3bar)	600024
Natural Gas G20 restrictor disc kit 392 (24kW)	076924
Natural Gas G20 restrictor disc kit 450 (30 & 36kW)	076934
LPG G31 restrictor disc kit 315 (24Kw)	076047
LPG G31 restrictor disc kit 370 (30 & 36kW)	076914

## 14 WARRANTY PROVISIONS AND CE DECLARATION

1. The installer must be registered with Gas Safe, installer must complete the Benchmark Commissioning Checklist in full at the time the boiler is installed. The Benchmark must be made available and can be found at the back of the installation instructions. The Benchmark Commissioning Checklist must be retained on site by the owner/occupier for inspection during an engineer's visit.
2. The boiler and Intergas system filter\* must both be registered for warranty with Intergas by either the installer or you the householder, within 30 days of the boiler being installed. For the new build properties, this must be done within 30 days of the sale being completed. If these conditions are not met, the warranty will not be valid.  
(\*Intergas system filter must be installed on the same date as the boiler and registered for warranty at the same time).

**The product must be registered via the internet at [www.intergasheating.co.uk](http://www.intergasheating.co.uk) or on the Intergas MiREG website [www.myintergasregistration.co.uk](http://www.myintergasregistration.co.uk) or by returning the warranty card.**

3. The boiler must be serviced annually by a registered Gas Safe Engineer in accordance with manufacturer's instructions.
4. Service details must be recorded in the Benchmark Checklist or provide proof of service which must be available for inspection.
5. The cost of the annual service is not included in the warranty.

**If the above conditions are not met this warranty will be limited to 12 months from the date of installation or date of Manufacture, as recorded on the Benchmark commissioning checklist.**



### IMPORTANT

**Warranty terms mentioned above are based on domestic use only. Any non-domestic applications will be covered by a 12 months warranty. Service intervals may need to be increased depending on commercial usage. For additional information please contact Intergas Heating Ltd.**

6. Only boiler component failures are covered by the warranty. The warranty does not cover any connected system or accessories such as time switches, thermostats, motorised valves, external pumps and so on.
7. Any repair carried out under the terms of this warranty does not extend the warranty beyond its original period.
8. If the boiler breaks down, Intergas may ask you\* (Homeowner or Installer) to pay a deposit before we visit to complete the repair. We will return the deposit in full if we find a fault that is covered by the warranty. We may keep the deposit if we cannot access the property at the time we have arranged with you to visit or we find other conditions of this warranty have not been met.
9. The system must be flushed and cleansed in accordance with BS7593:2019.
10. If any failure is caused by contaminated water in the system the engineer visit becomes chargeable.
11. All installation, non boiler or external system faults calls will be charged to the home owner/occupier.
12. Roof space installation BS6798:2014 Require a permanently fixed access ladder must service installations in lofts or attics. Adequate lighting and permanently fixed flooring must also be available.
13. Engineers will not carry out repairs if they think accessing the boiler would be a risk to Health and Safety. A responsible adult must be at the property to give our engineer access to the boiler.
14. If your boiler is in a cupboard, there must be enough room for the engineer to work (the minimum area as set out in the installation instructions). We are not responsible for removing cupboards, kitchen units, trims etc to gain access for repairs.

15. In hard water areas of 200ppm or above, appropriate protection actions must be taken in accordance with BS 7593:2019 in line with building regulations Part L1. (Above 200ppm we recommend Combimate\*, Adey Electroscale or Hydroflow HS38 should be installed. 300ppm and above we recommend a Combimate\*, Water softener\* or HS38 should be installed.) (\*serviceable item)
16. The central heating system must be maintained in accordance with the Benchmark Guidance on water Treatment in Central Heating Systems & BS7593:2019, we recommend the use of Fernox, Sentinel or Adey products, Inhibitors & filters. It is important that the correct concentration of water treatment is maintained for the life of the boiler, should we attend a warranty call Intergas reserve the right to take system water samples and should they fail the aforementioned requirements then the warranty will be void and the call will become chargeable. (Intergas system filter must be installed & registered at the same time as the boiler for enhanced warranty period).
17. If the boiler suffers a breakdown you should contact Intergas on 01527 888000 selecting option 2. Our normal working hours, excluding Bank Holidays are:  
8.00am – 5.00pm Monday to Friday and  
8.00am – 12.00pm Saturday mornings.



Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hotwater Industry Council who manage and promote the scheme. Visit [www.centralheating.co.uk](http://www.centralheating.co.uk) for more information.

### CE DECLARATION

Manufacturer	Intergas Heating Limited
Address	Unit 2 Easter Park Worcester Road Kidderminster DY11 7AR

hereby declares that CH appliance:  
INTERGAS, Type:

- ▶ Xtreme 24
- ▶ Xtreme 30
- ▶ Xtreme 36

Meets the provisions of the following directives:

- ▶ Low Voltage Directive (2014/35/EC)
- ▶ Gas Appliance Regulation (2016/426/EC)
- ▶ Directive regarding efficiency requirements for new oil and gas-burning central heating boilers (92/42/EC)
- ▶ EMC Directive (2014/30/EC)
- ▶ RED Directive (2014/53/EC)\*
- ▶ Ecodesign (2009/125/EG)
- ▶ Energy labelling (2010/30/EU)

\* The conformity declaration can be requested from Intergas.



S. Zouch, September 2020

## Benchmark Commissioning & Warranty Validation Service Record

It is a requirement that the boiler is installed and commissioned to the manufacturers' instructions and the data fields on the commissioning checklist completed in full.

To instigate the boiler warranty the boiler needs to be registered with the manufacturer within one month of the installation. The warranty rests with the end-user (consumer), and they should be made aware it is ultimately their responsibility to register with the manufacturer, within the allotted time period.

It is essential that the boiler is serviced in line with the manufacturers' recommendations, at least annually. This must be carried out by a competent Gas Safe registered engineer. The service details should be recorded on the Benchmark Service and Interim Boiler Work Record and left with the householder. Failure to comply with the manufacturers' servicing instructions and requirements will invalidate the warranty.



[www.hhic.co.uk](http://www.hhic.co.uk)

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

Failure to install and commission according to the manufacturers' instructions and complete this Benchmark Commissioning Checklist will invalidate the warranty. This does not affect the customer's statutory rights.

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## GAS BOILER SYSTEM COMMISSIONING CHECKLIST & WARRANTY VALIDATION RECORD

Address:													
Boiler make and model:													
Boiler serial number:													
Commissioned by (PRINT NAME):						Gas Safe registration number:							
Company name:						Telephone number:							
Company email:						Company address:							
										Commissioning date:			
Heating and hot water system complies with the appropriate Building Regulations?											Yes		
Optional: Building Regulations Notification Number (if applicable):													
Time, temperature control and boiler interlock provided for central heating and hot water											Yes		
Boiler Plus requirements (tick the appropriate box(s))													
Boiler Plus option chosen for combination boiler in ENGLAND						Weather compensation			Smart thermostat with automisation and optimisation				
						Load compensation			Flue Gas Heat Recovery				
Time and temperature control to hot water			Cylinder thermostat and programmer/timer						Combination boiler				
Zone valves			pre-existing			Fitted			Not required				
Thermostatic radiator valves			pre-existing			Fitted			Not required				
Automatic bypass to system			pre-existing			Fitted			Not required				
Underfloor heating			pre-existing			Fitted			Not required				
Water quality													
The system has been flushed, cleaned and a suitable inhibitor applied upon final fill, in accordance with BS7593 and boiler manufacturers' instructions											Yes		
What system cleaner was used?						Brand:			Product:				
What inhibitor was used?						Brand:			Product:				
Primary water system filter			pre-existing			Fitted			Not required				
CENTRAL HEATING MODE measure and record (as appropriate)													
Gas rate (for combination boilers complete DHW mode gas rate)						m <sup>3</sup> /hr			or		ft <sup>3</sup> /hr		
Central heating output left at factory settings?						Yes			No				
If no, what is the maximum central heating output selected?												kW	
Dynamic gas inlet pressure												mbar	
Central heating flow temperature												°C	
Central heating return temperature												°C	
System correctly balanced/rebalanced?												Yes	
COMBINATION BOILERS ONLY													
Is the installation in a hard water area (above 200ppm)?						Yes			No				
Water scale reducer/softener			pre-existing			Fitted			Not required				
What type of scale reducer/softener has been fitted?						Brand:			Product:				
Water meter fitted?						Yes			No				
If yes- DHW expansion vessel			pre-existing			Fitted			Not required				
Pressure reducing valve			pre-existing			Fitted			Not required				
DOMESTIC HOT WATER MODE Measure and record													
Gas rate						m <sup>3</sup> /hr			or		ft <sup>3</sup> /hr		
Dynamic gas inlet pressure at maximum rate												mbar	
Cold water inlet temperature												°C	
Hot water has been checked at all outlets						Yes			Temperature			°C	
CONDENSATE DISPOSAL													
The condensate drain has been installed in accordance with the manufacturers' instructions and/or BS5546/BS6798											Yes		
Point of termination						Internal			External (only where internal termination impractical)				
Method of disposal						Gravity			Pumped				
ALL INSTALLATIONS													
Record the following		At max rate:		CO ppm		CO <sub>2</sub> %		CO/CO <sub>2</sub>		Ratio			
		At min rate (where possible)		CO ppm		CO <sub>2</sub> %		CO/CO <sub>2</sub>		Ratio			
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?											Yes		
The operation of the boiler and system controls have been demonstrated to and understood by the customer											Yes		
The manufacturers' literature, including Benchmark Checklist and Service Record, has been explained and left with the customer											Yes		
Commissioning Engineer's signature													
Customer's signature (To confirm satisfactory demonstration and receipt of manufacturers' literature)													

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# SERVICE & INTERIM BOILER WORK RECORD

It is recommended that your boiler and heating system are regularly serviced and maintained, in line with manufacturers' instructions, and that the appropriate service / interim work record is completed.

## Service provider

When completing a service record (as below), please ensure you have carried out the service as described in the manufacturers' instructions. Always use the manufacturers' specified spare parts.

<b>SERVICE/INTERIM WORK ON BOILER</b> <small>delete as appropriate</small>					Date:	
Engineer name:		Company name:				
Telephone N°:		Gas Safe registration N°:				
Max rate	CO	ppm	CO <sub>2</sub>	%	CO/CO <sub>2</sub>	
Min rate	CO	ppm	CO <sub>2</sub>	%	CO/CO <sub>2</sub>	
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?"					yes	
Gas rate:	m <sup>3</sup> /h	OR	ft <sup>3</sup> /h			
Were parts fitted? <small>delete as appropriate</small>		Yes	No			
Parts fitted:						
System inhibitor concentration has been checked and appropriate action taken, in accordance with BS 7593 and boiler manufacturers' instructions. *					yes	n/a
Comments:						
Signature:						

\*A System inhibitor efficacy test is required on every annual service in accordance with the manufacturers' instructions and BS 7593. It is only acceptable to not have undertaken this if the service engineers attendance visit was in between annual services to attend a non-water facing component.

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