

UK

Condensing wall mounted boiler

# MURELLE PRO HE R MkII

## USER, INSTALLATION AND SERVICING INSTRUCTIONS



ENSURE THAT THESE INSTRUCTIONS ARE LEFT FOR THE USER AFTER COMPLETION OF THE BENCHMARK SECTION

PLEASE READ THE IMPORTANT NOTICE WITHIN THIS GUIDE REGARDING YOUR BOILER WARRANTY



Authorised User No. 02285

BOILER DETAILS

please position here a sticker from installation pack

## IMPORTANT NOTICE

For the first year all of our appliances are protected by our manufacturer's guarantee which covers both parts and labour.

As you would expect from Sime Ltd, it is our aim to provide our valued customers with the best in after sales and service.

To take advantage of any extended warranty offered, all you have to do is to adhere to these 3 simple conditions:

- The installation must be carried out to Manufacturers/Benchmark Standards by a Gas Safe Registered Engineer, and recorded in the installation manual.
- The appliance must be registered with both Sime Ltd and Gas Safe within 30 days of installation.
- The appliance must be serviced every 12 months, within 30 days of the anniversary of the installation date, by either Sime Ltd or a Gas Safe registered engineer- ensuring that the Benchmark service record in the installation manual is completed.

Failure to comply with the above will result in only the 12 month warranty being offered. In the absence of any proof of purchase, the 12 month warranty period will commence from the date of manufacture of the boiler as shown on the appliance data plate.

## SAFE HANDLING

This boiler may require 2 or more operatives to move it into its installation site, remove it from its packaging and during movement into its installation location. Manoeuvring the boiler may include the use of a sack truck and involve lifting pushing and pulling.

Caution should be exercised during these operations.

Operatives should be knowledgeable in handling techniques when performing these tasks and the following precautions should be considered:

- Grip the boiler at the base
- Be physically capable
- Use personal protective equipment as appropriate e.g. gloves, safety footwear.

During all manoeuvres and handling actions, every attempt should be made to ensure the following unless unavoidable and/or the weight is light.

- Keep back straight
- Avoid twisting at the waist
- Always grip with the palm of the hand
- Keep load as close to the body as possible
- Always use assistance

### WARNING

Caution should be exercised when performing any work on this appliance.

Protective gloves and safety glasses are recommended.

- Avoid direct contact with sharp edges.
- Avoid contact with any hot surfaces.

### NOTICE

Please be aware that due to the wet testing of the appliance, there may be some residual water in the hydraulic circuit.

- Protect any surfaces, carpets or floorings.
- Use a suitable container to catch any water that escapes when removing the protective caps from the connections.

# Code Of Practice

For the installation, commissioning and servicing of domestic heating and hot water products

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. Installers are required to carry out work in accordance with the following:

## Standards of Work

- Be competent and qualified to undertake the work required.
- Install, commission, service and use products in accordance with the manufacturer's instructions provided.
- Ensure that where there is responsibility for design work, the installation is correctly sized and fit for purpose.
- Meet the requirements of the appropriate Building Regulations. Where this involves notifiable work be a member of a Competent Persons Scheme or confirm that the customer has notified Local Authority Building Control (LABC), prior to work commencing.
- Complete all relevant sections of the Benchmark Checklist/Service Record when carrying out commissioning or servicing of a product or system.
- Ensure that the product or system is left in a safe condition and, whenever possible, in good working order.
- Highlight to the customer any remedial or improvement work identified during the course of commissioning or servicing work.
- Refer to the manufacturer's helpline where assistance is needed.
- Report product faults and concerns to the manufacturer in a timely manner.

## Customer Service

- Show the customer any identity card that is relevant to the work being carried out prior to commencement or on request.
- Give a full and clear explanation/demonstration of the product or system and its operation to the customer.
- Hand over the manufacturer's instructions, including the Benchmark Checklist, to the customer on completion of an installation.
- Obtain the customer's signature, on the Benchmark Checklist, to confirm satisfactory demonstration and receipt of manufacturer's instructions.
- Advise the customer that regular product servicing is needed, in line with manufacturers' recommendations, to ensure that safety and efficiency is maintained.
- Respond promptly to calls from a customer following completion of work, providing advice and assistance by phone and, if necessary, visiting the customer.
- Rectify any installation problems at no cost to the customer during the installer's guarantee period.



\*The use of the word "installer" is not limited to installation itself and covers those carrying out installation, commissioning and/or servicing of heating and hot water products, or the use of supporting products (such as water treatment or test equipment).

\*\*Customer includes householders, landlords and tenants.

## The Benchmark Scheme

Sime Ltd is a licensed member of the Benchmark Scheme which aims to improve the standards of installation and commissioning of domestic heating and hot water systems in the UK and to encourage regular servicing to optimise safety, efficiency and performance.

Benchmark is managed and promoted by the Heating and Hotwater Industry Council.

For more information visit [www.centralheating.co.uk](http://www.centralheating.co.uk).

Please ensure that the installer has fully completed the Benchmark Checklist in the use and maintenance section of the installation instructions supplied with the product and that you have signed it to say that you have received a full and clear explanation of its operation.

The installer is legally required to complete a commissioning checklist as a means of complying with the appropriate Building Regulations (England and Wales).

All installations must be notified to Local Area Building Control either directly or through a Competent Persons Scheme.

A Building Regulations Compliance Certificate will then be issued to the customer who should, on receipt, write the Notification Number on the Benchmark Checklist.

This product should be serviced regularly to optimise its safety, efficiency and performance.

The service engineer should complete the relevant Service Record on the Benchmark Checklist after each service.

The Benchmark Checklist may be required in the event of any warranty work and as supporting documentation relating to home improvements in the optional documents section of the Home Information Pack.

### Important Information

IT IS A STATUTORY REQUIREMENT THAT ALL GAS APPLIANCES ARE INSTALLED BY COMPETENT PERSONS, IN ACCORDANCE WITH THE GAS SAFETY (INSTALLATION AND USE) REGULATIONS (CURRENT EDITION). The manufacturer's instructions must not be taken as overriding any statutory requirements, and failure to comply with these regulations may lead to prosecution.

No modifications to the appliance should be made unless they are fully approved by the manufacturer.

**GAS LEAKS:** DO NOT OPERATE ANY ELECTRICAL SWITCH, OR USE A NAKED FLAME. TURN OFF THE GAS SUPPLY AND VENTILATE THE AREA BY OPENING DOORS AND WINDOWS CONTACT THE GAS EMERGENCY SERVICE ON 0800111999.



Please refer to commissioning instructions for filling in the checklist at the back of this installation guide.

Note: All Gas Safe registered installers carry a ID Card.

You can check your installer is Gas Safe Registered by calling 0800 408 5577

## SIME COMBINATION BOILERS Installer checklist

Please remember to carry out the following checks after installation. This will achieve complete customer satisfaction, and avoid unnecessary service calls. A charge will be made for a service visit where the fault is not due to a manufacturing defect.

- Has a correct by-pass been fitted and adjusted?
- Has the system and boiler been flushed?
- Is the system and boiler full of water, and the correct pressure showing on the pressure gauge?
- Is the Auto Air Vent open?
- **Has the pump been rotated manually?**
- Is the gas supply working pressure correct?
- Is the boiler wired correctly? (See installation manual).
- **Has the D.H.W. flow rate been set to the customer requirements?**
- Has the customer been fully advised on the correct use of the boiler, system and controls?
- Has the Benchmark Checklist in the use and maintenance section of this manual, been completed?

## SAFETY WARNINGS AND REGULATIONS



### WARNINGS

- After having unpacked the boiler ensure that it is undamaged and complete including the valve pack, hanging bracket and template.
- The appliance must be used as intended. **Sime Ltd** declines all responsibility for any injury or damage to persons, animals, or property as a result of improper installation, adjustment, maintenance or use.
- In the event of water leaks, disconnect the appliance from the mains power supply, close the water mains and seek help from a qualified engineer.
- Periodically check that the operating pressure of the water heating system when cold is **1-1.2 bar**. If required, increase the pressure or seek help from a qualified engineer.
- If the appliance is not used for a long period of time, the following operations must be carried out:
  - *set the main isolation switch to "OFF";*
  - *close the gas and water valves for the water heating system.*
- To ensure continued efficient operation of the appliance it is recommended that it is serviced regularly, at least once a year. This is also a condition of the boiler warranty.
- It is the law that any service or repair is carried out by a Gas Safe Registered engineer.
- Services must be recorded in the maintenance section of this installation guide.



### WARNINGS

- **This manual** is an integral part of the appliance. It must therefore be kept for future reference and must always accompany the appliance.
- **Installation and maintenance** of this appliance must be carried out by a qualified company or by a professionally qualified technician in accordance with the instructions contained in the manual. Once the work is complete, the company or technician will issue a declaration of conformity with national and local technical standards and legislation in force in the country where the appliance will be used.

## RESTRICTIONS



### DO NOT

- To allow children under the age of 8 to use the appliance. The appliance can be used by children no younger than 8 years old, by people with physical or cognitive disabilities, and by people lacking experience or the necessary knowledge, provided that they are supervised or have been instructed on how to use the appliance safely and that they understand the risks associated with it.
- To allow children to play with the appliance.
- To allow unsupervised children to perform user maintenance and cleaning.
- Do not use electrical devices or appliances such as switches, electrical appliances etc if you can smell gas. If this should happen:
  - *open the doors and windows to ventilate the room;*
  - *turn the gas off at the meter;*
  - *call the emergency service 0800 111999.*
- Do not touch the appliance with bare feet or with any wet part of the body.
- Do not carry out any repair, maintenance or cleaning operation before having disconnected the appliance from the mains power by setting the main switch to "OFF", and closing the gas supply.
- Do not modify the safety or adjustment devices without authorization and instructions from the manufacturer.



### DO NOT

- Do not block the condensate drain.
- Do not pull, detach or twist the electrical cables coming out of the appliance even if the appliance is disconnected from the mains power supply.
- Do not expose the boiler to atmospheric agents. These boilers can also be installed in partially covered areas, as per EN 15502, with a maximum ambient temperature of 60 °C and a minimum ambient temperature of - 5 °C. It is generally advisable to install the boilers below weathered roofs, on the balcony or in a protected niche, to protect them from exposure to weathering agents (rain, hail and snow). All boilers provide a standard antifreeze function.
- Do not block or reduce the size of the ventilation openings of the room where the appliance is installed, if present.
- Remove the mains power and gas supply from the appliance if the external temperature could fall below ZERO (risk of freezing).
- Do not leave containers with flammable substances in the room where the appliance is installed.
- Do not dispose of the packaging material irresponsibly as it could be dangerous. Packaging must be disposed of as specified by the legislation in force in the country where the appliance will be used.

## RANGE

MODEL	CODE	GAS COUNCIL NUMBER
Murelle Pro HE 20 R MkII	8114243	41-283-61
Murelle Pro HE 30 R MkII	8114245	41-283-62

## COMPLIANCE

Our company declares that **Murelle Pro HE R MkII** boilers comply with the following directives:

- Gas Appliances EU Regulation 2016/426
- Boiler Efficiency Directive 92/42/EEC
- Low Voltage Directive 2014/35/UUE
- Electromagnetic Compatibility Directive 2014/30/EU
- Ecodesign Directive 2009/125/EC
- Regulation (UE) N. 811/2013 - 813/2013
- Regulation (EU) No. 2017/1369



Please refer to the technical data plate for the serial number and year of manufacture.

## SYMBOLS



### WARNING

To indicate actions which, if not carried out correctly, can result in injury of a general nature or may damage or cause the appliance to malfunction; these actions therefore require particular caution and adequate preparation.



### ELECTRICAL HAZARD

To indicate actions which, if not carried out correctly, could lead to injury of an electrical nature; these actions therefore require particular caution and adequate preparation.



### DO NOT

To indicate actions which **MUST NOT BE** carried out.



### CAUTION

To indicate particularly important and useful information.

## MANUAL STRUCTURE

This manual is organized as follows.

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# USER INSTRUCTIONS

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## VERY IMPORTANT!

**PLEASE MAKE SURE YOUR COMMISSIONING CHECKLIST AND THE SERVICE INTERVAL RECORDS ENCLOSED ARE FILLED IN CORRECTLY.**

**ALL GAS SAFE REGISTERED INSTALLERS CARRY A GAS SAFE ID CARD.**

**BOTH SHOULD BE RECORDED IN YOUR COMMISSIONING CHECKLIST AND A SERVICE INTERVAL RECORDS.**

**YOU CAN CHECK YOUR INSTALLER IS GAS SAFE REGISTERED**

**BY CALLING ON 0800 408 5500 OR ALTERNATIVELY [WWW.GASSAFEREGISTER.CO.UK](http://WWW.GASSAFEREGISTER.CO.UK)**

# 1 OPERATING THE MURELLE PRO HE R MKII

## 1.1 Control panel

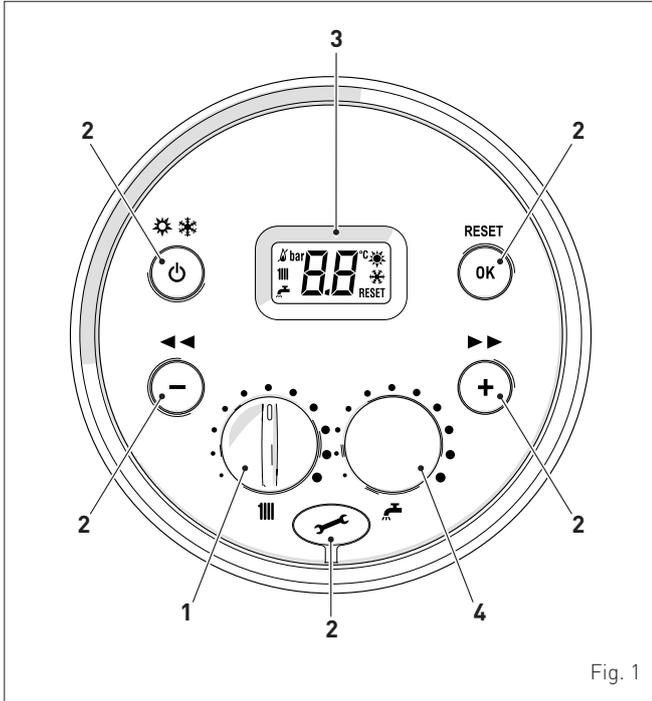


Fig. 1

### 1 KNOBS

**III** The heating knob allows the user to set the flow temperature to between 20 and 80°C during normal operation.

### 2 FUNCTIONAL BUTTONS

**⏻** Press for more than one second and release to step through the operating modes (Stand-by – Summer – Winter).

**←** This allows the engineer to scroll through the parameters or decrease the values.

**→** This allows the engineer to scroll through the parameters or increase the values.

**OK** This allows the engineer to confirm the selected parameter or to modify the value or to reset the appliances from a lockout failure.

**🔧** Programming connector cover plug.

**NOTE:** pressing any one of these buttons for more than 30 seconds generates a fault on the display without preventing boiler operation. The warning disappears when the button is released.

### 3 DISPLAY

**☀️** “SUMMER”. This function is NOT USED on these boilers. This symbol appears when the boiler is operating in Summer mode (used when commissioning the boiler). If the symbols ☀️ and ❄️ are flashing, this indicates that the chimney sweep function is active.

**❄️** “WINTER”. This symbol appears when the boiler is operating in Winter mode. If no operating modes have been enabled both symbols ☀️ and ❄️ will be off.

**RESET** “RESET REQUIRED”. This message only appears if there is a malfunction which must be or may be restored manually.

**🚰** “DOMESTIC HOT WATER”. This function IS NOT USED on these boiler models.

**III** “HEATING”. This symbol is present during heating operation or when the chimney sweep function is operating; it flashes during the heating set point selection.

**🔥** “LOCKOUT” DUE TO NO FLAME.

**💧** “FLAME LIT”.

**AL** “ALARM”. This indicates that a fault has occurred. The number specifies the cause which generated the alarm (see section “Fault / malfunction codes”).

**SE** “MAINTENANCE REQUEST”. If active, it shows it is time to perform maintenance on the boiler.

### 4 (Not used on these boilers)

## 1.2 Preliminary checks



### WARNING

– Should it be necessary to access the areas in the bottom part of the appliance, make sure that the system components and pipes are not hot (risk of burning).

– Before replenishing the heating system, put on protective gloves.

Prior to use the **Murelle Pro HE R MkII** boiler must be installed and commissioned by a Gas Safe Registered engineer. It may be necessary for the user to occasionally have to start the boiler, for instance after a holiday or after an interruption of the gas supply. In these cases the following operations must be carried out.

- check that the gas isolation valve is open
- using the pressure gauge (1) check that the pressure in the heating system, when cold, is **1-1.2 bar**. If the pressure is less than this, use the external filling device to repressurise the system to **1-1.2 bar**
- ensure that the filling device is turned off after use.

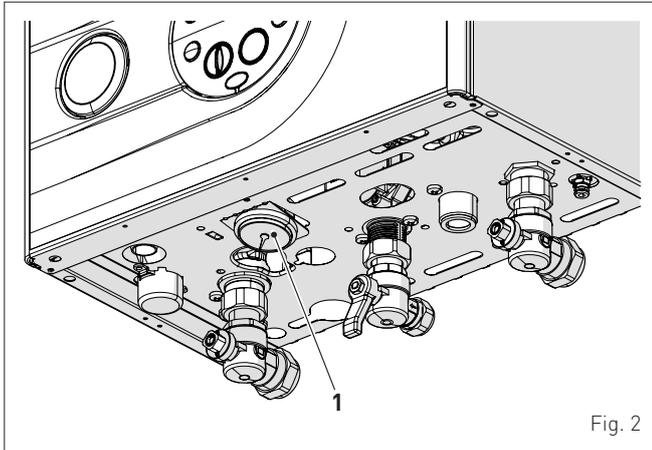


Fig. 2

### 1.3 Ignition

After having carried out the preliminary checks, proceed as follows:

- set the main system switch to "ON"
- put the boiler into "WINTER" mode ❄️, by pressing the button ⏻ twice for at least one second each time, until the "WINTER" ❄️ is displayed. The internal boiler temperature will be appear on the display
- ensure that any timers and room thermostats are in the on position. The IIII will appear on the display and the boiler will ignite.



### 1.4 Adjusting the delivery temperature

The temperature of the heating water can be adjusted by turning the IIII knob on the control panel.

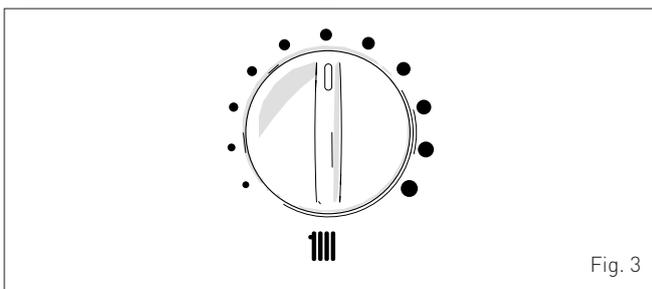


Fig. 3

### 1.5 Fault / malfunction codes

If a fault/malfunction is detected during boiler operation, the message "AL" will appear on the display followed by the fault code.

If you see alarm "02" (low water pressure in the system):

- using the pressure gauge (1) check that the pressure in the heating system, when cold, is **1-1.2 bar**. If the pressure is less than this, use the external filling device to repressurise the system to **1-1.2 bar**
- ensure that the filling device is turned off after use.

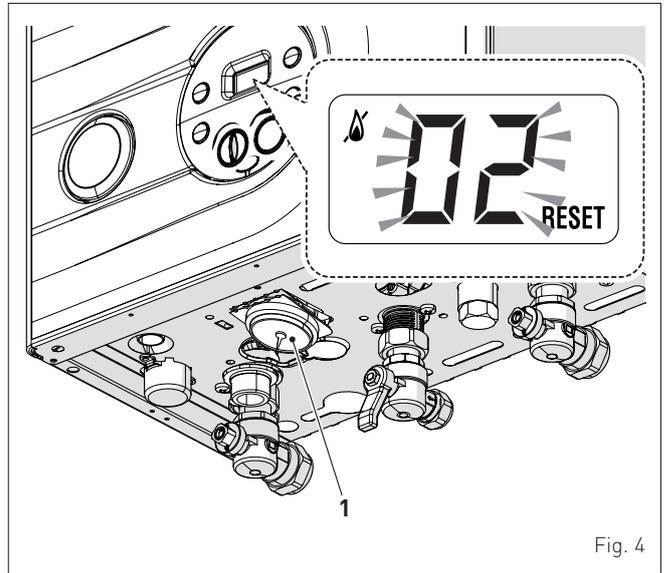
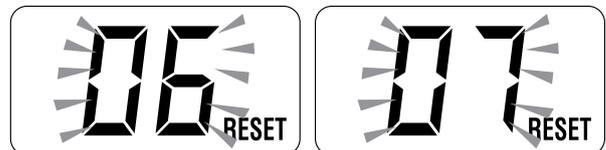


Fig. 4

If you see alarm "06" (no flame detected) and "07" (safety thermostat intervention):

- press and hold the OK RESET button for more than 3 seconds and check whether normal operating conditions are restored.



If this operation is not successful, **ONLY ONE MORE ATTEMPT** can be made, therefore:

- close the gas cock
- isolate the power supply
- contact the Qualified Technical Personnel.



#### CAUTION

Should you see an alarm not described here, contact a qualified technical professional.

#### 1.5.1 Maintenance request

When it is time to perform maintenance on the boiler, "SE" shows on the display.



Contact the technical assistance service to organise the necessary work.



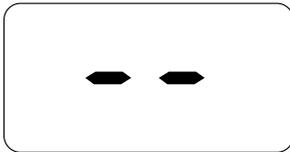
### CAUTION

As a condition of the warranty and to ensure correct operation and efficiency, it is important that the boiler is serviced every 12 months, within 30 days of the anniversary of the installation date ensure the required information is recorded in the Gas Boiler System Service Interval Record (page 43) (Benchmark).

## 2 SHUTDOWN

### 2.1 Temporary shutdown

To temporarily interrupt the boiler operation press and hold the button  for at least one second, once if in "WINTER mode" . "- -" will appear on the display the boiler will be in STAND-BY. The boiler anti freeze function will be enabled.



### ELECTRICAL HAZARD

The boiler will still be powered.



### CAUTION

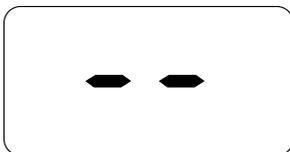
If the outside temperature might fall below ZERO, since the appliance is equipped with an "antifreeze function"

- ONLY PUT THE BOILER INTO STAND-BY
- leave the main system switch set to "ON" (boiler is powered)
- leave the gas cock open.

### 2.2 Shutting down for long periods

If the boiler is to be left unused for a long period, the following operations need to be carried out:

- press and hold the button  for at least 1 second, once if in "WINTER mode"  to put the boiler into stand-by "- -" will appear on the display



- isolate the power supply
- isolate the gas cock
- drain the heating and domestic hot water system if there is the risk of freezing.



### CAUTION

Contact the Qualified Technical Personnel if the procedure described above cannot be easily carried out.

## 3 MAINTENANCE

### 3.1 Servicing

As a condition of the warranty and to ensure correct operation and efficiency, it is important that the boiler is serviced every 12 months, within 30 days of the anniversary of the installation date ensure the required information is recorded in the Gas Boiler System Service Interval Record (Benchmark).



### CAUTION

Maintenance interventions must ONLY be carried out by professionally qualified personnel who will follow the indications provided in the INSTALLATION AND MAINTENANCE MANUAL.

### 3.2 External cleaning



### WARNING

- Should it be necessary to access the areas in the bottom part of the appliance, make sure that the system components and pipes are not hot (risk of burning).
- Before performing any maintenance, put on protective gloves.

#### 3.2.1 Cleaning the case

When cleaning the cladding, use a cloth dampened with soap and water or alcohol for stubborn marks.



### DO NOT

Do not use abrasive products.

## 4 DISPOSAL

### 4.1 Disposal of the equipment (European Directive 2012/19/EU)



Boilers and electrical and electronic appliances from private households must not be disposed of as unsorted municipal waste at the end of their life. Instead, they must be taken to specific return and collection facilities, as per Directive 2012/19/EU and Italian Legislative Decree 49/2014. For more information on authorised collection facilities, please contact your local council or retailer. Individual countries may also define specific rules on how to handle electrical and electronic waste. Before disposing of your appliance, please check the rules in force in your country.



### DO NOT

dispose of the product with urban waste.

## DESCRIPTION OF THE APPLIANCE

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## 5 DESCRIPTION OF THE APPLIANCE

### 5.1 Characteristics

**Murelle Pro HE R MkII** are condensing wall mounted boilers which **Sime Ltd** has produced for installation into domestic properties for system heating. The main design choices made by **Sime Ltd** for the **Murelle Pro HE R MkII** boilers are:

- the total pre-mix microflame burner combined with a steel heat exchanger
- room sealed, Type C appliance. Suitable for use on sealed heating systems

Other special features of the **Murelle Pro HE R MkII** boilers are:

- the anti-freeze function which activates automatically if the temperature of the water inside the boiler falls below the threshold of the value set at parameter "tS 1.0" and , if there is an external sensor, if the external temperature falls below the threshold of the value set at parameter "tS 1.1".

- anti jamming function of the pump. This activates automatically every 24 hours if no request for heat has been made
- the chimney sweep function lasts 15 minutes and makes the job of the qualified technician easier when measuring the parameters and combustion efficiency
- screen display of the operating and self-diagnostic parameters with error code display when the fault occurs. This makes repair interventions easier and allows appliance operation to be restored correctly.
- combustion control function: this function is always active during boiler operation and checks that combustion is within the established safety adjustment range. Otherwise, after a series of checks carried out automatically, the system will block the appliance and an alarm will appear on the display.



#### CAUTION

During the auto-check cycles the CO value could exceed 1000 ppm for few seconds.

### 5.2 Check and safety devices

The **Murelle Pro HE R MkII** boilers are equipped with the following check and safety devices:

- thermal safety thermostat  $90\pm 3^{\circ}\text{C}$
- delivery sensor (SM)
- exhaust sensor (SF)
- water pressure switch
- system relief valve.



#### DO NOT

Do not commission or operate the appliance with safety devices which do not work or which have been tampered with.



#### WARNING

Safety device may only be replaced by professional qualified personnel using **Sime Ltd** original spare parts.

### 5.3 Identification

The **Murelle Pro HE R MkII** boilers can be identified by means of:

- 1 Packaging label:** this is located on the outside of the packaging and provides a code, the serial number of the boiler and the bar code
- 2 Energy Efficiency Label:** this is positioned on the outside of the packaging to notify the User of the level of energy savings and reduced environmental pollution produced by the appliance
- 3 Technical Data Plate:** this is located inside the front panel of the boiler and provides the technical data, appliance performance information and any other information required by law in the country where the appliance will be used.

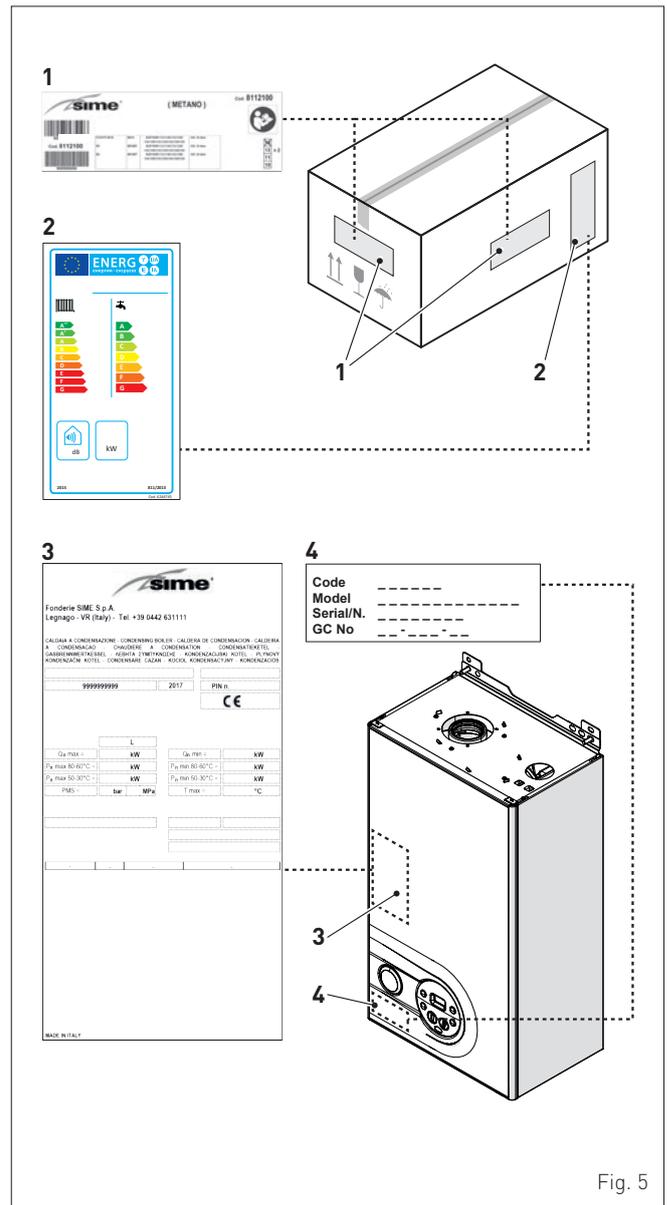


Fig. 5

KEY:

- 1 Packaging label
- 2 Energy Efficiency Label
- 3 Technical Data Plate
- 4 Steaker of product identification

### 5.3.1 Technical Data Plate

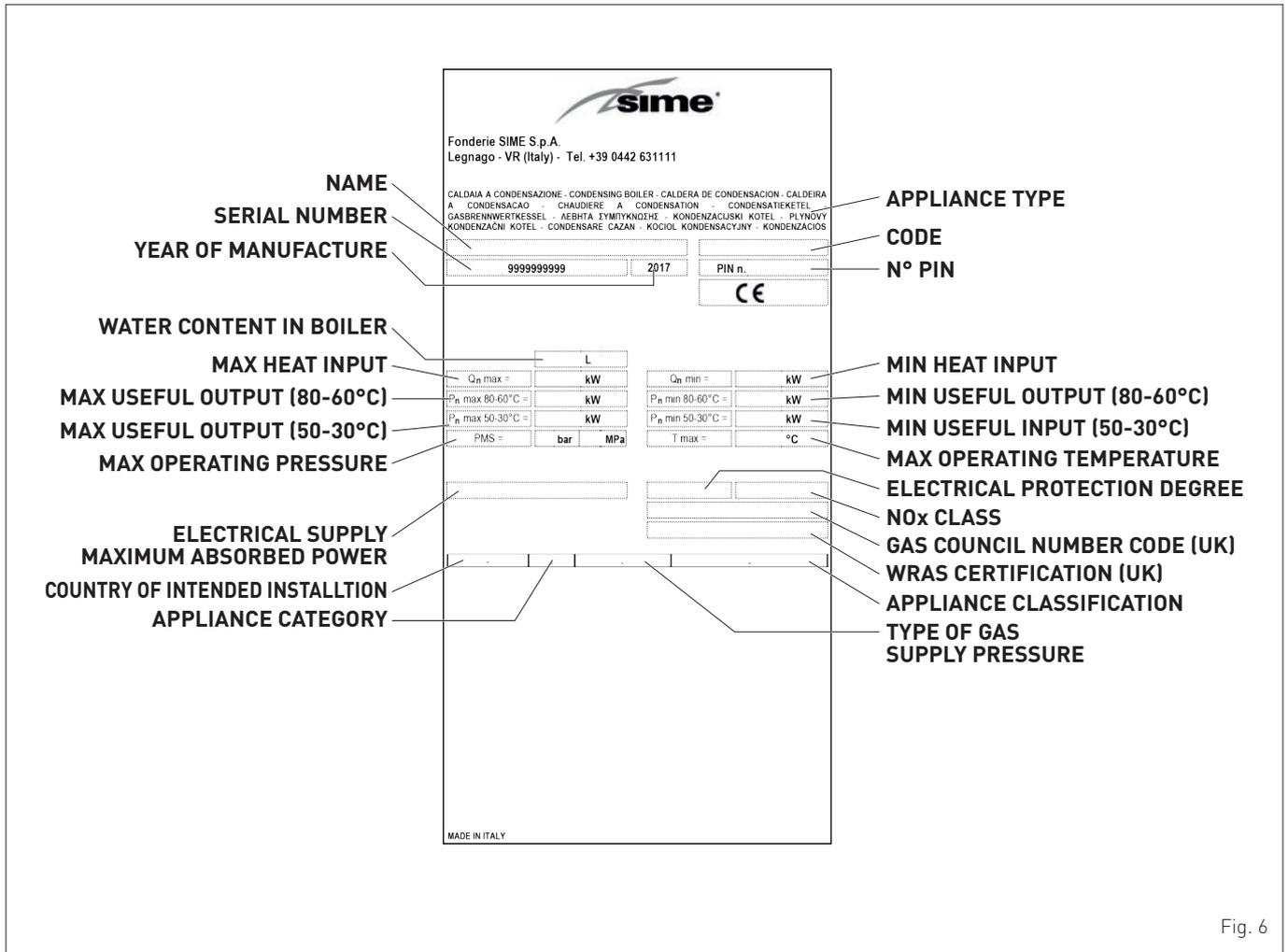


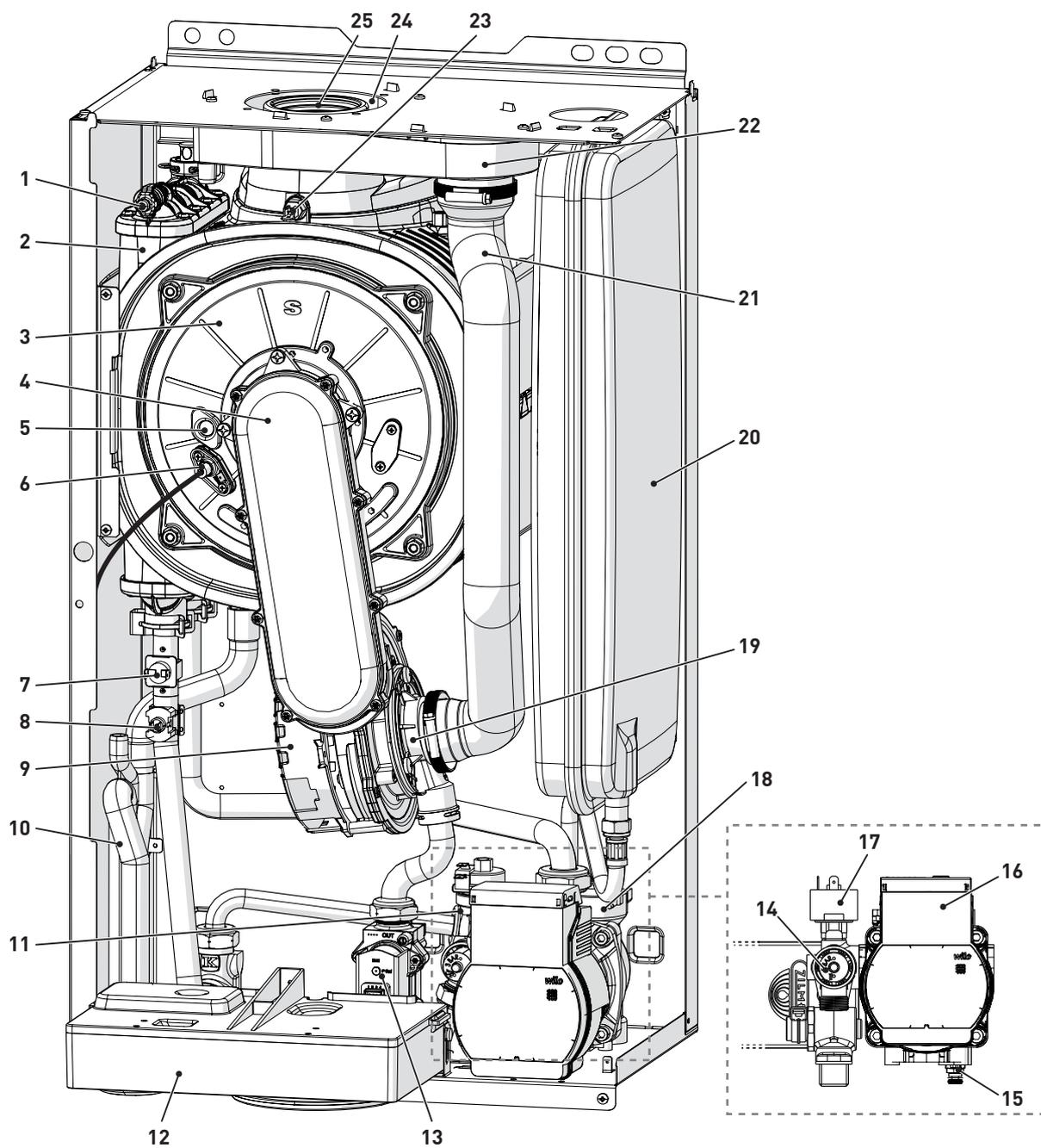
Fig. 6



#### CAUTION

Tampering with, removing or failing to display the identification plate or carrying out any other operation which does not allow safe identification of the product or which may hinder installation and maintenance operations.

## 5.4 Structure



- |    |                              |    |                       |
|----|------------------------------|----|-----------------------|
| 1  | Heat exchanger bleed point   | 14 | System relief valve   |
| 2  | Heat exchanger               | 15 | Boiler drain          |
| 3  | Combustion chamber door      | 16 | Pump                  |
| 4  | Air/gas duct                 | 17 | Water pressure switch |
| 5  | Flame viewing window         | 18 | Automatic bleed valve |
| 6  | Ignition/detection electrode | 19 | Air-gas mixer         |
| 7  | Safety thermostat (TS)       | 20 | Expansion vessel      |
| 8  | Delivery sensor (SM)         | 21 | Air inlet pipe        |
| 9  | Fan                          | 22 | Air-smoke chamber     |
| 10 | Condensate siphon            | 23 | Exhaust sensor (SF)   |
| 11 | Automatic by-pass            | 24 | Air inlet             |
| 12 | Control panel                | 25 | Exhaust outlet        |
| 13 | Gas valve                    |    |                       |

Fig. 7

## 5.5 Technical features

DESCRIPTION	Murelle Pro HE R MkII		
	20	30	
<b>CERTIFICATIONS</b>			
Country of intended installation	GB		
Fuel	G20 - G31		
PIN number	1312CP5936		
Category	II2H3P		
Type	C13 - C33		
Class NO <sub>x</sub> (*)	6 (< 56 mg/kWh)		
<b>HEATING PERFORMANCE</b>			
<b>HEAT INPUT (**)</b>			
Nominal flow [Q <sub>n</sub> max]	kW	20.0	30.0
Minimum flow [Q <sub>n</sub> min]	kW	4.0	6.0
<b>HEAT OUTPUT</b>			
Nominal (80-60°C) [P <sub>n</sub> max]	kW	19.7	29.5
Nominal (50-30°C) [P <sub>n</sub> max]	kW	21.4	32.2
Minimum G20 (80-60°C) [P <sub>n</sub> min]	kW	3.9	5.9
Minimum G20 (50-30°C) [P <sub>n</sub> min]	kW	4.3	6.5
Minimum G31 (80-60°C) [P <sub>n</sub> min]	kW	3.9	5.9
Minimum G31 (50-30°C) [P <sub>n</sub> min]	kW	4.3	6.5
<b>EFFICIENCY</b>			
Max useful efficiency (80-60°C)	%	98.5	98.3
Min useful efficiency (80-60°C)	%	97.5	98.3
Max useful efficiency (50-30°C)	%	107.0	107.3
Min useful efficiency (50-30°C)	%	107.5	108.3
Useful efficiency at 30% of load (40-30°C)	%	108,5	108,5
Losses after shutdown at 50°C	W	84	88
<b>ENERGY PERFORMANCE</b>			
<b>HEATING</b>			
Heating seasonal energy efficiency class		A	A
Heating seasonal energy efficiency	%	93	93
Sound power	dB(A)	54	53
<b>DOMESTIC HOT WATER</b>			
Domestic hot water energy efficiency class		-	-
Domestic hot water energy efficiency	%	-	-
Stated domestic hot water profile load		-	-
<b>ELECTRICAL SPECIFICATIONS</b>			
Power supply voltage	V	230	
Frequency	Hz	50	
Absorbed electrical power Q <sub>n</sub> max	W	65	78
Absorbed electrical power Q <sub>n</sub> min	W	52	52
Absorbed electrical power in stand-by	W	3,6	3,6
Electrical protection degree	IP	X5D	
<b>COMBUSTION DATA</b>			
Smoke temperature at Max/Min flow (80-60°C)	°C	82 / 66	77 / 67
Smoke temperature at Max/Min flow (50-30°C)	°C	59 / 45	58 / 49
Smoke flow Max/Min	g/s	11.2 / 1.9	16.3 / 2.8
CO <sub>2</sub> at Max/Min flow rate (G20)	%	9.0 / 9.0	9.0 / 9.0
CO <sub>2</sub> at Max/Min flow rate (G31)	%	10.0 / 10.0	10.0 / 10.0
NO <sub>x</sub> measured	mg/kWh	35	37
<b>NOZZLES - GAS</b>			
Number of nozzles	No.	1	1
Nozzle diameter (G20-G31)	mm	5.3	5.3
Gas consumption at Max/Min flow rate (G20)	m <sup>3</sup> /h	2.53 / 0.42	3.70 / 0.63
Gas consumption at Max/Min flow rate (G31)	kg/h	1.86 / 0.31	2.71 / 0.46
Gas supply pressure (G20/G31)	mbar	19 / 36	19 / 36
	kPa	1.9 / 3.6	1.9 / 3.6
<b>TEMPERATURE - PRESSURE</b>			
Max operating temperature [T max]	°C	85	
Heating adjustment range	°C	20÷80	

(\*) NO<sub>x</sub> class according to UNI EN 15502-1:2015

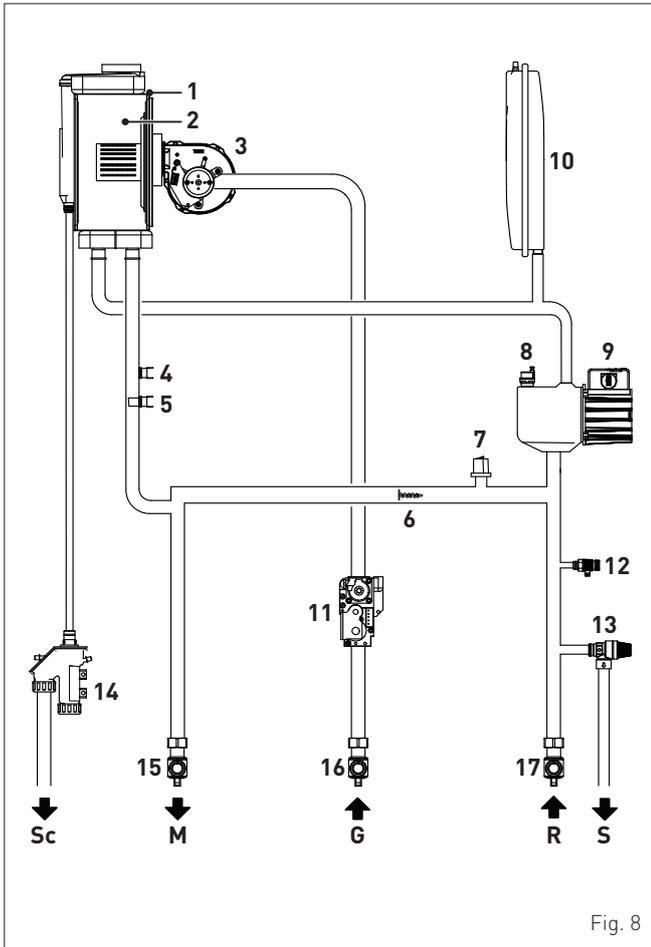
(\*\*) Heat input calculated using the lower heat output (Hi)

DESCRIPTION	Murelle Pro HE R MkII	
	20	30
Max operating pressure [PMS]	bar	2.5
	kPa	250
Water content in boiler	4.60	4.60

Lower Heat Output (Hi)

**G20 Hi.** 9.45 kW/m<sup>3</sup> (15°C, 1013 mbar) - **G31 Hi.** 12.87 kW/kg (15°C, 1013 mbar)

## 5.6 Main water circuit



KEY:

- M System flow
- R System return
- G Gas supply
- Sc Condensate outlet
- S Safety valve outlet

- 1 Condensing heat exchanger
- 2 Combustion chamber
- 3 Fan
- 4 Thermal safety thermostat (TS)
- 5 Delivery sensor (SM)
- 6 Automatic by-pass
- 7 Water pressure switch
- 8 Automatic bleed valve
- 9 Pump
- 10 System expansion vessel
- 11 Gas valve
- 12 Boiler drain
- 13 System relief valve
- 14 Condensate siphon outlet
- 15 System flow cock
- 16 Gas cock
- 17 System return cock

## 5.7 Sensors

The sensors installed have the following characteristics:

- Dual sensor (thermal safety/output) NTC R25°C; 10kΩ
- domestic hot water sensor NTC R25°C; 10kΩ
- external sensor NTC R25°C; 10kΩ

### Correspondence of Temperature Detected/Resistance

Examples of reading:

TR=75°C → R=1925Ω

TR=80°C → R=1669Ω.

TR	0°C	1°C	2°C	3°C	4°C	5°C	6°C	7°C	8°C	9°C	Resistance R (Ω)
0°C	27279	26135	25044	24004	23014	22069	21168	20309	19489	18706	
10°C	17959	17245	16563	15912	15289	14694	14126	13582	13062	12565	
20°C	12090	11634	11199	10781	10382	9999	9633	9281	8945	8622	
30°C	8313	8016	7731	7458	7196	6944	6702	6470	6247	6033	
40°C	5828	5630	5440	5258	5082	4913	4751	4595	4444	4300	
50°C	4161	4026	3897	3773	3653	3538	3426	3319	3216	3116	
60°C	3021	2928	2839	2753	2669	2589	2512	2437	2365	2296	
70°C	2229	2164	2101	2040	1982	1925	1870	1817	1766	1717	
80°C	1669	1622	1577	1534	1491	1451	1411	1373	1336	1300	
90°C	1266	1232	1199	1168	1137	1108	1079	1051	1024	998	
100°C	973										

## 5.8 Expansion vessel

The expansion vessel installed on the boilers has the following characteristics:

Description	U/M	Murelle Pro HE R MkII	
		20	30
Total capacity	l	9,0	
Prefilling pressure	kPa	100	
	bar	1,0	
Useful capacity	l	5,0	
Maximum system content (*)	l	124	

(\*) Conditions of:

Average operating temperature 70°C (with high temperature system 80/60°C)

Start temperature at system filling 10°C.

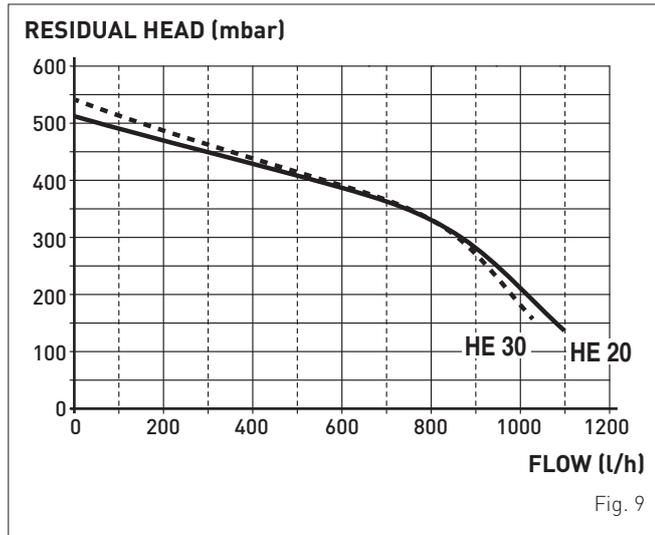


### CAUTION

- For systems with water content exceeding the maximum system content (as indicated in the table) an additional expansion vessel must be fitted.
- The difference in height between the relief valve and the highest point of the system cannot exceed 6 metres. If the difference is greater than 6 metres, increase the prefilling pressure of the expansion vessel and the system when cold by 0.1 bar for each meter increase.

## 5.9 Circulation pump

The flow-head performance curve available for the heating system is shown in the graph below.



### CAUTION

The appliance is equipped with a by-pass which ensures water circulation in the boiler when thermostatic valves are used in the system. The heating system design should incorporate a room thermostat. Thermostatic radiator valves fitted to all radiators except the room where the room thermostat is fitted. Properties with floor areas exceeding 150square metres should be zoned.

## 5.10 Control panel

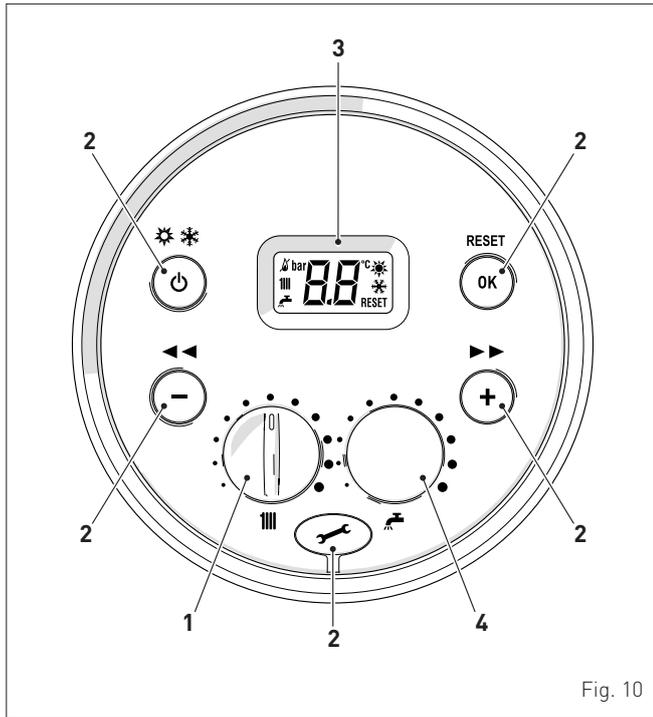


Fig. 10

### 1 KNOBS



The heating knob allows the user to set the flow temperature to between 20 and 80°C during normal operation.

### 2 FUNCTIONAL BUTTONS



Press for more than one second and release to step through the operating modes (Stand-by – Summer – Winter).



This allows the engineer to scroll through the parameters or decrease the values.



This allows the engineer to scroll through the parameters or increase the values.



This allows the engineer to confirm the selected parameter or to modify the value or to reset the appliances from a lockout failure.



Programming connector cover plug.

**NOTE:** pressing any one of these buttons for more than 30 seconds generates a fault on the display without preventing boiler operation. The warning disappears when the button is released.

## 3 DISPLAY



“SUMMER”. This function is NOT USED on these boilers. This symbol appears when the boiler is operating in Summer mode (used when commissioning the boiler). If the symbols and are flashing, this indicates that the chimney sweep function is active.



“WINTER”. This symbol appears when the boiler is operating in Winter mode. If no operating modes have been enabled both symbols and will be off.



“RESET REQUIRED”. This message only appears if there is a malfunction which must be or may be restored manually.



“DOMESTIC HOT WATER”. This function IS NOT USED on these boiler models.



“HEATING”. This symbol is present during heating operation or when the chimney sweep function is operating; it flashes during the heating set point selection.



“LOCKOUT” DUE TO NO FLAME.



“FLAME LIT”.



“ALARM”. This indicates that a fault has occurred. The number specifies the cause which generated the alarm (see section “Fault / malfunction codes”).



“MAINTENANCE REQUEST”. If active, it shows it is time to perform maintenance on the boiler.

## 4 (Not used on these boilers)

## 5.11 Wiring diagram

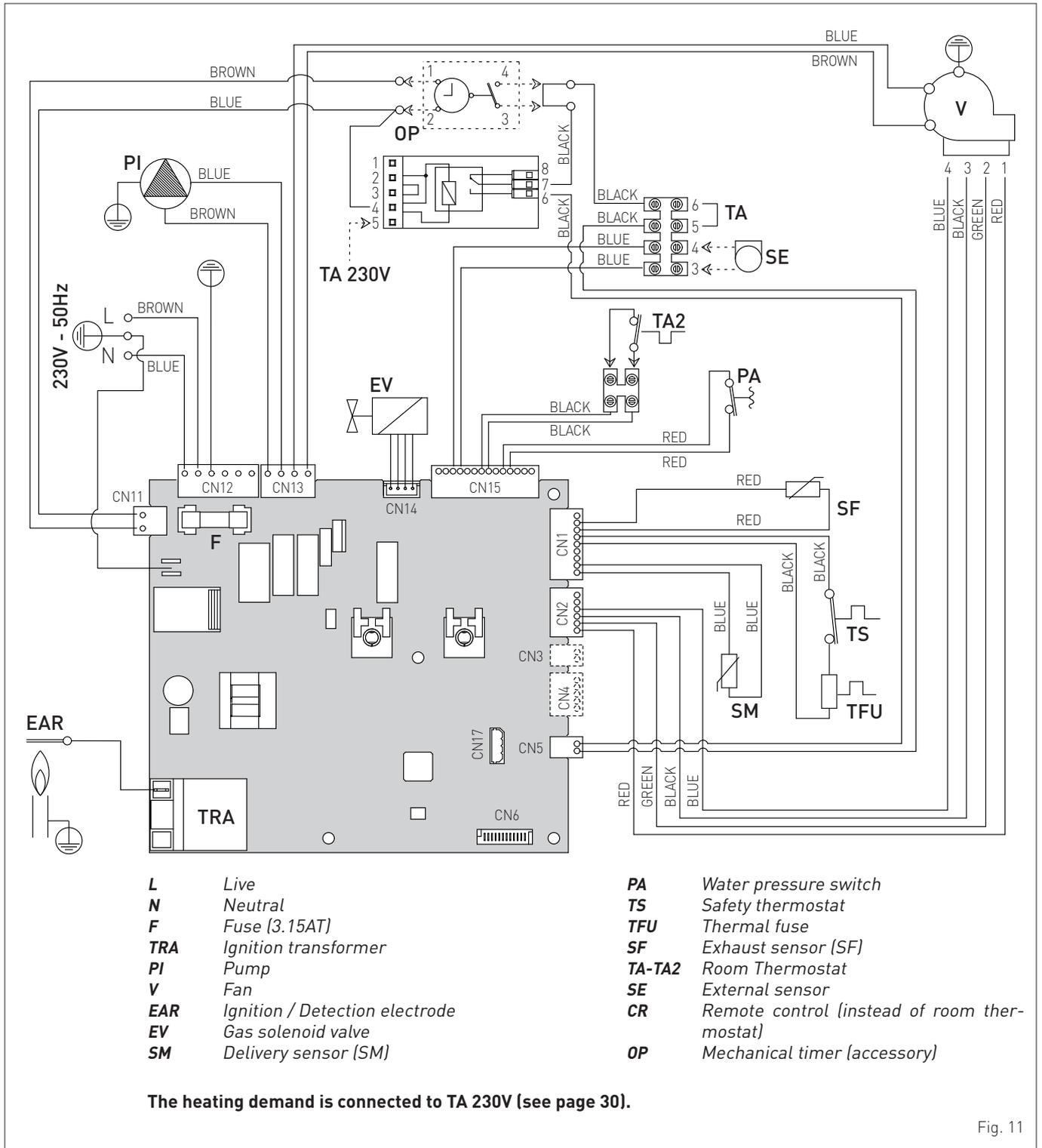


Fig. 11



### CAUTION

Installer must:

- Connect the boiler to a 230v -50Hz single phase power supply through a fused mains switch, with at least 3mm spacing between contacts, fused at 3amps **which ensures complete cut-off in overvoltage category III conditions (i.e. where there is at least 3 mm between the open contacts).**
- Respect the connections L (Live) - N (Neutral).
- Ensure that the special power cable is only replaced with a cable ordered as a spare part and connected by professionally qualified personnel.



### CAUTION

Installer must:

- Connect the earth wire to an effective earthing system. **Sime Ltd** declines all responsible for any injury or damage to persons, animals, or property as a result of failure to provide adequate earthing of the appliance.



### DO NOT

Do not use water pipes for earthing the appliance.

## **The Benchmark Scheme**

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.

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.

# INSTALLATION AND SERVICING INSTRUCTIONS

## Installer Checklist

Please remember to carry out the following checks after installation. This will achieve complete customer satisfaction, and avoid unnecessary service calls. A charge will be made for a service visit where the fault is not due to a manufacturing defect.

Has a correct by-pass been fitted and adjusted?

Has the system and boiler been flushed?

Is the system and boiler full of water, and the correct pressure showing on the pressure gauge?

Is the Auto Air Vent open?

### Has the pump been rotated manually?

Is the gas supply working pressure correct?

Is the boiler wired correctly? (See installation manual).

### Has the D.H.W. flow rate been set to the customer requirements?

Has the customer been fully advised on the correct use of the boiler, system and controls?

Has the Benchmark Checklist in the use and maintenance section of this manual, been completed?

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## 6 INSTALLATION



### CAUTION

The appliance must only be installed by the **Sime Ltd** Technical Service or by qualified professionals **who MUST wear** suitable protective safety equipment.

### 6.1 Receiving the product

**Murelle Pro HE R MkII** appliances are delivered in a single unit protected by cardboard packaging.

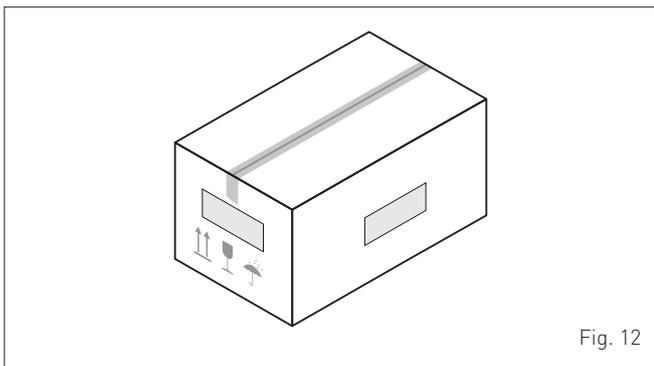


Fig. 12

The plastic bag found inside the packaging contains the following:

- Installation, use and maintenance manual
- Paper template for boiler installation
- Bracket for mounting the boiler on the wall
- Certificate of warranty
- Hydrostatic test certificate
- Hanging Bracket
- Connection pack



### DO NOT

Do not leave packaging material around or near children since it could be dangerous. Dispose of it as prescribed by legislation in force.

### 6.2 Dimensions and weight

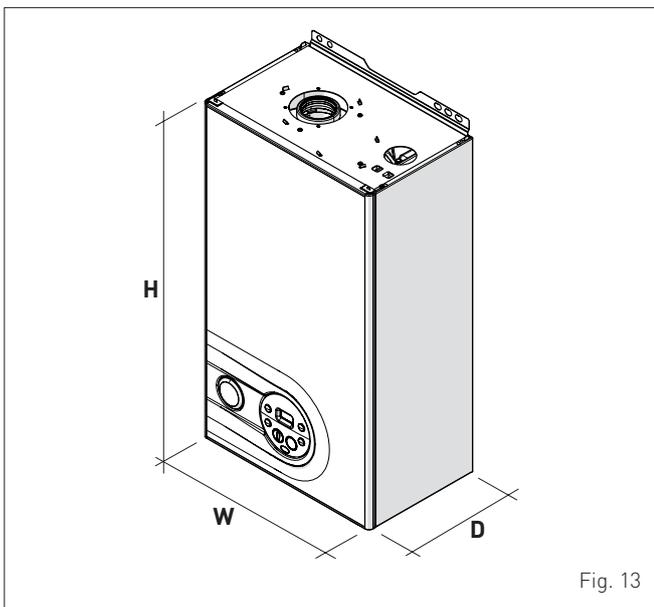


Fig. 13

Description	Murelle Pro HE 20 R MkII	Murelle Pro HE 30 R MkII
W (mm)	400	
D (mm)	250	
H (mm)	700	
Weight (kg)	27.5	29

### 6.3 Handling

Once the packaging has been removed, the appliance is to be handled manually, tilting it slightly, lifting it and applying pressure in the points indicated in the figure.

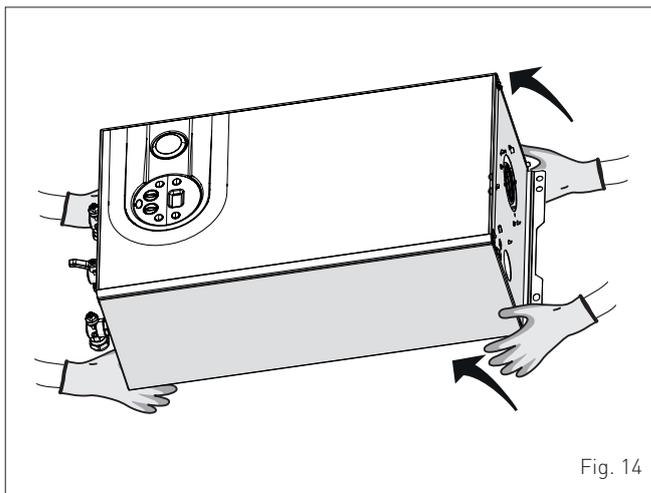


Fig. 14



### DO NOT

To grip the appliance casing. Hold the "solid" parts of the appliance such as the base and structural frame.



### WARNING

Use suitable tools and personal protection when removing the packaging and when handling the appliance. Observe the maximum weight that can be lifted per person.

### 6.4 Ventilation requirements

Detailed recommendations for the air supply are given in BS 5440-2. The following note is given for guidance. It is not necessary to have purpose provided air vents in the room or compartment that the appliance is installed.

The minimum temperature of the installation room must NOT be lower than **-5 °C**.



### CAUTION

- Before assembling the appliance, the installer **MUST** make sure that the wall supports the weight.
- Observe the required clearances (see Fig. 15).

### APPROXIMATE MINIMUM DISTANCES

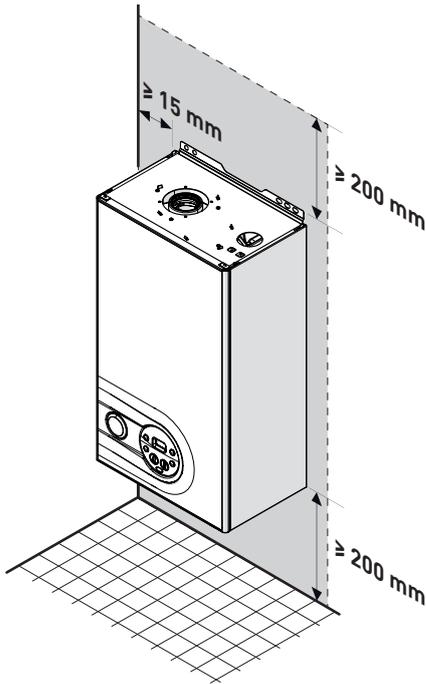


Fig. 15

### 6.5 New installation or installation of a replacement appliance

The boiler must be installed in a fixed location and only by specialized and qualified person in compliance with all instructions contained in this manual.

The installation of this boiler must be in accordance with the relevant requirements of the current Gas Safety (installation and use), the local building regulations and I.E.E. wiring regulations.

Detailed recommendations for air supply and fluing are given in BS5440.

The following notes are for general guidance: it is not necessary to have a purpose provided air vent in the room or compartment in which the appliance is installed.



#### CAUTION

It is a condition of the warranty that the boiler is installed in accordance with the instructions in this manual. The boiler must be registered with Gas Safe Register, the Benchmark record must be completed and the boiler is serviced annually and recorded in this manual.

### 6.6 Cleaning the system

Before connecting the boiler it is recommended that the system be flushed in accordance to BS 7593, to eliminate any foreign bodies that may be detrimental to the operating efficiency of the appliance.



#### CAUTION

Failure to flush and add inhibitor to the system may invalidate the warranty.

### 6.7 Characteristics of feedwater and system treatment

- All recirculatory systems will be subject to corrosion unless an appropriate water treatment is applied. This means that the efficiency of the system will deteriorate as corrosion sludge accumulates within the system, risking damage to pump and valves, boiler noise and circulation problems.
- Before connecting the boiler the associated central heating system must be flushed in accordance with the guidelines given in BS 7593 "Treatment of water in domestic hot water central heating systems".
- **Sime Ltd** recommends only the use of FERNOX products for the flushing and final treatment of the system water. This is particularly important in hard water areas. Failure to flush and add inhibitor to the system may invalidate the appliance warranty. Artificially softened water must not be used to fill the heating system. Naturally soft water areas can corrode aluminium heat exchangers. Adding Fernox F1 or Mb-1 will guard against corrosion.
- **Sime Ltd** promote the fitting of TF1 System filter with any new boiler installation.
- It is important to check the inhibitor concentration after installation, system modification and annually on a service visit in accordance with the manufacturer's instructions. (Note on benchmark service record this has been complete). Test kits are available from inhibitor stockists; the return of the Fernox test report should be kept with the Benchmark to validate warranty.
- Where Central heating systems are susceptible to freezing a mixture of inhibitor and anti-freeze should be added in accordance with the DWTa code of practice and the Manufacturer's instructions.
- The addition of sealing agents to system water is not recommended because deposits can be left in heat exchanger causing circulation issues.

### 6.8 Boiler installation

Murelle Pro HE R MkII are supplied with a hanging bracket and a template to assist installation.

For installation:

- position the bracket (1) on the wall (2), where you want to install the boiler
- check that it is straight and mark where to make the holes for the plugs
- drill the holes and insert the expansion plugs (3) which will be used to fix the bracket securely
- hook the boiler onto the pins (4) and secure it using the nuts and washers supplied.

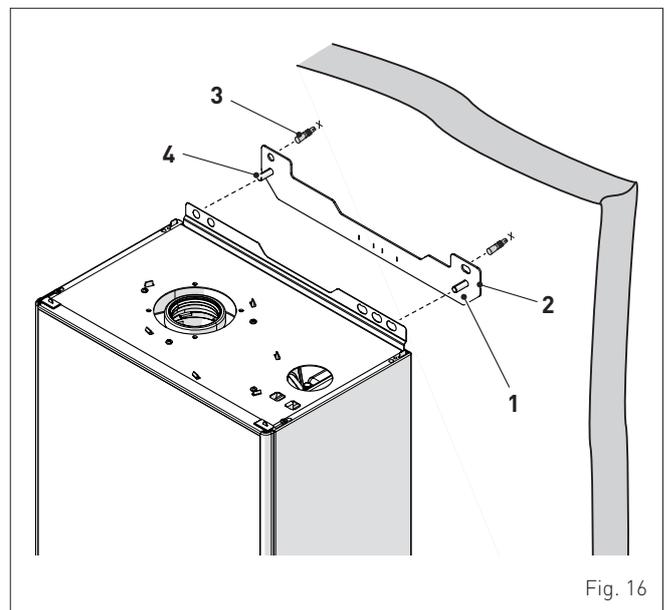


Fig. 16



**CAUTION**

The boiler should be located observing the required clearances, and provide safe, adequate service access.

**6.9 Plumbing connections**

The plumbing connections have the following characteristics and dimensions.

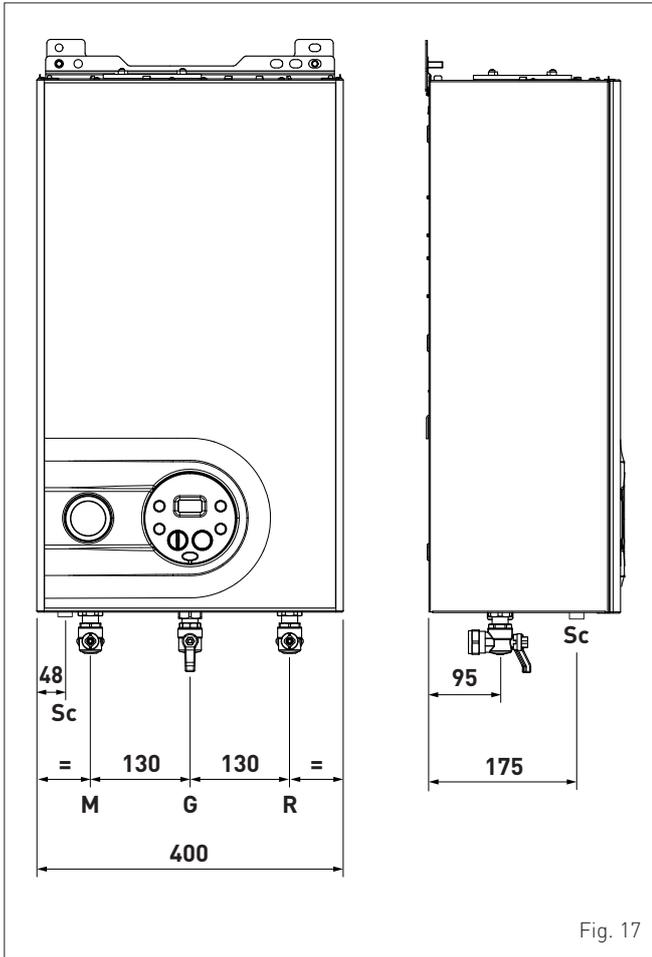


Fig. 17

Description	Murelle Pro HE R MkII	
	20	30
M - System flow	Ø 22 mm	
R - System return	Ø 22 mm	
G - Gas cock connection	Ø 15 mm	
Sc - Condensate outlet	Ø 21.5 mm	



**CAUTION**

A sealed system must only be filled by a competent person (see section **Method of filling a sealed system** page 31).

**6.9.1 Plumbing accessories (optional)**

To facilitate plumbing and gas connections to the systems, the accessories as shown in the table below are available and are to be ordered separately from the boiler.

DESCRIPTION	CODE
Stand off frame (25 mm)	8082212
Valve cover	8094530

**NOTE:** kit instructions are supplied with the accessory itself or are to be found on the packaging.

**6.10 Condensate outlet/collection**

To ensure safe disposal of the condensate produced by the flue gases, reference should be made to BS6798:2009. The boiler incorporates a condensate trap which has a seal of 75 mm, therefore no additional trap is required. The condensate trap can be filled prior to the installation of the flue by carefully pouring 1 litre of water into the exhaust connection.

*NOTE: All pipework must have a continuous fall from the boiler and must be resistant to corrosion by condensate, copper or steel is NOT suitable. It should be noted that the connection of a condensate pipe to a drain may be subject to local building control requirements (Dealing with Condensate - see Appendix 1).*

**6.11 Gas supply**

Murelle Pro HE R MkII boilers leave the factory prearranged for gas G20 (methane) and can also work with G31 (propane) without the need for any type of mechanical conversion. Simply select parameter "03" (see "Parameter setting and display" page 34) and set the type of gas to be used. If changing the type of gas to be used, carry out the entire appliance "COMMISSIONING" phase (page 33). The gas connection must be made using seamless steel or copper tube. Where the piping has to pass through walls, a suitable insulating sleeve must be provided. When sizing gas piping, from the meter to the boiler, take into account both the volume flow rates (consumption) in m<sup>3</sup>/h and the relative density of the gas in question. The sections of the piping making up the system must be such as to guarantee a supply of gas sufficient to cover the maximum output available from the boiler, limiting pressure loss between the gas meter and any apparatus being used to not greater than 1.0 mbar for family II gases (natural gas). An adhesive data badge is sited inside the front panel; it contains all the technical data identifying the boiler and the type of gas for which the boiler is arranged.



**CAUTION**

If the gas supply is changed from G20 to G31, mark the box on the TECHNICAL DATA PLATE.



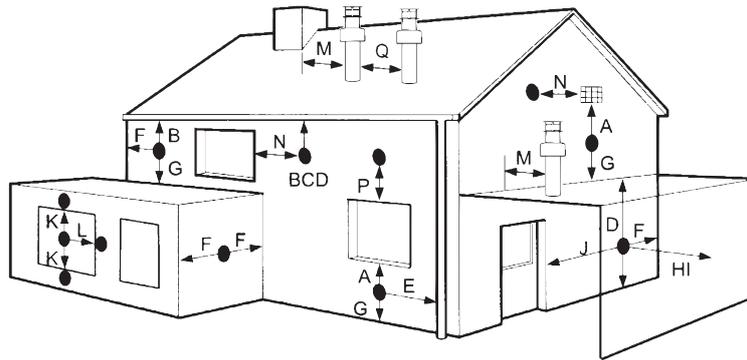
## 6.12 Connecting the flue



### CAUTION

- The appliance must be installed as a room sealed device and unless stated in writing from the manufacturer, in accordance with the current edition of BS 5440-1. The information shown in this manual is for guidance and parts identification.
- Prior to fitting the flue, the condensate trap can be filled by carefully pouring water into the exhaust section of the flue connection.

### 6.12.1 Flue Terminal Positions



Terminal position	Minimum spacing	
<b>A</b> Directly below an openable window, air vent or any other ventilation opening	300 mm	12 in
<b>B</b> Below guttering, drain pipes or soil pipes (**)	75 mm	3 in
<b>C/D</b> Below eaves, balconies or carport roof (*)	200 mm	8 in
<b>E</b> From vertical drain pipes or soil pipes	75 mm	3 in
<b>F</b> From internal or external corners	300 mm	12 in
<b>G</b> Above adjacent ground, roof or balcony level	300 mm	12 in
<b>H</b> From a boundary or surface facing the boiler	600 mm	24 in
<b>I</b> From a terminal facing the terminal	1,200 mm	48 in
<b>J</b> From an opening in the carport (eg door, window into dwelling)	1,200 mm	48 in
<b>K</b> Vertically from a terminal on the same wall	1,500 mm	60 in
<b>L</b> Horizont. from a terminal on the same wall	300 mm	12 in
<b>M</b> Horizont. from a vertical terminal to a wall	300 mm	12 in
<b>N</b> Horizont. from an openable window or other opening	300 mm	12 in
<b>P</b> Above an openable window or other opening	300 mm	12 in
<b>Q</b> From an adjacent vertical terminal	600 mm	24 in

(\*) This dimension to be used with ventilated soffits. With unvented soffits this can be reduced to 75 mm and further reduced to 25 mm when a flue shield is used to protect from the effects of heat and condensation.

(\*\*) This can be reduced to 25 mm but it may be necessary to protect the surfaces from the effects of heat and condensation.

- If the terminal discharges into a pathway or passageway check that combustion products will not cause nuisance and that the terminal will not obstruct the passageway.
- Where the lowest part of the terminal is fitted less than 2 m (78 in) above ground, above a balcony or above a flat roof to which people have access, the terminal MUST be protected by a purpose designed guard.
- The air inlet/outlet flue duct MUST NOT be closer than 10 mm (0.4 in) to combustible material.
- In certain weather conditions the terminal may emit a plume of steam. This is normal but positions where this would cause a nuisance should be avoided.

Fig. 18

### 6.12.2 Installation of coaxial flues 60/100mm – 80/125mm

Coaxial flue kits that are supplied separately. The diagrams below, illustrate some examples of fluing options allowed and the maximum lengths than can be achieved. It is essential that a flue gas analysis point is made available directly above the boiler.

**IMPORTANT:**

- The insertion of each additional 90° bend with a diameter of 60/100 (code 8095850) reduces the available section by 1.5 meters.
- The insertion of each additional 90° bend with a diameter of 80/125 (code 8095870) reduces the available section by 2 meters.
- Each additional 45° curve installed a diameter of 60/100 (code 8095950) reduces the available length by 1.0 metres.
- Each additional 45° curve installed a diameter of 80/125 (code 8095970) reduces the available length by 1.0 metres.

**HORIZONTAL FLUES MUST BE LEVEL**

**NOTE:** Before connecting accessories, it is always advisable to lubricate the internal part of the gaskets with silicon products. Avoid using oils and greases.

Model	Length of pipe Ø 60/100			Length of pipe Ø 80/125		
	H (m)	V (m)		H (m)	V (m)	
		Min.	Max.		Min.	Max.
Murelle Pro HE 20 R	6	1,3	8	12	1,2	15
Murelle Pro HE 30 R	4	1,3	6	10	1,2	13

**LIST OF Ø 60/100 ACCESSORIES**

- 1a Coaxial duct kit L. 790 code 8096250
- 1b Telescopic coaxial duct kit L. 695 code 8098605
- 2a Extension L. 1000 code 8096150
- 2b Extension L. 500 code 8096151
- 3 Vertical extension L. 140 with coupling code 8086950
- 5 Tile for joint code 8091300
- 6 Terminal for roof exit L. 1285 code 8091212 (includes 8086950)

**LIST OF Ø 80/125 ACCESSORIES**

- 1 Coaxial duct kit L. 785 code 8096253
- 2a Extension L. 1000 code 8096171
- 2b Extension L. 500 code 8096170
- 3 Adapter for Ø 80/125 code 8093150
- 5 Tile for joint code 8091300
- 6 Terminal for roof exit L. 1285 code 8091212 (includes 8093150)

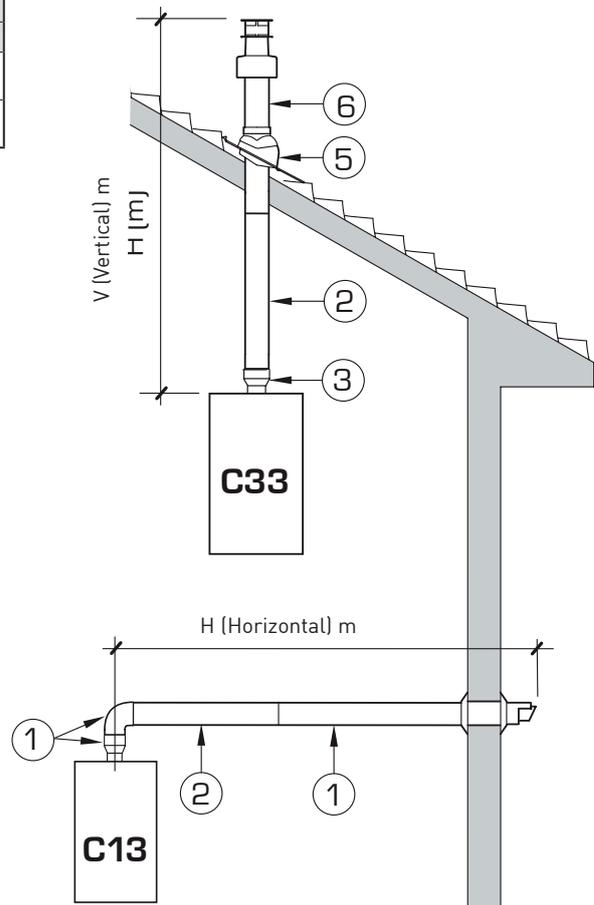


Fig. 19

### 6.12.3 Installation of separate ducts 80mm

The boiler can be installed with separate air inlet and exhaust ducts. The figure below illustrate some examples of the fluing options allowed and the associated losses of the accessories. The total load loss is the sum of the load losses of the accessories used. The maximum load loss **must not exceed 15 mm H<sub>2</sub>O**, and the maximum flue length **must not exceed 25 m** inlet and exhaust.

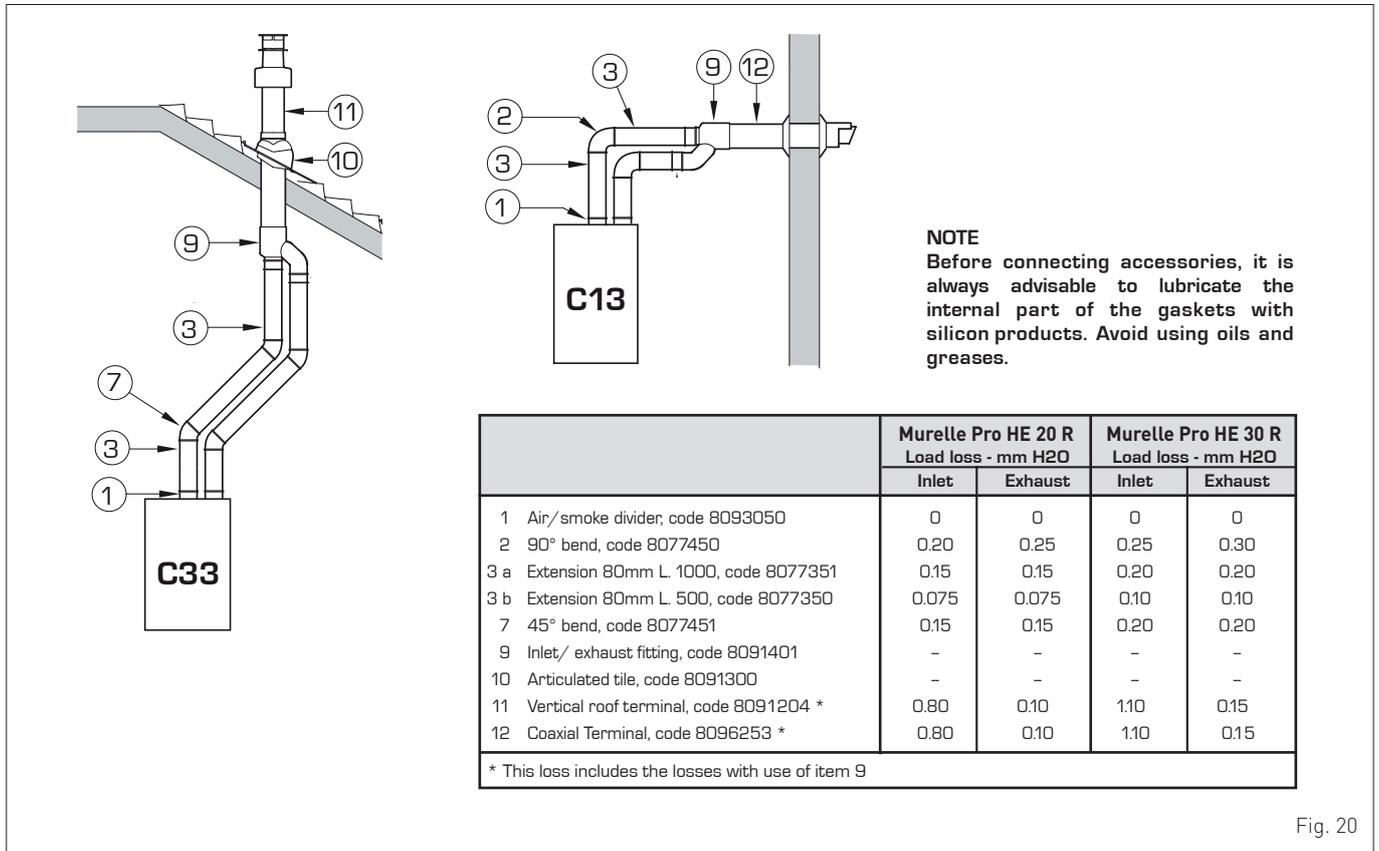


Fig. 20

It is essential that flue gas analysis points are made available directly above the boiler, these are incorporated in the twin flue adaptor code 8093050.

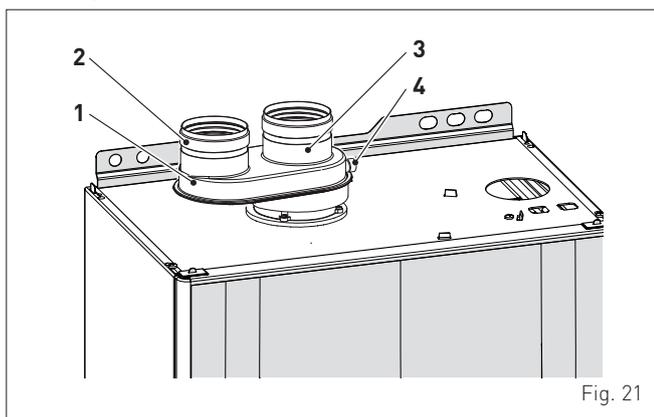


Fig. 21

- 1 Twin pipe adaptor with test points 8093050
- 2 Air inlet
- 3 Exhaust
- 4 Test point



#### CAUTION

- The maximum overall length is determined by the sum of the load losses of the individual flue components **must not exceed 15 mm H<sub>2</sub>O**.
- The maximum flue length must not exceed 25m - air intake, 25m -exhaust.

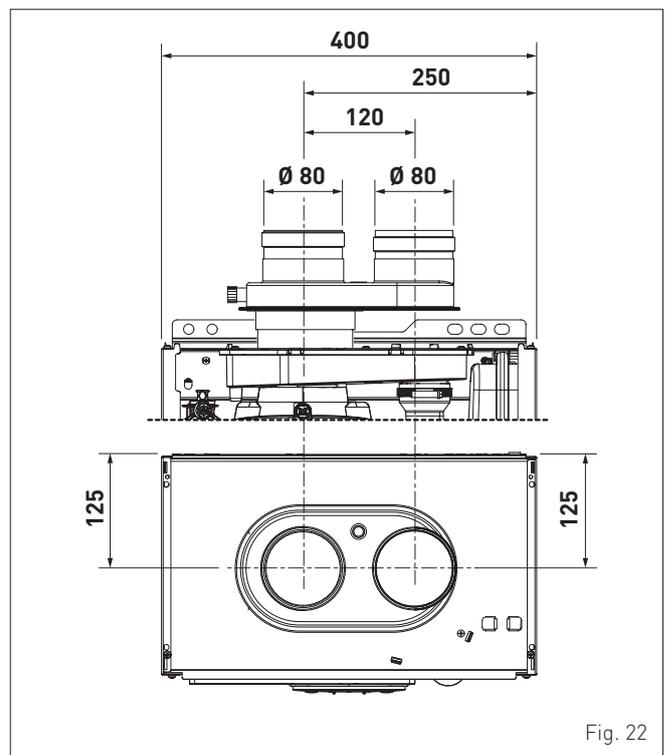


Fig. 22

### 6.13 Electrical connections and External controls

The boiler is supplied with a mains cable. Connect the boiler to a 230V -50Hz single phase power supply through a fused mains switch, with at least 3 mm spacing between contacts, fused at 3 amps.

If this cable needs to be replaced, an original spare must be requested from **Sime Ltd** (part code 6325602).

The heating control of the boiler can be achieved by a 230V switched control to the 230V TA connection.



#### CAUTION

Only qualified persons in compliance with the instructions contained in this manual are permitted to install, commission and maintain this boiler. The installation of this boiler must be in accordance with the relevant requirements of the current Gas Safety (installation and use) Regulation 1998, the local building regulations, and I.E.E. wiring regulations.



#### WARNING

Before carrying out any interventions described:

- isolate the power supply
- isolate the gas cock
- avoid contact with any hot surfaces.

To make the electrical connections:

- remove the screws (1), pull the front panel (2) forwards and release it from the top by lifting it

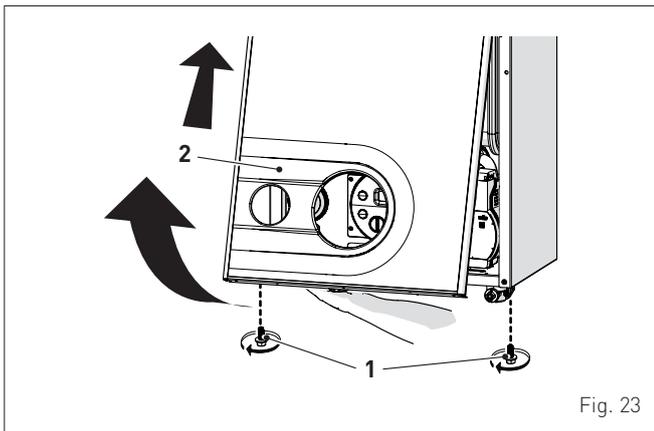


Fig. 23

- remove the screws (3) securing the control panel (4)
- move the panel (4) upwards (a) but keeping it in the side guides (5) to the end of travel
- bring it forwards and down (b) until it is horizontal

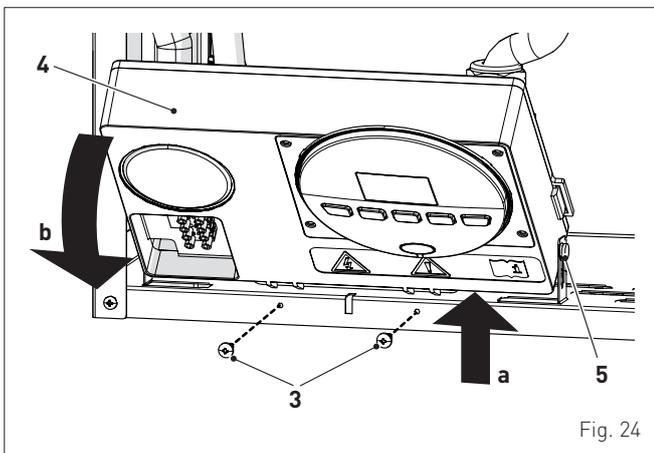


Fig. 24

- disconnect the electrode cable by pulling the appropriate connector on the rear of the control panel
- remove the screw (6)
- press on the tabs (7) and remove the rear cover (8) of the control panel

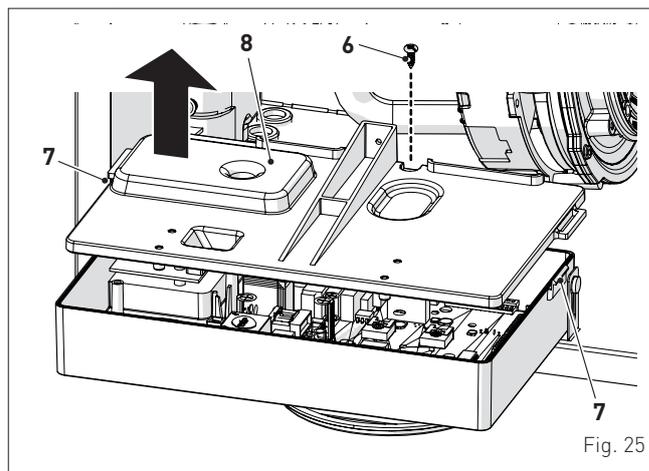


Fig. 25

- insert the connection wires through the grommet (8) and the opening (9) on the control panel
- connect the component wires to the terminal board (10)

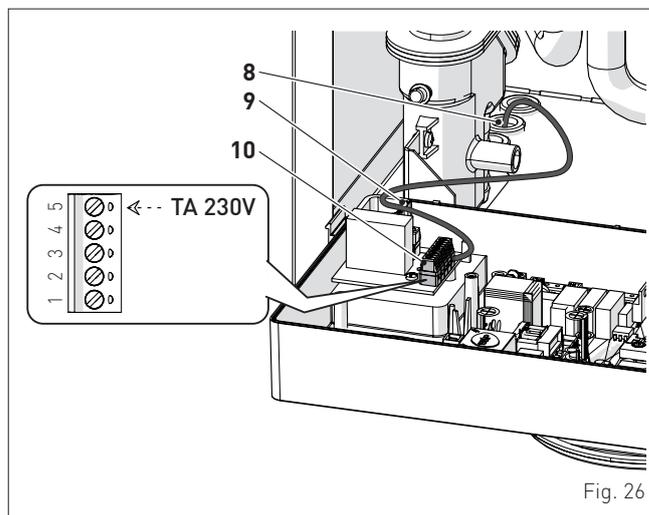


Fig. 26

- place the rear cover of the control panel and secure it with the screw previously removed
- bring the control panel (4) to the original position and secure it with the screws (3) which were removed previously.

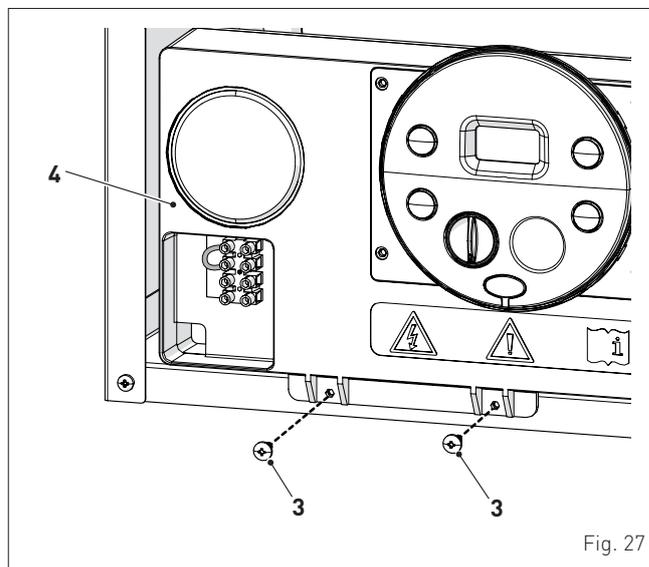


Fig. 27



### CAUTION

It is compulsory:

- to use an omnipolar cut-off switch, disconnect switch, in compliance with EN standards (contact opening of at least 3 mm)
- if the power cable is to be replaced, that **ONLY** a special cable is used with a factory produced re-wired connector, ordered as a spare part and connected by a professionally qualified person
- to connect the earth wire to an effective earthing system (\*)
- that before any work is done on the boiler, the mains power is disconnected by setting the main system switch to "OFF".

(\*) **Sime Ltd declines all responsible for any injury or damage to persons, animals, or property as a result of failure to provide adequate earthing of the appliance.**



### DO NOT

Do not use water pipes for earthing the appliance.

#### 6.13.1 Heating demand

The heating demand is made by applying 230V to connection-TA 230V.

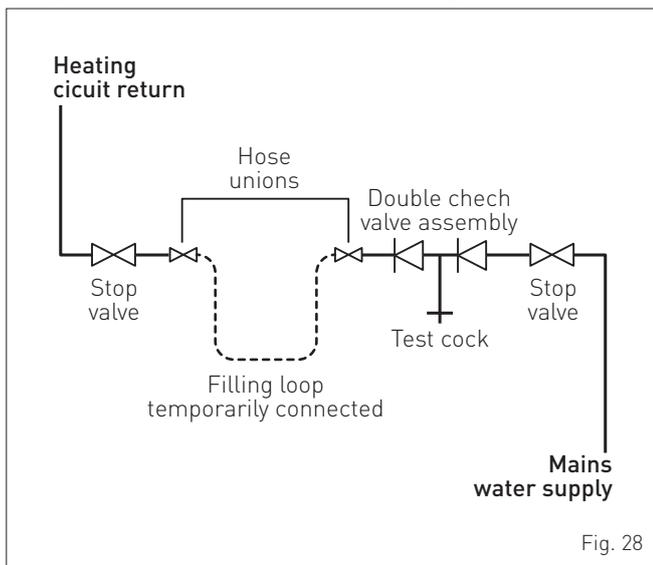
### 6.14 Refilling or emptying

Before carrying out the operation described below, isolate the boiler power supply.

Ensure that the inhibitor concentration is correct on refilling.

#### 6.14.1 Method of filling a sealed system

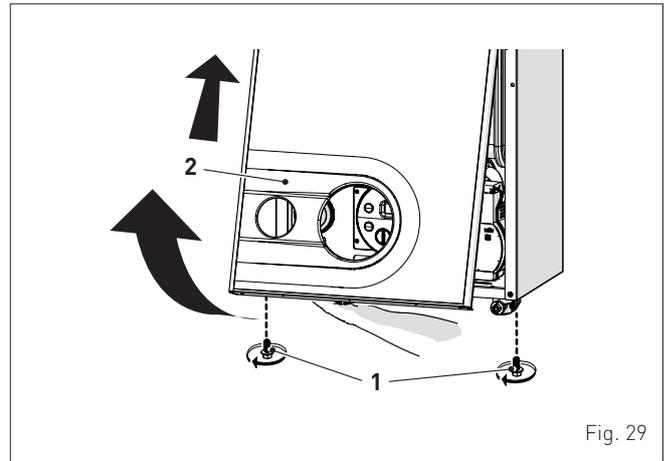
A sealed system must only be filled by a competent person using a method similar to that shown in figure below.



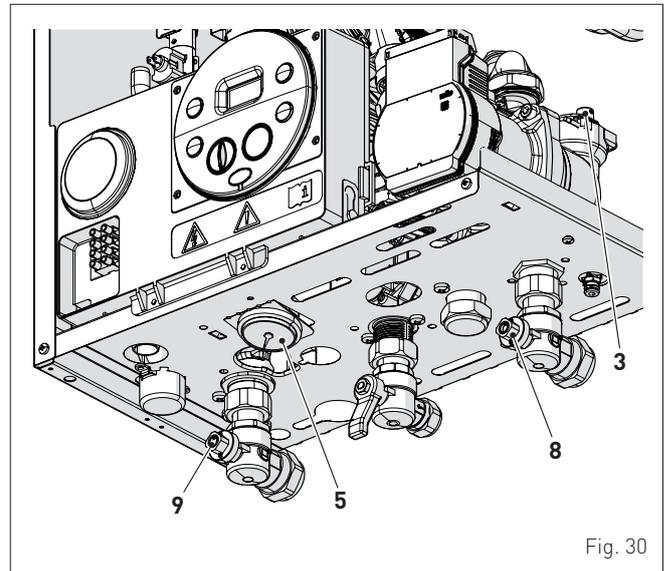
#### 6.14.2 SYSTEM Filling

##### Remove the front panel:

- remove the two screws (1), pull the front panel (2) forwards and release it from the top by lifting it.



- open the isolation and air bleeding valves in the highest points of the system
- loosen the automatic bleed valve (3)
- open the heating circuit isolation valves (8) and (9)
- activate the filling system "**Method of filling a sealed system**", and fill the heating system until a pressure of **1-1.2 bar** is shown on the pressure gauge (5)
- stop the filling system
- check that there is no air in the system by bleeding all the radiators and the circuit on the high points of the system. Connect a suitable pipe and use the heat exchanger bleed point (10) to vent the primary heat exchanger



**NOTE:** to completely remove all air from the system, it is recommended that this operation is repeated a number of times.

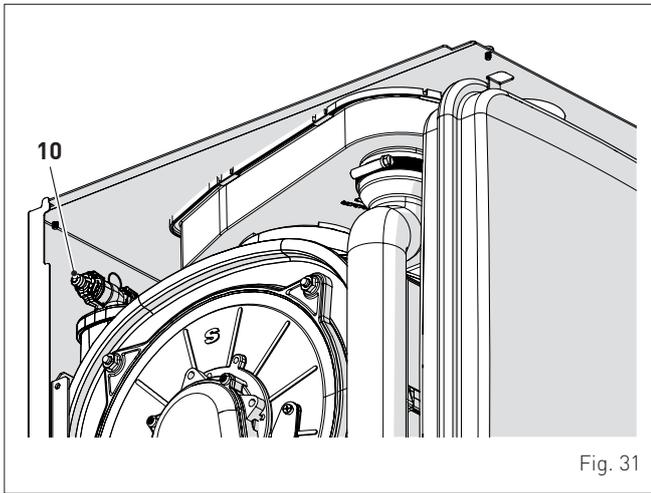


Fig. 31

- check the pressure on the pressure gauge (5) and if necessary top up until the correct pressure reading appears
- close the automatic bleed valve (3)
- it is recommended that the condensate trap is filled prior to fitting the flue, by carefully pouring water into the exhaust connection.

Refit the front panel of the boiler hooking it on at the top, pushing it forwards and securing it with the screw (1) which was removed previously.

### 6.14.3 EMPTYING operations

- loosen the automatic bleed valve (3)
- close the heating circuit isolation valves (8) and (9)
- connect a rubber hose to the boiler drain valve (7) and open it
- when it has fully emptied, close the drain valve (7)
- close the automatic bleed valve (3).

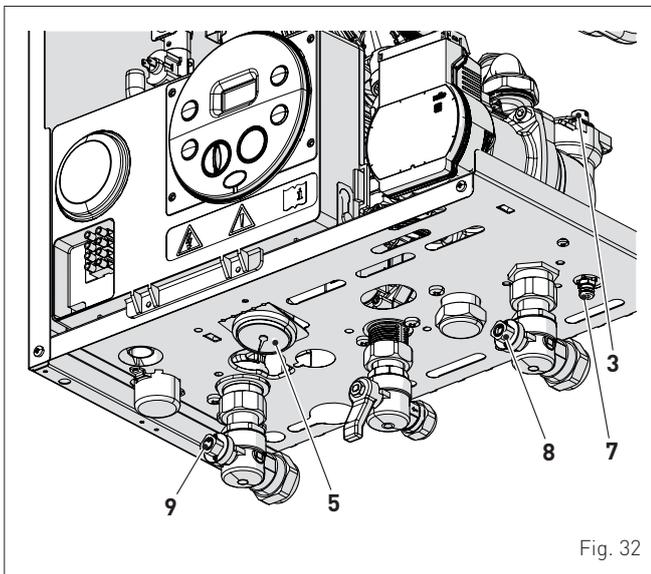


Fig. 32

## 7 COMMISSIONING

### 7.1 Preliminary operations



#### WARNING

- Should it be necessary to access the areas in the bottom part of the appliance, make sure that the system components and pipes are not hot (risk of burning).
- Before replenishing the heating system, put on protective gloves.

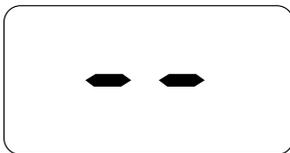
Before commissioning the appliance, check that:

- the type of gas is correct for the appliance
- the gas isolation valve is open
- check that the system pressure as shown on the pressure gauge when the system is cold, is between **1 and 1.2 bar**
- the pump impeller rotates freely
- the siphon has been filled
- the flue is fitted correctly.

### 7.2 Before commissioning

After having carried out the preliminary operations, proceed as follows:

- set the main system switch to "ON" and ensure that there is a heating demand
- the type of gas for which the boiler has been calibrated, "**nG**" (methane) or "**LG**" (LPG,) will appear followed by the power. Finally "--" will appear on the display



- press the button  once for at least 1 second to select "SUMMER mode" . The value of the delivery sensor detected at that moment will appear on the display



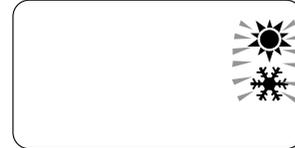
#### WARNING

The self calibration procedure must be done in the SUMMER mode with the system valves open to ensure heat is taken from the boiler. It is recommended that this procedure is done with a cold system. The system heating demand can be on, but there must not be a demand at the boiler.

### 7.2.1 Automatic self-calibrating procedure

Carry out the "Automatic self-calibrating procedure" as follows:

- turn the heating knob as far as it will go 
- press and hold down the buttons **OK** and **+** at the same time for approximately 12 seconds until the flashing symbols  and  appear on the display



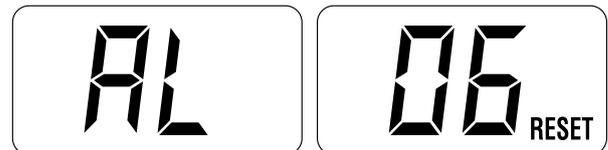
- as soon as the symbols begin to flash, release the buttons **OK** and **+** and press the button , **within 3 seconds**
- the "Automatic self-calibrating procedure" starts
- **ensure that there is a system heating demand and that the system valves are open**
- the values flash on the display: "**99**" (maximum value), followed by an "intermediate value" and finally "**00**" (minimum value)



It may take up 15 minutes for the "self-calibrating procedure" to end and the message "SUMMER mode"  to reappear on the display. Once the procedure has terminated:

- set the heating demand to off and check that the appliance shuts down.

If there is a fault, the message "**AL**" will appear on the display followed by the fault code (eg. "**06**" - no flame detected).



#### CAUTION

To restore the start conditions press and hold the button **OK** **RESET** for more than 3 seconds. This operation can be performed up to a maximum of 6 times without the "self-calibrating procedure" being interrupted.

- press the button  twice for at least 1 second to select "WINTER mode" . The value of the delivery sensor detected at that moment will appear on the display



- operate the heating controls and check that the boiler starts and operates correctly

- using the procedure shown in section "Chimney sweep function" complete inlet working gas pressure test and a flue gas analysis.
- record in Benchmark commissioning Check list (page 42).

### 7.3 Parameter setting and display

To go into the parameter menu:

- from the selected mode (eg. WINTER)



- press the buttons **-** and **OK** (approximately 5 seconds) at the same time until "tS" (installer) appears on the 2 digits of the display which alternate with "0.1" (parameter number) and a "2" (set value)



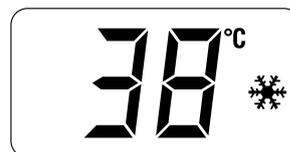
- press the button **+** to scroll up the list of parameters and then **-** to scroll down the list

**NOTE:** holding the buttons **+** or **-** increases the speed of the scrolling movement.

- once the required parameter has been reached, press the button **OK** for approximately 3 seconds to confirm and access the set value which will then flash and can then be modified

- to modify the value in the permitted range, press the buttons **+** to increase it or **-** to decrease it
- once the required value has been reached, press the button **OK** to confirm.

When all the parameter modifications have been made, exit the parameter menu by pressing and holding down the buttons **-** and **OK** at the same time for approximately 5 seconds until the initial screen is displayed.



### 7.4 List of parameters

Type	No.	Description	Range	U/M	Step	Default
<b>CONFIGURATION</b>						
tS	0.1	Index showing boiler power in kW	1 = 20 R kW 2 = 30 R kW	-	1	1 or 2
tS	0.2	Hydraulic configuration	0 = combi 1 = system 2 = N/A 3 = N/A 4 = N/A 5 = N/A	-	1	1
tS	0.3	Gas Type Configuration	0 = G20 1 = G31	-	1	0
tS	0.4	Combustion configuration	0 = sealed chamber with combustion control 1 = open chamber with smoke thermostat 2 = Low Nox	-	1	0
tS	0.8	External sensor value correction	-5 .. +5	°C	1	0
tS	0.9	Ignition fan speed	80 .. 160	RPMx25	1	128
<b>DOMESTIC HOT WATER - HEATING</b>						
tS	1.0	Boiler Antifreeze Threshold	0 .. +10	°C	1	3
tS	1.1	External Sensor Antifreeze Threshold -- = Disabled	-9 .. +5	°C	1	-2
tS	1.2	Heating Curve Incline	0 .. 80	-	1	20
tS	1.3	Minimum Heating Temperature Adjustment	20 .. Par tS 1.4	°C	1	20
tS	1.4	Maximum Heating Temperature Adjustment	Par tS 1.3 .. 80	°C	1	80

Type	No.	Description	Range	U/M	Step	Default
tS	1.5	Maximum power in CH mode	0 .. 100	%	1	100
tS	1.6	Heating Post-Circulation Time	0 .. 99	seconds x 10	1	3
tS	1.7	Heating Pump Activation Delay	0 .. 60	seconds x 10	1	0
tS	1.8	Heating Re-ignition Delay	0 .. 60	Min	1	3
tS	1.9	Domestic Hot Water Modulation with Flow meter	0 = Disabled 1 = Enabled	-	1	1
tS	2.0	Maximum power domestic hot water	0 .. 100	%	1	100
tS	2.1	Minimum power heating/domestic hot water (premixed)	0 .. 100	%	1	0
tS	2.2	Domestic hot water preheating enabling	0 = OFF 1 = ON	-	1	0
tS	2.5	Auxiliary TA function	0 = according to TA 1 = TA Antifreeze 2 = domestic hot water disabled	-	1	0
tS	2.6	Zone Valve / Pump Relaunch Delay	0 .. 99	Min	1	1
tS	2.8	DHW activation delay with solar power	0 .. 30	Min	1	0
tS	2.9	Anti-legionella Function (Only hot water tank) -- = Disabled	50 .. 80	-	1	--
tS	3.0	Maximum domestic hot water temperature	35 .. 67	°C	1	60
tS	3.5	Digital / analogue Pressure switch	0 = water pressure switch 1 = water pressure transducer (with ALL 09) 2 = water pressure transducer (without ALL 09)	-	1	0
tS	3.9	Modulating pump minimum speed	20 .. 100	%	1	30
tS	4.0	Modulating Pump Speed	-- = No modulation AU = Automatic 30 .. 100	%	10	AU
tS	4.1	ΔT Modulating pump delivery/Return	10 .. 40	°C	1	20
tS	4.7	System pump forcing (only in winter mode)	0 = Disabled 1 = Enabled	-	1	0
<b>RESET</b>						
tS	4.8	INST Parameter set to default	0 .. 1	-	1	0

In the event of a fault/malfunction the message "AL" will appear on the display alternating with the alarm number eg. "AL 04" (Domestic Hot Water Sensor Fault).

Before repairing the fault:

- disconnect the appliance from the mains power by setting the main switch to "OFF"
- as a precautionary measure, close the gas isolation valve.

Resolve the problem and start-up the boiler again.

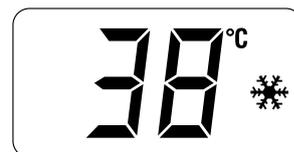
**NOTE:** after having repaired the fault, when the alarm number appears on the display together with the message RESET (see figure), press the button **OK (RESET)** for approximately 3 seconds to start the appliance up again.



## 7.5 Display of operating data and counters

Access the operating data "In" and the counters "C0" as follows:

- from the operating screen in the "WINTER mode" ❄️



- go into "INFO" by pressing the buttons **+** and **-** at the same time for more than 3 seconds until "In" appears alternating with "0.0" (information number) and "25" (eg. value)



From this point, the technician has 2 options:

- scroll through the list of "info" and "counters" by pressing the button **+**. This way, scrolling will be in sequence
- display the "activated alarms" (no more than 10) by pressing the button **-**. Once in this section, proceed with button **+** or **-**.

When all the values have been displayed, exit the menu by pressing and holding down the button **OK** for approximately 5 seconds until the initial screen is displayed.



**TABLE OF INFORMATION DISPLAYED**

Type	No.	Description	Range	U/M	Step
In	0.0	SW version			
In	0.1	External sensor [SE]	- 9 .. 99	°C	1
In	0.2	Delivery sensor 1 temperature [SM]	- 9 .. 99	°C	1
In	0.3	Exhaust temperature [SF]	- 9 .. 99	°C	1
In	0.4	N/A	- 9 .. 99	°C	1
In	0.5	N/A	- 9 .. 99	°C	1
In	0.6	Actual heating SET temperature	Par: 13 ... Par: 14	°C	1
In	0.7	Power level	0 .. 99	%	1
In	0.8	DHW Flow rate [N/A]	0 .. 99	l/min	0.1
In	0.9	Water pressure transducer reading (when fitted)	0...99	bar	0.1
In	1.0	Actual speed fan number	0 .. 99	RPM x 100	1

**TABLE OF COUNTER DISPLAYED**

Type	No.	Description	Range	U/M	Step
CO	0.0	total no. of boiler operating hours	0 .. 99	h x 1000	0.1; from 0.0 to 9.9; 1; from 10 to 99
CO	0.1	total no. of burner operating hours	0 .. 99	h x 1000	0.1; from 0.0 to 9.9; 1; from 10 to 99
CO	0.2	total no. of burner ignitions	0 .. 99	h x 1000	0.1; from 0.0 to 9.9; 1; from 10 to 99
CO	0.3	total no. faults	0 .. 99	x 1	1
CO	0.4	total no. of times installer parameters "tS" accessed	0 .. 99	x 1	1
CO	0.5	total no. of times OEM parameters accessed	0 .. 99	x 1	1
CO	0.6	Countdown to the next service	1 .. 199	months	1
CO	0.7	total no. of calibrations	1 .. 199	x 1	1

**TABLE OF ACTIVATED ALARMS/FAULTS**

Type	No.	Description
AL	00	Last activated alarm/fault
AL	01	Last but one activated alarm/fault
AL	02	Third from last activated alarm/fault
AL	03	Previous activated alarm/fault
AL	04	Previous activated alarm/fault
AL	05	Previous activated alarm/fault
AL	06	Previous activated alarm/fault
AL	07	Previous activated alarm/fault
AL	08	Previous activated alarm/fault
AL	09	Previous activated alarm/fault

## 7.6 Checks

### 7.6.1 Chimney sweep function

The chimney sweeper function is used by the qualified maintenance technician to check the mains gas pressure, detect the combustion parameters and to measure the combustion efficiency. A combustion analysis should not be conducted until a satisfactory inlet working pressure test has been completed.

This function lasts 15 minutes and is activated by proceeding as follows:

- if the panel (2) has not already been removed, remove the two screws (1), pull the front panel (2) forwards and release it from the top by lifting it

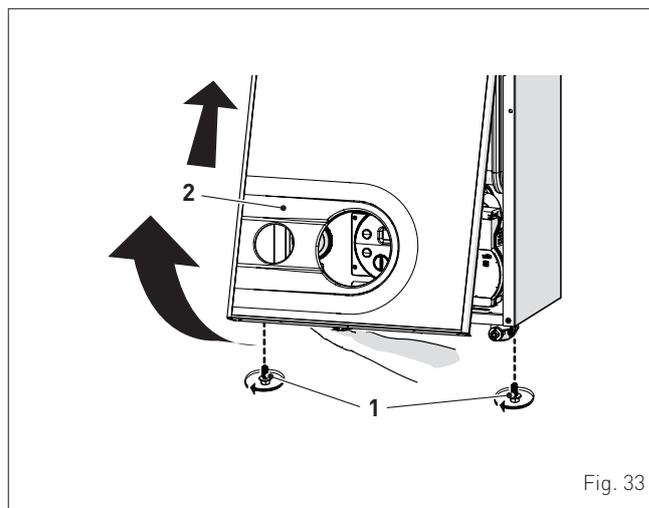


Fig. 33

- remove the screws (3) securing the control panel (4)
- move the panel (4) upwards (a) but keeping it in the side guides (5) to the end of travel
- bring it forwards and down (b) until it is horizontal

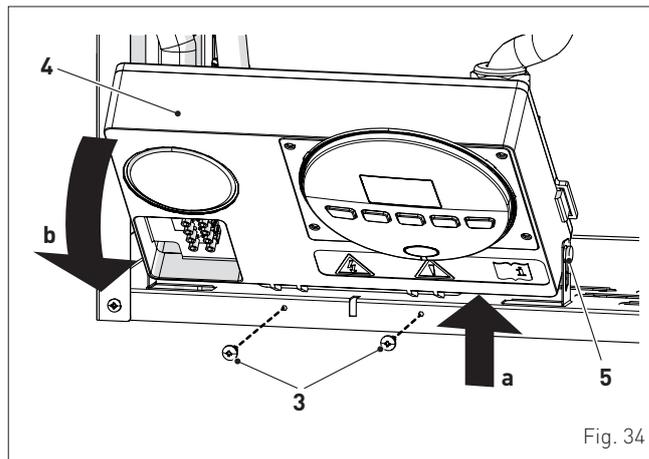


Fig. 34

- isolate the gas cock
- loosen the screw of the "mains pressure" point (6) and connect a pressure gauge

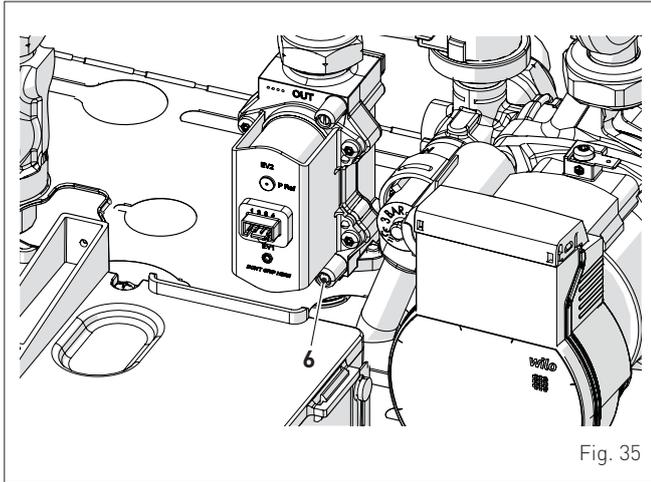
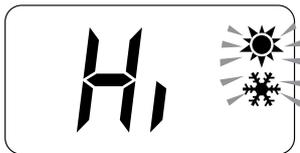


Fig. 35

- open the gas cock
- power the boiler by setting the main switch to "ON"
- press the button twice until "WINTER" mode has been selected
- press and hold down the buttons **OK** and **+** at the same time for approximately 10 seconds until the message "Hi" appears on the display together with the flashing symbols and



- press the button **+** to make the boiler operate at maximum power "Hi" and check that the mains gas pressure value on the pressure gauge is correct.
- press the button **-** to make the boiler operate at minimum power "Lo". The message "Lo" will appear on the display together with the flashing symbols and



- press the button to exit the "Chimney sweep Procedure". The boiler water delivery temperature will appear on the display



- disconnect the pressure gauge, carefully close the pressure point (6) and test for gas tightness. Now conduct a flue gas analysis as detailed in APPENDIX 2
- ensure the required information is recorded in the Gas Boiler System Commissioning Checklist (Benchmark).

## Gas supply pressure

Type of gas	G20	G31
Pressure (mbar)	19	36

*NOTE: There are negligible losses of working gas pressure attributable to the boiler as the gas cock is connected directly to the gas valve.*

## 7.7 Gas conversion

Murelle Pro HE R MkII models can work with G20 or G31 without the need for any mechanical conversion. Simply select parameter "0.3" (see "Parameter setting and display" page 34) and set the type of gas to be used.

If changing the type of gas to be used, carry out the entire appliance "COMMISSIONING" phase (page 33).



### CAUTION

If the gas supply is changed from G20 to G31, mark the box on the TECHNICAL DATA PLATE.

G31 - 36 mbar



## 7.8 Heating power output adjustment

To comply with Building regulations, the heating output must be set according to the requirements of the installed heating system.

This is done by adjustment of "parameter 15" (tS 1.5).

Calculate the heating requirements of the heating system in kW. Determine what that value is, as a % of the nominal heat output of the boiler, see table "Technical features" page 17. Access the parameters as shown in "Parameter setting and display" page 34, and adjust the parameter 15 (tS 1.5) to that % value

*Example:*

- Heating system with 8 radiators, average 1.5 kW per radiator total heat
- Requirement 12 kW (8 x 1.5)
- Maximum nominal heat output of boiler = 29.5 kW
- Parameter 15 (tS 1.5) =  $12/29.5 = 40.7\%$ . Set tS 1.5 to 41%.



### CAUTION

As a condition of the warranty and to ensure correct operation and efficiency, it is important that the boiler is serviced every 12 months, within 30 days of the anniversary of the installation date ensure the required information is recorded in the Gas Boiler System Service Interval Record (page 43) (Benchmark).

## 8 MAINTENANCE

### 8.1 Servicing

As a condition of the warranty and to ensure correct operation and efficiency, it is important that the boiler is serviced every 12 months, within 30 days of the anniversary of the installation date ensure the required information is recorded in the Gas Boiler System Service Interval Record (page 43) (Benchmark).



#### CAUTION

- Only qualified persons in compliance with the instructions contained in this manual are permitted to install, commission and maintain this boiler. Suitable protective safety equipment **MUST be worn**. The installation of this boiler must be in accordance with the relevant requirements of the current Gas Safety (installation and use), the local building regulations, and I.E.E. wiring regulations.
- Make sure that the system components and pipes are not hot (risk of burning).



#### WARNING

Before carrying out any interventions described:

- isolate the power supply
- isolate the gas cock
- avoid contact with any hot surfaces.

### 8.2 External cleaning

#### 8.2.1 Cleaning the case

When cleaning the cladding, use a cloth dampened with soap and water or alcohol for stubborn marks.



#### DO NOT

Do not use abrasive products.

### 8.3 Burner Inspection

#### 8.3.1 Burner access

To access the internal parts of the boiler:

- remove the screws (1), pull the front panel (2) forwards and release it from the top by lifting it

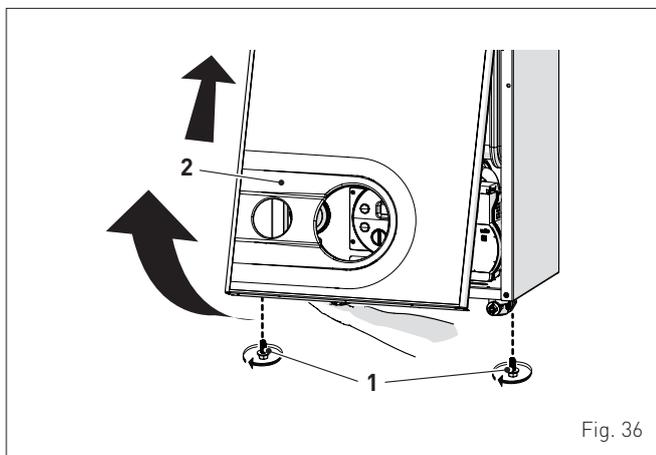


Fig. 36

- remove the screws (3) securing the control panel (4)
- move the panel (4) upwards (a) but keeping it in the side guides (5) to the end of travel
- bring it forwards and down (b) until it is horizontal

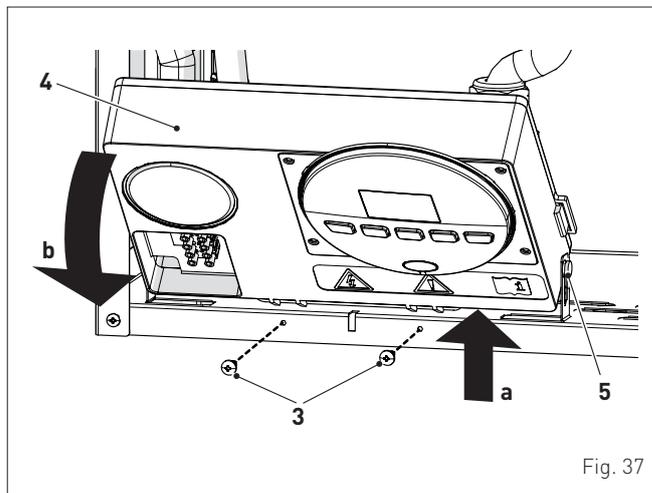


Fig. 37

- loosen the clips (6) and extract the air inlet pipe (7)
- unscrew the swivel joint (8)
- extract the connectors (9) from the fan and disconnect the electrode cable (10)

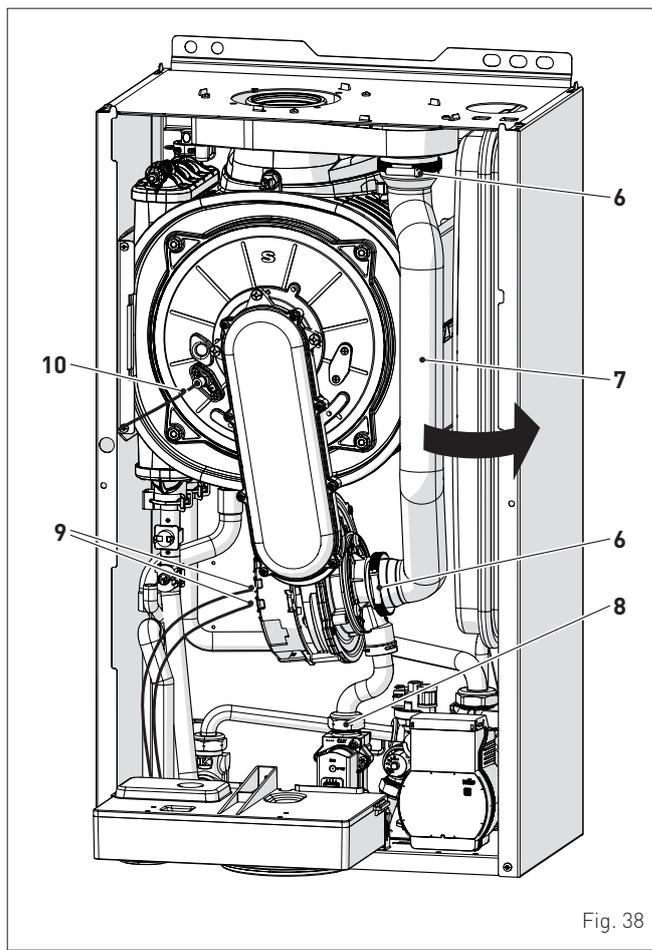


Fig. 38

- Unscrew the four nuts (11) securing the combustion chamber door (12)
- pull the fan-sleeve-door assembly (13) forwards and remove it.

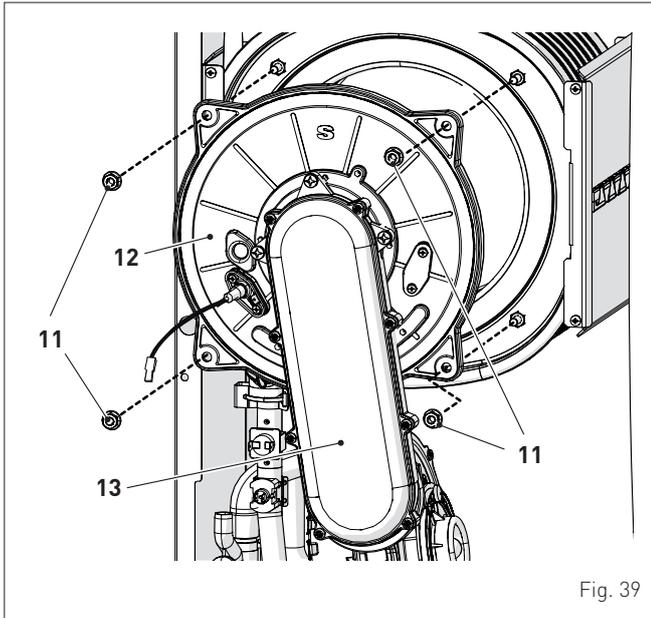


Fig. 39



**CAUTION**

Work carefully when removing the assembly (13) to prevent any damage occurring to the internal insulation of the combustion chamber and the door seal.

**8.3.2 Cleaning the burner and the combustion chamber**

The combustion chamber and the burner do not require any particular maintenance. Simply brush them with a soft brush.

**8.3.3 Checking the ignition/detection electrode**

Check the state of the ignition/detection electrode and replace if necessary. Check the measurements as per the drawing whether the ignition/detection electrode is replaced or not.

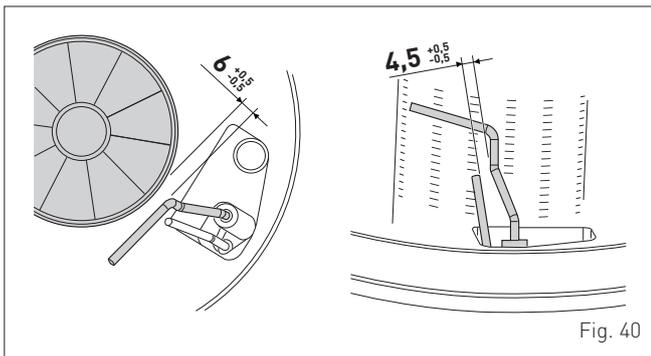


Fig. 40

**8.3.4 Final operations**

- After having cleaned the combustion chamber and the burner:
- remove any carbon residue
  - check that the seal and the insulation of the door (12) to the combustion chamber are undamaged. Replace if necessary
  - refit the assembly by carrying out the same operations for removal but in the reverse order and tighten the screws (11) of the door to the combustion chamber
  - reconnect the connections to the fan and the electrode.

**8.4 Checks**

**8.4.1 Checking the flue**

Check that the flue is undamaged and complete.

**8.4.2 Checking the expansion vessel pressure**

Close the flow and return valves and drain the boiler. Check the expansion vessel pressure is not less than **1 bar**. If this is not the case, pressurize it to the correct value.

**8.4.3 System Inhibiter concentration**

Check and if required correct the inhibitor concentration.

Once the checks described above have been completed:

- refill the boiler as described in section "SYSTEM Filling page 31"
- check that the siphon has been filled correctly
- Start the boiler, activate the "Chimney sweep function" page 36 and carry out combustion analysis as detailed in Appendix 2
- refit the front panel securing it with the two screws which were removed previously
- complete the service record in this manual.

**8.5 Circuit Board Replacement**

Should the circuit board be replaced, the engineer **MUST set the parameters** as indicated in this table and in the sequence shown.

Type	No.	Description	Setting for Murelle Pro HE R MkII	
			20	30
tS	0.1	Index showing boiler power in kW 1 = 20 R; 2 = 30 R	1	2
tS	0.2	Hydraulic configuration 0 = combi 1 = system 2 = N/A 3 = N/A 4 = N/A 5 = N/A	1	
tS	0.3	Gas Type Configuration 0 = G20; 1 = G31	0 or 1	

To enter "Parameter setting and display" see page 34.

Once the parameters in the table have been set, you must carry out the entire phase of "Automatic self-calibrating procedure" described at page 33.

If the **gas valve** and/or the **ignition/detection electrode**, and/or the **burner**, and/or the **fan** are replaced, the engineer must still carry out the entire phase of "Automatic self-calibrating procedure" described at page 33.

**8.6 Malfunction codes and possible solutions**

**LIST OF MALFUNCTION/FAULT ALARMS**

Type	No.	Fault	Solution
AL	01	Smoke thermostat	- Contact the Technical Assistance Centre
AL	02	Low water pressure in system	- Restore pressure - Check for any leaks in the system
AL	05	Delivery sensor (SM) fault	- Check connections - Check the sensor is working

Type	No.	Fault	Solution
AL	06	No flame detection	<ul style="list-style-type: none"> <li>- Check the integrity of the electrode and check that it is not grounded</li> <li>- Check gas availability and pressure</li> <li>- Check the operation of the gas valve</li> </ul>
AL	07	Safety thermostat (TS), intervention	<ul style="list-style-type: none"> <li>- Check the sensor or thermostat connections</li> <li>- Deaerate the system</li> <li>- Check the bleed valve</li> <li>- Replace the sensor or the thermostat</li> <li>- Check that the pump impeller is not blocked</li> </ul>
AL	08	Fault in the flame detection circuit	<ul style="list-style-type: none"> <li>- Check the integrity of the electrode and check that it is not grounded</li> <li>- Check the operation of the gas valve</li> </ul>
AL	09	No water circulating in the system	<ul style="list-style-type: none"> <li>- Check the rotation of the pump rotor</li> <li>- Check the electrical connections</li> <li>- Replace the pump</li> </ul>
AL	10	Auxiliary sensor fault	<ul style="list-style-type: none"> <li>- Check the hydraulic configuration using "tS 0.2"</li> <li>- Check the electrical connection</li> </ul>
AL	11	Gas valve modulator disconnected	<ul style="list-style-type: none"> <li>- Check the electrical connection</li> </ul>
AL	12	Domestic hot water sensor fault in tank mode	<ul style="list-style-type: none"> <li>- Set the parameter tS 0.4 (Combustion configuration) to 0</li> </ul>
AL	13	Exhaust sensor (SF) intervention	<ul style="list-style-type: none"> <li>- Check the sensor is working</li> <li>- Replace the smoke probe</li> </ul>
AL	14	Exhaust sensor (SF) fault	<ul style="list-style-type: none"> <li>- Replace the smoke probe</li> <li>- Check the electrical connection of the smoke probe</li> <li>- Contact the Technical Assistance Centre</li> </ul>
AL	15	Fan check cable disconnected	<ul style="list-style-type: none"> <li>- Check the connection cable between the fan and the board</li> </ul>
AL	18	Condensate level fault	<ul style="list-style-type: none"> <li>- Check for any clogging in the pipe which takes the condensate to the siphon</li> <li>- Check that the siphon is not clogged</li> </ul>
AL	28	Maximum number of consecutive resets reached (6)	<ul style="list-style-type: none"> <li>- Wait 1 hour and try unblocking the board again</li> <li>- Contact the Technical Assistance Centre</li> </ul>
AL	37	Fault due to low network voltage	<ul style="list-style-type: none"> <li>- Check the voltage</li> <li>- Contact your network provider</li> </ul>
AL	40	Incorrect supply frequency detected	<ul style="list-style-type: none"> <li>- Contact your network provider</li> </ul>
AL	41	Flame loss more than 6 consecutive times	<ul style="list-style-type: none"> <li>- Check the ignition/detection electrode</li> <li>- Check the gas supply (open valve)</li> <li>- Check mains gas pressure</li> </ul>
AL	42	Button fault	<ul style="list-style-type: none"> <li>- Check that buttons are working</li> </ul>
AL	43	Open Therm communication fault	<ul style="list-style-type: none"> <li>- Check the OT electric connection</li> </ul>
AL	44	Gas valve timeout fault without flame	<ul style="list-style-type: none"> <li>- Check gas valve and board</li> </ul>
AL	56	Lock for $\Delta T$ delivery/return over max limit (open vent)	<ul style="list-style-type: none"> <li>- Contact the Technical Assistance Centre</li> </ul>
AL	57	Lock for flow temperature (FT) check (open vent)	<ul style="list-style-type: none"> <li>- Contact the Technical Assistance Centre</li> </ul>
AL	62	Self-calibrating procedure is required	<ul style="list-style-type: none"> <li>- Carry out the self-calibrating procedure (see the specific section)</li> </ul>

Type	No.	Fault	Solution
AL	72	Incorrect positioning of the delivery sensor	<ul style="list-style-type: none"> <li>- Check delivery sensor operation and position</li> </ul>
AL	74	Second delivery sensor fault	<ul style="list-style-type: none"> <li>- Check second delivery sensor operation and position</li> </ul>
AL	77	EV2 SGV current max/min absolute limits error	<ul style="list-style-type: none"> <li>- Check gas valve and board</li> </ul>
AL	78	EV2 SGV current upper limit error	<ul style="list-style-type: none"> <li>- Check gas valve and board</li> </ul>
AL	79	EV2 SGV current lower limit error	<ul style="list-style-type: none"> <li>- Check gas valve and board</li> </ul>
AL	80	Fault on the valve control logic line/valve cable damaged	<ul style="list-style-type: none"> <li>- Check gas valve and board</li> </ul>
AL	81	Lockout due combustion during start-up	<ul style="list-style-type: none"> <li>- Check for blockage in flue</li> <li>- Check air diaphragm (for BF models)</li> <li>- Check gas calibration</li> <li>- Bleed the air from the gas circuit</li> </ul>
AL	82	Block due to numerous combustion control failures	<ul style="list-style-type: none"> <li>- Check electrode</li> <li>- Check outlets</li> <li>- Check air diaphragm (for BF models)</li> <li>- Check gas calibration</li> </ul>
AL	83	Irregular combustion (temporary error)	<ul style="list-style-type: none"> <li>- Check for blockage in flue</li> <li>- Check air diaphragm (for BF models)</li> <li>- Check gas calibration</li> </ul>
AL	84	Flow rate reduced for (presumed) low pressure on mains gas	<ul style="list-style-type: none"> <li>- Check gas flow rate</li> </ul>
AL	88	Internal error (board component protection)	<ul style="list-style-type: none"> <li>- Check the board is working</li> <li>- Replace board</li> </ul>
AL	89	Unstable combustion feedback signal error	<ul style="list-style-type: none"> <li>- Check electrode</li> <li>- Check outlets</li> <li>- Check air diaphragm (for BF models)</li> <li>- Check gas calibration</li> </ul>
AL	90	Combustion set cannot be reached error	<ul style="list-style-type: none"> <li>- Check electrode</li> <li>- Check outlets</li> <li>- Check air diaphragm (for BF models)</li> <li>- Check gas calibration</li> </ul>
AL	92	System has reached maximum air correction error (at the minimum flow rate)	<ul style="list-style-type: none"> <li>- Check electrode</li> <li>- Check outlets</li> <li>- Check air diaphragm (for BF models)</li> <li>- Check gas calibration</li> </ul>
AL	93	Combustion set cannot be reached error	<ul style="list-style-type: none"> <li>- Check electrode</li> <li>- Check outlets</li> <li>- Check air diaphragm (for BF models)</li> <li>- Check gas calibration</li> </ul>
AL	95	Flame signal micro interruptions error	<ul style="list-style-type: none"> <li>- Check electrode</li> <li>- Check board</li> <li>- Check electric power supply</li> <li>- Check gas calibration</li> </ul>
AL	96	Lockout due to flue (exhaust) blockage	<ul style="list-style-type: none"> <li>- Check for blockage in flue</li> <li>- Check the smoke outlet and electrode position (not touching the burner)</li> </ul>
AL	98	SW error, board start-up	<ul style="list-style-type: none"> <li>- Contact the Technical Assistance Centre</li> </ul>
AL	99	General board error	<ul style="list-style-type: none"> <li>- Contact the Technical Assistance Centre</li> </ul>
-	-	Frequent relief valve intervention	<ul style="list-style-type: none"> <li>- Check circuit pressure</li> <li>- Check expansion vessel</li> </ul>
-	-	Limited production of domestic hot water	<ul style="list-style-type: none"> <li>- Check the diverter valve</li> <li>- Check that plate heat exchanger is clean</li> <li>- Check domestic hot water circuit valve</li> </ul>

### 8.6.1 Maintenance request

When it is time to perform maintenance on the boiler, "SE" shows on the display.



Contact the technical assistance service to organise the necessary work.



### CAUTION

As a condition of the warranty and to ensure correct operation and efficiency, it is important that the boiler is serviced every 12 months, within 30 days of the anniversary of the installation date ensure the required information is recorded in the Gas Boiler System Service Interval Record (page 43) (Benchmark).

## 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.



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**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.

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

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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> delete as appropriate					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? <sup>delete as appropriate</sup>		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.

<b>SERVICE/INTERIM WORK ON BOILER</b> delete as appropriate					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? <sup>delete as appropriate</sup>		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.

<b>SERVICE/INTERIM WORK ON BOILER</b> delete as appropriate					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? <sup>delete as appropriate</sup>		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.

<b>SERVICE/INTERIM WORK ON BOILER</b> delete as appropriate					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? <sup>delete as appropriate</sup>		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.

<b>SERVICE/INTERIM WORK ON BOILER</b> delete as appropriate					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? <sup>delete as appropriate</sup>		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.

<b>SERVICE/INTERIM WORK ON BOILER</b> delete as appropriate					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? <sup>delete as appropriate</sup>		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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## 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.

SERVICE/INTERIM WORK ON BOILER <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.

SERVICE/INTERIM WORK ON BOILER <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.

SERVICE/INTERIM WORK ON BOILER <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.

SERVICE/INTERIM WORK ON BOILER <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.

SERVICE/INTERIM WORK ON BOILER <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.

SERVICE/INTERIM WORK ON BOILER <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.

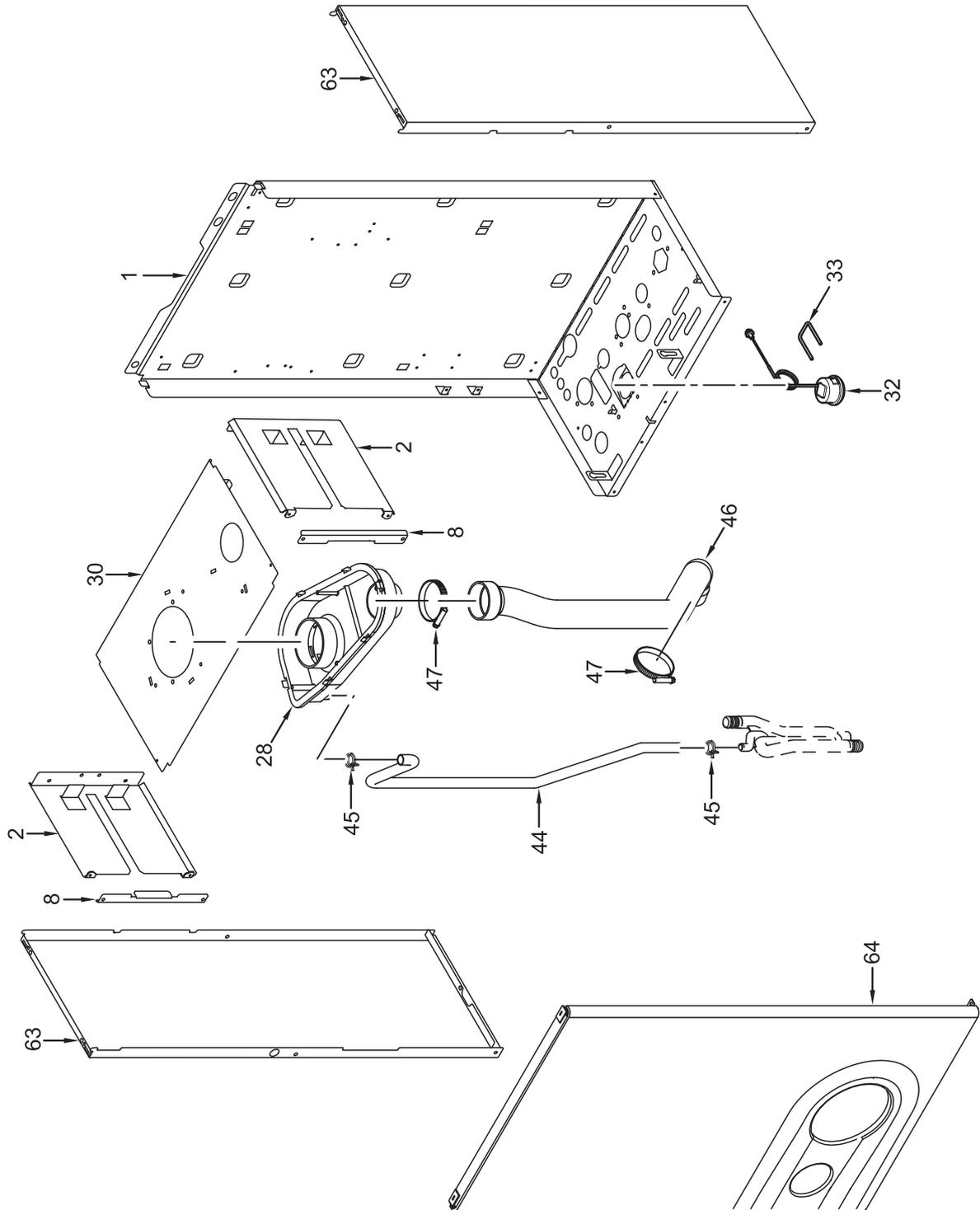
\* All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

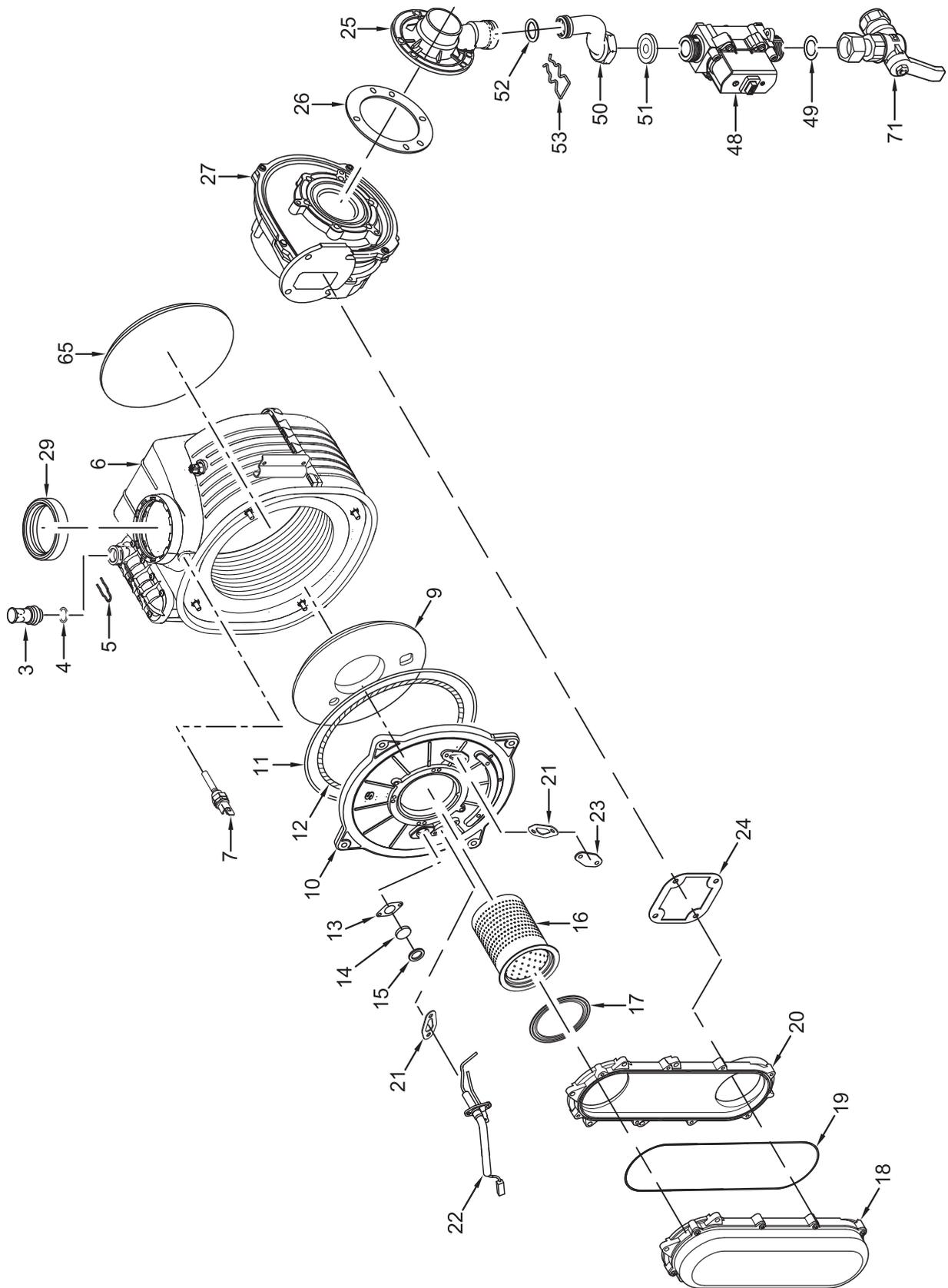
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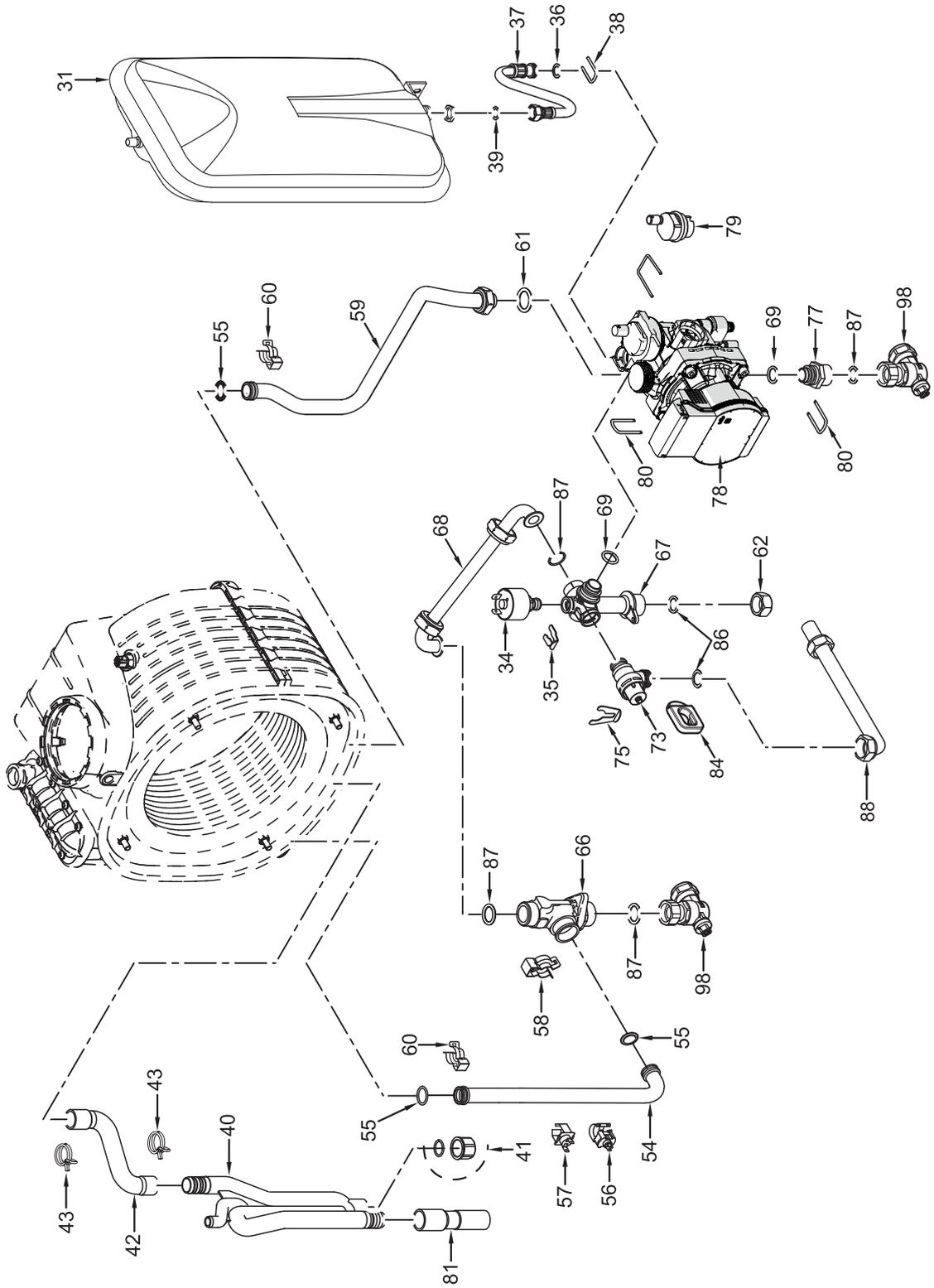


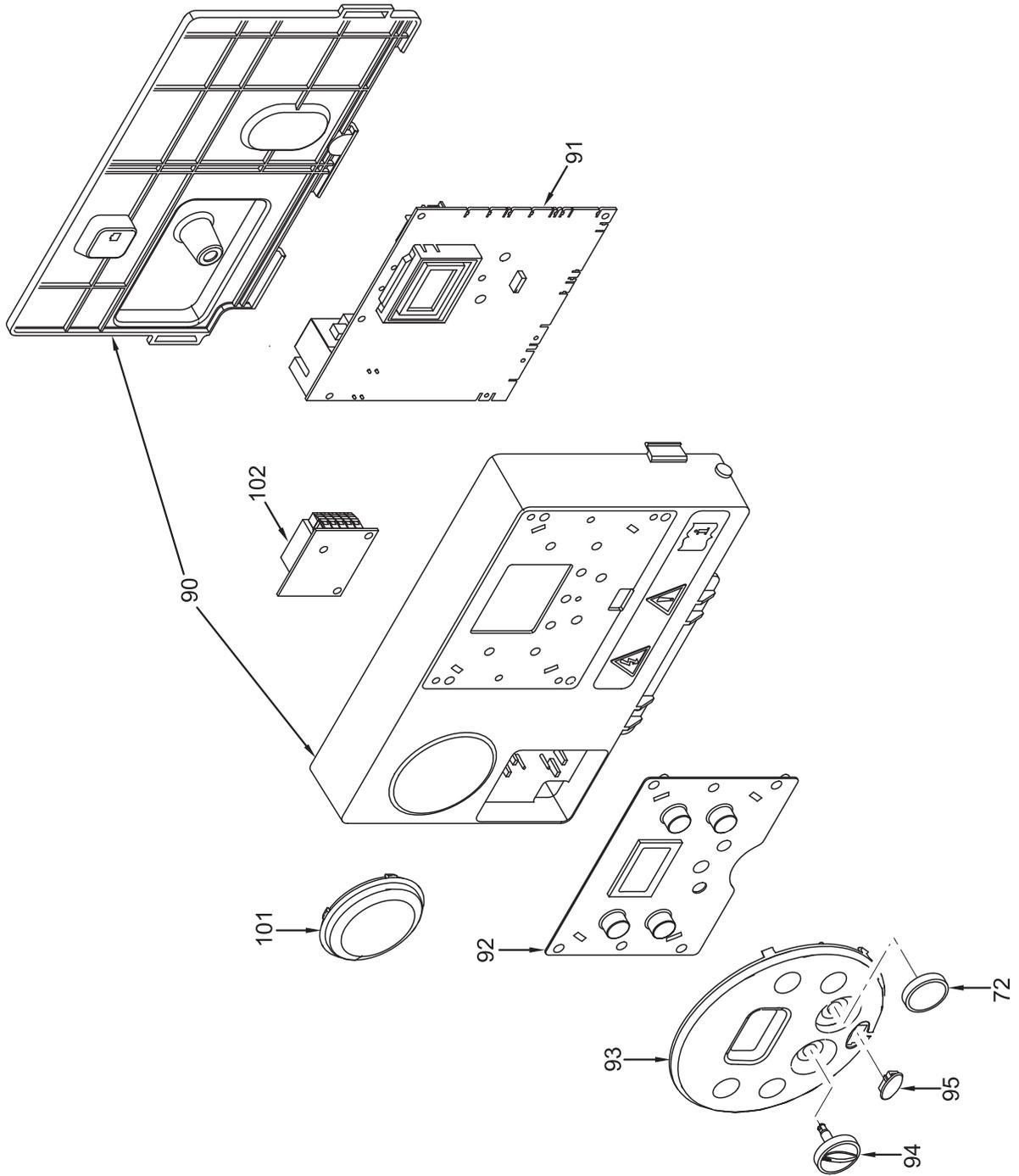
www.centralheating.co.uk

# 9 EXPLODED VIEWS









Pos.	Code	Description	Murelle Pro HE	
			20 R	30 R
1	6264560	Boiler fixing bracket	x	x
2	6010890	Support exchangers bracket	x	
2	6010891	Support exchangers bracket		x
3	6147412	Plug for air vent connection	x	x
4	6226464	O-ring 115 diam. 11,91x2,62	x	x
5	6226624	Spring air vent knob	x	x
6	6278913	Main exchanger body	x	
6	6278912	Main exchanger body		x
7	6277130	Probe NTC D.4X40	x	x
8	6010892	Support exchangers bracket	x	x
9	6269008	Main exchanger door insulation	x	x
10	5188361	Main exchanger door	x	x
11	6248870	Combustion chamber O-ring	x	x
12	6248871	Glass fibre sealing cord	x	x
13	6311810	Glass fixing flange	x	x
14	6020103	Sight glass	x	x
15	6248872	Sight glass gasket	x	x
16	6278370	Premix burner	x	
16	6278359	Premix burner		x
17	6174828	Gasket for burner flange	x	x
18	6278892	Air-gas hose	x	x
19	6174819	Air-gas hose gasket	x	x
20	6278891	Side low air-gas hose	x	x
21	6174809	Gasket for ignition electrode	x	x
22	6221670	Ignition-ionisation electrode	x	x
23	6285950	Bracket	x	x
24	6174816	Gasket for fan flange	x	x
25	6274390	Air/gas mixer	x	
25	6274391	Air/gas mixer		x
26	6028703	Gasket for duct flange	x	x
27	6261412	Fan	x	x
28	6278703	Smoke chamber	x	x
29	6248855	P.C. inlet/outlet smokes gasket	x	x
30	6291150	Upper protection shield	x	x
31	5183729	Rectang. expans.vessel 9 l. 3/8" M	x	x
32	6146101	Hydrometer	x	x
33	6226628	Hydrometer Fixing spring	x	x
34	6037510	Water pressure switch	x	x
35	6226639	Spring clip	x	x
36	6226476	ORing diam.15x2	x	x
37	6017405	Flexible pipe M.F. 3/8" L=300	x	x
38	6226643	Pipe fixing spring	x	x
39	2030226	Gasket Ø 10,2x14,8x2	x	x
40	6277211	Water trap	x	x
41	6119381	Cap G 1/2"	x	x
42	6034155	Condensate drainage pipe	x	x
43	2051123	Clamp diam. 24,2	x	x
44	1010215	Rubber pipe dia. 15x2,5	x	x
45	2051120	Clamp diam. 17,3	x	x
46	6001162	Air intake pipe 40	x	x
47	2051203	Hose clamp Ø 40-60	x	x
48	6243838	Gas valve	x	x
49	2030249	Gasket Ø 24x17x3	x	x
50	6277445	Pipe connecting gas valve-mixer	x	
50	6277444	Pipe connecting gas valve-mixer		x
51	6050471	Nozzle 530	x	
51	6050472	Nozzle 650		x
52	6226477	Rubber gasket OR Ø 17x3	x	x
53	6226636	D.H.W. elektrovalve fix.spring	x	x

Pos.	Code	Description	Murelle Pro HE	
			20 R	30 R
54	6227462	Flowing pipe to C.H. system	x	x
55	6226412	O-ring 3068	x	x
56	6231372	Temperature sensor	x	x
57	6146729	100° C safety stat	x	x
58	6226601	Spring for heat exchanger connection	x	x
59	6227539	Return pipe from C.H. system	x	x
60	6226619	Spring for heat exchanger connection	x	x
61	2030267	Piracriten gasket Ø 30x17x2	x	x
62	6229500	Plug 1/2"	x	x
63	6304480	casing left/right side panel	x	x
64	6325050	Front panel	x	x
65	6281545	Replacement rear insulat. kit	x	x
66	6265895	Flowing to C.H. system manifold	x	x
67	6265835	C.H. return manifold	x	x
68	6277798	Pipe connecting	x	x
69	6226475	ORing diam.18,64x3,53	x	x
71	6177530	Gas cock 3/4" F x 15	x	x
72	6247380	Cap for knob hole	x	x
73	6040211	Pressure relief valve 3 bar	x	x
75	6226626	Pipe fixing spring	x	x
77	6120560	Pump nipple 3/4"	x	x
78	6272360	Modulating circulating pump	x	
78	6272323	Modulating circulating pump		x
79	6013182	Automatic air vent	x	x
80	6226644	Spring clip for rotating connection	x	x
81	6034167	Condensate drainage pipe	x	x
84	6275910	Pressure relief valve operation lever	x	x
85	-	-		
86	2030227	Gasket Ø 12x18x2	x	x
87	2030228	Gasket Ø 17x24x2	x	x
88	6157653	Pressure relief valve drain pipe	x	x
90	6304720	Control panel	x	x
91	6324930	Main PCB	x	x
92	6305130	Rubber button	x	x
93	6304834	Interface panel	x	x
94	6290150	Knob Ø 25	x	x
95	6305140	Rubber cap	x	x
98	6177505	Ball cock 3/4" x 22	x	x
101	6247370	Cap for programmer clock	x	x
102	6301461	Programmer clock expansion board	x	x
700	6281534	Gaskets kit	x	x
701	6319695	Murelle-Format-.....o-ring kit	x	x
702	6211794	Peephole kit	x	x
706	6323876	4 pole cable connector CN14	x	x
707	6323872	9 pole cable connector CN1	x	x
708	6323873	6 pole cable connector CN2	x	x
709	6325602	6 pole cable connector CN12	x	x
710	6325603	14 pole cable connect.CN15+CN5	x	x
712	6319700	Springs / clamps kit DIN	x	x
714	5202527	Complete control panel	x	x
715	6325626	4 pole cable connector CN13	x	x

## Manufacturers Instructions

Manufacturer's instructions must be followed for the correct connection of the condensate discharge pipe from the boiler as this may vary due to the design of the boiler. For example a visible air break and trap is not required if there is a trap with a minimum condensate seal of 75 mm incorporated into the boiler.

### Internal Pipe Run In Unheated Spaces

Condensate discharge pipes that are routed in an unheated space such as a loft or garage should be insulated to prevent freezing.

## Internal Condensate Pipe Discharge Termination

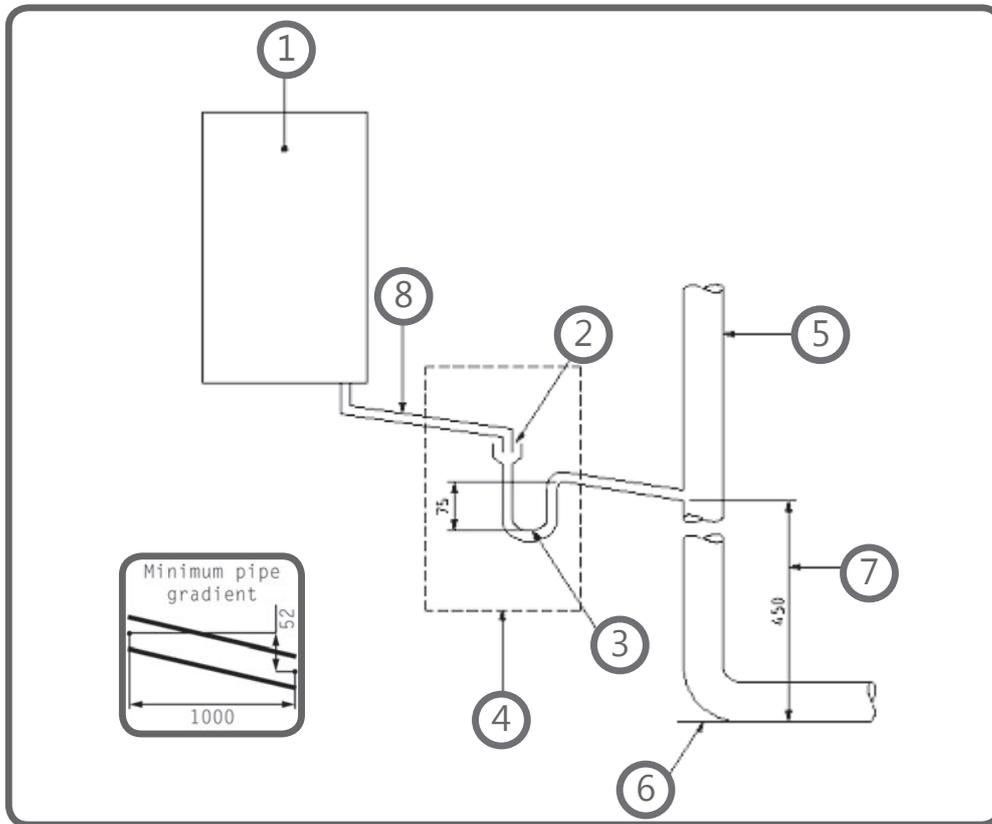
Internal condensate discharge pipework must be a minimum of 19mm ID (typically 22mm OD) plastic pipe or as per manufacturer's instructions and this should "fall" a minimum of 45mm per metre away from the boiler, taking the shortest practicable route to the termination point.

(45mm as per BS6798, 52mm per metre as per industry practice is specified in the following diagrams)

To minimise the risk of freezing during prolonged sub-zero conditions, an internal "gravity discharge point" such as an internal soil stack (preferred method), internal kitchen, utility room or bathroom waste pipe e.g. from a sink, basin, bath or shower should be adopted, where possible.

Note - A suitable permanent connection to the foul waste pipe should be used. Figures 1, 2(a), 2(b) show appropriate connection methods.

Figure 1 – Connection of condensate discharge pipe to internal soil and vent stack.  
 Note – Check manufacturer’s instructions to see if an air break is required.



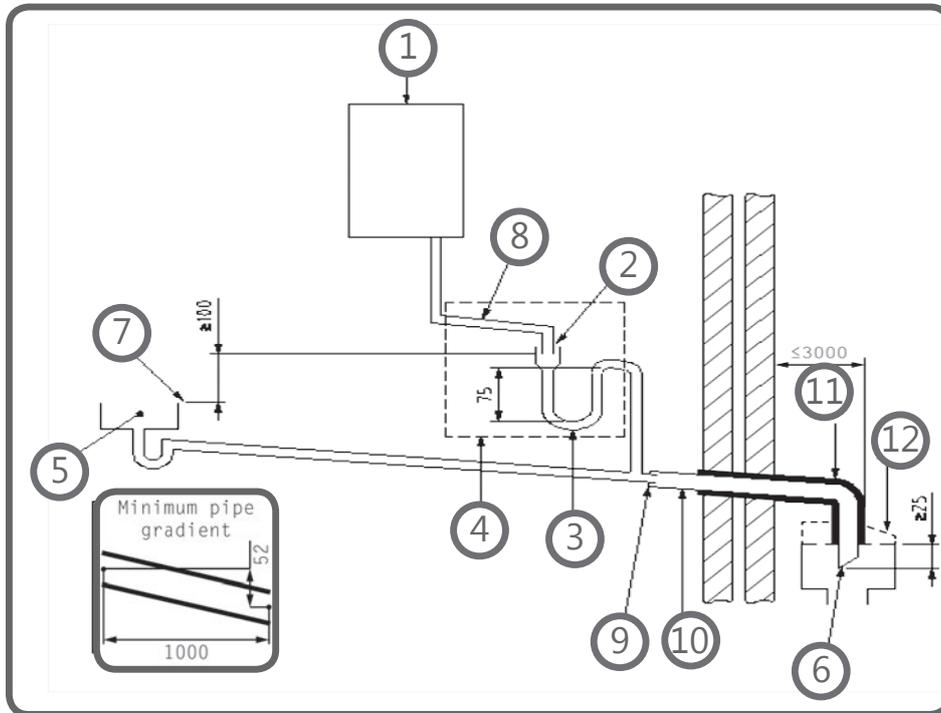
Key

- 1 Boiler
- 2 Visible air break
- 3 75 mm trap
- 4 Visible air break and trap not required if there is a trap with a minimum condensate seal of 75 mm incorporated into the boiler
- 5 Soil and vent stack
- 6 Invert
- 7 450 mm minimum up to three storeys
- 8 Minimum internal diameter 19 mm

## Internal Condensate Pipe Discharge Termination

Figure 2(a) – Connection of a condensate discharge pipe downstream of a sink, basin, bath or shower waste trap.

Note – Check manufacturer’s instructions to see if an air break is required.



### Key

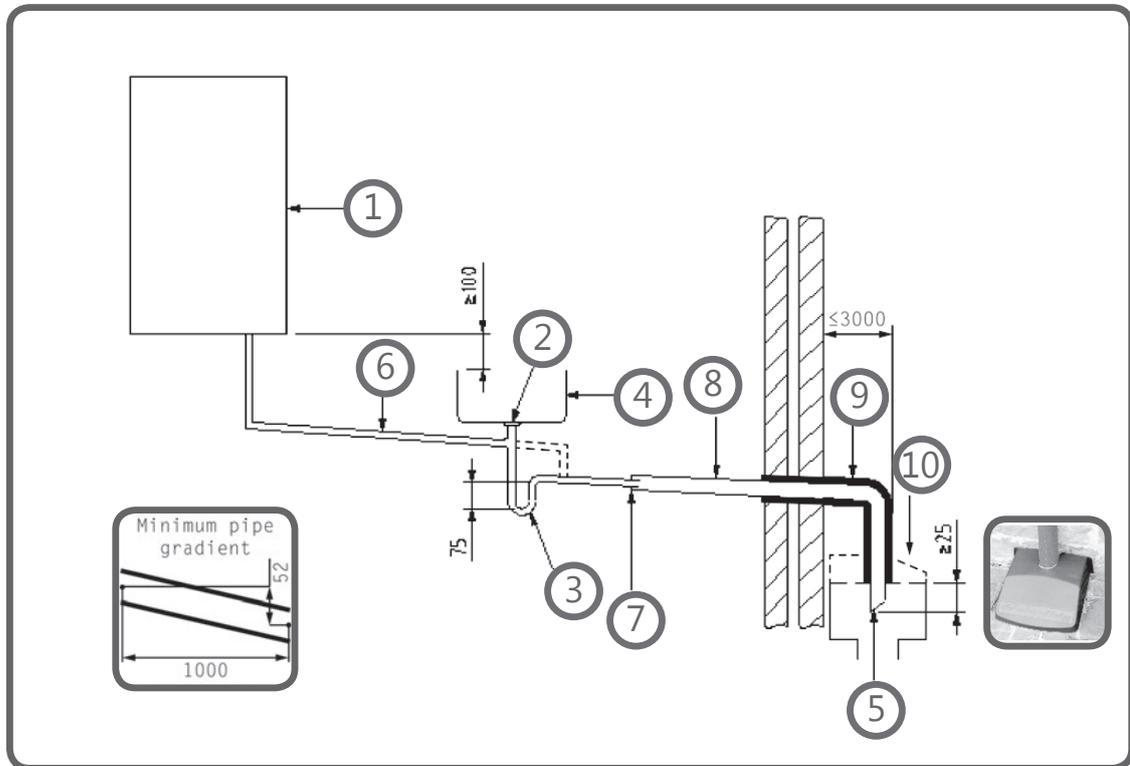
- 1 Boiler
- 2 Visible air break
- 3 75 mm trap
- 4 Visible air break and trap not required if there is a trap with a minimum condensate seal of 75 mm incorporated into the boiler. In this case the 100 mm is measured to the trap in the boiler.
- 5 Sink, basin, bath or shower
- 6 Open end of condensate discharge pipe direct into gully 25 mm min below grating but above water level; end cut at 45 °

Note – the maximum external condensate discharge length is 3 metres

- 7 Sink lip
- 8 Minimum internal diameter 19 mm
- 9 Pipe size transition
- 10 Minimum internal diameter 30 mm
- 11 Water/weather proof insulation
- 12 Drain cover/leaf guard

## Internal Condensate Pipe Discharge Termination

Figure 2(b) – Connection of a condensate discharge pipe upstream of a sink, basin, bath or shower waste trap



### Key

- 1 Boiler
- 2 Visible air break at plug hole – alternative connection can be below sink trap
- 3 75 mm sink, basin, bath or shower waste trap
- 4 Sink, basin, bath or shower with integral overflow
- 5 Open end of condensate discharge pipe direct into gully 25 mm min below grating but above water level; end cut at 45 °
- Note – the maximum external condensate discharge length is 3 metres
- 6 Minimum internal diameter 19 mm
- 7 Pipe size transition
- 8 Minimum internal diameter 30 mm
- 9 Water/weather proof insulation
- 10 Fit drain cover/leaf guard

## Internal Condensate Pipe Discharge Termination

The possibility of waste pipes freezing downstream of the connection point should be considered when determining a suitable connection point - e.g. a slightly longer pipe run to an internal soil stack may be preferable to a shorter run connecting into a kitchen waste pipe discharging directly through the wall to an external drain.

Note - Where "gravity discharge" to an internal termination is not physically possible (e.g. the discharge point is above the appliance location, or access is obstructed by a doorway), or where very long internal pipe runs would be required to reach a suitable discharge point, then a condensate pump should be used.

External waste pipes from kitchens, utility rooms or bathrooms such as sink, basin, and bath or shower waste outlets should be insulated with waterproof UV resistant, class 0 material, terminated below the grid but above the water line and a drain/leaf guard fitted. The waste pipe should be cut at 45 degrees where it terminates into the grid. (See insulation section for guidance on suitable materials).

## Condensate Pumps

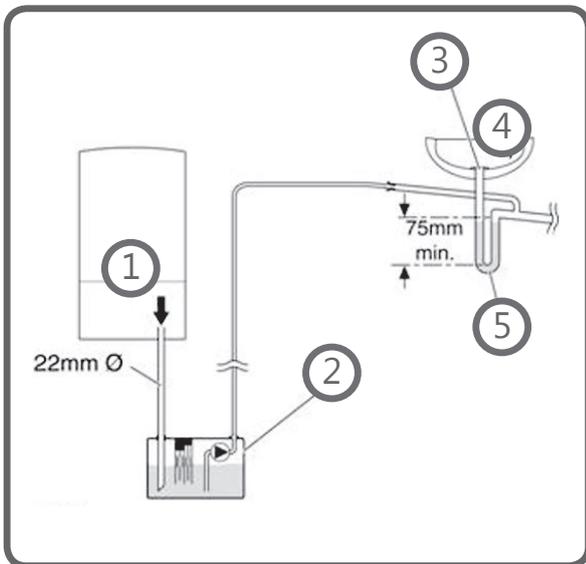
### Use of a Condensate Pump to an Internal Termination

Condensate can be removed using a proprietary condensate pump, of a specification recommended by the boiler or pump manufacturer. In order to minimise the risk of freezing during prolonged sub-zero spells, one of the following methods internal to the property for terminating the boiler condensate pump to a foul water discharge point should be adopted such as an internal soil stack (preferred method), internal kitchen, utility room or bathroom waste pipe such as sink, basin, and bath or shower waste. Figure 3 shows a typical connection method.

## Internal Condensate Pipe Discharge Termination

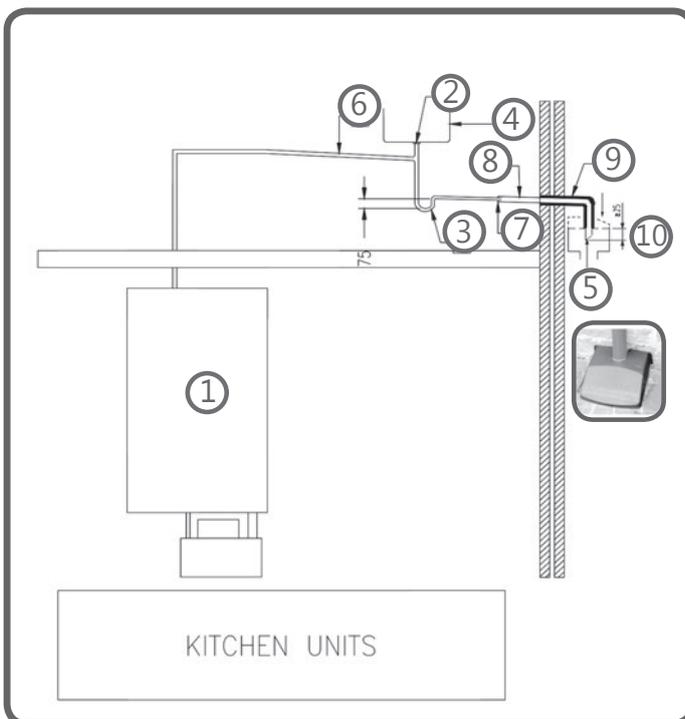
Figure 3 – Connection of a condensate pump - typical method (NB manufacturer’s detailed instructions should be followed).

Note – Any external pipe work should be insulated, pipe cut at 45 degrees and a drain/ leaf guard fitted.



Key

- 1 Condensate discharge from boiler
- 2 Condensate pump
- 3 Visible air break at plug hole
- 4 Sink or basin with integrated overflow
- 5 75mm sink waste trap



Key

- 1 Boiler
- 2 Visible air break at plug hole
- 3 75 mm sink, basin, bath or shower waste trap
- 4 Sink, basin, bath or shower with integral overflow
- 5 Open end of condensate discharge pipe direct into gully 25 mm min below grating but above water level; end cut at 45 ° Note – the maximum external condensate discharge length is 3 metres
- 6 Minimum internal diameter 19 mm
- 7 Pipe size transition
- 8 Minimum internal diameter 30 mm
- 9 Water/weather proof insulation
- 10 Fit drain cover/leaf guard

## External Connections

### External Connections

Only fit an external boiler condensate drain connection if an internal gravity or pumped connection is **impractical** to install.

The pipe work from the boiler should be of a minimum 19mm ID or as per manufacturer's instructions and the condensate discharge pipe shall be run in a standard drainpipe material, e.g. poly (vinyl chloride) (PVC), un-plasticized poly (vinyl chloride) (PVC-U), acrylonitrile butadiene-styrene (ABS), polypropylene (PP) or chlorinated poly (vinyl chloride) (PVC-C).

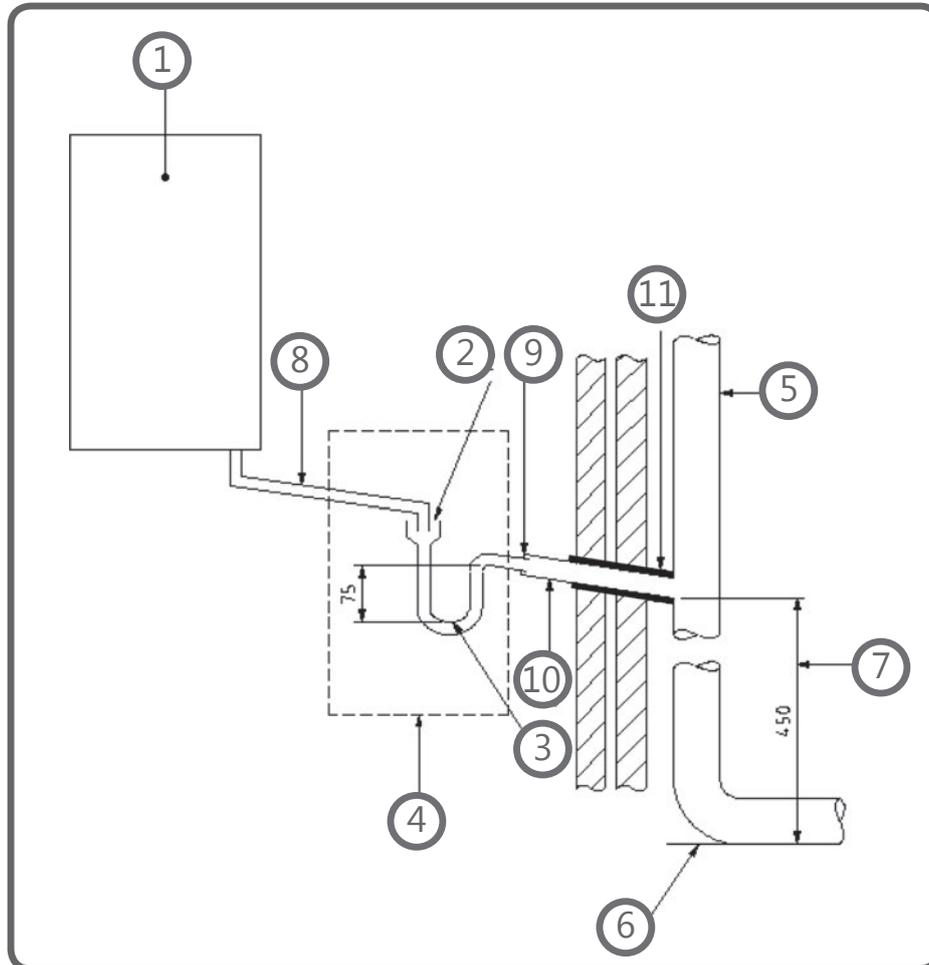
Note - Fixing centres for brackets should be a maximum of 300mm for flexible pipe and 500mm for solid pipe and manufacturer's recommendations should be followed.

The condensate pipe should be run internally as far as possible before going externally and the pipe diameter should be increased to a minimum of 30mm ID (typically 32mm OD) before it passes through the wall. The angle of the pipe should slope downwards by at least 3 degrees as it passes through the wall to assist in maintaining a good velocity as the condensate exits the building.

The external pipe run should be kept as short as possible to a maximum of 3 metres, taking the most direct and "most vertical" route to the discharge point, with no horizontal sections in which condensate might collect.

## External Connections

Figure 4 – Connection of condensate discharge pipe to external soil and vent stack



Key

- 1 Boiler
- 2 Visible air break
- 3 75 mm trap
- 4 Visible air break and trap not required if there is a trap with a minimum condensate seal of 75mm incorporated into the boiler.
- 5 Soil and vent stack
- 6 Invert
- 7 450mm minimum upto three storeys
- 8 Minimum internal diameter 19 mm
- 9 Pipe size transition point
- 10 Minimum internal diameter 30mm
- 11 Water/weather proof insulation

## External Connections

### Alternative Solutions

Cold weather protection methods approved or endorsed by boiler manufacturers and/or service organisations may be adopted if these are considered suitable by the parties involved. It is the responsibility of the manufacturer of these products to ensure they have completed the necessary testing or calculations to ensure the product offers suitable protection to prevent the condensate pipe from freezing. The product manufacturer should provide information as to what level of external temperature and for what time period the product can protect against sub-zero temperatures, i.e. -15°C for 48 hours. BS6798 refers to devices that pump the condensate produced by a condensing boiler to a fine misting nozzle in the boiler flue terminal so that the condensate is discharged with the hot flue gas. (BS6798 section 6.3.8 note 4). The boiler manufacturer's instructions will provide advice regarding fitting and siting of the flue terminal to ensure safe disposal of the condensate.

### Additional Measures

At least one of the following measures should be fitted in addition to the measures detailed above for external condensate discharge pipes

- *Insulate external pipe with a minimum thickness of insulation to be 19mm "O" class PVC coated material.*
- *Fit trace heating – with insulation as recommended by manufacturer.*
- *Fit internal auxiliary(additional) high volume syphon unit*

### Auxiliary Syphon – Fitted Internally

Auxiliary syphons fitted inside the premises assist with the siting of the boiler where an external condensate pipe **must** be fitted. The storage capacity of the auxiliary syphon increases the volume of condensate discharge reducing the risk of freezing. A further reduction in the potential for the pipe to freeze is achieved when combined with the external insulation requirements.

## External Connections

### Electric Trace Heating

Trace heating with an external thermostat can be fitted to the external condensate pipe to raise the temperature of the condensate pipe in freezing conditions. Trace heating takes the form of an electrical heating element run in physical contact along the length of the condensate pipe. The pipe is usually covered with thermal insulation to retain heat losses from the pipe. Heat generated by the element then maintains the temperature of the pipe. If such a system is used then the installation instructions of the trace heating manufacturer and any specific recommendations regarding pipe diameter, insulation, etc. should be followed. All other relevant guidance on condensate discharge pipe installation should also be followed.

### Insulation Materials

Insulation used for external condensate pipes, sink or washing machine waste pipes should be of class 'O' grade with an outer coating that is weather proof, bird/animal proof, and UV resistant finish. A minimum of 19mm thick insulation is recommended for 32mm external pipes.

### Use of Air Breaks In Condensate Discharge Pipes

Heating engineers should follow manufacturer's instructions on the use of air breaks in condensate discharge pipes. A visible air break is not required if the boiler condensate trap has a minimum condensate seal of 75mm incorporated into the boiler.

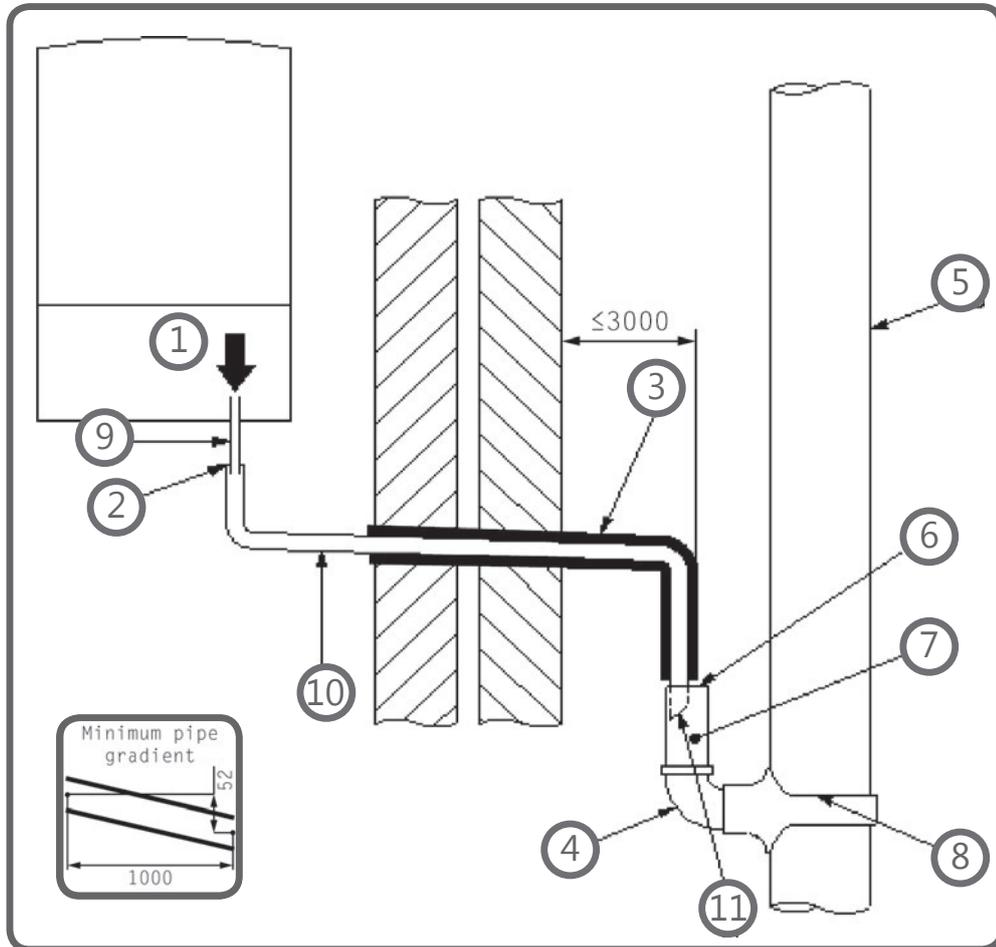
### Connecting to a rain water downpipe/External Soil Stack

When an external soil stack or rain water downpipe is used as the termination (NB only permissible if this downpipe passes to a combined foul and rainwater drainage system) an external air break must be installed between the condensate discharge pipe and the downpipe to avoid reverse flow of rainwater/sewage into the boiler should the downpipe itself become flooded or frozen.

Figure 5 shows a suitable connection method. Pipe insulation should be fitted.

## External Connections

Figure 5 – External termination to rainwater downpipe (NB only combined foul/rainwater drain)



### Key

- 1 Condensate discharge pipe from boiler
- 2 Pipe size transition point
- 3 Water/weather proof insulation
- 4 43mm 90° male/female bend
- 5 External rain water pipe into foul water
- 6 External air break
- 7 Air gap
- 8 68mm PVCu strap on fitting
- 9 Minimum internal diameter 19mm
- 10 Minimum internal diameter 30mm
- 11 End cut at 45°

## External Connections

### External Termination of the Condensate Pipe

Where the condensate discharge pipe is terminated over an open foul drain or gully, the pipe should terminate below the grating level, but above water level, in order to minimise “wind chill” at the open end. Pipe drainage and resistance to freezing will be improved if the termination end of the condensate pipe is cut at 45 degrees as opposed to a straight cut.

The use of a drain cover (such as those used to prevent blockage by leaves) **must** be fitted to offer further protection from wind chill. Figure 6 (following page) shows a suitable connection method. Where the condensate drain pipe terminates in a purpose-designed soakaway (see BS 6798:2014 or boiler installation manual for soakaway design requirements) any above-ground section of condensate discharge pipe should be run and insulated as described above. Figure 7 (following page) shows a suitable connection method.

### Unheated Areas in Buildings

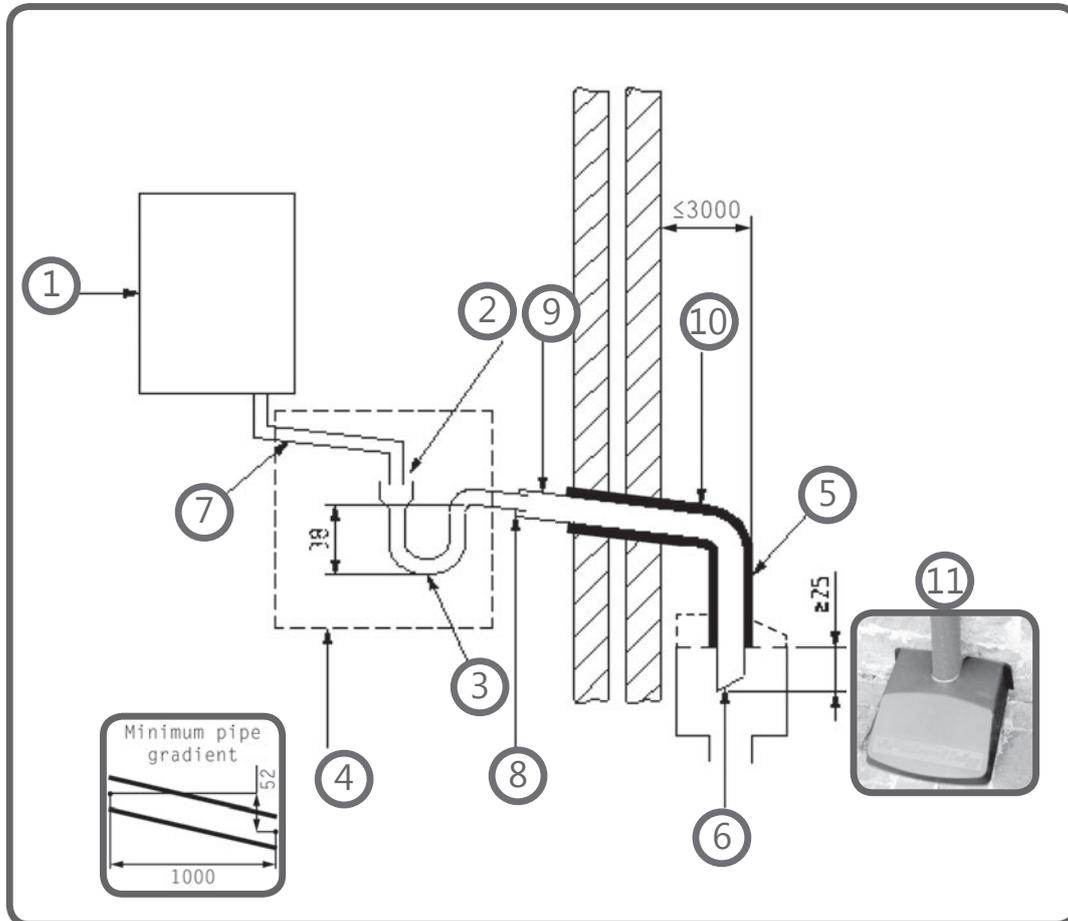
Internal condensate drainage pipes run in unheated areas such as lofts, basements and garages should be treated as external connections and insulated accordingly. Weather proof materials may not be necessary and should be assessed by the heating engineer.

### Use of Air Breaks In Condensate Discharge Pipes

Installers should follow the manufacturer’s instructions on the use of air breaks in condensate discharge pipes. A visible air break and trap is not required if the boiler condensate trap has a minimum condensate seal of 75 mm incorporated into the boiler.

## External Connections

Figure 6 – External drain, gully or rainwater hopper

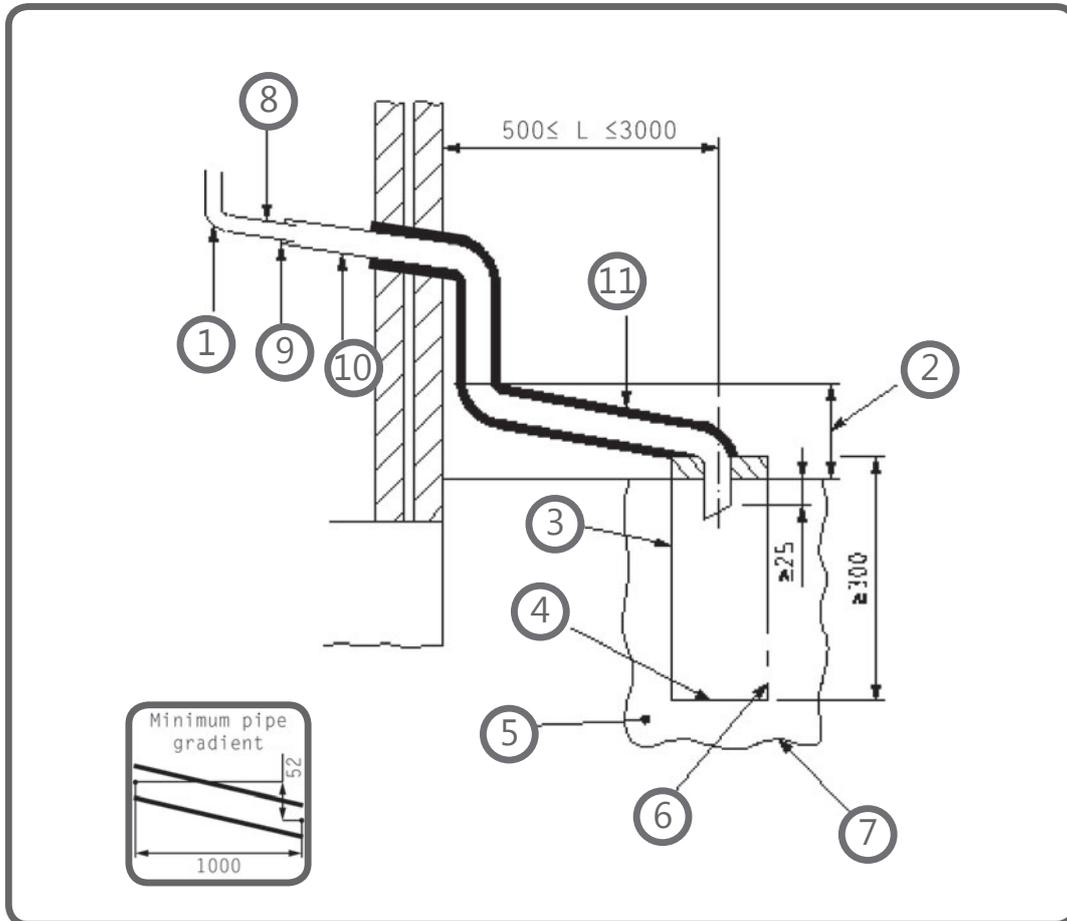


### Key

- 1 Boiler
- 2 Visible air break
- 3 38mm minimum trap
- 4 Visible air break and trap not required if there is a trap with a minimum condensate seal of 38 mm incorporated into the boiler – refer to manufacturers instructions
- 5 External length of pipe 3 m maximum
- 6 Open end of condensate discharge pipe direct into gully 25 mm min below grating but above water level; end cut at 45 °
- 7 Minimum internal diameter 19 mm
- 8 Pipe size transition point
- 9 Minimum internal diameter 30 mm
- 10 Water/weather proof insulation
- 11 Fit drain cover/leaf guard

## External Connections

Figure 7 – Example of a purpose made soakaway



Key

- 1 Condensate discharge pipe from boiler
- 2 Ground (this section of the condensate discharge pipe may be run either above or below round level); End cut at 45°
- 3 Diameter 100 mm minimum plastic tube
- 4 Bottom of tube sealed
- 5 Limestone chippings
- 6 Two rows of three 12 mm holes at 25 mm centres, 50 mm from bottom of tube and facing away from house
- 7 Hole depth 400 mm minimum by 300 mm diameter
- 8 Minimum internal diameter 19 mm
- 9 Pipe size transition point
- 10 Minimum internal diameter 30 mm
- 11 Water/weather proof insulation

# 10 APPENDIX 2

## FLOWCHART FOR CO AND COMBUSTION RATIO CHECK ON COMMISSIONING A CONDENSING BOILER

**PRIOR TO CO AND COMBUSTION RATIO CHECK**

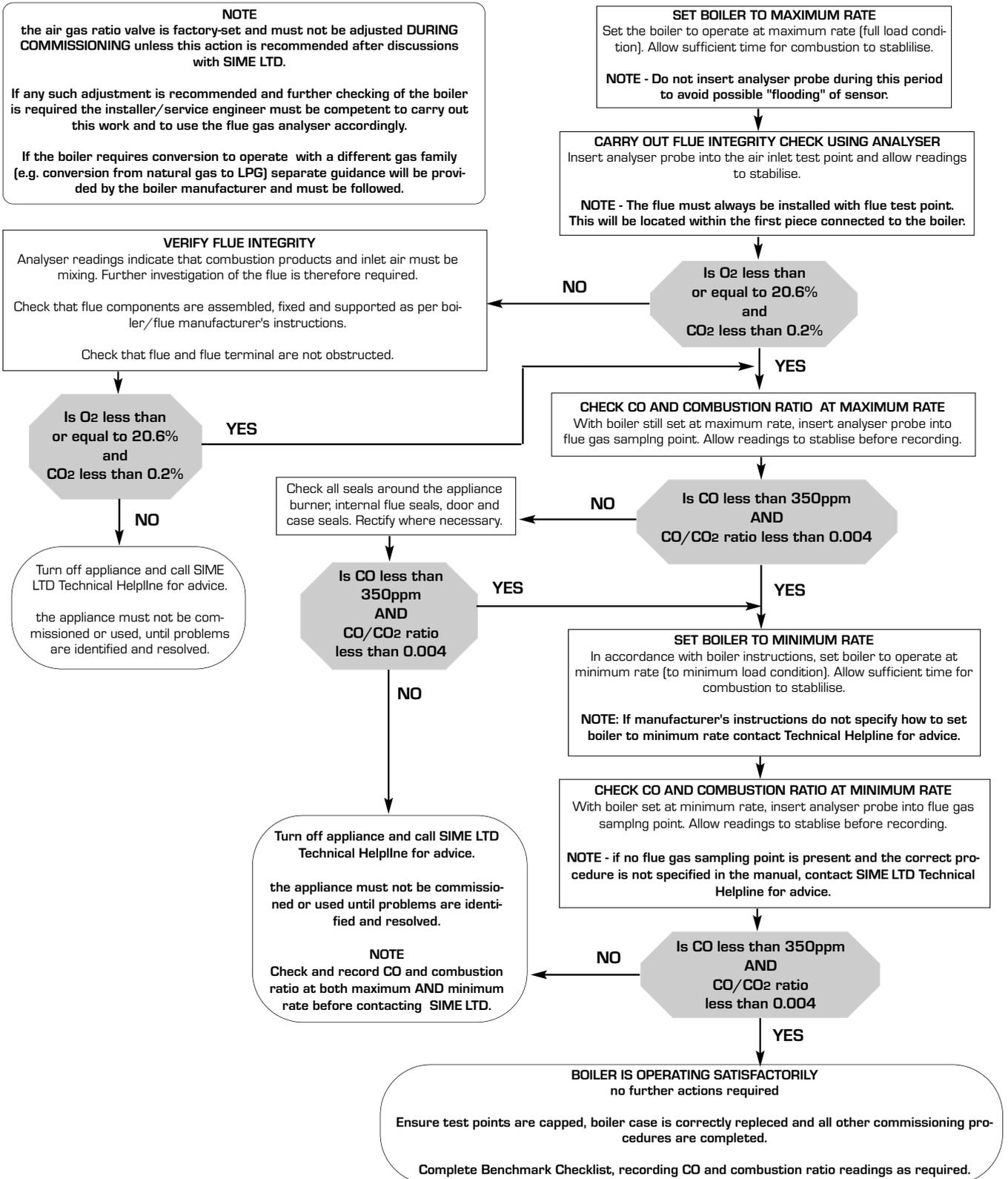
The installation instructions should have been followed, gas type verified and gas supply pressure/rate checked as required prior to commissioning.

As part of the installation process, **ESPECIALLY WHERE A FLUE HAS BEEN FITTED BY PERSONS OTHER THAN THE BOILER INSTALLER**, visually check the integrity of the whole flue system to confirm that all components are correctly assembled, fixed and supported. Check that manufacturer's maximum flue lengths have not been exceeded and all guidance has been followed (e.g. Gas Safe Technical Bulletin TBO08).

The flue gas analyser should be of the correct type, as specified by BS 7967

Prior to its use, the flue gas analyser should have been maintained and calibrated as specified by the manufacturer. The installer must have the relevant competence for use of the analyser.

Check and zero the analyser IN FRESH AIR as per analyser manufacturer's instructions.



# 11 PRODUCT DATA SHEET

		
<b>Murelle PRO HE</b>	<b>20 R MkII</b>	<b>30 R MkII</b>
C.H. energy efficiency class		
Heat output (kW)	<b>20</b>	<b>30</b>
C.H. seasonal energy efficiency (%)	<b>93</b>	<b>93</b>
C.H. annual energy consumption (GJ)	<b>37</b>	<b>56</b>
Sound power dB(A)	<b>54</b>	<b>53</b>
<p>Specific precautionary measures to be adopted at the time of assembly, installation or maintenance of the equipment are contained in the boiler instruction manual</p> <p>Conforming to Annex IV (item 1) of the Delegated Regulations (EU) No. 811/2013 which supplements Directive 2010/30/EU</p>		

## 12 ANNEX AA.1

Information requirements for boiler space heaters, boiler combination heaters							
Model(s):		MURELLE PRO HE 20 R MkII					
Condensing boiler:		Yes					
Low-temperature boiler:		Yes					
B11 boiler:		No					
Cogeneration space heater:		No		Equipped with a supplementary heater:		No	
Combination heater:		Yes					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
<b>Nominal heat output for space heating</b>	$P_n$	20	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	93	%
For boiler space heaters and boiler combination heaters: useful heat output				For boiler space heaters and boiler combination heaters: useful efficiency			
At nominal heat output and high-temperature regime <sup>a</sup>	$P_4$	19,7	kW	At nominal heat output and high-temperature regime [*]	$\eta_4$	88,7	%
At 30% of nominal heat output and low-temperature regime <sup>b</sup>	$P_1$	5,9	kW	At 30% of nominal heat output and low-temperature regime [*]	$\eta_1$	97,7	%
Auxiliary electricity consumption				Other items			
At full load	$e_{l_{max}}$	0,024	kW	Standby heat loss	$P_{stby}$	0,083	kW
At part load	$e_{l_{min}}$	0,008	kW	Ignition burner power consumption	$P_{ign}$	0	kW
In standby mode	PSB	0,003	kW	Emissions of nitrogen oxides	NOx	35	mg/kWh
For combination heaters:							
<b>Declared load profile</b>		-		<b>Water heating energy efficiency</b>		$\eta_{wh}$	-
Daily electricity consumption		$Q_{elec}$	-	kWh	Daily fuel consumption		$Q_{fuel}$
Contact details		Sime Ltd - 1a Blue Ridge Park - Thunderhead Ridge - Glasshoughton, Castleford, WF10 4UA					
<p>a. High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.</p> <p>b. Low-temperature regime means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature.</p>							
[*] The yield data have been calculated using the higher heating value.							

Information requirements for boiler space heaters, boiler combination heaters							
Model(s):		MURELLE PRO HE 30 R MkII					
Condensing boiler:		Yes					
Low-temperature boiler:		Yes					
B11 boiler:		No					
Cogeneration space heater:		No		Equipped with a supplementary heater:		No	
Combination heater:		Yes					
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
<b>Nominal heat output for space heating</b>	$P_n$	30	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_s$	93	%
For boiler space heaters and boiler combination heaters: useful heat output				For boiler space heaters and boiler combination heaters: useful efficiency			
At nominal heat output and high-temperature regime <sup>a</sup>	$P_4$	29,5	kW	At nominal heat output and high-temperature regime [*]	$\eta_4$	88,5	%
At 30% of nominal heat output and low-temperature regime <sup>b</sup>	$P_1$	8,9	kW	At 30% of nominal heat output and low-temperature regime [*]	$\eta_1$	97,7	%
Auxiliary electricity consumption				Other items			
At full load	$e_{l_{max}}$	0,037	kW	Standby heat loss	$P_{stby}$	0,088	kW
At part load	$e_{l_{min}}$	0,011	kW	Ignition burner power consumption	$P_{ign}$	0	kW
In standby mode	PSB	0,003	kW	Emissions of nitrogen oxides	NOx	37	mg/kWh
For combination heaters:							
<b>Declared load profile</b>		-		<b>Water heating energy efficiency</b>		$\eta_{wh}$	-
Daily electricity consumption		$Q_{elec}$	-	kWh	Daily fuel consumption		$Q_{fuel}$
Contact details		Sime Ltd - 1a Blue Ridge Park - Thunderhead Ridge - Glasshoughton, Castleford, WF10 4UA					
<p>a. High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.</p> <p>b. Low-temperature regime means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature.</p>							
[*] The yield data have been calculated using the higher heating value.							









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