EN

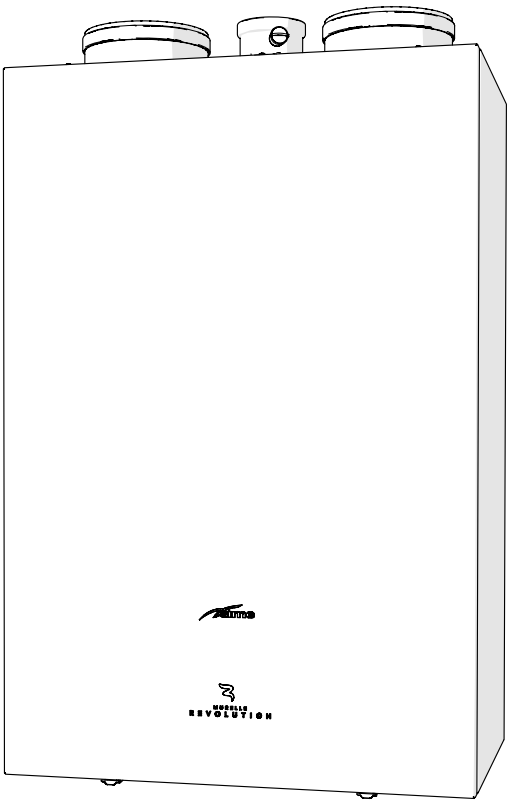
6328590A - 02/2022 - R4

MURELLE REVOLUTION 30

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



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

WRAS
WATER REGULATIONS ADVISORY SCHEME

GAS safe REGISTER
199839

energy saving trust
endorsed product

To consult the documentation, visit our website www.sime.it

sime®

BOILER DETAILS

please position here a sticker from installation pack

TRANSLATION OF THE ORIGINAL INSTRUCTIONS

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 some residual water in the hydraulic circuit.
– Protect any surfaces, carpets or floorings.
– Use a suitable container to catch any water that escape when removing the protective caps from the connections.

All descriptions and illustrations provided in this manual have been carefully prepared but we reserve the right to make changes and improvements in our products that may affect the accuracy of the information contained in this manual.

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.

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

*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 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.
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 complyng 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.

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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?

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 responsible 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.
- In case of an accidental refrigerant gas leak, disconnect the appliance from the mains and open a window to air the room where the appliance is installed.
- 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.
- If the power cable is damaged, replace it with a cable ordered as a spare part with the same characteristics (type X). Assembly must be by carried out by a qualified professional.

WARNINGS

- **It is recommended that all operators** read this manual carefully in order to use the appliance in a safe and rational manner.
- **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.
- **Any repairs on the appliance** must be carried out solely by professionally qualified personnel, using original spare parts only. Failure to comply with these instructions can jeopardise the appliance's safety and void the warranty with immediate effect.
- **Fonderie SIME S.p.A.** reserves the right to make improvements to its products at any time without prior notice, without compromising their essential characteristics. The graphic illustrations and/or images in this document may show optional accessories that vary according to the country in which the appliance is 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.
- To 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.*
- To touch the appliance with bare feet or with any wet part of the body.
- To 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.
- To modify the safety or adjustment devices without authorization and instructions from the manufacturer.
- To block the condensate drain.

DO NOT

- To pull, detach or twist the electrical cables coming out of the appliance even if the appliance is disconnected from the mains power supply.
- To expose the boiler to atmospheric agents. The boiler is suitable for use in partially protected places according to standard EN 15502, with a maximum ambient temperature of 60°C and a minimum of -5°C. We recommend installing the boiler under a sloping roof, on a balcony or in a sheltered corner. In all cases it must not be directly exposed to bad weather (rain, hail, snow). The boiler is equipped with a series of anti-freeze functions.
- To leave containers with flammable substances in the room where the appliance is installed.
- To 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.
- To load the refrigerating circuits with a refrigerant other than the one indicated on the ID plate. Using a different refrigerant may cause serious damage to the compressor.
- To use oils other than those indicated in this manual. Using a different oil may cause serious damage to the compressor.
- To dispose of the R-410A refrigerant irresponsibly; it is a fluorinated greenhouse gas with 1975 global warming potential (GWP).

RANGE

MODEL	CODE	GAS COUNCIL NUMBER
Murelle Revolution 30	8116102	47-283-87

COMPLIANCE

Our company declares that **Murelle Revolution 30** boilers comply with the following directives:
- Gas Appliances EU Regulation 2016/426
- 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

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.

USER INSTRUCTIONS

TABLE OF CONTENTS

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

1 USING THE BOILER MURELLE REVOLUTION 30

1.1 Main control panel (remote)

The main control panel (MCP) allows all of the necessary adjustments to be made to **Murelle Revolution 30** and to the connected systems.
It also serves as a main room thermostat and can therefore be used by all operators, users, authorised maintenance technicians and the technical service for the operations for which each of these figures is authorised, as described in detail in the relevant sections.
It communicates with the boiler control panel with an unpolarised bus line and OpenTherm protocol, and with the heat pump control panel with a RS485 polarised ModBus two-wire line.
It is equipped with a volt free input for remote control, where relevant (GSM-Dialler/WiFi).

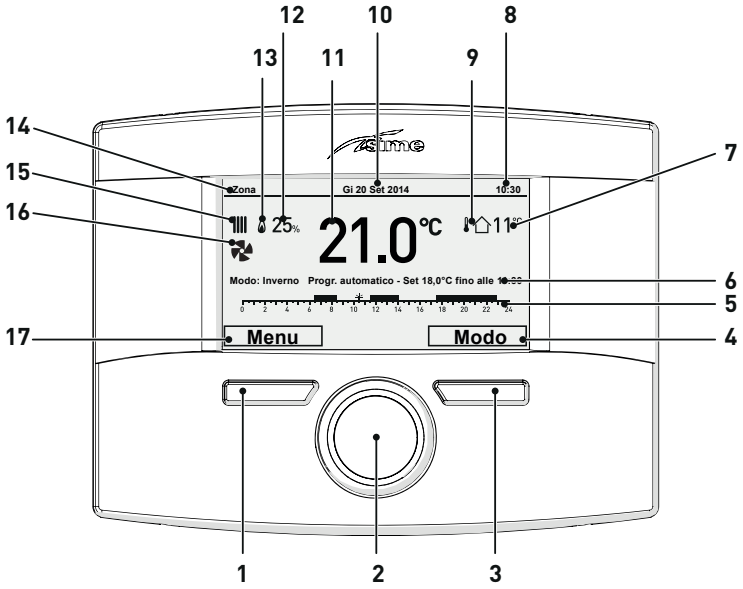


Fig. 1

1 Button (A)
2 Multifunction encoder
3 Button (B)
4 Action carried out by pressing button (B)
5 Programmed time band
6 Mode selection
7 Measured outdoor temperature
8 Time
9 Presence of outdoor probe (OP)
10 Date
11 Measured ambient temperature
12 Modulation percentage
13 Flame
14 Controlled area
15 Request for heating (rad) or hot water (tap)
16 Heat pump operating
17 Action carried out by pressing button (A)

1.1.1 Using the buttons

With the appliance powered, from the "Main screen".

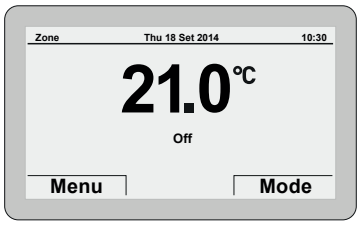


Fig. 2

BUTTON (A)
(used mainly by professionally qualified technicians and NOT by the end user)
This allows technicians to view the **"menu"** select screen (e.g. Menu **"GENERAL SETTINGS"**) and then to operate according to what is written above the button on the display (e.g. Esc to exit and return to the main screen.

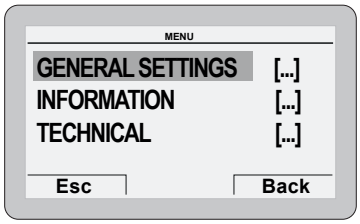


Fig. 3

MULTIFUNCTION ENCODER

If turned, allows the user to scroll through and select the **"Menu/rows"** or the **"Function mode"**, or to change the values in the selected field.
In "Summer" mode, the DHW temperature can be adjusted.
In "Winter" mode, the DHW can be adjusted in relation to the heating and the "Holiday function".

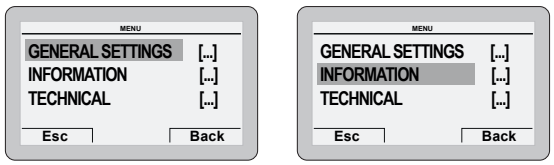


Fig. 4

If pressed, **click** confirms the selection and takes the user to the submenus (e.g. **"LANGUAGE"** or **"Hot water"**) or confirms the modified value or entry.

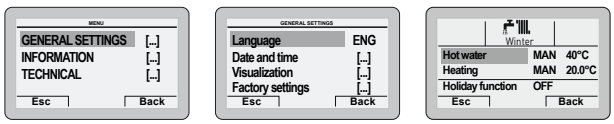


Fig. 5

BUTTON (B)
This allows users to view the **"Function mode"** screen (e.g. "Winter") and then to operate according to what is written above the button on the display (e.g. Esc to exit and return to the main screen).

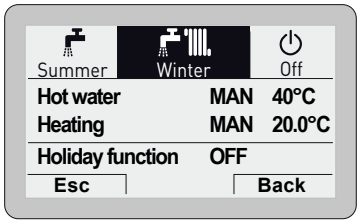


Fig. 6

1.2 Start-up

1.2.1 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.

Commissioning of the **Murelle Revolution 30** boiler must be carried out by professionally qualified personnel after which the boiler can operate automatically. It may however be necessary for the User to start the appliance autonomously without involving a technician: for example, after a holiday.

In this case, certain checks and the following operations must be carried out:
- check that the gas isolation and water system valves are open.

1.2.2 Ignition

After having carried out the preliminary checks, proceed as follows:
- set the main system switch to "ON"
- after a few seconds, the "Main screen" is shown

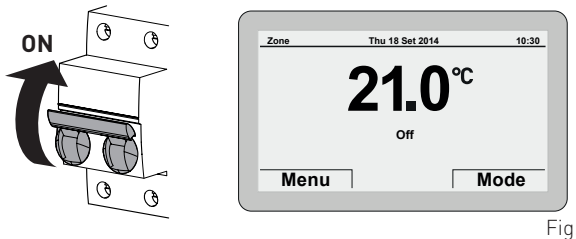


Fig. 7

- Press the Mode button to view the **"Function mode"** (MODE) selection screen. Turn the encoder to select the preferred mode (e.g. "Winter")
- press the **click** encoder to confirm "Winter"
- press the Esc button to go back to the "Main screen".

Check the **"System pressure"** by doing as follows:
- press the Menu button to view the **"Menu"** selection screen
- turn the encoder to select the menu **"INFORMATION"**

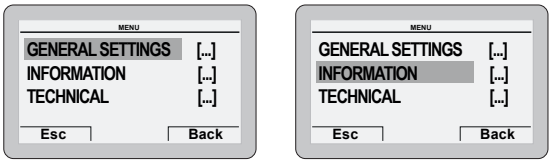


Fig. 8

– press the **click** encoder to confirm the highlighted "Mode" and go to the "rows"

– Turn the encoder to **"Boiler"**

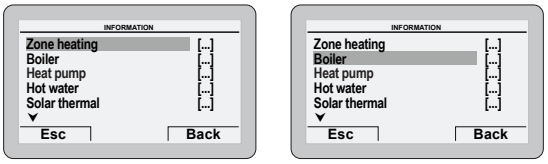


Fig. 9

– Press the **click** encoder to confirm the selection and go to the screen showing the **"System pressure"**

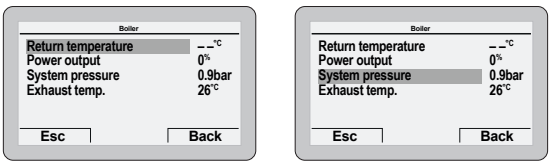


Fig. 10

– check that the system pressure as shown when the system is cold , is between **1 and 1.2 bar**. Where the value is different from **1-1.2 bar** (the correct value), open the filling valve, which should be on the system return, until this value is reached and then shut it off again
– press the **Esc** button to go back to the "Main screen"

CAUTION
To view the "System pressure", the row does not need to be selected by turning the encoder .

– open one or more of the hot water valves and check that the appliance starts up

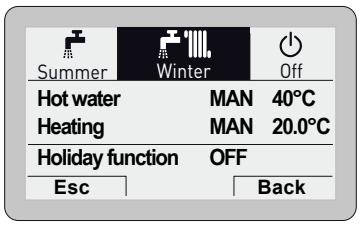


Fig. 11

– allow the appliance to operate until hot water is produced and shut off the valves opened previously.

1.3 Settings using the MODE button

From the "Main screen":

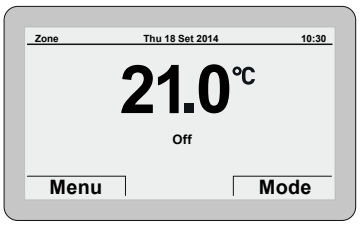


Fig. 12

– Press the **Mode** button to view the **"Function mode"** selection screen. Turn the encoder to select a mode (e.g. "Winter")

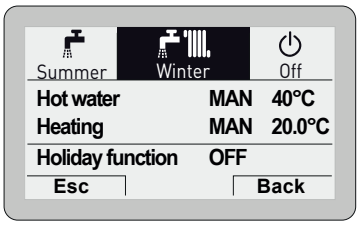


Fig. 13

– press the **click** encoder to confirm the highlighted "Mode" and go to the "rows"

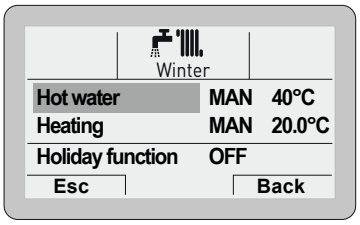


Fig. 14

– turn the encoder to select **"Heating"** (Heating)
– press the **click** encoder to confirm **"Heating"** and access the **"Rows"**

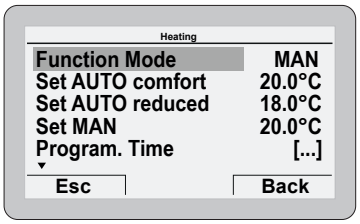


Fig. 15

– press the **click** encoder to confirm the highlighted "Row" and access the modifiable area

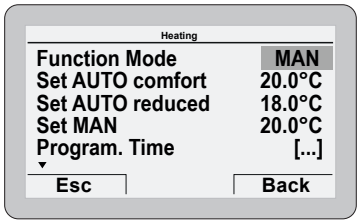


Fig. 16

– turn the encoder to modify the "Data/value" in the permitted field (e.g. MAN - AUTO - OFF)
– Press the **click** encoder to confirm any modifications made and go back to the row **"Function mode"**
– turn the encoder to select another "Row" (e.g. **"Program. Time"**).

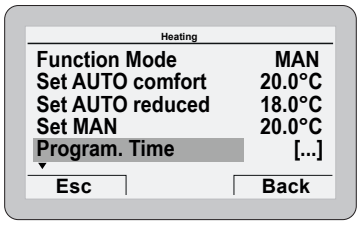


Fig. 17

1.3.1 Time Programming

The **main control panel (MCP)** allows up to four daily time bands to be managed for the domestic hot water function and the heating function described below.
During the programmed time band, the boiler works in COMFORT heating mode, while outside the programmed time band it works in REDUCED heating mode:

– press the **click** encoder to confirm the **"Program. time"** and go to the modifiable area

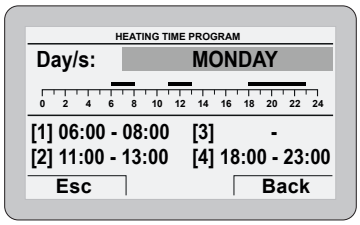


Fig. 18

– turn the encoder to select the "Single days" or the "Group of days"
– press the **click** encoder to confirm the required selection and access the first "Adjustable time" **[1]**

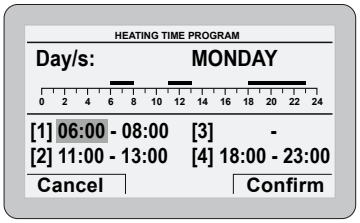


Fig. 19

– turn the encoder to modify the "Data/value" on the basis of the required time
– press the **click** encoder to confirm the modification and move to the next "Data/value"

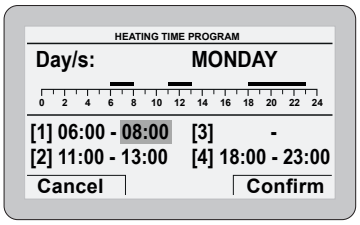


Fig. 20

– continue in this way until all the necessary modifications have been made for each day of the week or group of days.

***NOTE**: The user must work in a CIRCULAR manner, meaning ALWAYS MOVING FORWARDS, even if a mistake is made.*

CAUTION
If NO time band is required, set the start and stop times of that band to the same value (e.g. [3] 14:00-14:00).

– Once the modification has been made, press the **Confirm** button to go back to "Single days" or "Group of days"
– press the **Esc** button to go back to the "Main screen".

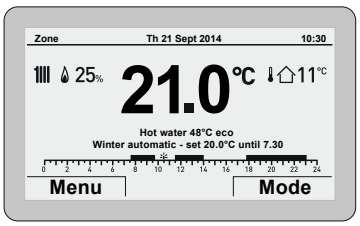


Fig. 21

1.3.2 Holiday function

This function allows the user to deactivate both heating and hot water production during a **"set and activated"** holiday period, during which the antifreeze function can be active (if set).

To set the holiday function from the "Main screen":
- press the Mode button
- press the **click** encoder to confirm one of the **Summer** or **Winter** function mode
- turn the encoder to select **"Holiday function"**

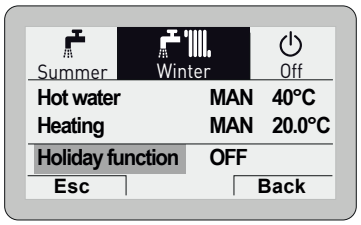


Fig. 22

- press the encoder **click** to confirm the **"Holiday function"** (Holiday function) and go into the modifiable area

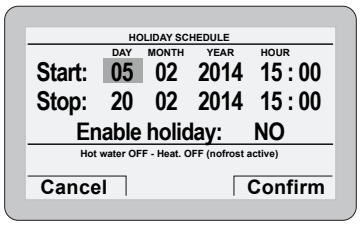


Fig. 23

- turn the encoder to modify the "Data/value" which is highlighted
- press the **click** encoder to confirm the modification and move to the next "Data/value"

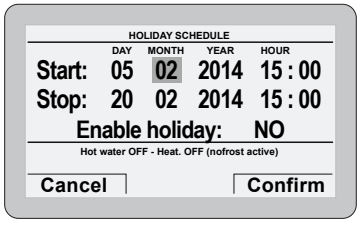


Fig. 24

- turn the encoder to modify the "Data/value" on the basis of the holiday start date
- press the **click** encoder to confirm the modification and move to the next "Data/value"
- continue in this way until all the necessary modifications have been made..

***NOTE**: The user must work in a CIRCULAR manner, meaning ALWAYS MOVING FORWARDS, even if a mistake is made.*

- When all modifications have been made, press the Confirm button to go back to **"Holiday function"**
- press the Esc button to go back to the "Main screen".

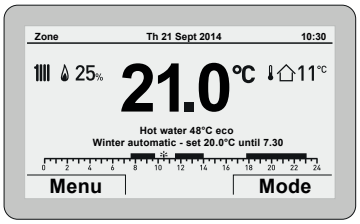


Fig. 25

1.3.3 Fault warnings

If a fault occurs, the screen **"Anomaly in progress"** (Fault in progress) will appear in place of the "main screen". For the main fault codes, a brief description and suggestions for the user are displayed, based on the seriousness and the frequency with which the fault reappears.

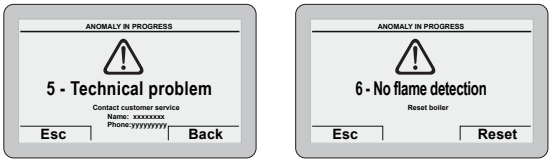


Fig. 26

The fault may be **transient** (volatile) or it may cause an appliance **block**.

To restore normal operating conditions:
- if the fault is transient, eliminate the cause of the fault
- if the fault causes a block, remove the cause of the fault and then press the Reset button.

If there is **"no water in the system"** or **"low water pressure in the system"** there is a request to fill the system and then to press the Confirm button rather than the Reset button.

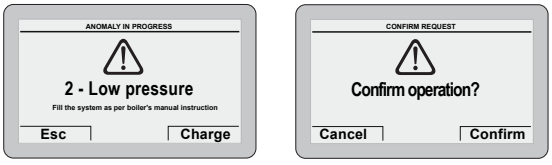


Fig. 27

CAUTION
For a full list of faults, see "**Malfunction codes and possible solutions**".

1.3.4 Quick settings

The encoder allows the operator, specifically the user, to:
- change the **"Set hot water"** in SUMMER mode
- change the **"Set room temperature"** in WINTER mode.

In both cases, from the "Main screen":

- press the **click** encoder to display the **set** value

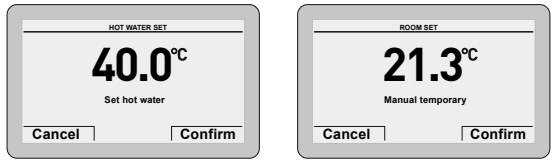


Fig. 28

- turn the encoder to set the new **"Set value"**
- press the **Confirm** button to complete the modification and return to the "Main screen".

IMPORTANT INFORMATION FOR THE SET AMBIENT TEMPERATURE

The meaning of the words on the display is as follows:

Manual temporary: the heating **"Function mode"** is set to AUTO and the set value read on the display is valid until the next time band change (automatic set point)

Manual: the heating **"Function mode"** is set to MAN and the set value read on the display is permanently valid.

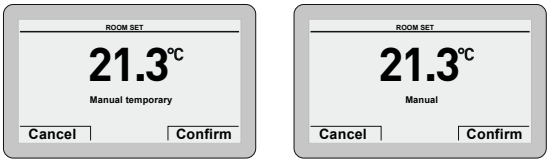


Fig. 29

1.4 Navigating using the MODE button

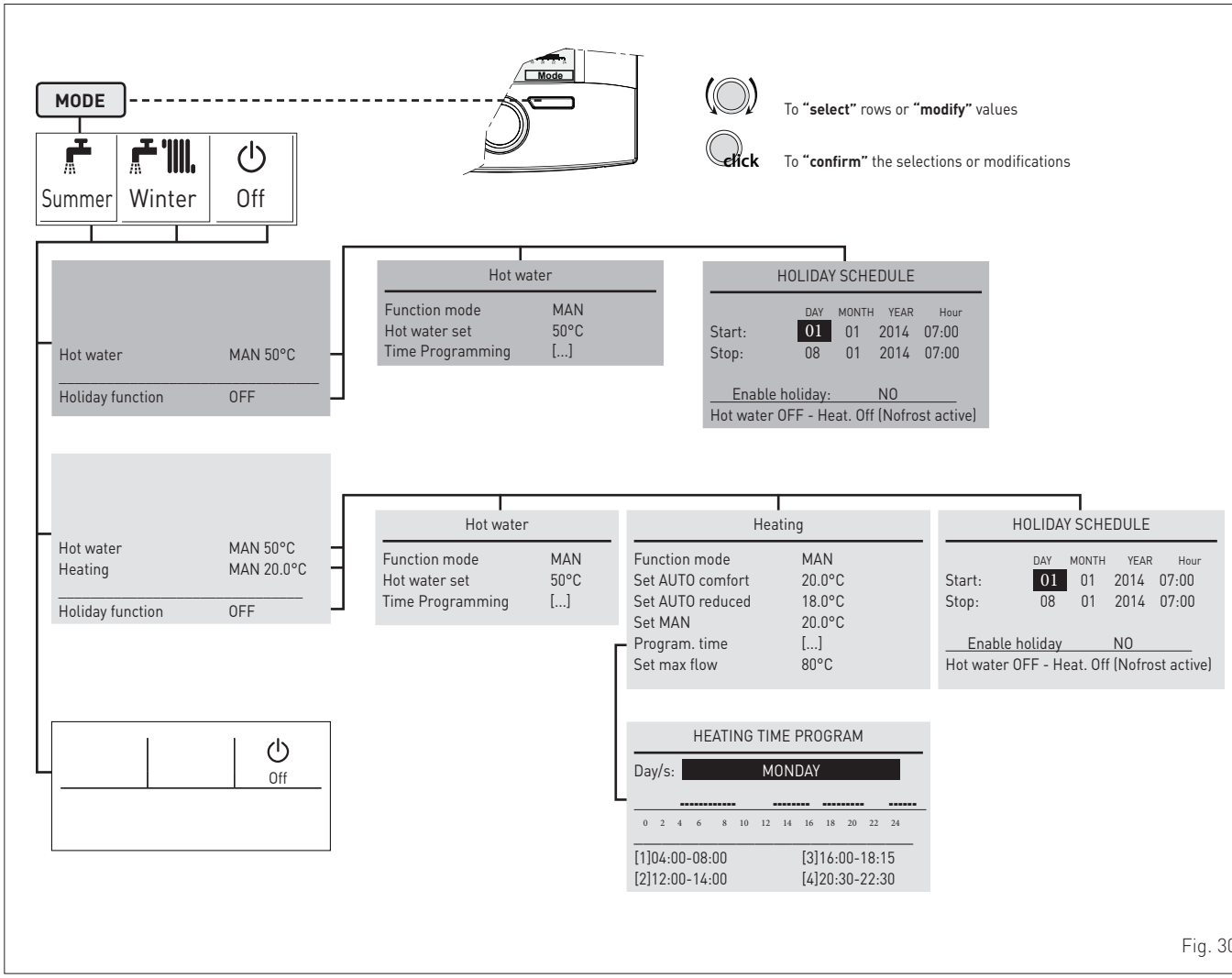


Fig. 30

2 MAINTENANCE

2.1 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.

2.2 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.

2.2.1 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.

3 DISPOSAL

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

At the end of their life span, the appliance and electrical and electronic devices coming from households or classifiable as household waste must be delivered to appropriate waste collection systems, in accordance with the law and with Directive 2012/19/EU. This product was designed and manufactured for minimising its impact on the environment and on human health, but it contains components that could be detrimental if managed improperly. The symbol (crossed-out wheelie bin) depicted here and also appearing on your appliance means that the appliance at the end of its life must be managed in accordance with the law and treated as electrical and electronic waste. Before delivering the appliance for its disposal, consult the applicable provisions of the laws in force in the country where the appliance is used and get information on the authorised waste disposal facilities by contacting the relevant local offices.

DO NOT
dispose of the product with urban waste.

DESCRIPTION OF THE APPLIANCE

TABLE OF CONTENTS

4 DESCRIPTION OF THE APPLIANCE

4.1 Characteristics

Murelle Revolution 30 is an innovative Ccass A++ wall-mounted boiler designed by **Sime Ltd** SOLELY for space heating and producing domestic hot water.
The appliance is made up of a latest-generation sealed condensing gas boiler and a heat pump.
Murelle Revolution 30 can ONLY operate if it is connected to the outdoor probe supplied with the appliance; if the outdoor probe is NOT connected, Murelle Revolution 30 will NOT work.
The wall the appliance is mounted to must be able to support its weight, and preferably be an outside wall, to simplify installing the air inlet and outlet pipes.
Murelle Revolution 30 can produce water for a heating system to a temperature of up to 75°C. **To obtain maximum performance from Murelle Revolution 30**, the delivery temperature **MUST NOT** exceed **65°C** and the return temperature must not be above of **45°C** .
The main design choices made by **Sime Ltd** for **Murelle Revolution 30** boilers are:
- use of a sealed boiler with a total pre-mix microflame burner combined with a steel heat exchanger body and a rapid heat exchanger for DHW
- use of a modulating circulation pump
- use of a heat pump (HP), which is supported by the boiler to produce heat, and can operate separately or together with the boiler, according to the temperature detected by the outdoor probe
- a Main control panel (remote) which serves both as an room thermostat and as a command and control device, a microprocessor, with bus protocol to manage the **Murelle Revolution 30** and related system
- use of a main evaporator with a patented smoke evaporator in series and a plate heat exchanger to transmit the heat to the water in the system. This allows the heat pump to operate with an average COP of 4.
- the option of being connected to room thermostats or chrono-thermostats for the zone.

The command board also has an internal connection where an expansion which can control the external relays can be inserted.
Murelle Revolution 30 also has the following functions:
- the anti-freeze function which is activated automatically if the temperature of the water inside the boiler falls below the value set under "PAR 10" and if the outdoor temperature falls below the value set under "PAR 11"
- anti jamming function of the pump and diverter valve, 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
- domestic hot water comfort function which allows the time necessary for the hot water to become available to be reduced and ensures that the temperature is stable
- 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.

4.2 Operation summary

4.2.1 Heating

When there is a heating request from the main control panel (MCP) or from an room thermostat for the zone (ATz), where there are no alarms and where the outdoor temperature is at least -7°C, the heat pump is activated (HP).
After a set period of time, calculated using an algorithm according to the current outdoor temperature, the gas boiler also starts up to help heat the water in the system and respond to the current request for heat.
When the system water temperature reaches the required value, also calculated using a specific algorithm for the gas boiler, the boiler stops and ONLY the heat pump continues to operate, until the heating request has been satisfied; after which, the heat pump also stops.

CAUTION
If, when there is a heating request, the outdoor temperature is **below -7°C (e.g. - 10°C)**, only the gas boiler is activated and the heat pump remains inactive.

4.2.2 Domestic Hot Water (DHW)

When there is a request for DHW, providing there is no heating request from the room thermostats, the diverter valve prepares to direct the flow of water towards the plate heat exchanger and the boiler starts up to respond to the request.
Should there be a request for heat at the same time, the heat pump stops and the boiler operates as described above. Once the DHW request has been satisfied, standard heating operation resumes.

4.3 Check and safety devices

The **Murelle Revolution 30** boilers are equipped with the following check and safety devices:
- thermal safety thermostat 100°C
- 3 bar relief valve
- heating water pressure transducer
- delivery sensor (SM)
- DHW sensor (SS)
- exhaust sensor (SF).

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.

4.4 Identification

The **Murelle Revolution 30** 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 energy savings and reduced environmental pollution of the "packet"
3 **Heat pump 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.
4 **Boiler technical data plate:** this is located on the side of the appliance and provides the technical data, appliance performance information and any other information required by law in the country where the appliance will be used.

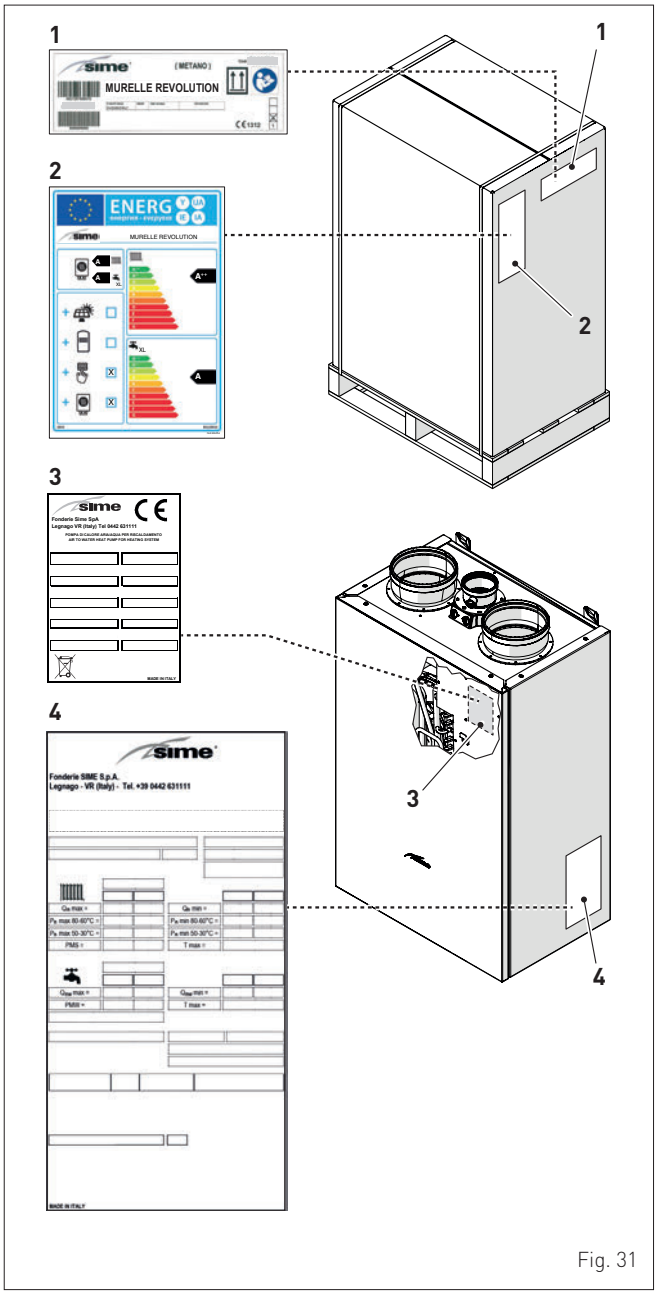
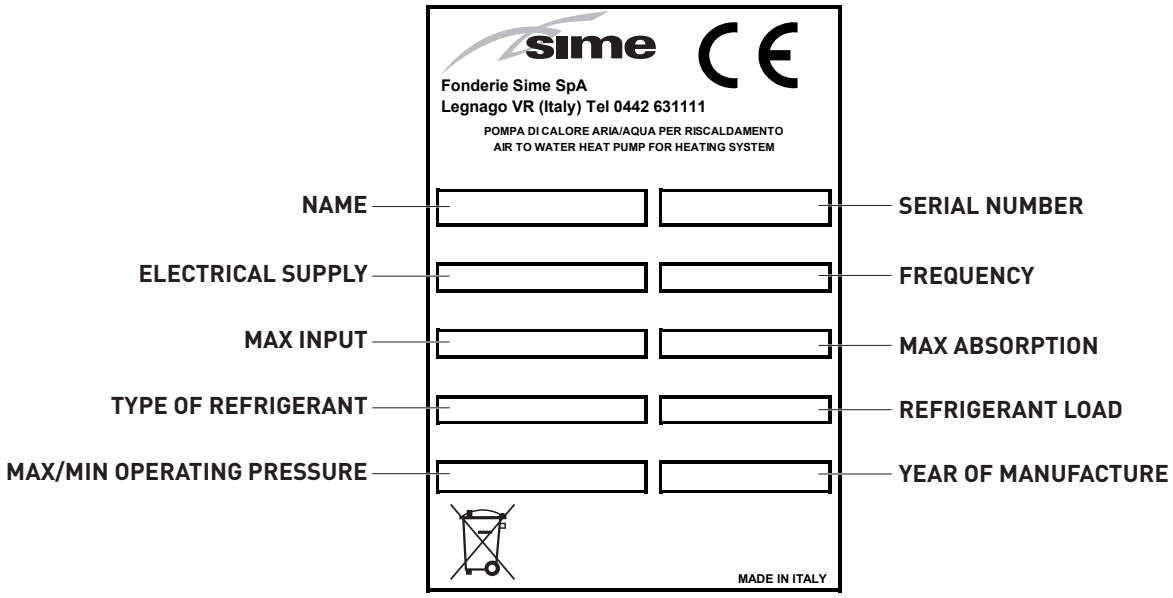


Fig. 31

4.4.1 Technical data plates

Heat Pump Technical Data Plate



Boiler Technical Data Plate

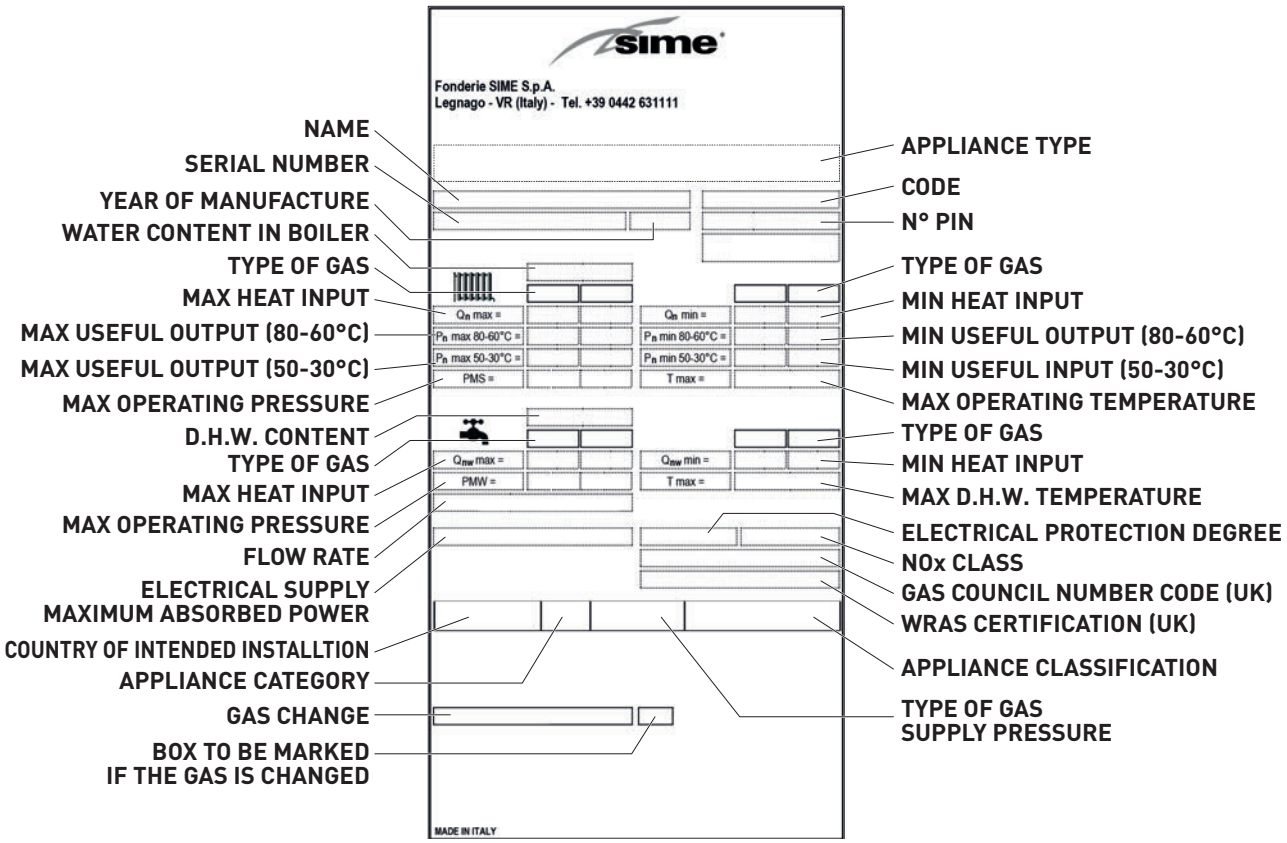
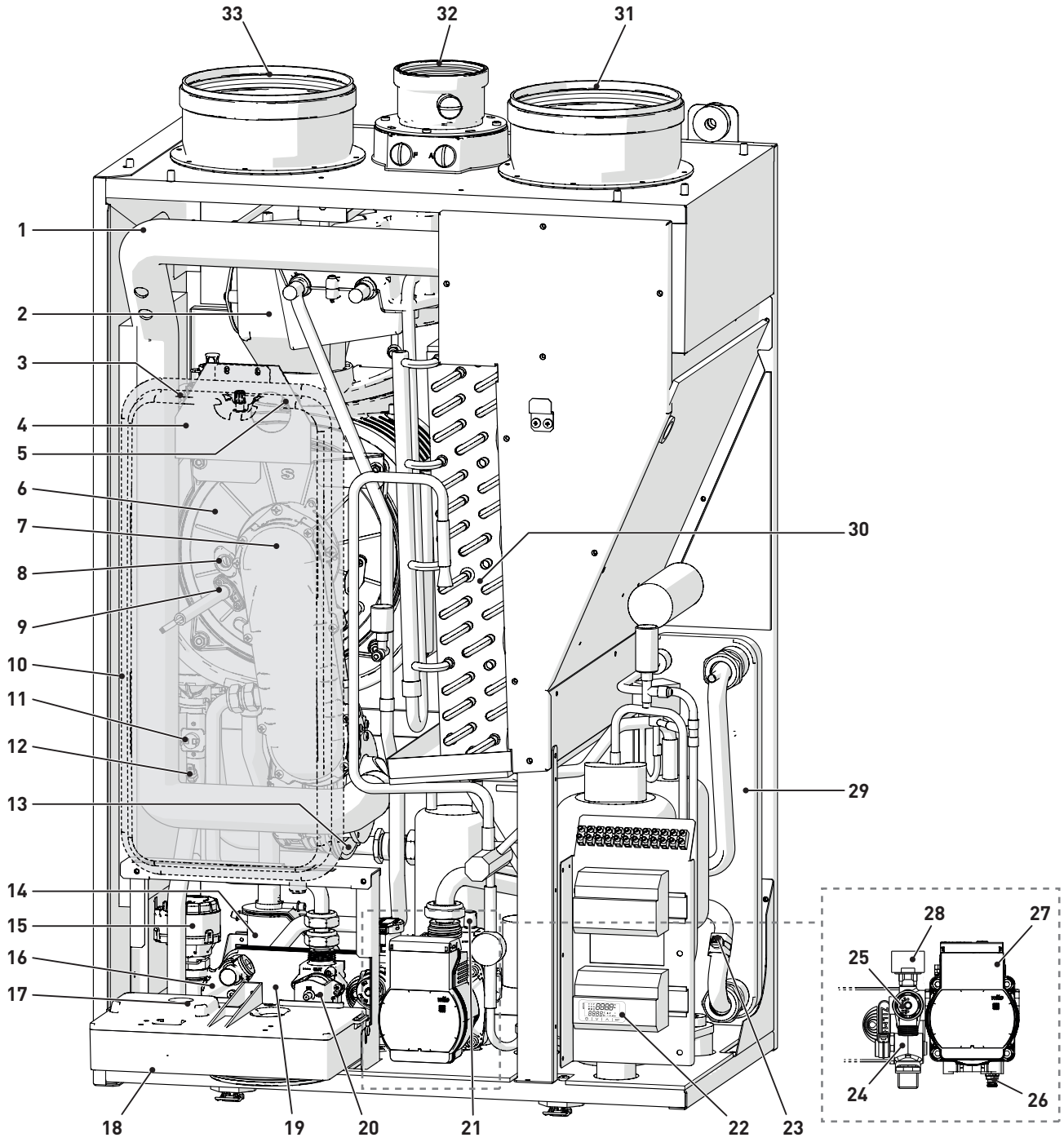


Fig. 32

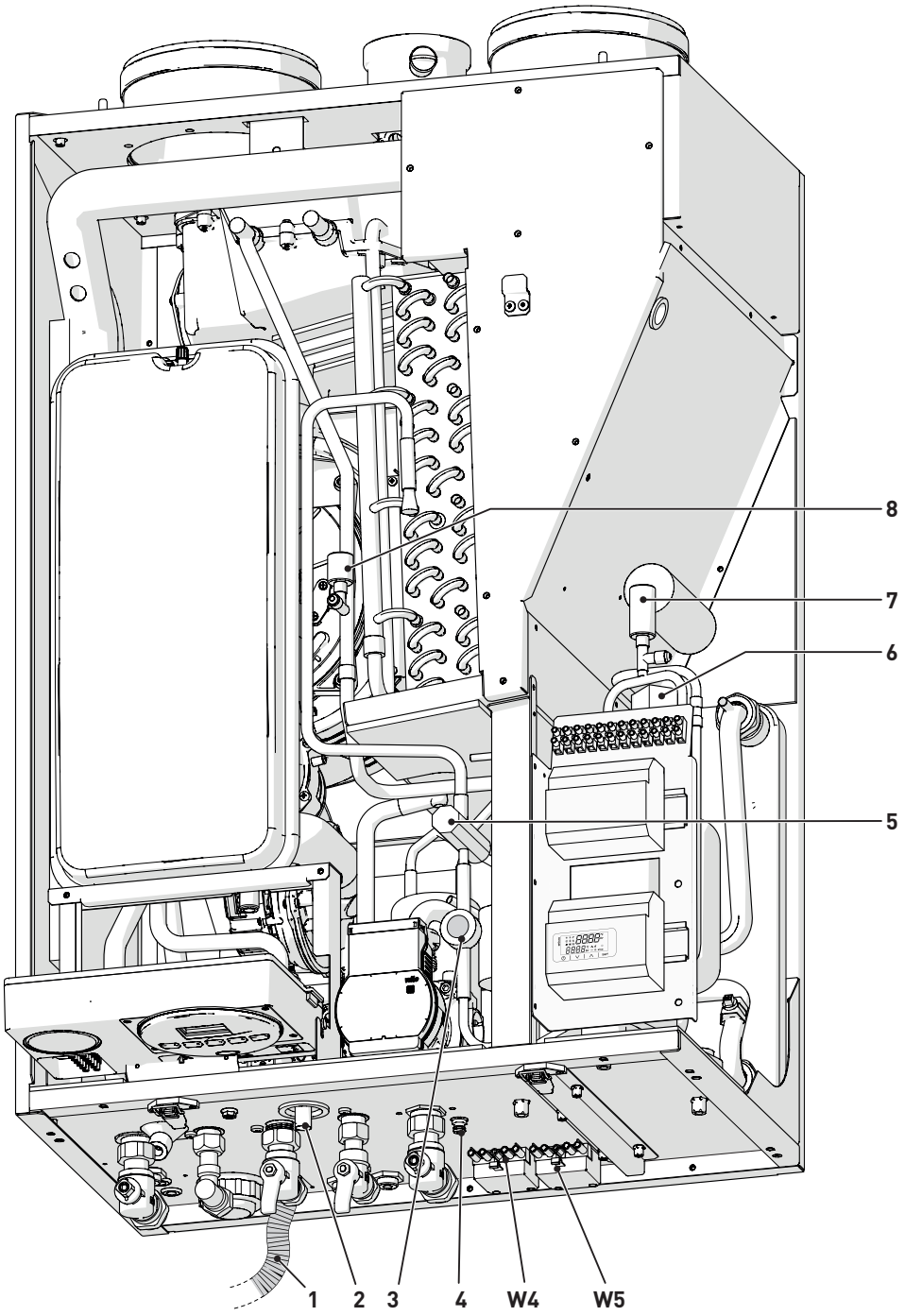
CAUTION
Tampering with, removing or failing to display the identification plate or carrying out any other operation which does not allow safe identification of the product or which may hinder installation and maintenance operations.

4.5 Structure



1 *Air inlet pipe*
2 *Gas boiler smoke evaporator*
3 *Heat exchanger bleed point*
4 *Heat exchanger*
5 *Exhaust sensor (SF)*
6 *Combustion chamber door*
7 *Air/gas duct*
8 *Flame viewing window*
9 *Ignition/detection electrode*
10 *Expansion vessel*
11 *Safety thermostat (TS)*
12 *Delivery sensor (SM)*
13 *Fan*
14 *Condensate siphon*
15 *Diverter valve*
16 *System filling unit*
17 *Domestic hot water sensor (SS)*
18 *Boiler control panel (gas side)*
19 *Domestic hot water heat exchanger*
20 *Gas valve*
21 *Automatic bleed valve*
22 *HP control panel*
23 *Return temperature probe*
24 *Domestic hot water filter*
25 *System relief valve*
26 *Boiler drain*
27 *Pump*
28 *Water pressure transducer*
29 *Plate capacitor*
30 *Air evaporator*
31 *Heat pump air outlet duct*
32 *Boiler smoke outlet duct*
33 *Boiler/heat pump air inlet duct*

Fig. 33



1 *Condensate outlet*
2 *Safety valve outlet*
3 *Liquid level indicator*
4 *Boiler drain*
5 *Thermostatic expansion valve*
6 *HP by-pass solenoid valve*
7 *HP high pressure switch*
8 *HP low pressure switch*

W4 *Boiler connector (gas side) – Main control panel*
W5 *HP-main control panel connector*

Fig. 34

4.6 Technical features

4.6.1 Boiler (gas side)

DESCRIPTION		Murelle Revolution 30
CERTIFICATIONS		
Country of intended installation		GB
Fuel		G20 / G31
PIN number		1312CR6100
Category		II2H3P
Appliance classification		C53 - C63 - C83
Class NO_x (*)		6 (< 56 mg/kWh)
DHW rated useful heat output	kW	28
HEATING PERFORMANCE		
HEAT INPUT (**)		
Nominal flow (Q_n max)	kW	20
Minimum flow (Q_{nw} min)	kW	4
HEAT OUTPUT		
Nominal (80-60°C) (P_n max)	kW	19.7
Nominal (50-30°C) (P_n max)	kW	21.4
Minimum G20 (80-60°C) (P_n min)	kW	3.9
Minimum G20 (50-30°C) (P_n min)	kW	4.3
Minimum G31 (80-60°C) (P_n min)	kW	3.9
Minimum G31 (50-30°C) (P_n min)	kW	4.3
EFFICIENCY		
Max useful efficiency (80-60°C)	%	98.5
Min useful efficiency (80-60°C)	%	97.5
Max useful efficiency (50-30°C)	%	107
Min useful efficiency (50-30°C)	%	107.5
Useful efficiency at 30% of load (40-30°C)	%	108.5
Losses after shutdown at 50°C	W	84
DOMESTIC HOT WATER PERFORMANCE		
Nominal heat input (Q_{nw} max)	kW	28
Minimum heat input (Q_{nw} min)	kW	4
Specific D.H.W. flow rate Δt 30°C (EN 13203)	l/min	12.9
Continuous D.H.W. flow rate (Δt 25°C/Δt 35°C)	l/min	16.1 / 11.5
Minimum D.H.W. flow rate	l/min	2
Max (PMW) / Min Pressure	bar	7 / 0.5
	kPa	700 / 50
ENERGY PERFORMANCE		
HEATING		
Heating seasonal energy efficiency class		A
Heating seasonal energy efficiency	%	93
Sound power	db(A)	54
DOMESTIC HOT WATER		
Domestic hot water energy efficiency class		A
Domestic hot water energy efficiency	%	84
Stated domestic hot water profile load		XL
ELECTRICAL SPECIFICATIONS		
Power supply voltage	V	230
Frequency	Hz	50
Absorbed electrical power (Q_n max)	W	70
Absorbed electrical power at (Q_n min)	W	52
Absorbed electrical power in stand-by	W	3.6
Electrical protection degree	IP	X5D
COMBUSTION DATA		
Smoke temperature at Max/Min flow (80-60°C)	°C	82 / 66
Smoke temperature at Max/Min flow (50-30°C)	°C	59 / 45
Smoke flow Max/Min	g/s	11.2 / 1.9
CO_2 at Max/Min flow rate (G20)	%	9.0 / 9.0
CO_2 at Max/Min flow rate (G31)	%	10.0 /10.0
NOx measured (***)	mg/kWh	35

(*) NOx class according to UNI EN 15502-1:2015
(**) Heat input calculated using the lower heat output (Hi)
(***) Calculated with upper calorific value (Hs)

DESCRIPTION		Murelle Revolution 30
NOZZLES - GAS		
Number of nozzles	No.	1
Nozzle diameter (G20-G31)	mm	5.3
Gas consumption at Max/Min flow rate (G20)	m^3/h	2.96 / 0.42
Gas consumption at Max/Min flow rate (G31)	Kg/h	2.17 / 0.31
Gas supply pressure (G20/G31)	mbar	20 / 37
	kPa	2 / 3.7
TEMPERATURE - PRESSURE		
Max operating temperature (T max)	°C	75
Heating adjustment range	°C	20÷75
Domestic hot water adjustment range	°C	10÷60
Max operating pressure (PMS)	bar	2.5
	kPa	250
Water content in boiler	l	4.65

Lower Heat Output (Hi)
G20 Hi. *9.45 kW/m³ (15°C, 1013 mbar) -* ***G31 Hi.*** *12.87 kW/kg (15°C, 1013 mbar)*

4.6.2 Heat pump

DESCRIPTION		Murelle Revolution 30
Model		HYSIMO104M
HEATING PERFORMANCE		
Heating water maximum temperature	°C	50
Heating water maximum pressure (DHWMP)	bar	3
Seasonal efficiency	%	155
Energy efficiency class of central heating		A++
Nominal power (Q_n max)	kW	4,0
Refrigerant		R-410A
Refrigerant load	kg	1,15
ELECTRICAL SPECIFICATIONS		
Power supply voltage	V	230
Frequency	Hz	50
Nominal electrical power	W	1334
Maximum electrical power		1650
Nominal absorption	A	6,0
Maximum absorption		6,8
Protection rating against humidity and water penetration	IP	X5D
"CONTO ENERGIA TERMICO 2.0" RENEWABLE THERMAL ENERGY INCENTIVE		
COP		4,45 (*)

(*) Value obtained with:
- *(*) External temperature = + 7°C*
- Heat pump air input/output temperature = 30/35°C.

4.7 Main water circuit

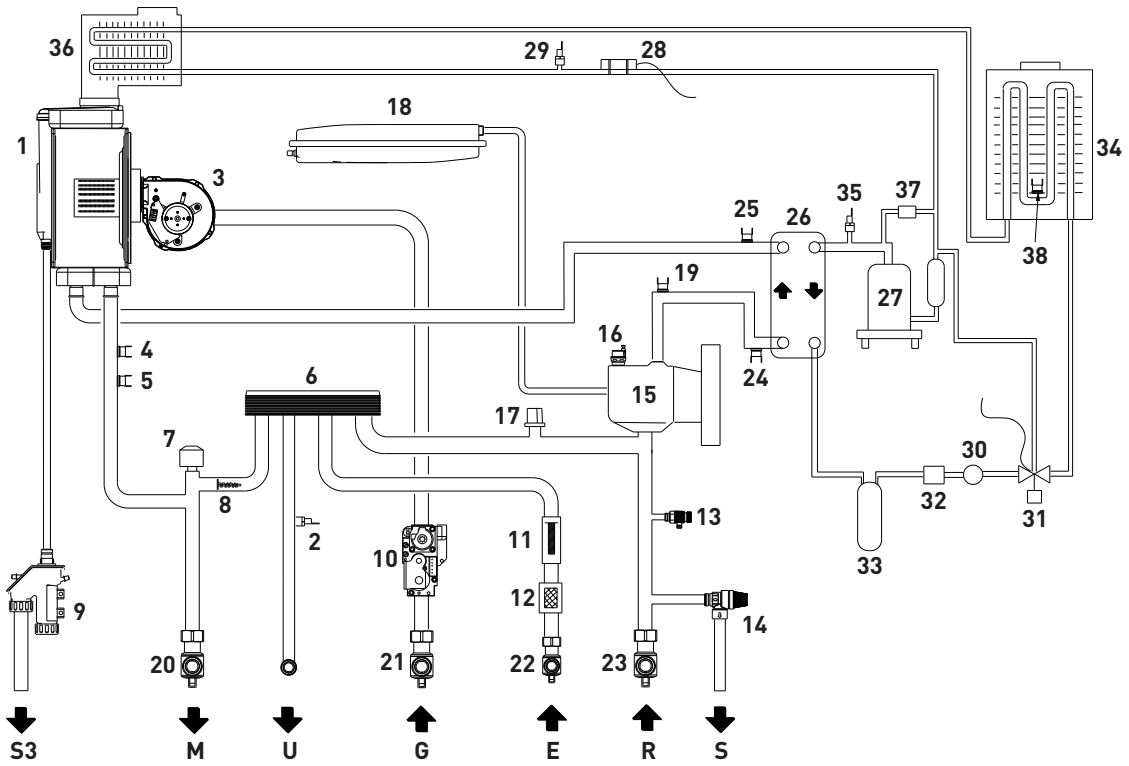


Fig. 35

KEY:

M System flow
R System return
U Domestic hot water outlet
E Domesti hot water inlet
S Safety valve outlet
G Gas supply
S3 Condensate outlet

1 *Primary heat exchanger*
2 *Domestic hot water sensor (SS)*
3 *Boiler fan*
4 *Thermal safety thermostat (TS)*
5 *Heating delivery probe*
6 *Domestic hot water heat exchanger*
7 *Diverter valve*
8 *Automatic by-pass*
9 *Condensate siphon outlet*
10 *Gas valve*
11 *Domestic hot water flow meter*
12 *Domestic hot water filter*
13 *Gas boiler outlet*
14 *System relief valve*
15 *Pump*
16 *Automatic bleed valve*
17 *Pressure transducer*
18 *System expansion vessel*
19 *HP water inlet probe*
20 *System flow cock*
21 *Gas cock*
22 *Domestic hot water inlet cock*
23 *System return cock*
24 *Return temperature probe*
25 *HP water outlet temperature probe*
26 *Plate heat exchanger*
27 *HP ON/OFF compressor*
28 *Expansion valve thermal bulb*
29 *HP low pressure switch*
30 *Liquid level indicator*
31 *Thermostatic expansion valve*
32 *Filter*
33 *Liquid receptacle*
34 *Air evaporator*
35 *HP high pressure switch*
36 *Smoke evaporator*
37 *Smoke HP by-pass solenoid valve*
38 *HP battery probe*

4.8 Sensors

The sensors installed have the following characteristics:
- Dual sensor (thermal safety/output) NTC R25°C; 10kΩ ß25°-85°C: 3435
- domestic hot water sensor NTC R25°C; 10kΩ ß25°-85°C: 3435
- External temperature sensor NTC R25°C; 10kΩ ß25°-85°C: 3435

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										

Correspondence of Temperature Detected/Resistance
Examples of reading:
TR=75°C → R=1925Ω
TR=80°C → R=1669Ω.

4.9 Expansion vessel

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

Description	U/M	Murelle Revolution 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.

4.10 Circulation pump

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

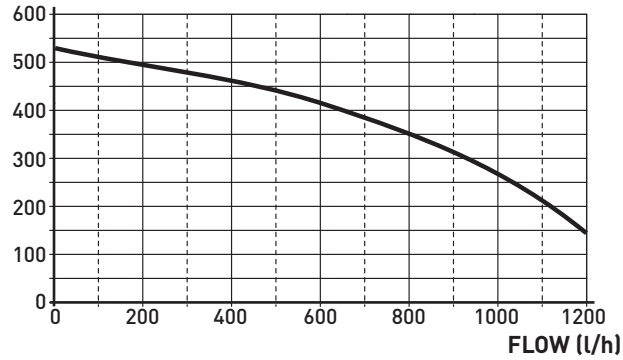


Fig. 36

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 150squre metres should be zoned.

4.10.1 Boiler control panel (gas side)

The boiler control panel can be used locally ONLY by the technical assistance service or by an authorised maintenance technician.

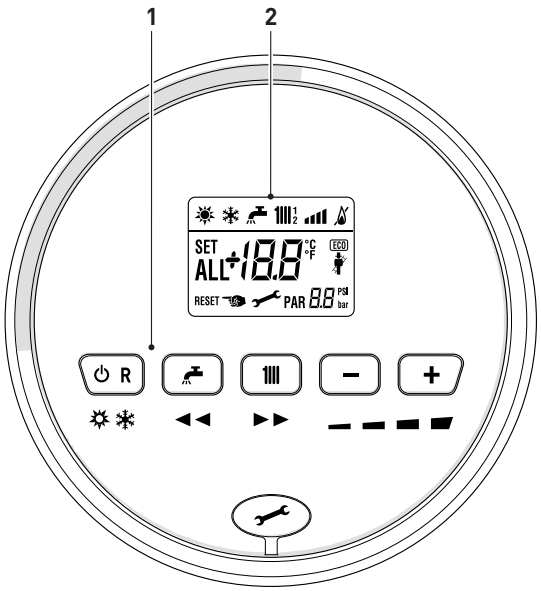


Fig. 37

1 FUNCTIONAL BUTTONS

R Press for more than one second and release to step through the operating modes (Stand-by – Summer – Winter). Also use this key to reset a resettable lockout.

During normal operation, pressing the button displays the domestic hot water set point which can be between 10 and 60°C. In "parameter setting", the engineer can scroll through the parameter index (decreasing) by pressing this button.

During normal operation, pressing the button displays the heating set point which can be between 20 and 80°C. In "parameter setting", the engineer can scroll through the parameter index (increasing) by pressing this button.

– During normal operation, pressing this button allows the user to reduce the heating or DHW set point on the basis of the selection made previously. If there is a Remote Control (Open Therm), after having selected the heating button, the user can modify the incline of the climatic curve (decreasing it) by pressing the button (**-**). In "parameter setting/display", the engineer can modify the parameter setting or value (decreasing) by pressing this button.

+ During normal operation, pressing this button allows the user to increase the heating or DHW set point on the basis of the selection made previously. If there is a Remote Control (Open Therm), after having selected the heating button, the user can modify the incline of the climatic curve (increasing it) by pressing the button (**+**). In "parameter setting/display", the engineer can modify the parameter setting or value (increasing) by pressing this button.

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.*

2 DISPLAY

"SUMMER". This symbol appears when the boiler is operating in "Summer" mode or if only the domestic hot water mode is enabled via the remote control. 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 or if both the domestic hot water and heating modes are enabled via the remote control. With the remote control, if no operating modes have been enabled both symbols and will be off.

RESET **"RESET REQUIRED"**. The message indicates that after having corrected the problem, normal boiler operation can be restored by pressing the button **R**.

"DOMESTIC HOT WATER". This symbol is present during a DHW request or during the "chimney sweep function" It flashes during the selection of the domestic hot water set point.

"HEATING". This symbol lights up during heating operation or during the "chimney sweep function It flashes during the selection of the heating set point.

"LOCKOUT" DUE TO NO FLAME.

"FLAME LIT".

"POWER LEVEL". This indicates the power level at which the boiler is operating.

PAR **"PARAMETER"**. This indicates when the engineer is in parameter setting/display, or "info" or "counter", or in "activated alarms" (history).

ALL **"ALARM"**. This indicates that a fault has occurred. The number specifies the cause which generated the alarm.

"CHIMNEY SWEEP". This indicates that the "chimney sweep function" has been activated.

1.1 bar **"HEATING SYSTEM PRESSURE"**. Display of heating system pressure.

ECO **"ECO", ALTERNATIVE ENERGY SOURCES**. Where active, it indicates that there is a solar system available.

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

4.10.2 Heat pump control panel (local)

The heat pump control panel can be used locally ONLY by the technical assistance service or by an authorised maintenance technician.

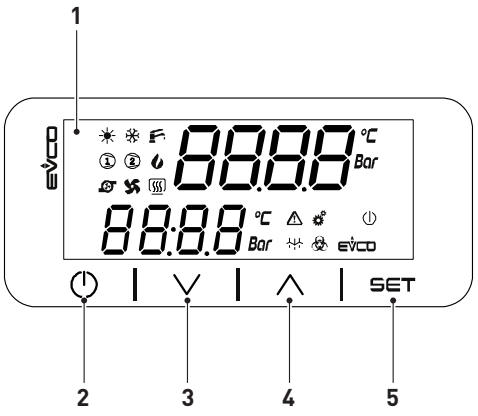


Fig. 38

1 Display
2 ON/OFF button
3 Decrease button
4 Increase button
5 Settings button

4.11 Main control panel (remote)

The main control panel (MCP) allows all of the necessary adjustments to be made to **Murelle Revolution 30** and to the connected systems.
It also serves as a main room thermostat and can therefore be used by all operators, users, authorised maintenance technicians and the technical service for the operations for which each of these figures is authorised, as described in detail in the relevant sections.
It communicates with the boiler control panel with an unpolarised bus line and OpenTherm protocol, and with the heat pump control panel with a RS485 polarised ModBus two-wire line.
It is equipped with a volt free input for remote control, where relevant (GSM-Dialler/WiFi).

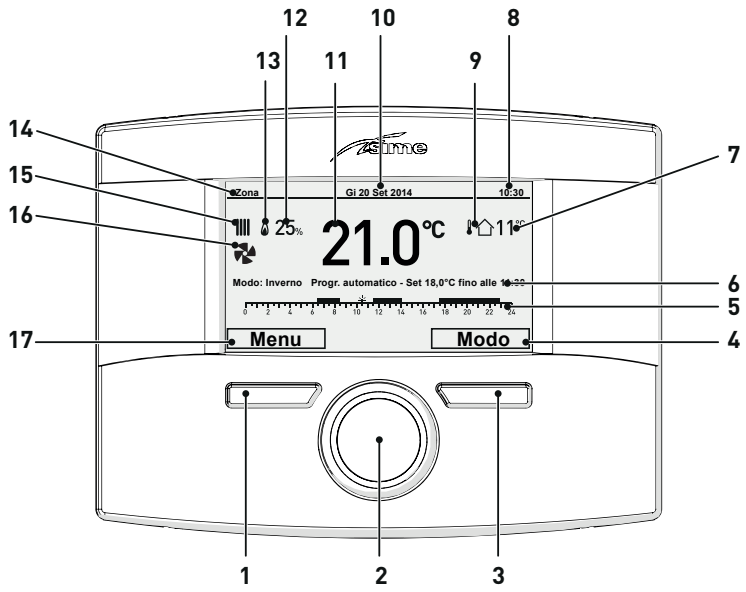


Fig. 39

1 Button (A)
2 Multifunction encoder
3 Button (B)
4 Action carried out by pressing button (B)
5 Programmed time band
6 Mode selection
7 Measured outdoor temperature
8 Time
9 Presence of outdoor probe (OP)
10 Date
11 Measured ambient temperature
12 Modulation percentage
13 Flame
14 Controlled area
15 Request for heating (rad) or hot water (tap)
16 Heat pump operating
17 Action carried out by pressing button (A)

4.11.1 Using the buttons

With the appliance powered, from the "Main screen".

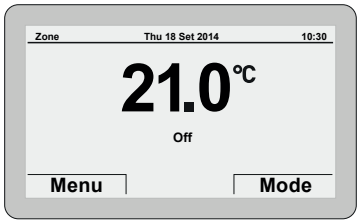


Fig. 40

BUTTON (A)
(used mainly by professionally qualified technicians and NOT by the end user)
This allows technicians to view the **"menu"** select screen (e.g. Menu **"GENERAL SETTINGS"**) and then to operate according to what is written above the button on the display (e.g. **Esc**) to exit and return to the main screen.

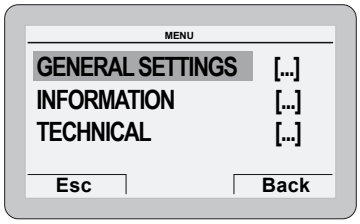


Fig. 41

MULTIFUNCTION ENCODER

If turned, allows the user to scroll through and select the **"Menu/rows"** or the **"Function mode"**, or to change the values in the selected field.
In "Summer" mode, the DHW temperature can be adjusted.
In "Winter" mode, the DHW can be adjusted in relation to the heating and the "Holiday function".

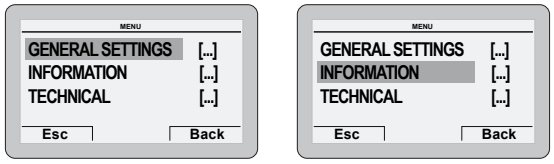


Fig. 42

If pressed, **click** confirms the selection and takes the user to the submenus (e.g. **"LANGUAGE"** or **"Hot water"**) or confirms the modified value or entry.

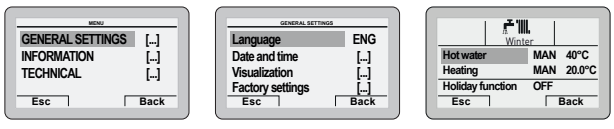


Fig. 43

BUTTON (B)
This allows users to view the **"Function mode"** screen (e.g. "Winter") and then to operate according to what is written above the button on the display (e.g. **Esc**) to exit and return to the main screen).

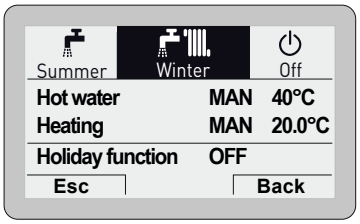
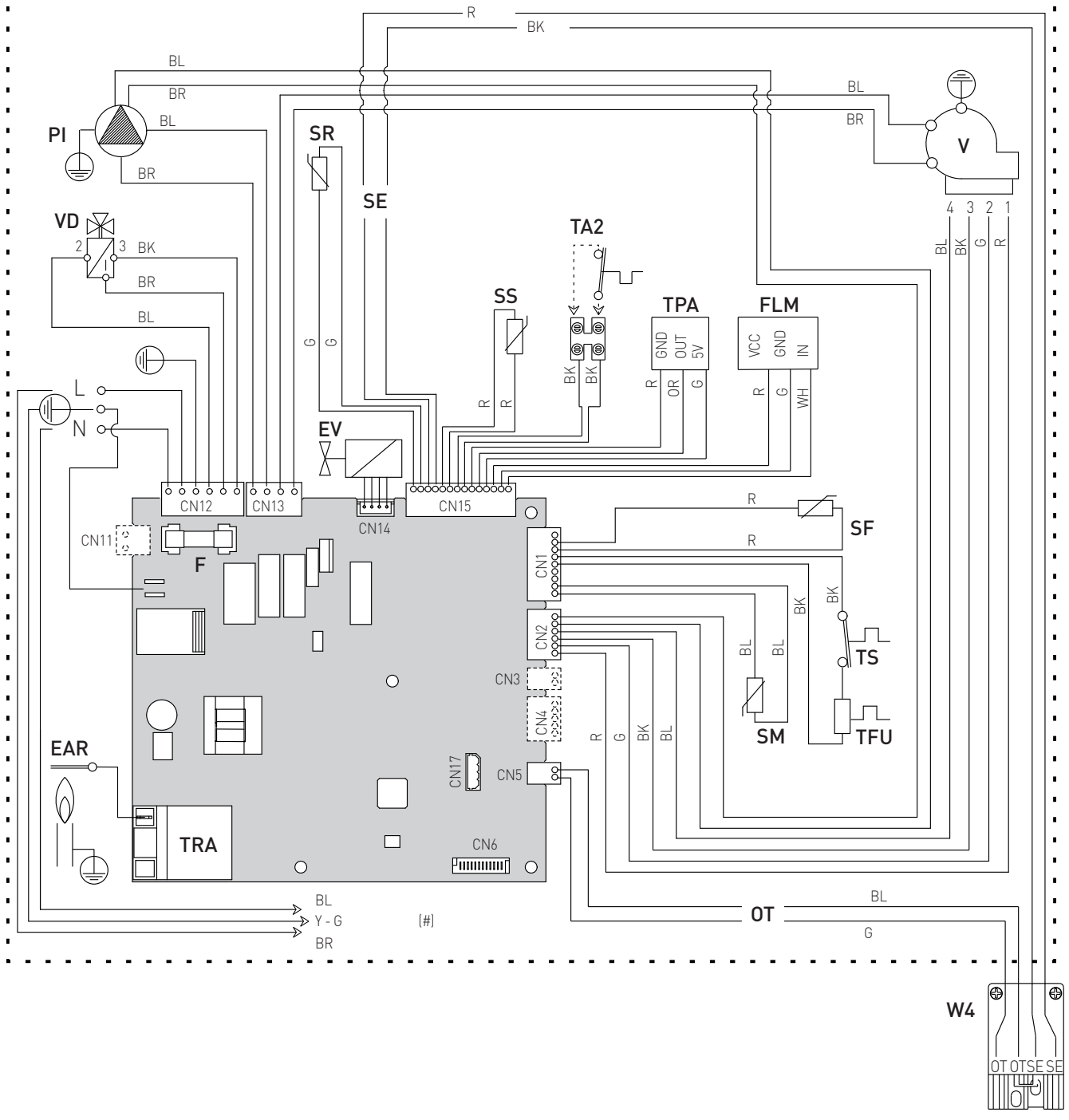


Fig. 44

CAUTION
For more information, please see "**Commissioning**".

4.12 Wiring diagrams

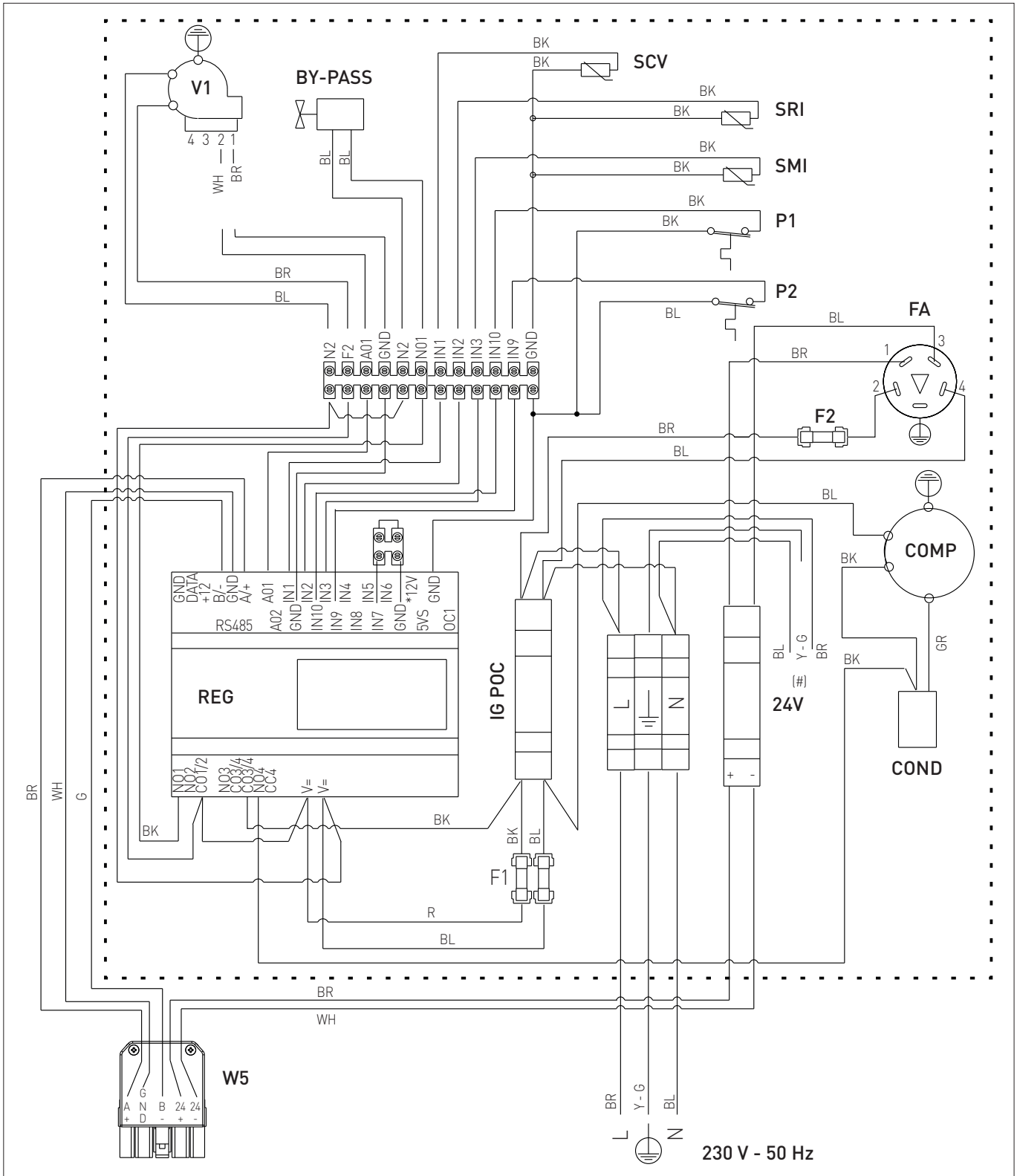
4.12.1 Boiler



L	*Live*	***F***	*Fuse (3.15AT) (3.15AT - 250V)*	***BL***	*Blue*
N	*Neutral*	***SF***	*Exhaust sensor (SF)*	***BR***	*Brown*
VD	*Diverter valve*	***TS***	*Safety thermostat*	***BK***	*Black*
PI	*Pump*	***SM***	*Delivery sensor (SM)*	***G***	*Green*
SR	*Return Sensor (SR)*	***TFU***	*Thermal fuse*	***OR***	*Orange*
SE	*External sensor*	***EAR***	*Ignition / Detection electrode*	***R***	*Red*
SS	*Domestic hot water sensor (SS)*	***TRA***	*Ignition transformer*	***Y***	*Yellow*
TA2	*Room thermostat for the zone*	***OT***	*OpenTherm communication*	***YG***	*Yellow/Green*
TPA	*Pressure transducer*	***W4***	*Boiler connector (gas side) – Main control panel*	***WH***	*White*
FLM	*Flow meter*				
V	*Fan*				

Fig. 45

4.12.2 Heat pump

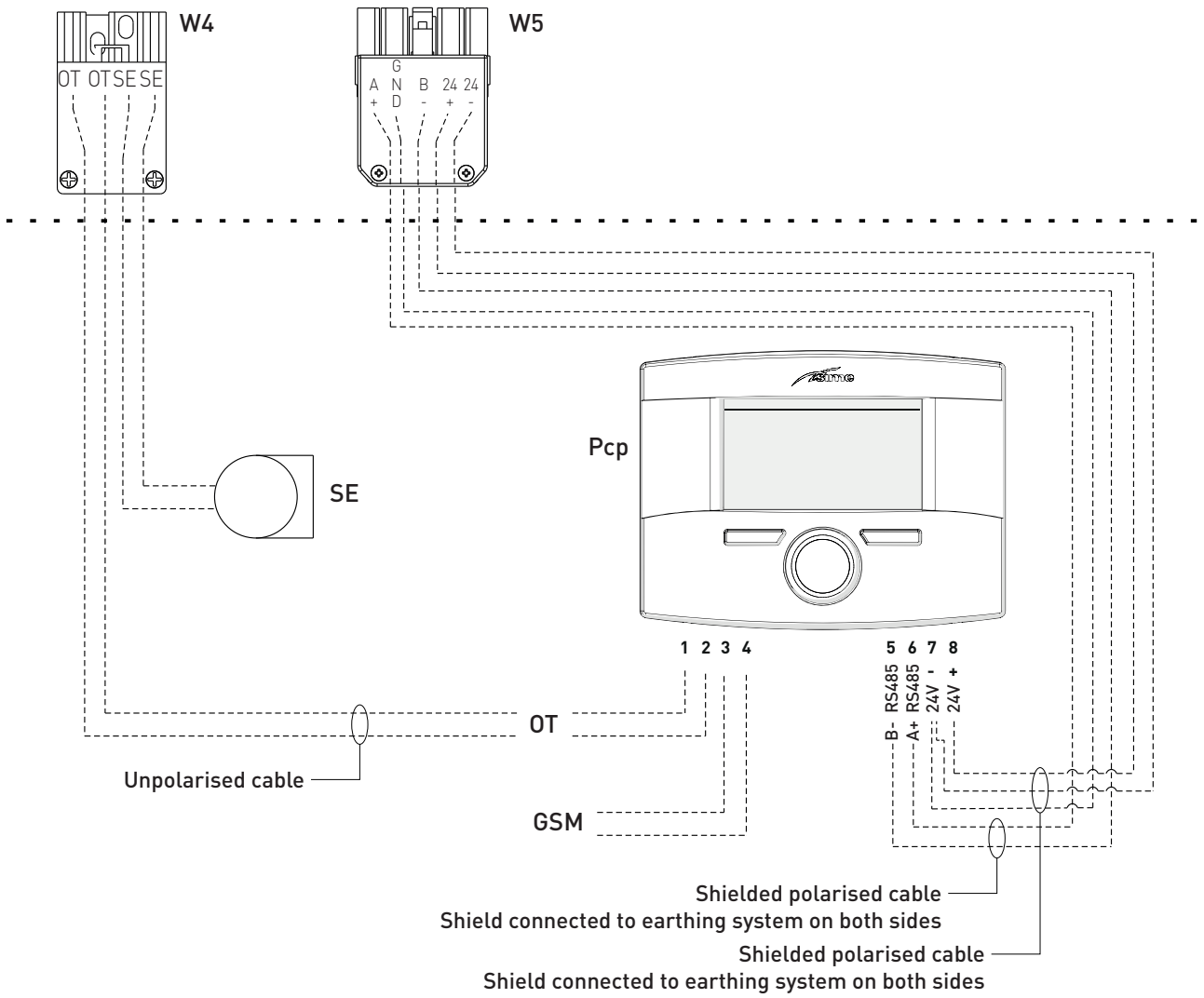


V1	*Heat pump fan*	***24V***	*Main control panel (remote) 24V power supply*	***BL***	*Blue*
BY-PASS	*By-pass solenoid valve*	***F1***	*Fuse (2AT)*	***BR***	*Brown*
SCV	*Fan check probe*	***F2***	*Fuse (500mAT)*	***BK***	*Black*
SRI	*System return probe*	***FA***	*Noise filter*	***G***	*Green*
SMI	*System delivery probe*	***IG PDC***	*Heat pump cut-off*	***GR***	*Grey*
P1	*High pressure switch*	***REG***	*Heat pump regulator*	***R***	*Red*
P2	*Low pressure switch*	***W5***	*HP-main control panel connector*	***Y***	*Yellow*
COMP	*Compressor*			***YG***	*Yellow/Green*
COND	*Capacitor*			***WH***	*White*

Fig. 46

4.12.3 Interconnecting the appliance, outdoor probe and main control panel (remote)

The connections below should be made by the installer and must be prepared before installing the main control panel (remote), See "**Mounting the main control panel (remote)**".



SE	*External sensor*
OT	*OpenTherm communication*
GSM	*Phone dialler (optional)*
Pcp	*Main control panel*
W4	*Boiler connector (gas side) – Main control panel*
W5	*HP-main control panel connector*
W5	*HP-main control panel connector*

Fig. 47

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?

TABLE OF CONTENTS

5 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.

5.1 Receiving the product

Murelle Revolution 30 is delivered in a single unit protected by cardboard packaging.

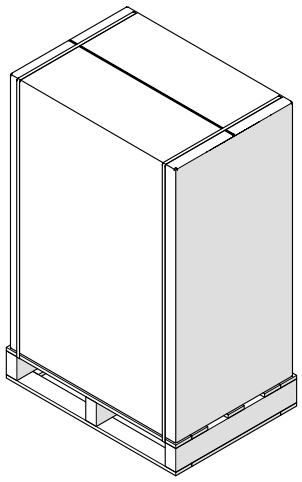


Fig. 48

The plastic bag found inside the packaging contains the following:
- Installation, use and maintenance manual
- Certificate of warranty
- Hydrostatic test certificate
- Hanging Bracket
- External sensor
- Main control panel (remote)
- Connection pack
- Boiler and heat pump energy labels
- Anti-vibration and spacer panels
- Paper template for boiler installation.

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

5.2 Dimensions and weight

Description	Murelle Revolution 30
W (mm)	600
D (mm)	391
H (mm)	900
H1 (mm)	82,5
H2 (mm)	71
Weight (kg)	103

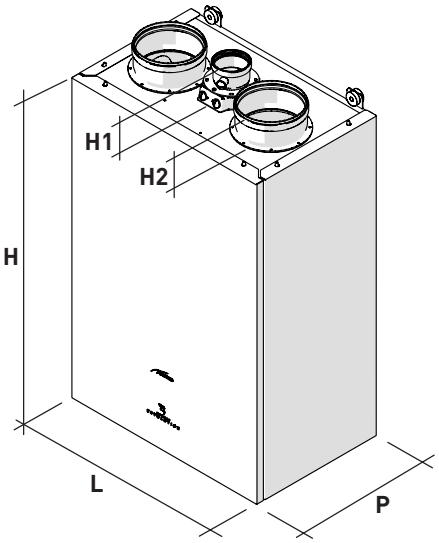


Fig. 49

5.3 Handling

During transportation, the boiler must be kept in a vertical position, and knocks against walls or hard surfaces should be avoided.

DO NOT
Position the appliance horizontally or on its side.

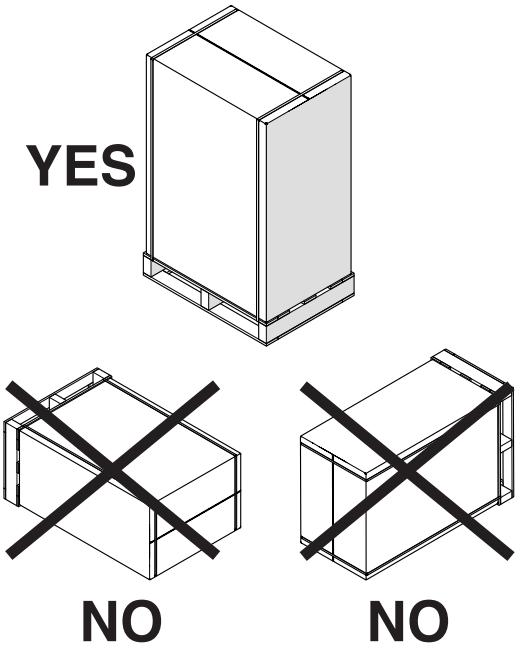


Fig. 50

Once the packaging has been removed, the appliance can be handled manually, lifting it by gripping the points indicated in the figure.

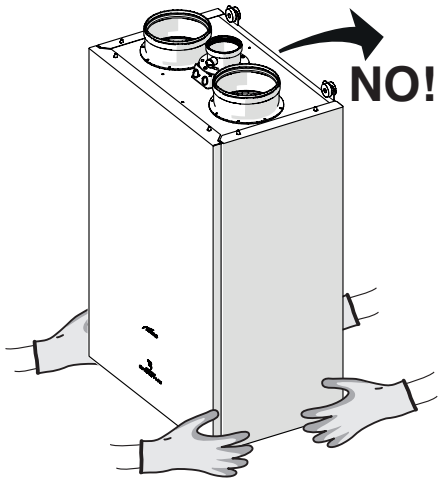


Fig. 51

DO NOT
To grip the appliance casing. Hold the "solid" parts of the appliance such as the base and structural frame.

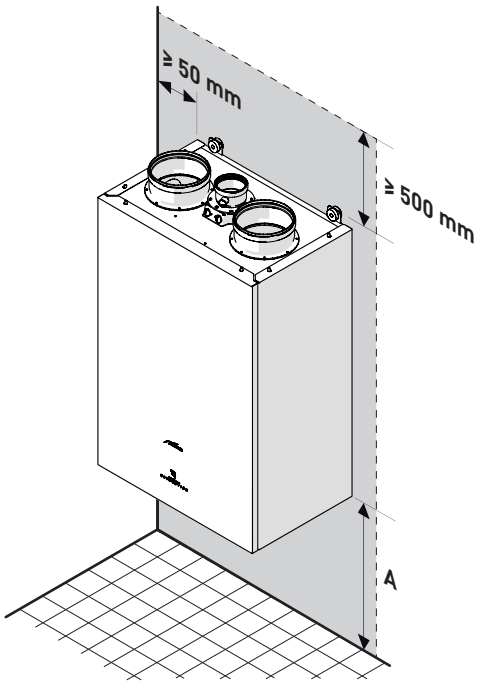
WARNING
When moving the appliance and removing the packaging, **the user must**:

- **respect the maximum weight restrictions for lifting per person**
- use suitable tools and safety devices.

5.4 Ventilation requirements

The room where the appliance is to be installed must comply with the technical regulations and legislation in force. No aeration vents are required because the approved installation is **ONLY "TYPE C"**.
The minimum temperature of the installation room must NOT be lower than **-5 °C**.

APPROXIMATE MINIMUM DISTANCES



A *The necessary height for plumbing and gas connections is decided during installation.*

Fig. 52

5.5 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.

CAUTION
If the domestic water supply is metered or should a water meter be added at a later time, a small expansion vessel should be included in the domestic water pipework.

5.6 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 Manufactures instructions.
- The addition of sealing agents to system water is not recommended because deposits can be left in heat exchanger causing circulation issues.

5.7 Boiler installation

Before mounting the **Murelle Revolution 30** boiler on the wall, check that:

- the wall is solid **enough to support the weight**
- the required minimum clearance zones are respected
- it is an outside wall or one which allows the user to respect the maximum length of the air inlet and outlet pipes (Ø = 160/200 mm) (6 metres in total)
- the smoke outlet allows the user to respect the maximum length of the pipe (maximum permitted load loss)
- the water and gas supplies are easily accessible.

*NOTE: **Sime Ltd** has created the "Wall-mounting bracket" KIT code 8081224 (not supplied with the product) to considerably reduce vibrations and noise in installations where these characteristics are important (e.g. internal rooms). If the kit is used, for the drilling operations refer to the instruction sheet accompanying the kit.*

CAUTION
Attach the four circular spacers (1) supplied in front of and behind the fittings (2).

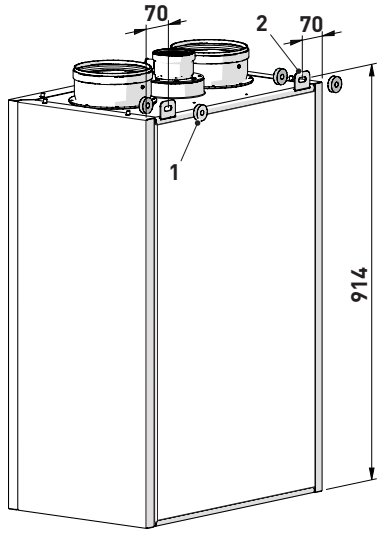
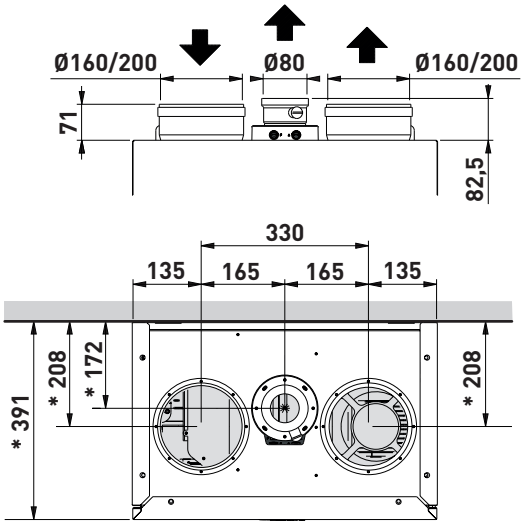


Fig. 53

*NOTE: if the **"Wall-mounting bracket" kit code 8081224** is used, refer to the instruction sheet accompanying the kit.*
Then:

- mark the two points where the holes are to be made to insert suitable expansion plugs that support the weight of the boiler
- mark the points where the holes (Ø 164 mm) are to be made to pass the air inlet and outlet and smoke outlet pipes through



** if the **"Wall-mounting bracket" kit code 8081224** is used, the boiler will be mounted roughly 20 mm away from the wall.*

Fig. 54

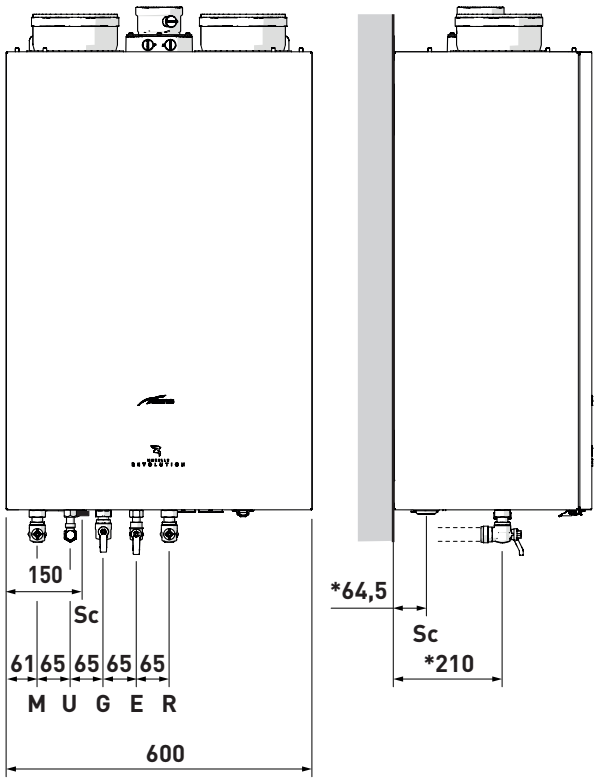
- mount the boiler safely on the wall.

CAUTION

- The boiler should be located observing the required clearances, and provide safe, adequate service access.
- The manufacturer is not responsible for any damage to people, animals or objects following incorrect mounting of the appliance.

5.8 Plumbing connections

The plumbing connections have the following characteristics and dimensions.



** if the **"Wall-mounting bracket" kit code 8081224** is used, the boiler will be mounted roughly 20 mm away from the wall.*

Fig. 55

Description	Murelle Revolution 30
M - System flow	Ø 22 mm
R - System return	Ø 22 mm
U - Domestic hot water output	Ø 15 mm
E - Domestic hot water inlet	Ø 15 mm
G - Gas cock connection	Ø 15 mm
Sc - Condensate outlet	Ø 21.5 mm

WARNING
You must fit a filter on the system return pipe.

5.8.1 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
Curve kit	8075418
Cocks kit	8091806
Wall mount replacement kit for other makers	8093900
Polyphosphate dosing kit	8101700
Dosing recharge kit	8101710

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

5.9 Condensate outlet/collection

In order to collect the condensate, it is recommended that:
- the appliance condensate outlets and the smoke outlet are ducted
- a neutralising device is prearranged
- the outlet incline is **>3%**.

CAUTION
- The condensate outlet duct must be airtight, suitably sized to that of the siphon and must not be restricted at any point.
- The condensate outlet must be constructed in full compliance of the National or Local regulations in force.
- Before commissioning the appliance, fill the siphon with water.

5.10 Gas supply

Murelle Revolution 30 boilers leave the factory prearranged for gas G20 and can also work with G31 without the need for any type of mechanical conversion. Simply select parameter**"03"** (see "**Parameter setting and display**" page 60) 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 50).
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 76) (Benchmark).
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 m3/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.

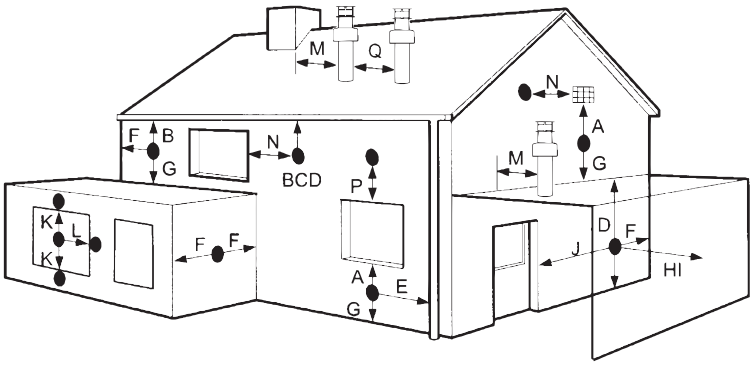
G31 - 36 mbar	X

5.11 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.

5.11.1 Flue Terminal Positions



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

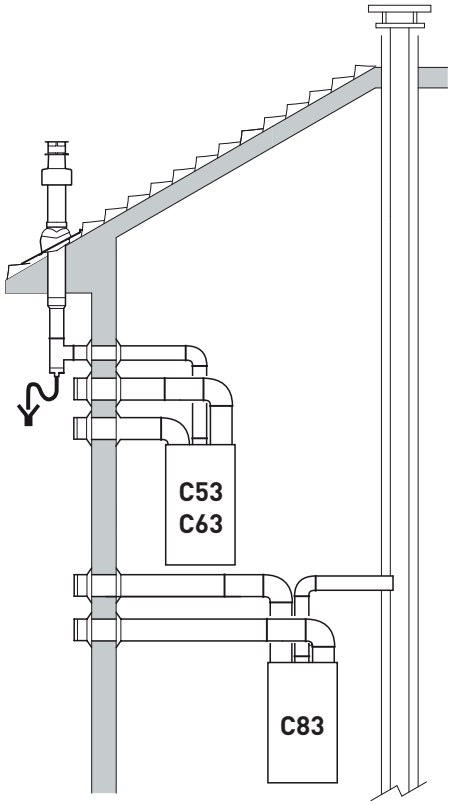
Fig. 56

5.11.2 Smoke outlet and air inlet (combustion/heat pump)

WARNINGS

Murelle Revolution 30 boilers must be installed and used with smoke outlet ducts and combustion/heat pump air inlet ducts fitted as specified below. **If installed outside in a partially protected place, the basic configuration with a 90° elbow and inlet/outlet terminal is still required as a minimum**.

Permitted outlets



C53
Separate wall or roof inlet and outlet in different pressure areas.

C83
Outlet in single or shared flue or with inlet on wall.

Fig. 57

WARNINGS

When the smoke outlet is wall mounted, the smoke outlet duct must be positioned at least 500 mm above the air duct.

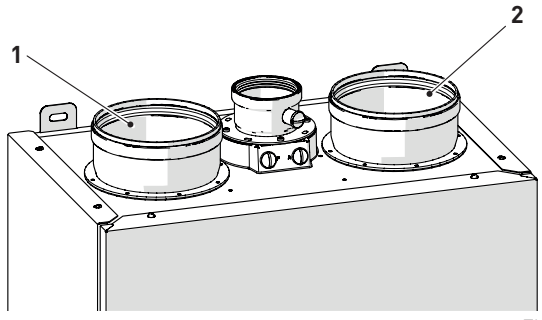


Fig. 58

WARNINGS

- The smoke flue and the connection to the flue pipe must be in compliance with the national and local standards and legislation in force in the country where the appliance will be used.
- The use of rigid ducts which are resistant to temperature, condensate, mechanical stress and are air-tight is compulsory.
- Outlet ducts which are not isolated are a risk of danger.

5.11.3 Coaxial ducts (Ø 160/200 mm) for air inlet/ outlet (combustion/heat pump)

Coaxial ducts (Ø 160/200 mm) are used for the combustion air inlet and also for the heat pump inlet/outlet. A space is required between the two ducts to prevent condensation from forming.

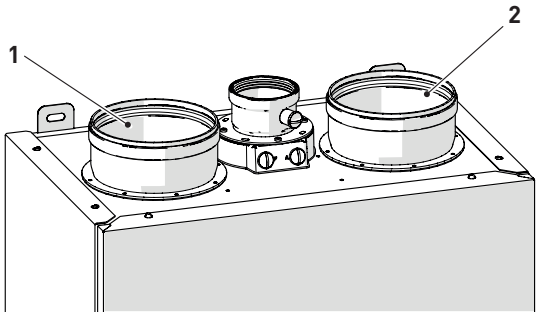


Fig. 59

KEY:
1 *Combustion/heat pump air inlet*
2 *Heat pump air outlet*

Air coaxial accessories

Description	Code
	Ø 160/200 mm
Extension MF PP Ø 160/200 L=1000	8077360
Extension MF PP Ø 160/200 L=500	8077361
Elbow Ø 160/200 90° PP MUR. REV	8089930
Elbow Ø 160/200 45° PP MUR. REV	8089931
Inlet/outlet terminal MUR. REVOL.	8089550

Load loss - Equivalent lengths

Model	Leq (linear metres)
	Ø 160/200 mm
90° curve	1,5
45° curve	1

Maximum lengths of straight tracks

Model	Duct length Ø 160/200			
	L Horizontal (m) (*)		H Vertical (m) (*)	
	Inlet	Outlet	Inlet	Outlet
Murelle Revolution 30	3	3	4	4

(*) The max. length of the straight track already includes a 90° elbow. Any shortening of one of the two tracks DOES NOT PERMIT equal lengthening of the other.

5.11.4 Holes for air inlet/outlet

Two holes are required for the appliance in the wall to channel the air inlet (1) and outlet (2) pipes outside.

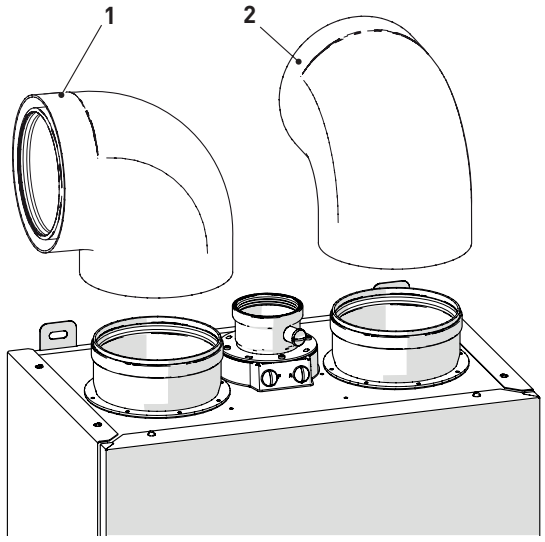
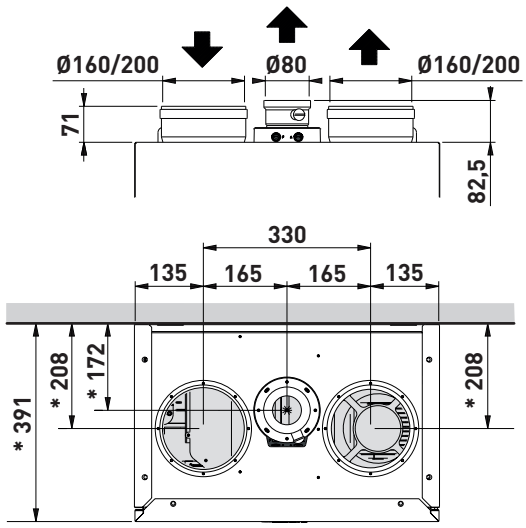


Fig. 60

– Carefully mark the centre of the holes to be made



** if the **"Wall-mounting bracket" kit code 8081224** is used, the boiler will be mounted roughly 20 mm away from the wall.*

Fig. 61

Given the substantial size of the holes to be made in the wall, we recommended that suitable equipment (a core drill) be used, together with a suction system to limit the amount of dust and rubble.

CAUTION

The holes for channelling the inlet and outlet pipes outside must be slightly inclined downwards, to prevent any water coming in through the ducts.

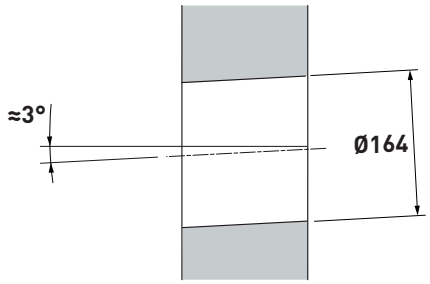


Fig. 62

WARNING

When making the holes for channelling the inlet and outlet pipes outside, the majority of the material may be expelled outside; it is therefore important to check that it does not hit people or objects below as it falls. To avoid damaging the external plastering as far as possible, take extra care in the final stages of making the hole.

CAUTION

The manufacturer is not responsible for any damage to people, animals or objects following incorrect installation of the air inlet and outlet system.

5.11.5 Fitting the air ducts

– Cut the pipe (1) so that M1 = space between the wall and the elbow (A) + approximately 45 mm (insertion length of the pipe (1) in the elbow (3))
– cut the pipe (2) so that M2 = 160 + wall thickness (B) + space between the wall and the elbow (A) + approximately 60 mm (insertion length of the pipe (2) in the elbow (3))
– insert the rings (4) inside the pipe (1), then the pipe (1) in the elbow (3) and the assembled unit in the support (5)
– install the pipe (2), from the outside, until it is fully inserted in the elbow (3).

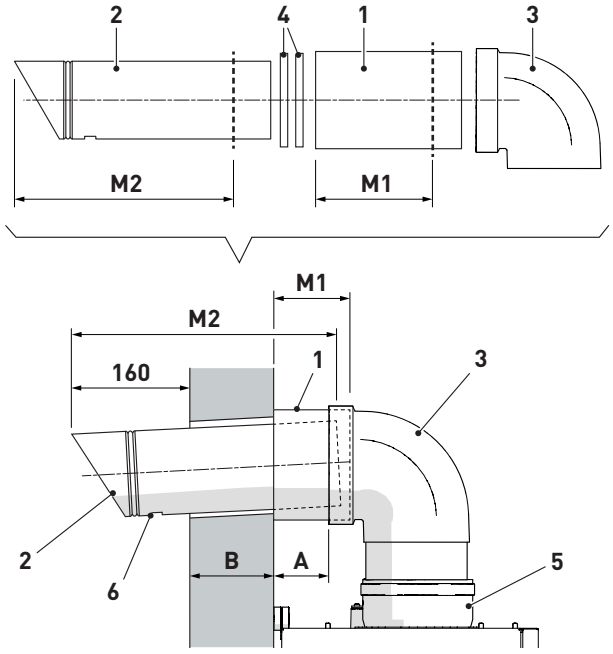


Fig. 63

***NB.**: Ensure that the opening (6) is completely free so that any rain water can be drained.*

5.11.6 Smoke outlet (Ø 80 mm)

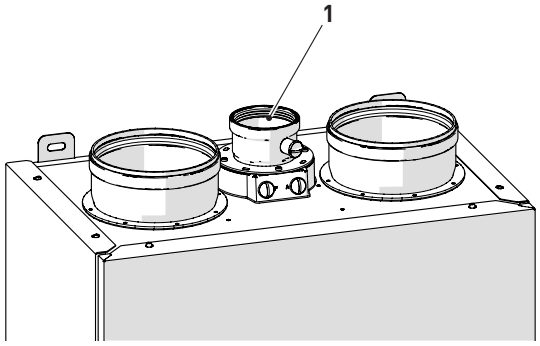


Fig. 64

KEY:
1 *Smoke outlet fitting*

To assemble the smoke outlet, the accessories chosen from the table must be connected up.

Accessories

Description	Code
	Diameter Ø 80 (mm)
90° curve M-F (6 pieces)	8077450
Extension W. 1000 mm (6 pieces)	8077351
Extension W. 500 mm (6 pieces)	8077350
Wall outlet terminal	8089501
Internal and external ring nut kit	8091500
45° curve M-F (6 pieces)	8077451
Roof outlet terminal	8091204
Condensate recovery	8093300

CAUTION
– The **maximum length of the smoke outlet duct** is determined by the load loss of the single accessories used and **should not be more than 15 mm H2O**.

Load loss accessory Ø 80 mm

Description	Code	Load loss (mm H_2O)
		Murelle Revolution 30
		Outlet
90° curve MF	8077450	0,30
45° curve MF	8077451	0,20
Horizontal extension W. 1000 mm	8077351	0,20
Vertical extension W. 1000 mm	8077351	0,20
Wall terminal	8089501	0,35
Roof outlet terminal	8091204	0,15

Example calculation of the load loss of a smoke outlet for a **Murelle Revolution 30** boiler.
(installation permitted since the total of the load loss of the accessories used is less than 15 mm H_2O).

Accessories Ø 80 mm	Code	Quantity	Load loss (mm H_2O)	
			Outlet	Total
Extension W. 1000 mm (horizontal)	8077351	7	7 x 0,20	1,40
90° curve	8077450	2	2 x 0,30	0,60
Wall terminal	8089501	2	0,35	0,35
TOTAL				**2,35**

5.12 Mounting the main control panel (remote)

CAUTION
Before mounting the main control panel on the wall, the cables below must be prepared; these cables will then be connected to the terminals inside the control panel itself:
– Mod-Bus communication cable
– 24 V power cable 2 x 0.75 mm2
– OpenTherm communication cable
– communication cable required to use a phone dialler for remote management, where relevant.

– Remove the main control panel from the packaging
– use a screwdriver to push the fastening tab (1) to release the base (2) from the user interface (3), making sure that the screwdriver does not penetrate it

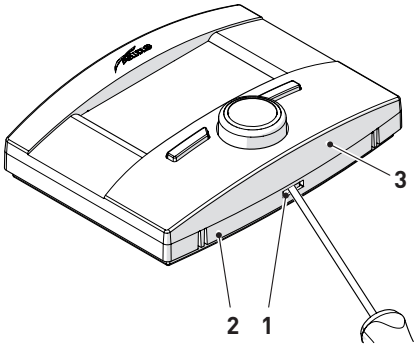


Fig. 65

– separate the two parts

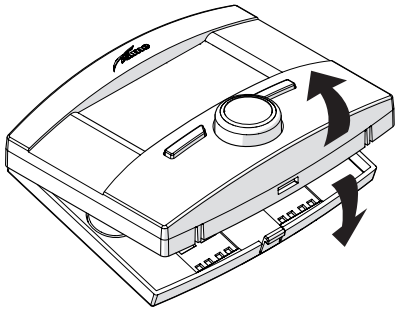


Fig. 66

- connect the OpenTherm (OT) communication cables to the terminal (4)
- connect the communication cables that may be required to use a phone dialler for remote management to the terminal (5)
- connect the ModBus RS485 communication cables to the terminal (6)
- connect the 24 V power cables (2 x 0.75 mm^2) to the terminal (7)

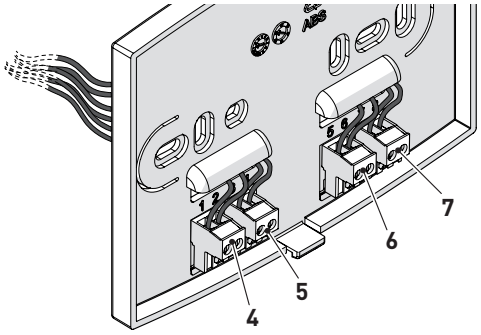


Fig. 67

- secure the base (2) to the wall using the screws (8) and the plugs (9) supplied with the main control panel

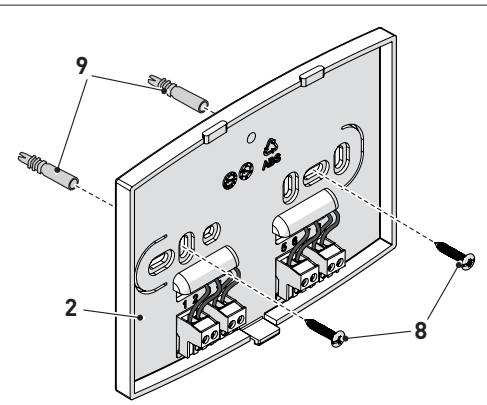


Fig. 68

- refit the user interface (3) on the base (2), hooking the tab (1) on correctly.

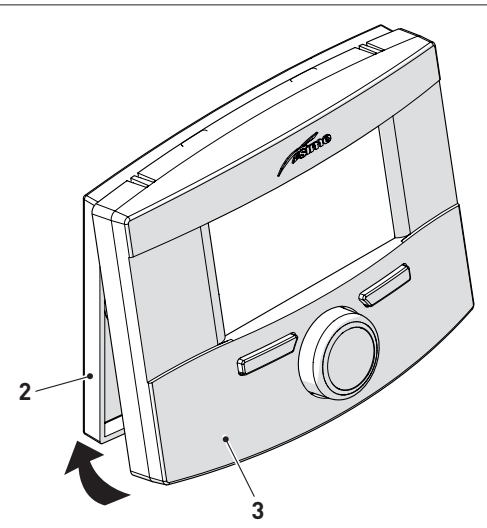


Fig. 69

CAUTION
Make sure that there is no excess cable between the base (2) and the user interface (3).

5.13 Electrical connections and External controls

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.

The installer should make the following electrical connections:
- connecting the wired power cable, supplied with the boiler, to the 230V~50Hz mains
- connecting the outdoor probe, supplied with the appliance, to the specific connector on the boiler
- connecting the specific connector on the boiler to the terminals on the main control panel.

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 rewired 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.

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**.

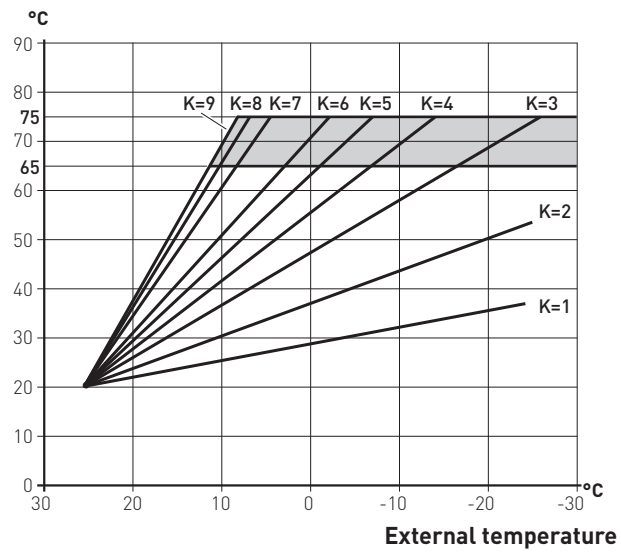
DESCRIPTION	CODE
Power cable (dedicated)	6127260

5.13.1 External temperature sensor

Murelle Revolution 30 requires an outdoor probe. This is supplied and MUST be connected because the boiler uses the outdoor temperature detected to operate.

CAUTION
The boiler CANNOT FUNCTION unless the outdoor probe is installed.

Climatic curve



k=4 *Factory settings*

Fig. 70

Procedure for selecting the climatic curve
To select the preferred climatic curve:
– from the **"Main screen"** on the main control panel (MCP)

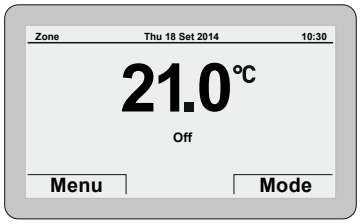


Fig. 71

– press the **Menu** button to view the **"Menu"** selection screen
– turn the encoder to select the **"TECHNICAL"** menu

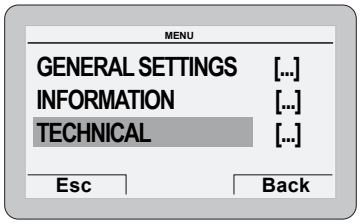


Fig. 72

– press the **click** encoder to access the modifiable area. The following screen is displayed:

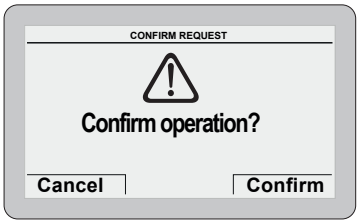


Fig. 73

– press the **Confirm** button to access the submenus

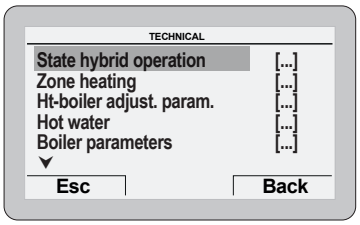


Fig. 74

– turn the encoder to select the **"Zone heating"** submenu

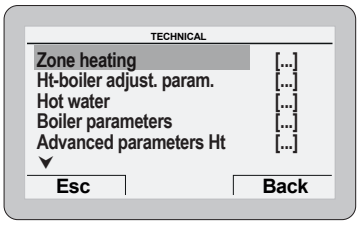


Fig. 75

– press the **click** encoder to access the modifiable parameters area

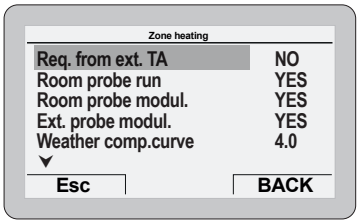


Fig. 76

– turn the encoder to select the **"Climatic curve "** row

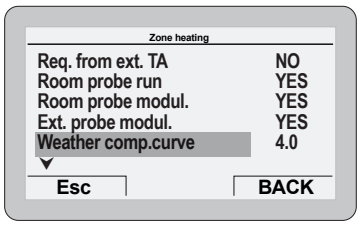


Fig. 77

– press the encoder to confirm the highlighted "Row" and access the modifiable parameters.

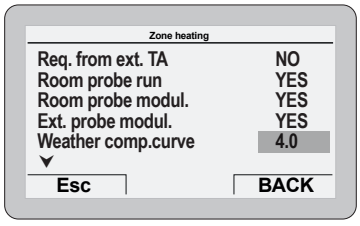


Fig. 78

– turn the encoder to select the **preferred climatic curve (from 1 to 9) according to the system requirements**
– press the encoder to confirm the selection
– press the **Esc** button to go back to the "Main screen".

CAUTION
The submenu**"Hybrid func. status"** is read-only.

5.13.2 Chrono-thermostat or room thermostat for the zone

The chrono-thermostat or room thermostat for the zone must be connected to terminals AT2 on the boiler control panel (gas side).

To set the MULTIZONE system configuration, operate the main control panel as described below.

From the "Main screen":

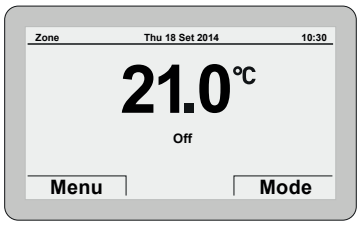


Fig. 79

– press the **Mode** button to access the **"Function mode"** select screen
– turn the encoder to select **"Winter"** mode

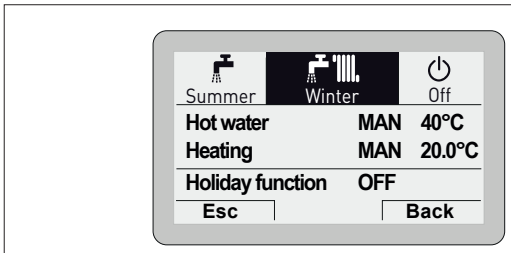


Fig. 80

– press the **click** encoder to confirm and access the **"Rows"**
– turn the encoder to select **"Heating"** (Heating)
– press the **click** encoder to confirm **"Heating"** and access the **"Rows"**

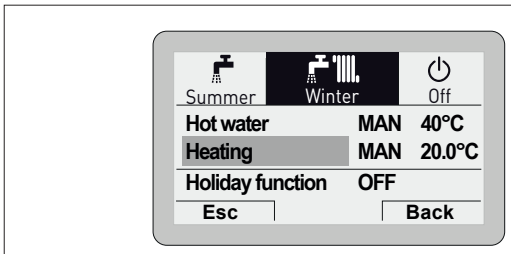


Fig. 81

– turn the encoder to select **"Function mode"**
– press the **click** encoder to confirm the **"Function mode"** and go to the modifiable area

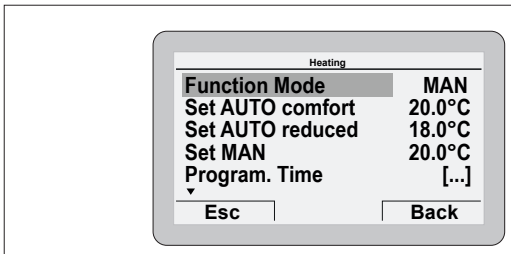


Fig. 82

– turn the encoder to select **"OFF"**
– press the **click** encoder to confirm

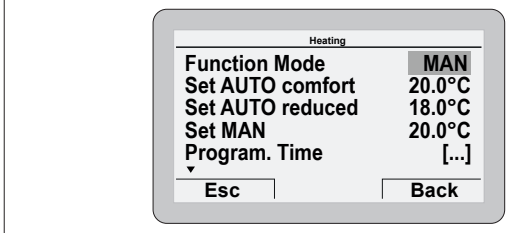


Fig. 83

– press the **Esc** button to complete the modification and return to the "Main screen".

From the "Main screen":

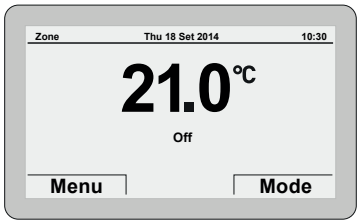


Fig. 84

– press the **Menu** button to view the **"Menu"** selection screen

– turn the encoder to select the **"TECHNICAL"** menu

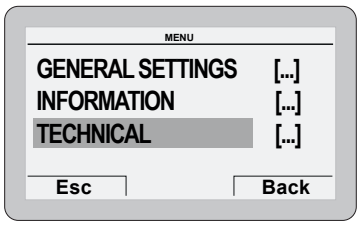


Fig. 85

– press the **click** encoder to access the modifiable area. The following screen is displayed:

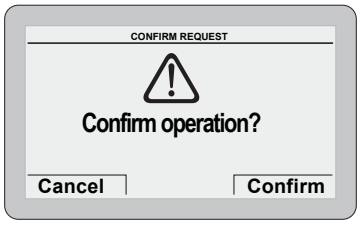


Fig. 86

– press the **Confirm** button to access the submenus

– turn the encoder to select the **"Zone heating"** submenu

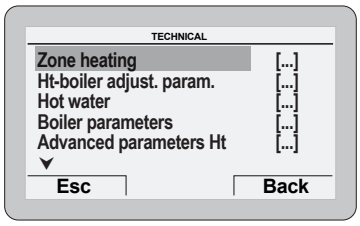


Fig. 87

– press the **click** encoder to access the modifiable parameters area

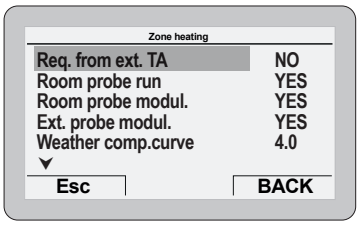


Fig. 88

– press and turn the encoder to change the settings as specified below:

Req. from ext. TA	YES
Req. with room probe	NO
Mod. with room probe	NO
Mod. with ext. probe	YES

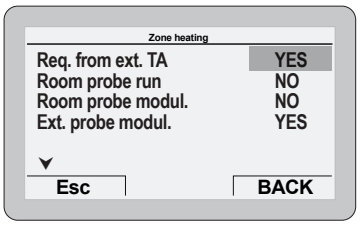


Fig. 89

– press the **Esc** button to complete the modification and return to the "Main screen".

The **main control panel (MCP)** then becomes a simple system operator with the relevant operating logic, and requests for heat for each zone are managed by the individual chrono-thermostats or ambient thermostats.

5.13.3 EXAMPLE of use of the command/control device on some types of heating systems

KEY

M System flow
R System return
Pcp Main control panel (remote)
SE External sensor
TA2 Room thermostat for boiler activation
TZ1÷TZ3 Room thermostat for the zone
VZ1-VZ3 Zone valves
RL1-RL3 Zone relays
P1-P3 Zone pump
SP Hydraulic separator

ONE DIRECT ZONE system.

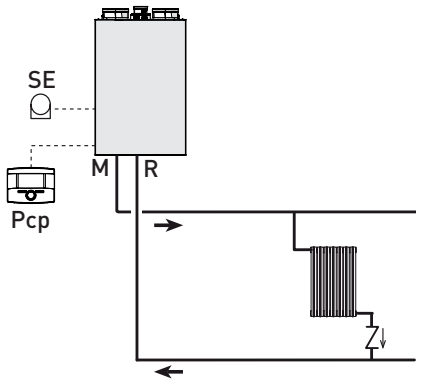


Fig. 90

MULTI ZONE system – with pump and room thermostat.

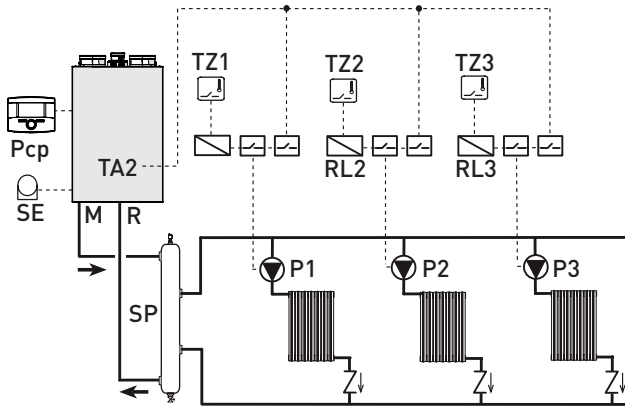


Fig. 91

MULTI ZONE system – with zone valve and room thermostats.

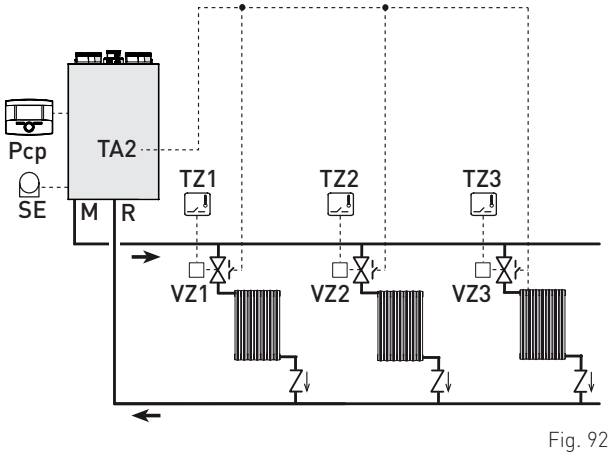


Fig. 92

CAUTION
Set the parameter "tS 17 = DELAY SYSTEM PUMP ACTIVATION to allow the opening of zone valve Vz.

5.14 Refilling or emptying

Before carrying out the operations described below, make sure that the main system switch is set to "ON"; after a few seconds, the main display will show on the **Main control panel**, and the pressure level in the system during refilling can be displayed.

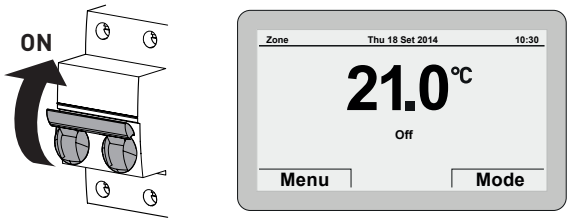


Fig. 93

Press the **Mode** button and check that the appliance function mode is set to **OFF**.

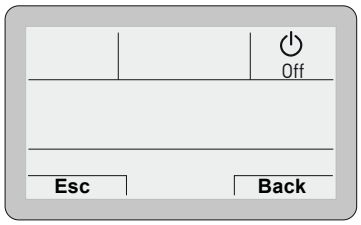


Fig. 94

If it is not OFF, turn the encoder to select **OFF** mode and press the **click** button to confirm.

5.14.1 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.

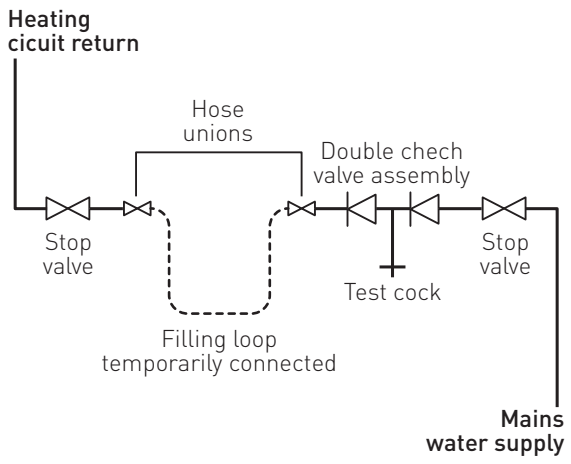


Fig. 95

5.14.2 SYSTEM Filling

The **Murelle Revolution 30** boilers are not equipped with a filling valve which must be prearranged on the system return. The procedure is described below.

Remove the front panel:
if the front panel has not already been removed, open the two catches (1), unscrew the two screws (2), pull the front panel (3) forwards and release it from the top by lifting it.

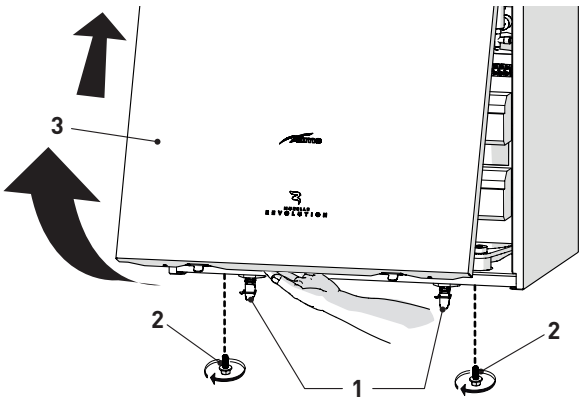


Fig. 96

Domestic hot water circuit:
- open the isolation valves of the domestic hot water circuit (if present)
- open each of the DHW taps until air is expelled
- once bleeding has been completed, close the hot water valves.

Heating circuit:
- open the isolation and air bleeding valves in the highest points of the system
- loosen the automatic bleed valve (4)
- open the isolation valves of the heating circuit (if present)
- Open the filling valve, which should be on the system return
- Fill until the water overflows from the air bleeding valves and shut off the valves again
- close the automatic bleed valve (4)
- Continue filling until the pressure reaches **1-1.2** bar as shown on the display
- close the filling valve
- check that there is no air in the system by bleeding all the radiators and the circuit on the high points of the system

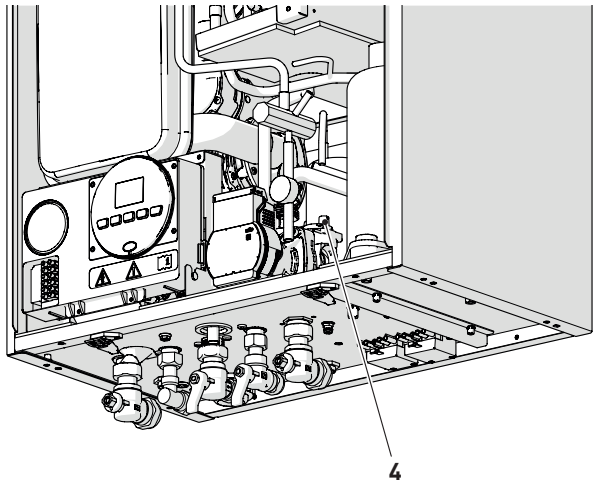


Fig. 97

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

- check the pressure on the display and if necessary top up until the correct pressure reading appears
- 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 by first closing the catches (1) and then tightening the screws (2) which were removed previously.

5.14.3 EMPTYING operations

Domestic hot water circuit:
- close the domestic hot water circuit isolation valve (prearranged in installation)
- open one or more than one hot water taps and drain the domestic hot water circuit.

Boiler:
- loosen the automatic bleed valve (4)
- close the heating circuit isolation valves (prearranged in installation)
- check that the filling valve which was prearranged during installation is closed
- connect a rubber hose to the boiler drain valve (5) and open it
- when it has fully emptied, close the drain valve (5)
- close the automatic bleed valve (4).

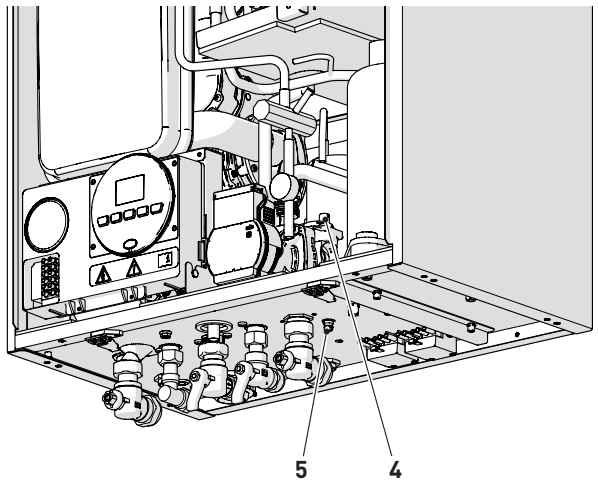


Fig. 98

6 COMMISSIONING

6.1 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.

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 76) (Benchmark).

Before commissioning the appliance, check that:
- the type of gas is correct for the appliance
- the gas isolation valves for the heating system and the water system are open
- the siphon has been filled.

6.2 Before commissioning

After having carried out the preliminary operations, follow the procedure below, in order, to start the boiler:
- Set the main system switch to "ON"; after a few seconds, the "Main screen" is shown on the display

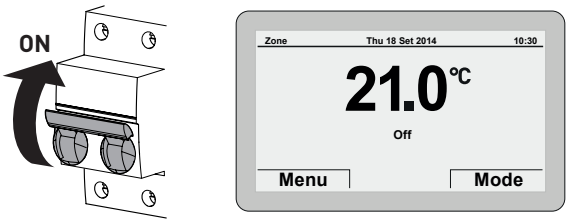


Fig. 99

- press the **Mode** button to access the **"Function mode"** select screen
- turn the encoder to select a mode (e.g. "Summer")
- press the **click** encoder to confirm

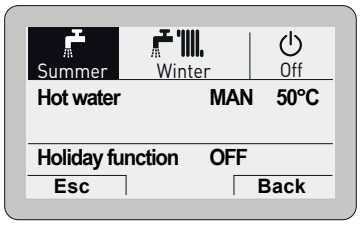


Fig. 100

- disconnect and reconnect the electrical power supply by setting the main system switch to **"OFF"** and then to **"ON"**

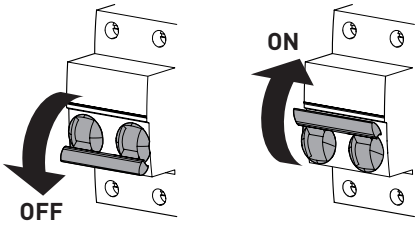
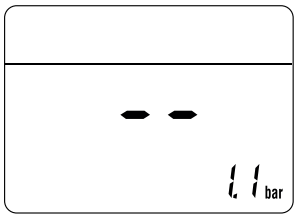


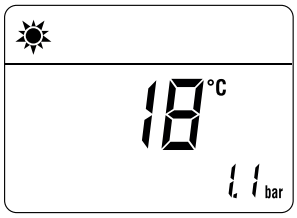
Fig. 101

NOTE: *this operation allows the user to access the boiler control panel (local).*

- 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

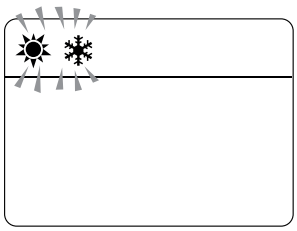


- check that the system pressure as shown when the system is cold , is between **1 and 1.2 bar**
- press the button OR once for at least 1 second to select "SUMMER mode" . the value of the delivery sensor detected at that moment will appear on the display

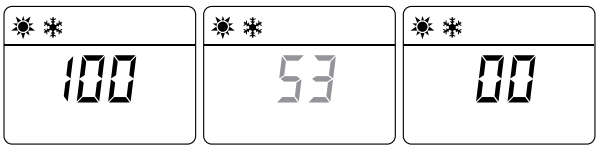


6.2.1 Automatic self-calibrating procedure

Carry out the "Automatic self-calibrating procedure" as follows:
- press button and set the DOMESTIC HOT WATER SET to maximum using the button +
- press and hold down the buttons − and + at the same time for approximately 10 seconds until the flashing symbols and appear on the display

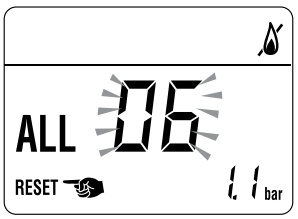


– as soon as the symbols begin to flash, release the buttons **–** and **+** and press the button ⏻R, **within 3 seconds**
– the "Automatic self-calibrating procedure" starts
– **to dissipate the heat , tun on one or more DHW taps**
– the values flash on the display: **"100"** (maximum value), followed by an "intermediate value" and finally **"00"** (minimum value)



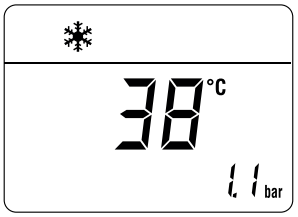
It may take up 15 minutes for the "self-calibrating procedure" to end and the message "SUMMER mode" to reappear on the display Once the procedure has terminated:
– close the taps opened previously and check that the appliance shuts down.

if there is a fault, the message **"ALL"** will appear on the display, the fault code (eg. **"06"** - no flame detected) and the message RESET.



CAUTION
To restore the start conditions press and hold the button ⏻R 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 RESET once for at least 1 second to select "WINTER mode". The value of the heating water temperature 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.

6.3 Main control panel display and settings

CAUTION
We recommend not changing the factory settings so as not to alter optimal appliance operation. For any specific support, please contact the **Sime Ltd** Technical Assistance Service.

6.3.1 Settings using the MODE button

From the "Main screen":

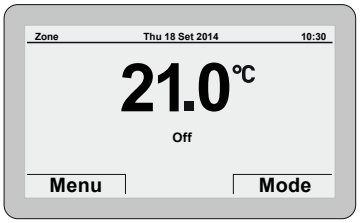


Fig. 102

– Press the **Mode** button to view the **"Function mode"** selection screen. Turn the encoder to select a mode (e.g. "Winter")

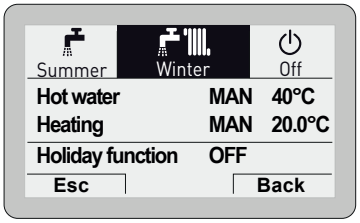


Fig. 103

– press the **click** encoder to confirm the highlighted "Mode" and go to the "rows"

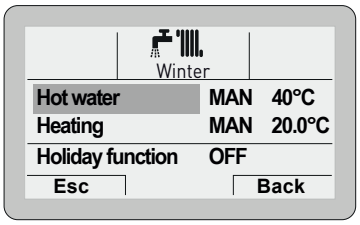


Fig. 104

– turn the encoder to select **"Heating"** (Heating)

– press the **click** encoder to confirm **"Heating"** and access the **"Rows"**

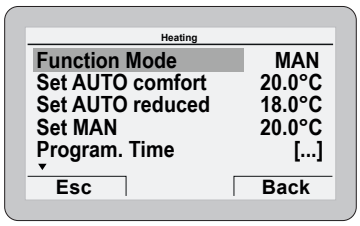


Fig. 105

– press the **click** encoder to confirm the highlighted "Row" and access the modifiable area

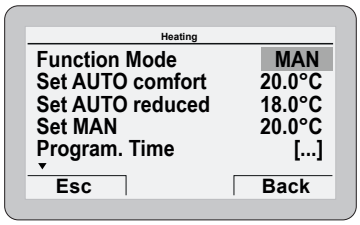


Fig. 106

– turn the encoder to modify the "Data/value" in the permitted field (e.g. MAN - AUTO - OFF)

– Press the **click** encoder to confirm any modifications made and go back to the row **"Function mode"**

– turn the encoder to select another "Row" (e.g. **"Program. Time"**).

CAUTION
For information on using the functions "**Time Programming**" and "**Holiday function**" see the relevant section ("**User instructions**").

6.3.1.1 Fault warnings

If a fault occurs, the screen **"Anomaly in progress"** (Fault in progress) will appear in place of the "main screen". For the main fault codes, a brief description and suggestions for the user are displayed, based on the seriousness and the frequency with which the fault reappears.

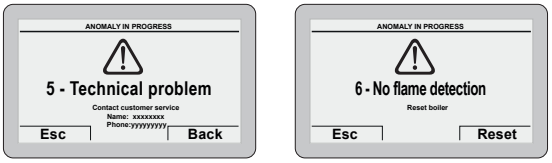


Fig. 107

The fault may be **transient** (volatile) or it may cause an appliance **block**.

To restore normal operating conditions:
– if the fault is transient, eliminate the cause of the fault
– if the fault causes a block, remove the cause of the fault and then press the **Reset** button.

If there is **"no water in the system"** or **"low water pressure in the system"** there is a request to fill the system and then to press the **Confirm** button rather than the **Reset** button.

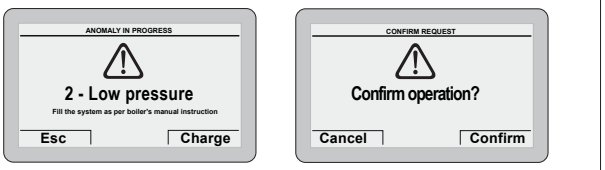


Fig. 108

A list of possible faults is given under "**Fault / malfunction codes**".

6.3.1.2 Quick settings

The encoder allows the operator, specifically the user, to:
– change the **"Set hot water"** in SUMMER mode
– change the **"Set room temperature"** in WINTER mode.

In both cases, from the "Main screen":

– press the **click** encoder to display the **set** value

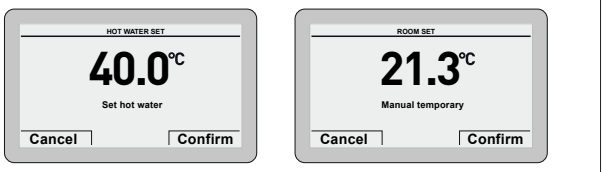


Fig. 109

– turn the encoder to set the new **"Set value"**
– press the **Confirm** button to complete the modification and return to the "Main screen".

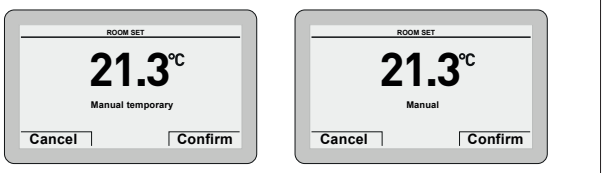


Fig. 110

IMPORTANT INFORMATION FOR THE SET AMBIENT TEMPERATURE

The meaning of the words on the display is as follows:
Manual temporary: the heating **"Function mode"** is set to AUTO and the set value read on the display is valid until the next time band change (automatic set point)
Manual: the heating **"Function mode"** is set to MAN and the set value read on the display is permanently valid.

6.3.2 Navigating using the MODE button

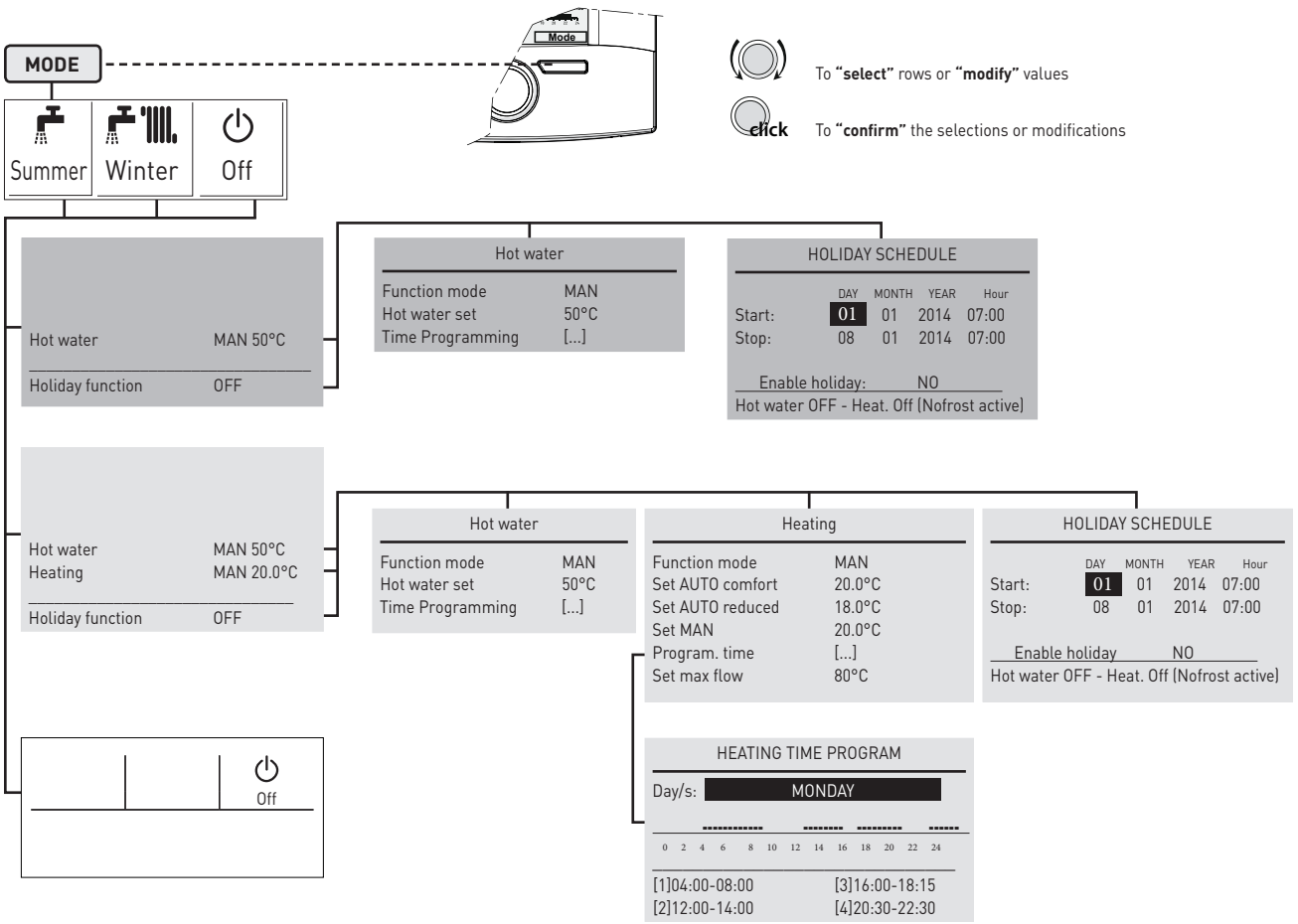


Fig. 111

6.3.3 Settings using the MENU button

6.3.3.3 GENERAL SETTINGS menu

From the **"Main screen"** on the **main control panel (MCP)**, proceed as follows:

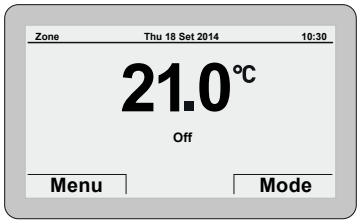


Fig. 112

– press the **Menu** button to view the **"Menu"** selection screen

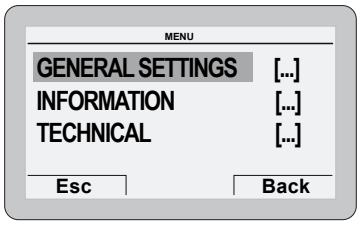


Fig. 113

– press the **click** encoder to confirm the highlighted menu and access the submenus

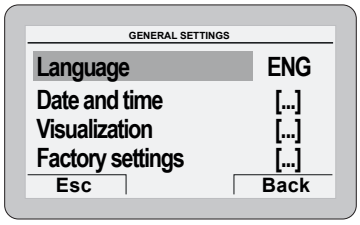


Fig. 114

– press the **click** encoder to confirm the highlighted submenu and select the modifiable area

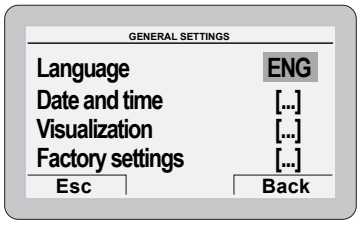


Fig. 115

– turn the encoder and modify the "Data/value" in the permitted field (e.g. from ENG to ITA)

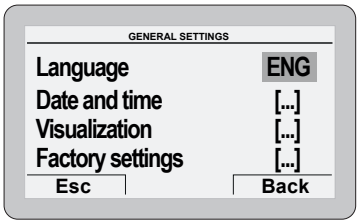


Fig. 116

– press the **click** encoder to confirm the modification and go back to the submenu

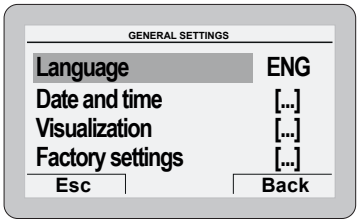


Fig. 117

***NOTE**: press the* **Back** *button to go back one step, or press the* **Esci** *button to return to the **"Main screen"**.*

– turn the encoder to select another submenu (e.g. Date and time)

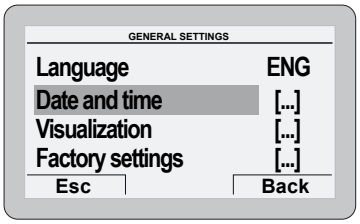


Fig. 118

– press the **click** encoder to confirm the highlighted submenu and access the modifiable area

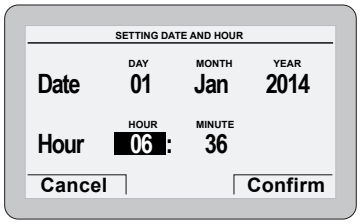


Fig. 119

– the first modifiable "Data/value" is highlighted (e.g. 06)
– turn the encoder to modify the **"Data/value"** (e.g. from 06 to 12)
– press the **click** encoder to confirm the modification and select the next **"Data/value"** which will be highlighted (e.g. 36)

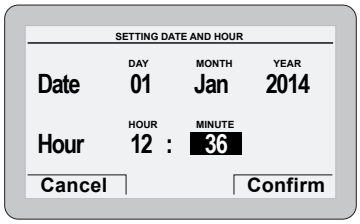


Fig. 120

– turn the encoder to modify the "Data/value" (e.g. from 36 to 50)

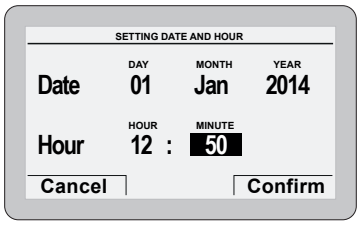


Fig. 121

– press the **click** encoder to confirm the modification and select the next "Data/value" which will be highlighted (e.g. 01)
– continue in this way until all the necessary modifications have been made.
– after all modifications have been made, press the **Confirm** button to go back to the initial submenu (Date and time).

***NOTE**: The user must work in a CIRCULAR manner, meaning ALWAYS MOVING FORWARDS, even if a mistake is made.*

– turn the encoder to select another **"Menu"** (e.g. Display).

The **"Display"** menu allows the user to adjust:
– display contrast
– duration of the display back-lighting
– encoder back-lighting

The operating procedure is as has been described so far.

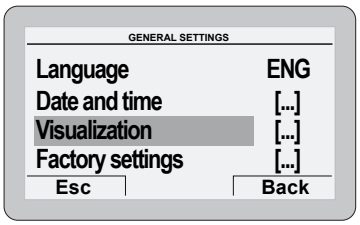


Fig. 122

CAUTION
"Factory settings" submenu
It is recommended that the user access this submenu ONLY to restore the **"Factory settings"** (Factory settings), thereby deleting all settings made by the end user.
Otherwise, press the **Esc** or **Indietro** button.

To proceed:

– press the **click** encoder to access the modifiable area. A screen appears offering the following options:

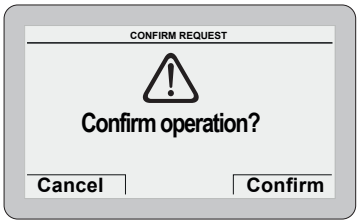


Fig. 123

– press the **Cancel** button to go back to the "Menu" selected previously (Factory settings)
– press the **Confirm** button to restore the **"Factory settings"** and, after a few seconds, go back to the **"main screen"**.

6.3.3.4 INFORMATION menu

The INFORMATION menu is read-only and the data **cannot** be modified.
From the **"Main screen"**:

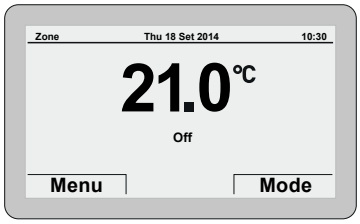


Fig. 124

– press the **Menu** button to view the **"Menu"** selection screen
– turn the encoder to select the menu **"INFORMATION"**

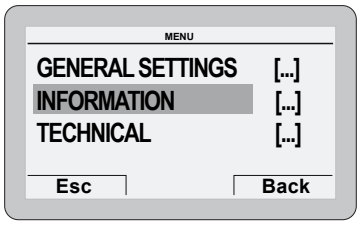


Fig. 125

– press the **click** encoder to confirm **"INFORMATION"** and access the submenu

Fig. 126

– turn the encoder to select the required submenu
– press the **click** encoder to confirm the selected submenu and access the relevant data display

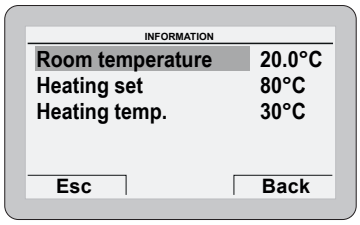


Fig. 127

– press the **Back** button to go back to the submenus
– turn the encoder to select another submenu

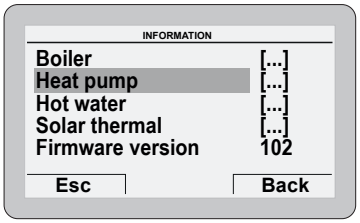


Fig. 128

– press the **click** encoder to confirm the selected submenu and access the relevant data display
– continue in this way until all the necessary information has been shown
– press the **Esc** button to go back to the **"main screen"**.

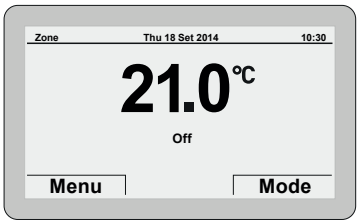


Fig. 129

6.3.3.5 TECHNICAL menu

It is recommended that the TECHNICAL Menu only be used by professionally qualified technicians, since it is used to modify system management data.
The submenu **"Boiler parameters"** requires the CODE (or password) **"1 2 3 4 5"** to be entered.

CAUTION
We recommend not changing the factory settings so as not to alter optimal appliance operation. For any specific support, please contact the **Sime Ltd** Technical Assistance Service.

From the **"Main screen"**:

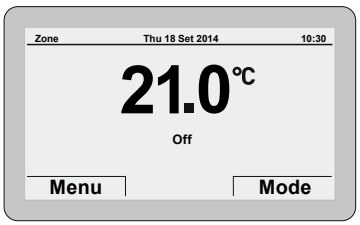


Fig. 130

– press the Menu button to view the **"Menu"** selection screen

– turn the encoder to select the **"TECHNICAL"** menu

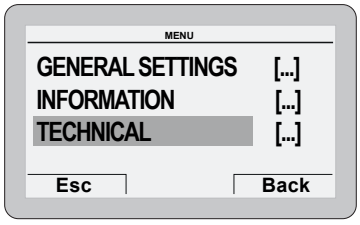


Fig. 131

– press the **click** encoder to access the modifiable area. The following screen is displayed:

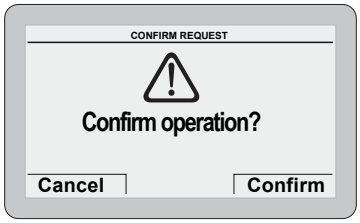


Fig. 132

– press the Cancel button to go back to the **"TECHNICAL"** menu
– press the Confirm button to access the submenus

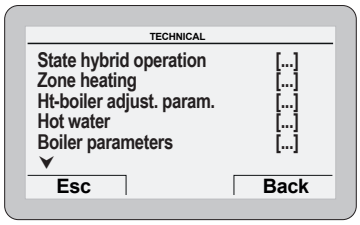


Fig. 133

– turn the encoder to select the required submenu

– press the **click** encoder to confirm the selected submenu and access the modifiable parameters area.

CAUTION
When the submenu **"Boiler parameters"** is selected, the following screen appears when the **click** encoder is pressed:

Fig. 134

– turn the encoder to modify the first digit from 0 to 1

– press the **click** encoder to confirm the modification and select the next digit

– continue in this way until the CODE (or password) **"1 2 3 4 5"** has been completed

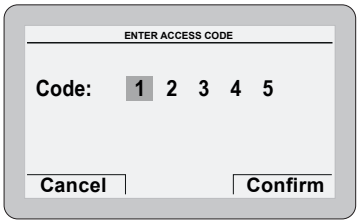


Fig. 135

– press the Confirm button to access the boiler **"Parameter settings"** area

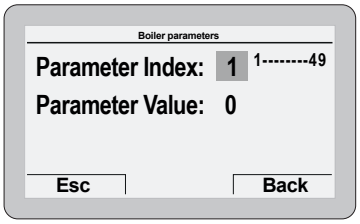


Fig. 136

– where **"Parameter index"** refers to the parameter table "**Parameter setting and display**"

– Turn the encoder to scroll through the list of parameters and check the value.

If the value of the selected parameter is to be modified:

– press the **click** encoder to access the value modification area

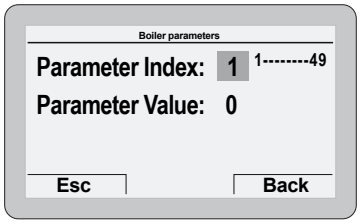


Fig. 137

– press the encoder to set the new value
– press the **click** encoder to confirm the modification and move on to another parameter
– once all the display/modification commands have been completed, press the Esc button to go back to the **"Main screen"**.

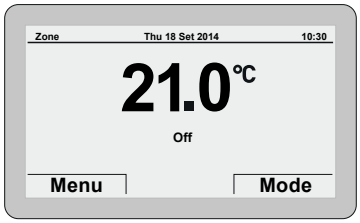


Fig. 138

6.3.3.6 TECHNICAL ASSISTANCE CENTRE menu

CAUTION
It is useful to enter the TECHNICAL ASSISTANCE CENTRE references which can then be displayed in the **"Display menu"** and suggested to the user if there is a serious fault with the boiler.

To enter the TECHNICAL ASSISTANCE CENTRE references:
– follow the procedure described in the section "**TECHNICAL menu**" up to "accessing the submenus"
– turn the encoder to select the **"Technical Assistance Centre"** submenu

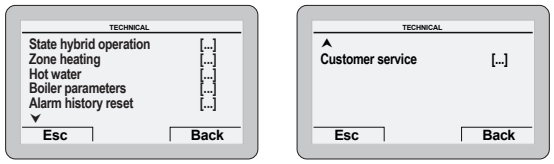


Fig. 139

– press the **click** encoder to confirm

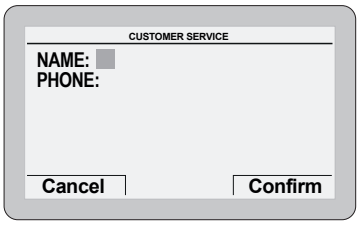


Fig. 140

– turn the encoder to select the first letter of the name
– turn the **click** encoder to confirm and move on to the next letter

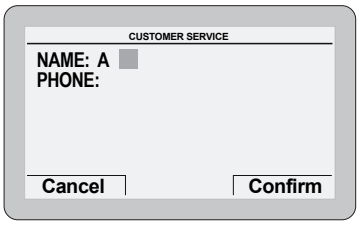


Fig. 141

– continue in the same way until the name is complete
– press the Confirm button to enter the telephone number. Proceed in the same way as for the name

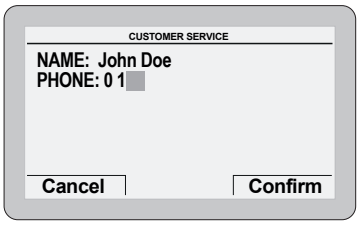


Fig. 142

– when this operation has been completed, press the Confirm button to return to the submenu. Press Esc to go back to the **"Main screen"**.

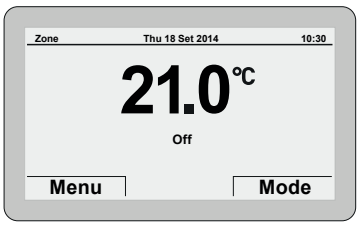


Fig. 143

6.3.4 Navigating using the MENU button

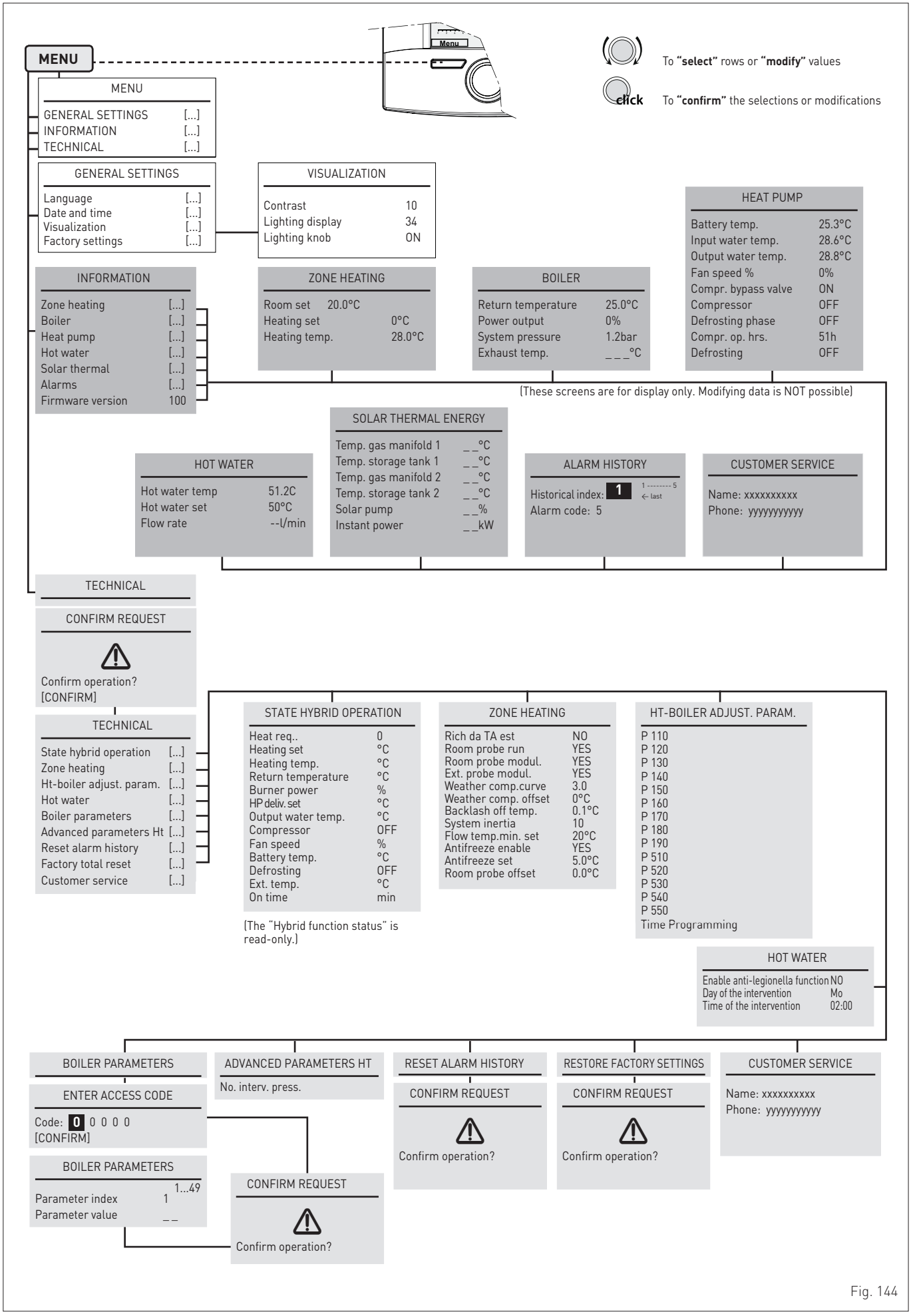


Fig. 144

6.4 Parameter setting and display

To access the parameters menu from the **"Main screen"**:

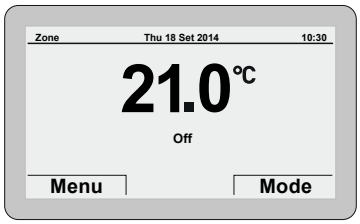


Fig. 145

– press the **Menu** button to view the **"Menu"** selection screen

– turn the encoder to select the **"TECHNICAL"** menu

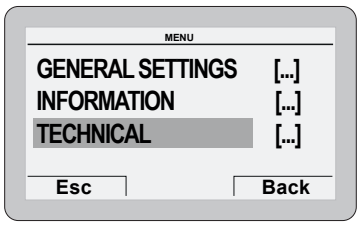


Fig. 146

– press the **click** encoder to access the modifiable area. The following screen is displayed:

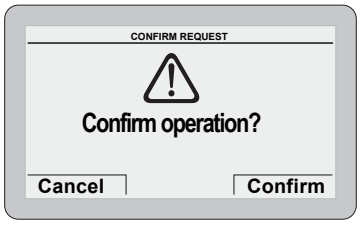


Fig. 147

– press the **Cancel** button to go back to the **"TECHNICAL"** menu

– press the **Confirm** button to access the submenus

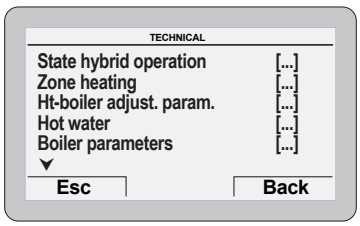


Fig. 148

– turn the encoder to select the required submenu

– press the **click** encoder to confirm the selected submenu and access the modifiable parameters area.

***NOTE**: The parameters below can be found in the submenu "HP-Boiler adjustment parameters".*

Type	No.	Description	Range	U/M	Step	Default
P	110	ΔT ON heating request	0 10	°C	1	1
P	120	ΔT OFF heating request	0 10	°C	1	4
P	130	Outdoor probe temperature for boiler ON to boost	-5 15	°C	1	7
P	140	Time 1 boiler ON (to support)	0 60	min	1	20
P	150	Time 2 boiler ON (to support)	0 60	min	1	5
P	160	ΔT ON heating boost request	-20 ...20	°C	1	2
P	170	ΔT OFF heating boost request	-20 ...20	°C	1	1
P	180	ΔT set for heat pump	-10 ...10	°C	1	8
P	190	Time 3 boiler ON (restart prevented)	0 ...30	min	1	3
P	510	Outdoor probe temp. for heat pump OFF	-15 ...0	°C	1	-7
P	520	Boiler activation to boost heating	Off/On	-	-	On
P	530	Domestic hot water activation	Off/On	-	-	On
P	540	Heat pump activation	Off/On	-	-	On
P	550	HP maximum limit	30 ...55	°C	1	47
Time Programming			[.....]	-	-	-

Once the HP-Boiler parameter setting is complete::

– press the **Esc** button

– turn the encoder to select the **"Boiler parameters"** submenu

The following screen appears when the encoder is pressed as confirmation:

Fig. 149

– turn the encoder to modify the first digit from 0 to 1
– press the **click** encoder to confirm the modification and select the next digit
– continue in this way until the CODE (or password) **"1 2 3 4 5"** has been completed

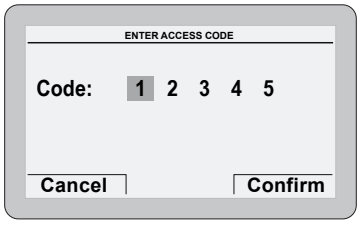


Fig. 150

– press the **Confirm** button to access the boiler **"Parameter settings"** area

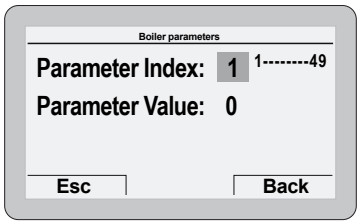


Fig. 151

– The **"Parameter index"** refers to the parameter table below
– Turn the encoder to scroll through the list of parameters and check the value.

If the value of the selected parameter is to be modified:

– press the **click** encoder to access the value modification area

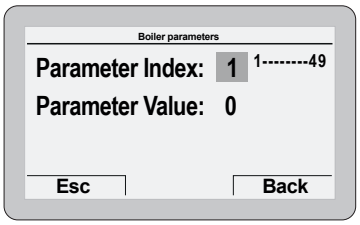


Fig. 152

– press the encoder to set the new value
– press the **click** encoder to confirm the modification and move on to another parameter
– once all the display/modification commands have been completed, press the **Esc** button to go back to the **"Main screen"**.

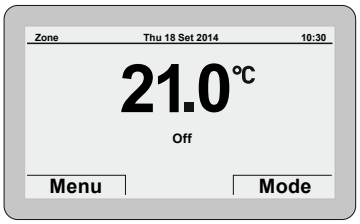


Fig. 153

Type	No.	Description	Range	U/M	Step	Default
		CONFIGURATION				
PAR	01	Index showing boiler power in kW	6 = 30 (MURELLE REVOLUTION 30)	-	1	6
PAR	02	Hydraulic configuration	0 = combi 1 = system 2 = N/A 3 = N/A 4=instant with solar power input	-	1	0
PAR	03	Gas Type Configuration	0 = G20 1 = G31	-	1	0
PAR	04	Combustion configuration 0 = sealed chamber with combustion control	-	-	-	0
PAR	08	External sensor value correction	-5 .. +5	°C	1	0
PAR	09	Ignition fan speed	80 .. 160	RPMx25	1	128
		DOMESTIC HOT WATER - HEATING				
PAR	10	Boiler Antifreeze Threshold	0 .. +10	°C	1	3
PAR	11	External Sensor Antifreeze Threshold -- = Disabled	-9 .. +5	°C	1	-2
PAR	12	Heating Curve Incline	0 .. 80	-	1	20
PAR	13	Minimum Heating Temperature Adjustment	20 .. PAR 14	°C	1	20
PAR	14	Maximum Heating Temperature Adjustment	PAR 13 .. 80	°C	1	65
PAR	15	Maximum power in CH mode	0 .. 100	%	1	100
PAR	16	Heating Post-Circulation Time	0 .. 99	seconds x 10	1	3
PAR	17	Heating Pump Activation Delay	0 .. 60	seconds x 10	1	0
PAR	18	Re-ignition Delay	0 .. 60	Min	1	3

Type	No.	Description	Range	U/M	Step	Default
PAR	19	Domestic Hot Water Modulation with Flow meter	0 = Disabled 1 = Enabled	-	1	1
PAR	20	Maximum power domestic hot water	0 .. 100	%	1	100
PAR	21	Minimum power heating/domestic hot water (premixed)	0 .. 100	%	1	0
PAR	22	Domestic hot water preheating enabling	0 = OFF 1 = ON	-	1	0
PAR	23	External relay 1 function	0 = not used 1 = remote alarm NO 2 = remote alarm NC 3 = zone valve 4 = automatic filling 5 = external request 6 = recirculation pump 7 = zone valve with OT 8 = relaunch pump 9 = heat pump management	-	-	0
PAR	24	External relay 2 function	0 = not used 1 = remote alarm NO 2 = remote alarm NC 3 = zone valve 4 = automatic filling 5 = external request 6 = recirculation pump 7 = zone valve with OT 8 = relaunch pump 9 = heat pump management	-	-	0
PAR	25	Auxiliary TA function 0 = according to TA	1 = TA Antifreeze 2 = domestic hot water disabled	-	1	0
PAR	26	Zone Valve / Pump Relaunch Delay	0 .. 99	Min	1	1
PAR	28	DHW activation delay with solar power	0 .. 30	Min	1	0
PAR	29	Anti-legionella Function (Only hot water tank) -- = Disabled	50 .. 80	-	1	--
PAR	30	Maximum domestic hot water temperature	10 .. 67	°C	1	60
PAR	35	Digital / analogue Pressure switch	0 = water pressure switch 1 = water pressure transducer (with ALL 09) 2 = water pressure transducer (without ALL 09)	-	1	1
PAR	39	Modulating pump minimum speed	20 .. 100	%	1	55
PAR	40	Modulating Pump Speed	-- = No modulation AU = Automatic 30 100% PAR 39 100%	%	10	PM
PAR	41	ΔT Modulating pump delivery/Return	10 .. 40	°C	1	20
PAR	42	Select heat pump or gas boiler switchover	-20 .. 30	°C	1	5
PAR	43	Delay boiler activation to boost heat pump	1 .. 180	Min	1	20
PAR	47	System pump forcing (only in winter mode)	0 = Disabled 1 = Enabled	-	-	0
RESET						
PAR	48	INST Parameter set to default	0 .. 1	-	-	0

6.5 Fault / malfunction codes

If a fault occurs, the screen **"Anomaly in progress"** (Fault in progress) will appear in place of the "main screen". For the main fault codes, a brief description and suggestions for the user are displayed, based on the seriousness and the frequency with which the fault reappears.

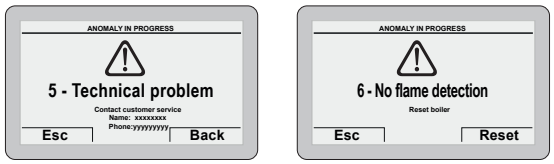


Fig. 154

The fault may be **transient** (volatile) or it may cause an appliance **block**.

To restore normal operating conditions:
- if the fault is transient, eliminate the cause of the fault
- if the fault causes a block, remove the cause of the fault and then press the **Reset** button.

If there is **"no water in the system"** or **"low water pressure in the system"** there is a request to fill the system and then to press the **Confirm** button rather than the **Reset** button.

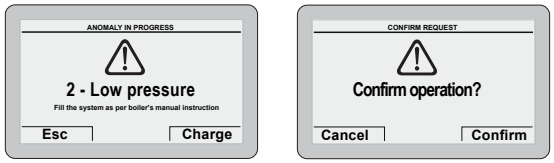


Fig. 155

Boiler fault (gas side)

Type	No.	Description
ALL	01	Not used
ALL	02	Low water pressure in system
ALL	03	High water pressure in system
ALL	04	Domestic hot water sensor (SS) fault
ALL	05	Delivery sensor (SM) fault
ALL	06	No flame detection
ALL	07	Safety thermostat intervention
ALL	08	Fault in the flame detection circuit
ALL	09	No water circulating in the system
ALL	10	Auxiliary sensor fault
ALL	11	Gas valve modulator disconnected
ALL	12	Incorrect configuration of the open / sealed chamber
ALL	13	Exhaust sensor (SF) intervention
ALL	14	Exhaust sensor (SF) fault
ALL	15	Fan check cable disconnected
ALL	18	Condensate level fault
ALL	28	Maximum number of consecutive resets (6)
ALL	30	Return sensor (SR) fault
ALL	37	Fault due to low network voltage
ALL	40	Incorrect supply frequency detected
ALL	41	Flame loss more than 6 consecutive times
ALL	42	Button fault
ALL	43	Open Therm communication fault
ALL	44	No flame valve opening time sum anomaly
ALL	62	Self-calibrating procedure is required
ALL	72	Incorrect positioning of the delivery sensor
ALL	77	EV2 SGV current max/min absolute limits error
ALL	78	EV2 SGV current upper limit error
ALL	79	EV2 SGV current lower limit error
ALL	80	Fault on the valve control logic line/valve cable damaged
ALL	82	Block due to numerous combustion control failures
ALL	84	Flow rate reduced for (presumed) low pressure on mains gas
ALL	88	Internal error (board component protection)
ALL	89	Unstable combustion feedback signal error
ALL	90	Combustion set cannot be reached error
ALL	92	System has reached maximum air correction error (at the minimum flow rate)
ALL	93	Combustion set cannot be reached error
ALL	95	Flame signal micro interruptions error
ALL	96	Lockout due to flue (exhaust) blockage
ALL	98	SW error, board start-up
ALL	99	General board error

Heat pump fault

Type	No.	Description
P	02	High pressure
P	04	Low pressure
P	12	Antifreeze (heat exchanger temp. < 3°C)
P	15	High temperature (HP delivery temp. > 50°C)
P	32	Probe errors aggregate (one or more probes with an active alarm)
P	33	Battery temperature probe error
P	34	Inlet water temperature probe error
P	35	Outlet water temperature probe error

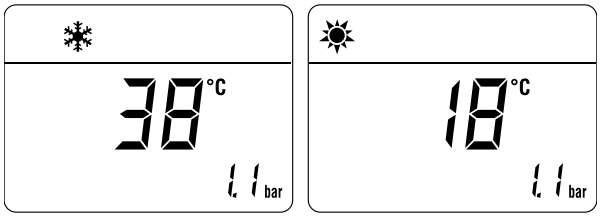
CAUTION

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 76) (Benchmark).

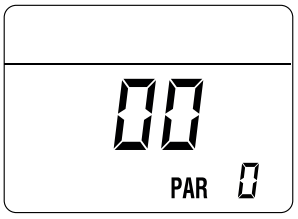
6.6 Display of operating data and counters

Once the boiler is operating a qualified technician can view the operating data and the counters as follows:>

– from the boiler control panel screen (gas side) in the mode enabled at that time (WINTER or SUMMER)

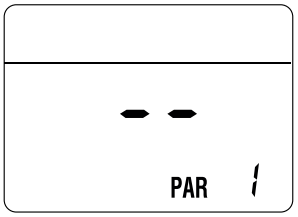


– go into **"DISPLAY"** by pressing the buttons and **— at the same time** for more than 3 seconds until the following screen appears

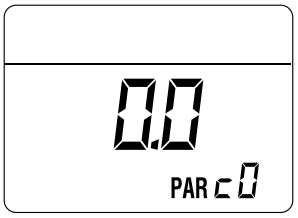


From this point, the technician has 2 options:

– scroll through the list of **"information (PAR)"** and **"counters (PARc)"** by pressing the button . 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 R for approximately 5 seconds until the initial screen is displayed.

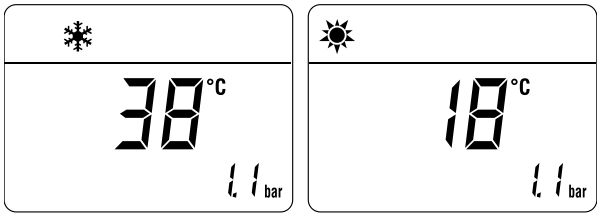


TABLE OF INFORMATION DISPLAYED

Type	No.	Description	Range	U/M	Step
PAR	00	SW version			
PAR	01	External temperature sensor	- 9 .. 99	°C	1
PAR	02	Delivery sensor temperature (SM)	- 9 .. 99	°C	1
PAR	03	Exhaust temperature (SF)	- 9 .. 99	°C	1
PAR	04	Domestic hot water sensor temperature (SS)	- 9 .. 99	°C	1
PAR	05	AUX auxiliary sensor	- 9 .. 99	°C	1
PAR	06	Actual heating SET temperature	Par. 13 ... Par. 14	°C	1
PAR	07	Power level	0 .. 99	%	1
PAR	08	DHW Flow rate	0 .. 99	l/min	0.1
PAR	09	Water pressure transducer reading	0 .. 99	bar	0.1
PAR	10	Actual speed fan number	0 .. 99	RPM x 100	1

TABLE OF COUNTER DISPLAYED

Type	No.	Description	Range	U/M	Step
PAR	c0	total no. of boiler operating hours	0 .. 99	h x 1000	0.1; from 0.0 to 9.9; 1; from 10 to 99
PAR	c1	total no. of burner operating hours	0 .. 99	h x 1000	0.1; from 0.0 to 9.9; 1; from 10 to 99
PAR	c2	total no. of burner ignitions	0 .. 99	h x 1000	0.1; from 0.0 to 9.9; 1; from 10 to 99
PAR	c3	total no. faults	0 .. 99	x 1	1
PAR	c4	total no. of times installer parameters "ALL"accessed	0 .. 99	x 1	1
PAR	c5	total no. of times OEM parameters accessed	0 .. 99	x 1	1
PAR	c6	Countdown to the next service	1 .. 199	months	1
PAR	c7	total no. of calibrations	1 .. 199	x 1	1

TABLE OF ACTIVATED ALARMS/FAULTS

Type	No.	Description
PAR	A0	Last activated alarm/fault
PAR	A1	Last but one activated alarm/fault
PAR	A2	Third from last activated alarm/fault
PAR	A3	Previous activated alarm/fault
PAR	A4	Previous activated alarm/fault
PAR	A5	Previous activated alarm/fault
PAR	A6	Previous activated alarm/fault
PAR	A7	Previous activated alarm/fault
PAR	A8	Previous activated alarm/fault
PAR	A9	Previous activated alarm/fault

6.7 Checks

6.7.1 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 front panel has not already been removed, open the two catches (1), unscrew the two screws (2), pull the front panel (3) forwards and release it from the top by lifting it.

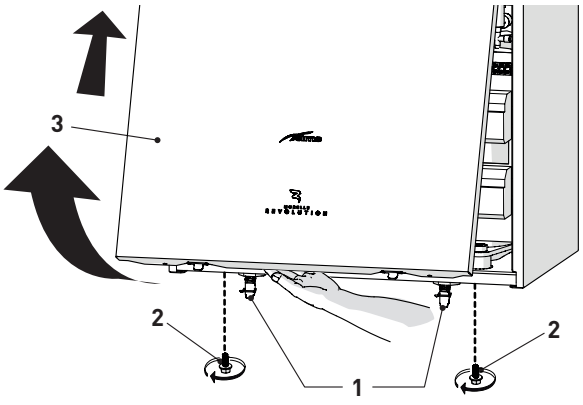


Fig. 156

– remove the screws (4) securing the control panel (5)
– move the panel (5) upwards (a) but keeping it in the side guides (6) to the end of travel
– bring it forwards and down (b) until it is horizontal

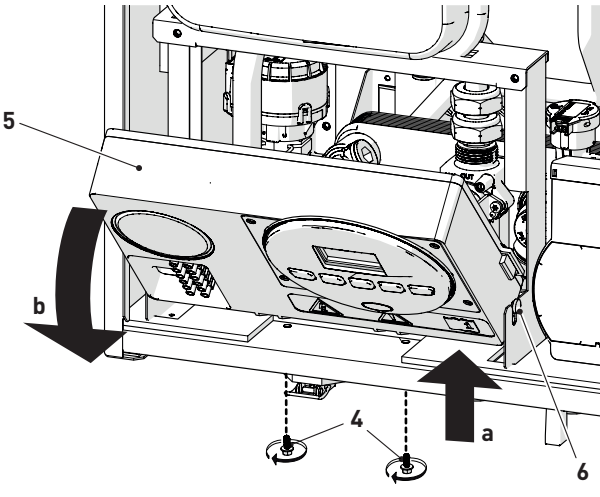


Fig. 157

– isolate the gas cock
– loosen the screw of the "mains pressure" point (7) and connect a pressure gauge

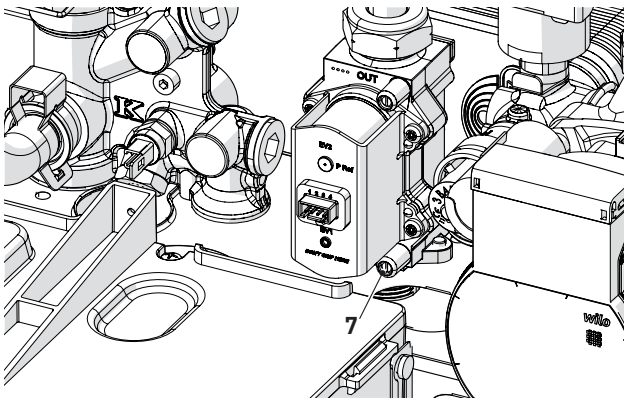


Fig. 158

– open the gas cock
– power the boiler by setting the main switch to "ON"

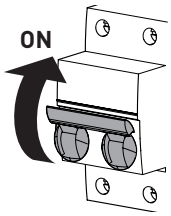
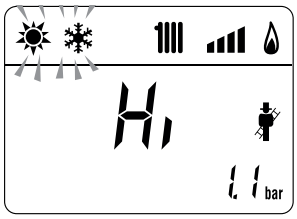
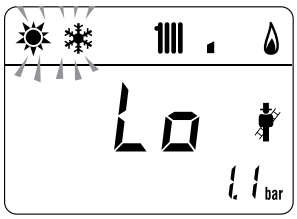


Fig. 159

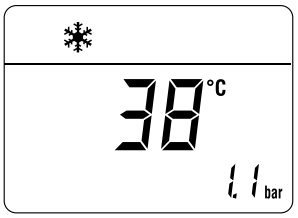
– press the button ⏻R for at least 1 second until "SUMMER" mode ☀ has been selected
– press and hold down the buttons − and + at the same time for approximately 10 seconds until the message "Hi" appears on the display together with the flashing symbols ☀ and ❄



– 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 ❄



– take the combustion data reading
– press the button ⏻R to exit the "Chimney sweeper Procedure". The boiler water delivery temperature will appear on the display



– disconnect the pressure gauge, carefully close the pressure point (6), test for gas tightness, put the control panel back to the original position and refit the front panel (2). Now conduct a flue gas analysis as detailed in APPENDIX 2.

Gas supply pressure

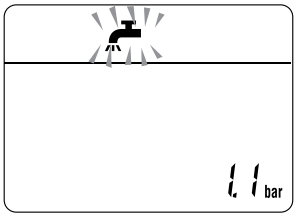
Type of gas	G20	G31
Pressure (mbar)	19	36

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

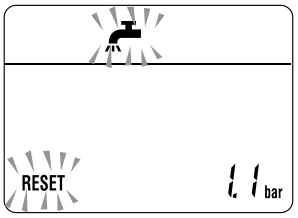
6.8 Domestic hot water comfort function (preheating)

Murelle Revolution 30 models have a "domestic hot water comfort" function which ensures the best performance in terms of domestic hot water, reducing the time necessary for the hot water to become available and ensuring that the temperature is stable.

To activate the function:
– select parameter**"PAR 22"** (see "**Parameter setting and display**") and set it to **value 1**
– exit parameter settings and press button **+** for approximately 5 seconds until the symbol appears on the display and begins to flash indicating that the function has been activated.



To deactivate the function:
– press button **+** again for approximately 5 seconds until the symbols and RESET appear on the display and begin to flash indicating that the function has been deactivated.



6.9 Gas conversion

Murelle Revolution 30 models can work with G20 or G31 without the need for any mechanical conversion. Simply select parameter**"PAR 03"** (see "**Parameter setting and display**" page 60) 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 50).

CAUTION
Conversion may ONLY be carried out by Professionally Qualified Personnel.

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

G31 - 36 mbar	X ←

7 MAINTENANCE

7.1 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 76) (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.

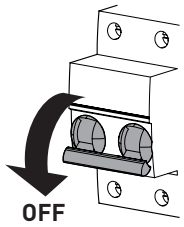


Fig. 160

7.2 External cleaning

7.2.1 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.

7.3 Burner Inspection

7.3.1 Burner access

To access the internal parts of the boiler:

- open the two catches (1), unscrew the two screws (2), pull the front panel (3) forwards and release it from the top by lifting it.

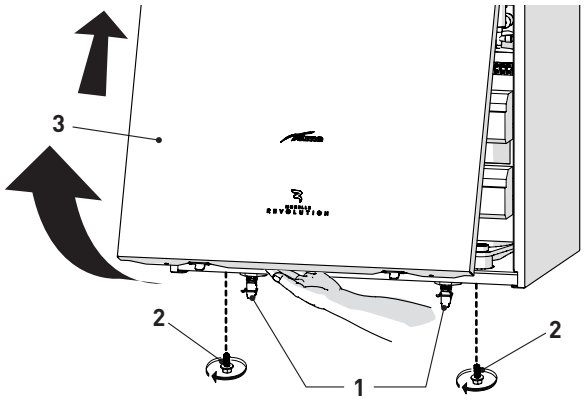


Fig. 161

- remove the screws (4) securing the control panel (5)
- move the panel (5) upwards (a) but keeping it in the side guides (6) to the end of travel
- bring it forwards and down (b) until it is horizontal

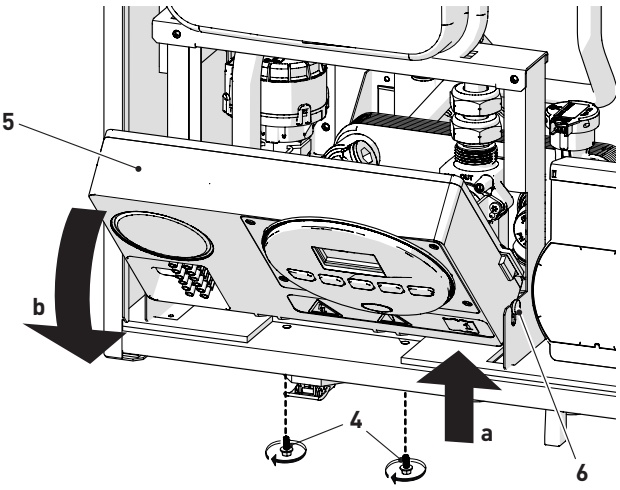


Fig. 162

– remove the two screws (7), lift the expansion vessel and hook it onto the support (8)

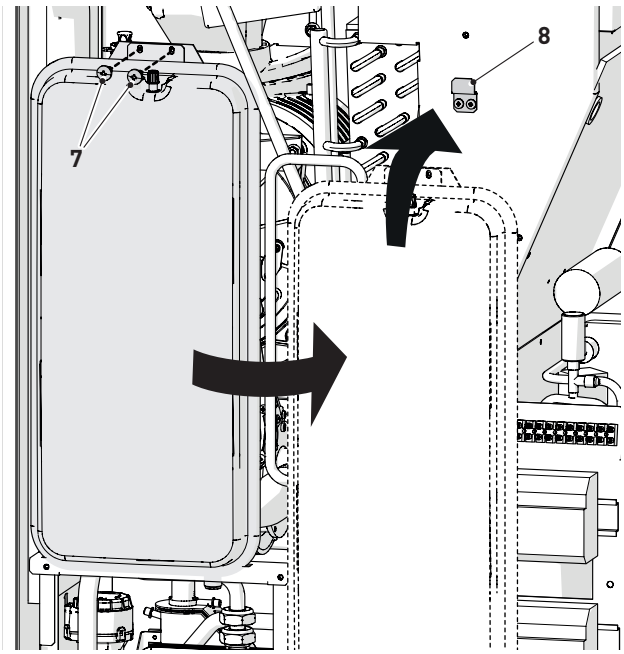


Fig. 163

– loosen the clip (9) and extract the air inlet pipe (10)
– unscrew the swivel joint (11)
– extract the connectors (12) from the fan and disconnect the electrode cable (13)

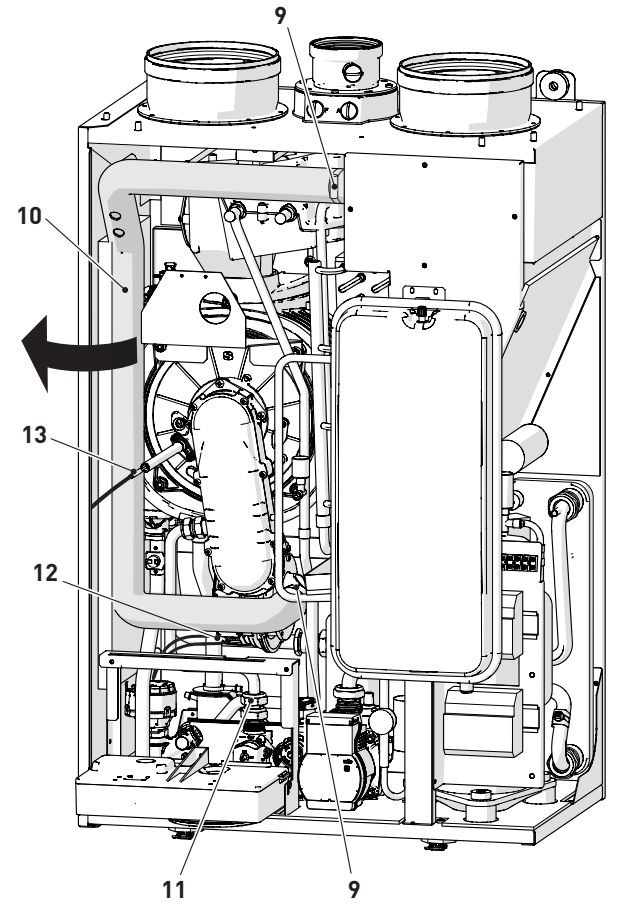


Fig. 164

– Unscrew the four nuts (14) securing the combustion chamber door (15)
– pull the fan/sleeve/door/air pipe assembly (16) forwards and remove it.

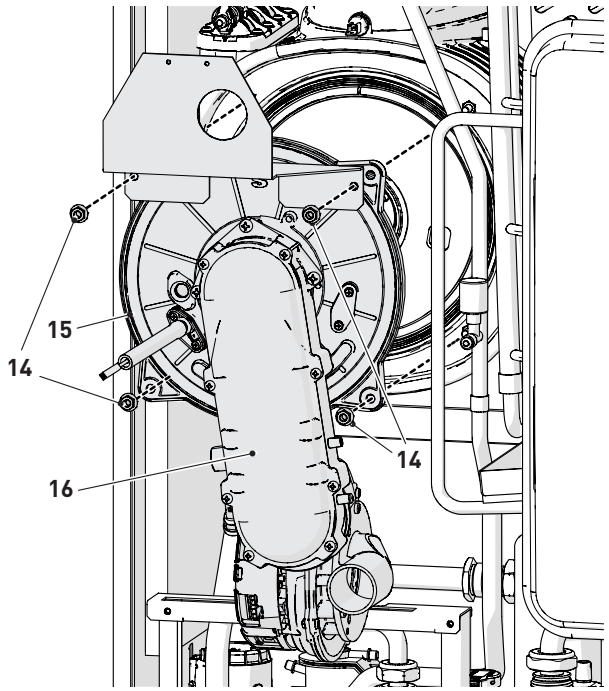


Fig. 165

CAUTION
Work carefully when removing the assembly (16) to prevent any damage occurring to the internal insulation of the combustion chamber and the door seal.

7.3.2 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.

7.3.3 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.

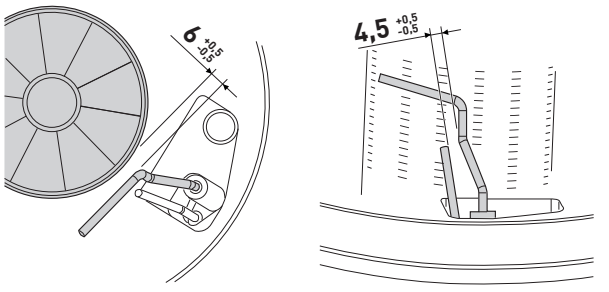


Fig. 166

7.3.4 Cleaning the smoke exchanger

Remove the cover (17) by unscrewing the two screws and remove any carbon deposits.

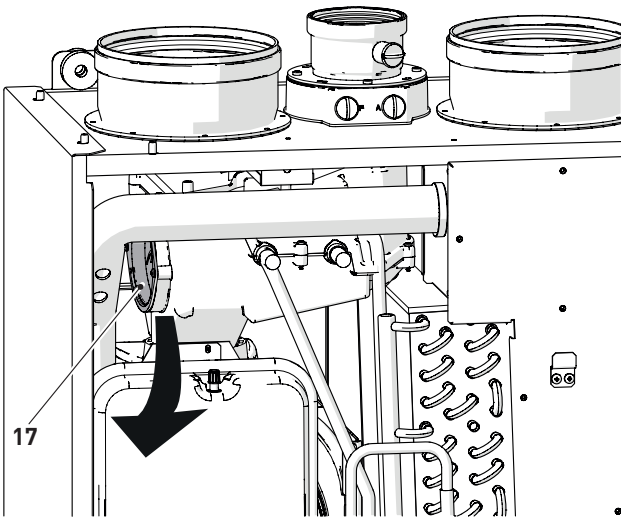


Fig. 167

7.3.5 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 (15) 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 (14) of the door to the combustion chamber
- reconnect the air duct and tighten the clips
- reconnect the connections to the fan and the electrode
- refit the expansion vessel in its original position.

7.3.6 Cleaning the heat pump

The only maintenance work required on the heat pump is cleaning of the evaporator with a suitable tool (a form of brush).

7.4 Checks

7.4.1 Checking the flue

Check that the combustion air inlet/outlet ducts and smoke outlet duct are integral and airtight.

7.4.2 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 (see section**Expansion vessel**".

Once the checks described above have been completed:
- refill the boiler as described in section "**SYSTEM Filling**"
- check that the siphon has been filled correctly
- Start the boiler, activate the "**Chimney sweep function**" and carry out combustion analysis as detailed in Appendix 2
- refit the front panel, fixing it in place with the two catches (1).

7.5 Circuit Board Replacement

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

Type	No.	Description	Setting for Murelle Revolution 30
PAR	01	Index showing boiler power in kW 6 = 30 (MURELLE REVOLUTION 30)	6
PAR	02	Hydraulic configuration 0 = combi 1 = system 2 = N/A 3 = N/A 4=instant with solar power input	0
PAR	03	Gas Type Configuration 0 = G20/G25; 1 = G31	0 or 1

To enter "**Parameter setting and display**" refer to the indications provided in the specific section.
Once the parameters in the table have been set, you must carry out the entire phase of "**Automatic self-calibrating procedure**" described in the specific section.
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 in the specific section.

7.6 Malfunction codes and possible solutions

Boiler fault (gas side)

Type	No.	Fault	Solution
ALL	01	Not used	
ALL	02	Low water pressure in system	- Restore pressure - Check for any leaks in the system
ALL	03	High water pressure in system	- Empty the system via the drain valve on the hydraulic assembly and bring the pressure to approximately 1.2 bar
ALL	04	Domestic hot water sensor (SS) fault	- Check connections - Check the sensor is working
ALL	05	Delivery sensor (SM) fault	- Check connections - Check the sensor is working
ALL	06	No flame detection	- Check the integrity of the electrode and check that it is not grounded - Check gas availability and pressure - Check the operation of the gas valve - Clean and check the integrity of the mesh filter on the pressure point of the gas valve installed in the lower part of the boiler. If necessary, replace the mesh filter
ALL	07	Safety thermostat (TS), intervention	- Check the sensor or thermostat connections - Deaerate the system - Check the bleed valve - Replace the sensor or the thermostat - Check that the pump impeller is not blocked
ALL	08	Fault in the flame detection circuit	- Check the integrity of the electrode and check that it is not grounded - Check gas availability and pressure - Check the operation of the gas valve
ALL	09	No water circulating in the system	- Check the rotation of the pump rotor - Check the electrical connections - Replace the pump
ALL	10	Auxiliary sensor fault	- Check PAR 02 "hydraulic configuration" - Check the electrical connection
ALL	11	Gas valve modulator disconnected	- Check the electrical connection
ALL	12	Incorrect configuration of the open / sealed chamber	- Set the parameter PAR 04 (Combustion configuration) to 0
ALL	13	Exhaust sensor (SF) intervention	- Replace the smoke probe - Contact the Technical Assistance Centre
ALL	14	Exhaust sensor (SF) fault	- Replace the smoke probe - Check the electrical connection of the smoke probe, if the problem is not resolved, contact the Assistance Centre
ALL	15	Fan check cable disconnected	- Check the connection cable between the fan and the board
ALL	18	Condensate level fault	- Check for any clogging in the pipe which takes the condensate to the siphon - Check that the siphon is not clogged
ALL	28	Maximum number of consecutive resets reached (6)	- Wait 1 hour and try unblocking the board again - Contact the Technical Assistance Centre
ALL	30	Return sensor (SR) fault	- Replace the return probe - Check parameters - Contact the Technical Assistance Centre
ALL	37	Fault due to low network voltage	- Check the voltage - Contact your network provider
ALL	40	Incorrect supply frequency detected	- Contact your network provider
ALL	41	Flame loss more than 6 consecutive times	- Check the ignition/detection electrode - Check the gas supply (open valve) - Check mains gas pressure
ALL	42	Button fault	- Check that buttons are working
ALL	43	Open Therm communication fault	- Check the OT electric connection
ALL	44	Gas valve timeout fault without flame	- Check for the presence of water hammer on the hot water system and, if present, mount a water hammer arrestor - Check for any abnormal requests on the room thermostat - Contact the Technical Assistance Centre
ALL	62	Self-calibrating procedure is required	- Carry out the self-calibrating procedure (see the specific section)
ALL	72	Incorrect positioning of the delivery sensor	- Check delivery sensor operation and position
ALL	77	EV2 SGV current max/min absolute limits error	- Check gas valve and board
ALL	78	EV2 SGV current upper limit error	- Check gas valve and board
ALL	79	EV2 SGV current lower limit error	- Check gas valve and board
ALL	80	Fault on the valve control logic line/ valve cable damaged	- Check gas valve and board
ALL	82	Block due to numerous combustion control failures	- Check electrode - Check outlets

Type	No.	Fault	Solution
ALL	84	Flow rate reduced for (presumed) low pressure on mains gas	- Check gas flow rate
ALL	88	Internal error (board component protection)	- Check the board is working - Replace board
ALL	89	Unstable combustion feedback signal error	- Check electrode - Check outlets - Check air diaphragm (for BF models) - Check gas calibration
ALL	90	Combustion set cannot be reached error	- Check electrode - Check outlets - Check air diaphragm (for BF models) - Check gas calibration
ALL	91	Gas valve out of range	- Recalibrate the gas valve
ALL	92	System has reached maximum air correction error (at the minimum flow rate)	- Check electrode - Check outlets - Check air diaphragm (for BF models) - Check gas calibration
ALL	93	Combustion set cannot be reached error	- Check electrode - Check outlets - Check air diaphragm (for BF models) - Check gas calibration
ALL	95	Flame signal micro interruptions error	- Check electrode - Check board - Check electric power supply - Check gas calibration
ALL	96	Lockout due to flue (exhaust) blockage	- Check for blockage in flue - Check the smoke outlet and electrode position (not touching the burner)
ALL	98	SW error, board start-up	- Contact the Technical Assistance Centre
ALL	99	General board error	- Contact the Technical Assistance Centre
-	-	Frequent relief valve intervention	- Check circuit pressure - Check expansion vessel
-	-	Limited production of domestic hot water	- Check the diverter valve - Check that plate heat exchanger is clean - Check domestic hot water circuit valve

Heat pump fault

Type	No.	Description	Solution
P	02	High pressure	Automatic reset Remove and reconnect the electrical power supply
P	04	Low pressure	Automatic reset Remove and reconnect the electrical power supply
P	12	Antifreeze (heat exchanger temp. < 3°C)	Wait for heat exchanger temp. > 5°C
P	15	High temperature (HP delivery temp. > 50°C)	Automatic restore when delivery temp. < 48°C
P	32	Probe errors aggregate (one or more probes with an active alarm)	Automatic restore after sensor replaced
P	33	Battery temperature probe error	Replace the damaged probe
P	34	Inlet water temperature probe error	Replace the damaged probe
P	35	Outlet water temperature probe error	Replace the damaged probe

8 MURELLE REVOLUTION 30 CHECKLIST

The **Murelle Revolution 30** boiler must be installed and commissioned solely by qualified companies or by professionally qualified technicians as specified in the appliance manual.

INSTALLATION

N°	Description	✓
1	Read the appliance manual supplied.	
2	Check that the installation location/room and chosen wall are suitable for the appliance type and weight.	
3	Use the template provided with the appliance to prepare the plumbing, fuel, air inlet/outlet ducts, and smoke outlet ducts.	
4	Attach the anti-vibration supports and spacers to the back of the appliance.	
5	Mount the appliance on the wall.	
6	Wash and treat the water system before connecting up the plumbing and gas.	
7	Connect up the plumbing, gas supply and condensate outlet. Fit a filter to the system return pipe.	
8	Check that the smoke system load loss falls within the limits as per the manual, then prepare and mount the air inlet and outlet ducts and the smoke outlet duct.	
9	Connect up the electrics to the grid, main control panel, thermostat(s) for the zones, and outdoor probe.	
10	Open the gas mains and check the seal of the joints. Then shut off the gas supply.	
11	Check the water characteristics, then fill to 1-1.2 bar pressure.	
12	De-aerate the systems.	

COMMISSIONING

N°	Description	✓
13	Open the water system isolation valves and the gas valve and power the appliance.	
14	Select "Summer" mode on the main control panel.	
15	Disconnect and reconnect the power using the main switch.	
16	Auto-calibrate the boiler from the boiler control panel. Check that the boiler (gas side) produces hot water correctly, and check also that the gas line load loss at maximum power falls within the standard values (see standard UNI 7129).	
17	Select "Winter" mode and activate the system via the remote control.	
18	Check that Murelle Revolution operates correctly in HP + Boiler mode; where necessary, check the function status/-specific set points via the technical menu (see instruction manual).	
19	Activate the "Chimney sweep" function and check the data and combustion performance.	
20	Check that the delivery limit temperature is compatible with the type of system: the factory setting is 65°C.	

The installer declares that the appliance (serial no. .....) has been installed, commissioned and checked in line with the manufacturer's instructions and the laws in force in the country where the appliance will be used.

Stamp and signature

9 PRODUCT DATA SHEET

sime	
MURELLE REVOLUTION 30	
Seasonal energy efficiency of heating from heat pump ["I"] (%)	155
Temperature control contribution (%)	4
Additional boiler contribution (%)	-25
Solar energy contribution (%)	0
Energy efficiency class of combined central heating	A++
Seasonal energy efficiency of combined central heating (%)	134
Weighting factor of preferential heating appliance heat output ["II"]	0,403
Result of mathematical expression 294/(11*Pnominal) ["III"]	6,68
Result of mathematical expression 115/(11*Pnominal) ["IV"]	2,61
Energy efficiency of combi boiler for DHW (%)	84
D.H.W load profile declared	XL
Solar energy contribution (%)	-
Energy efficiency class of combined DHW	A
Energy efficiency of combined DHW in average climatic conditions (%)	84
Result of mathematical expression (220*Qref)/Qnonsol ["II"]	-
Result of mathematical expression (Qaux*2,5)/(220*Qref) ["III"]	-
Conforming to Annex IV (item 6) of the Delegated Regulations (EU) No. 811/2013 which supplements Directive 2010/30/EU	

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.

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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^3/hr		or		ft^3/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^3/hr		or		ft^3/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_2 %	CO/CO_2 Ratio	
	At min rate (where possible)	CO ppm	CO_2 %	CO/CO_2 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.

SERVICE/INTERIM WORK ON BOILER delete as appropriate				Date:	
Engineer name:		Company name:			
Telephone Nº:		Gas Safe registration Nº:			
Max rate	CO	ppm	CO_2	%	CO/CO_2
Min rate	CO	ppm	CO_2	%	CO/CO_2
Where possible, has a flue integrity check been undertaken in accordance with manufacturers' instructions, and readings are correct?"			yes		
Gas rate:	m^3/h	OR		ft^3/h	
Were parts fitted? delete as appropriate		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 delete as appropriate				Date:	
Engineer name:		Company name:			
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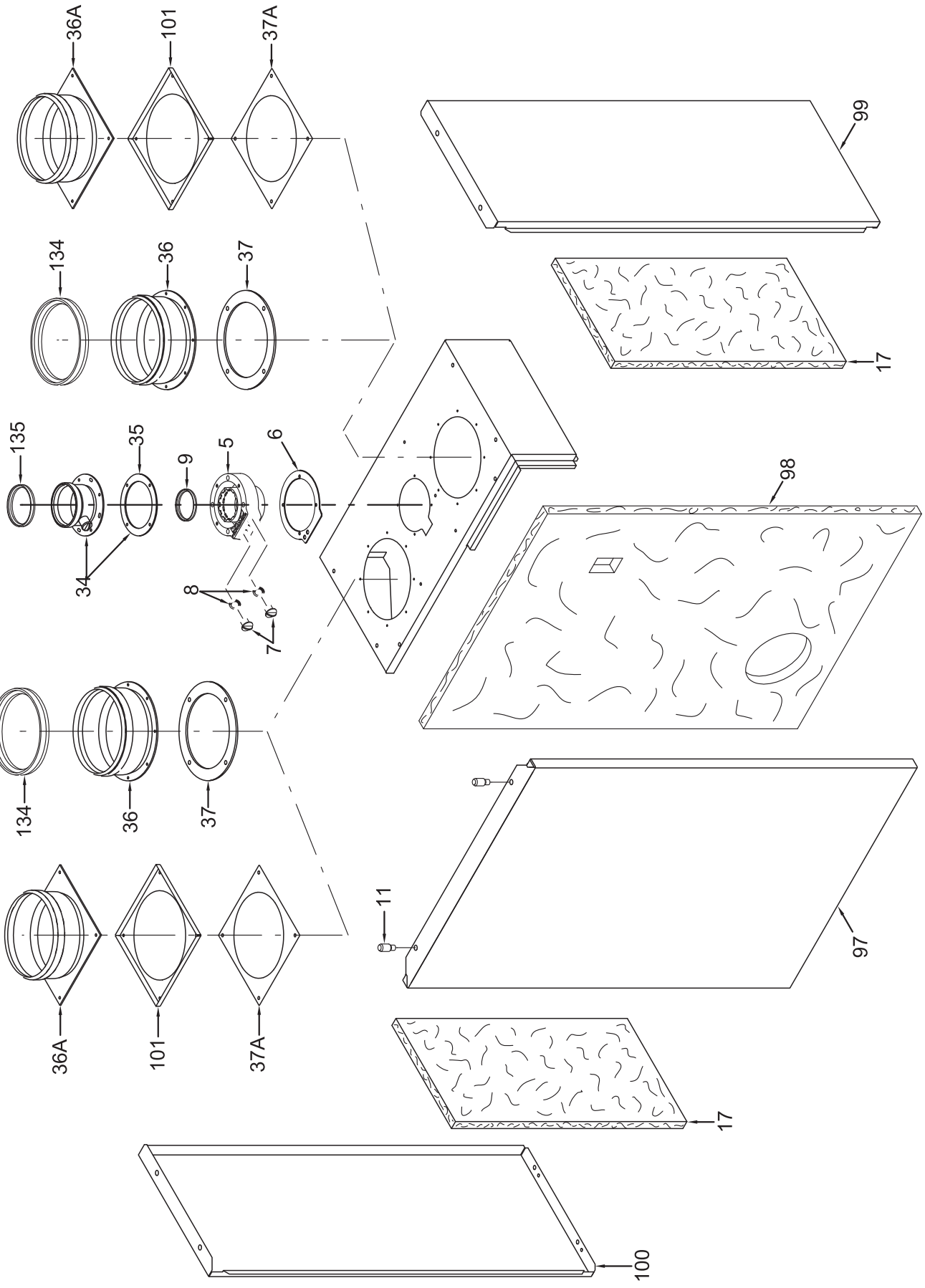
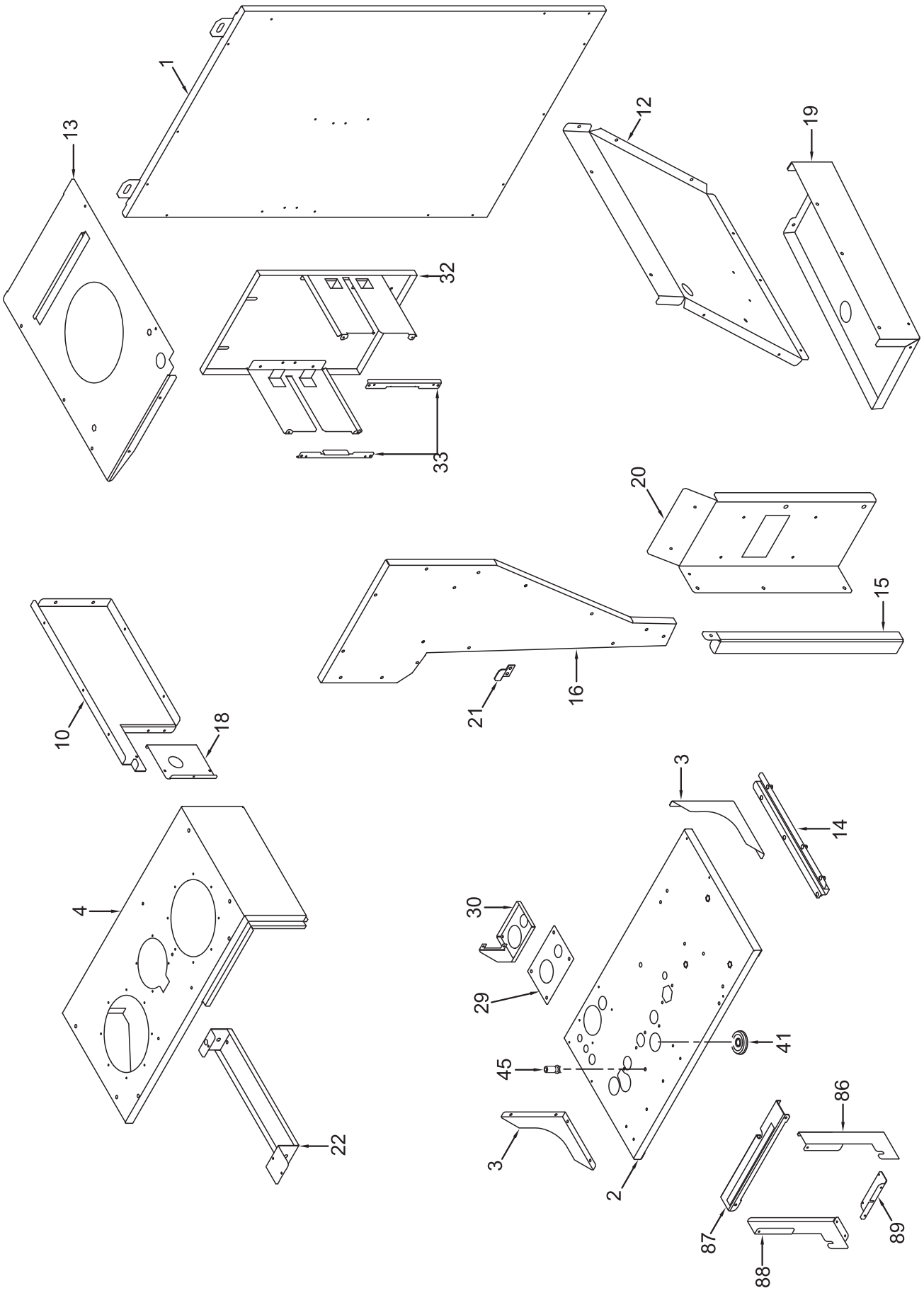
10 EXPLODED VIEWS

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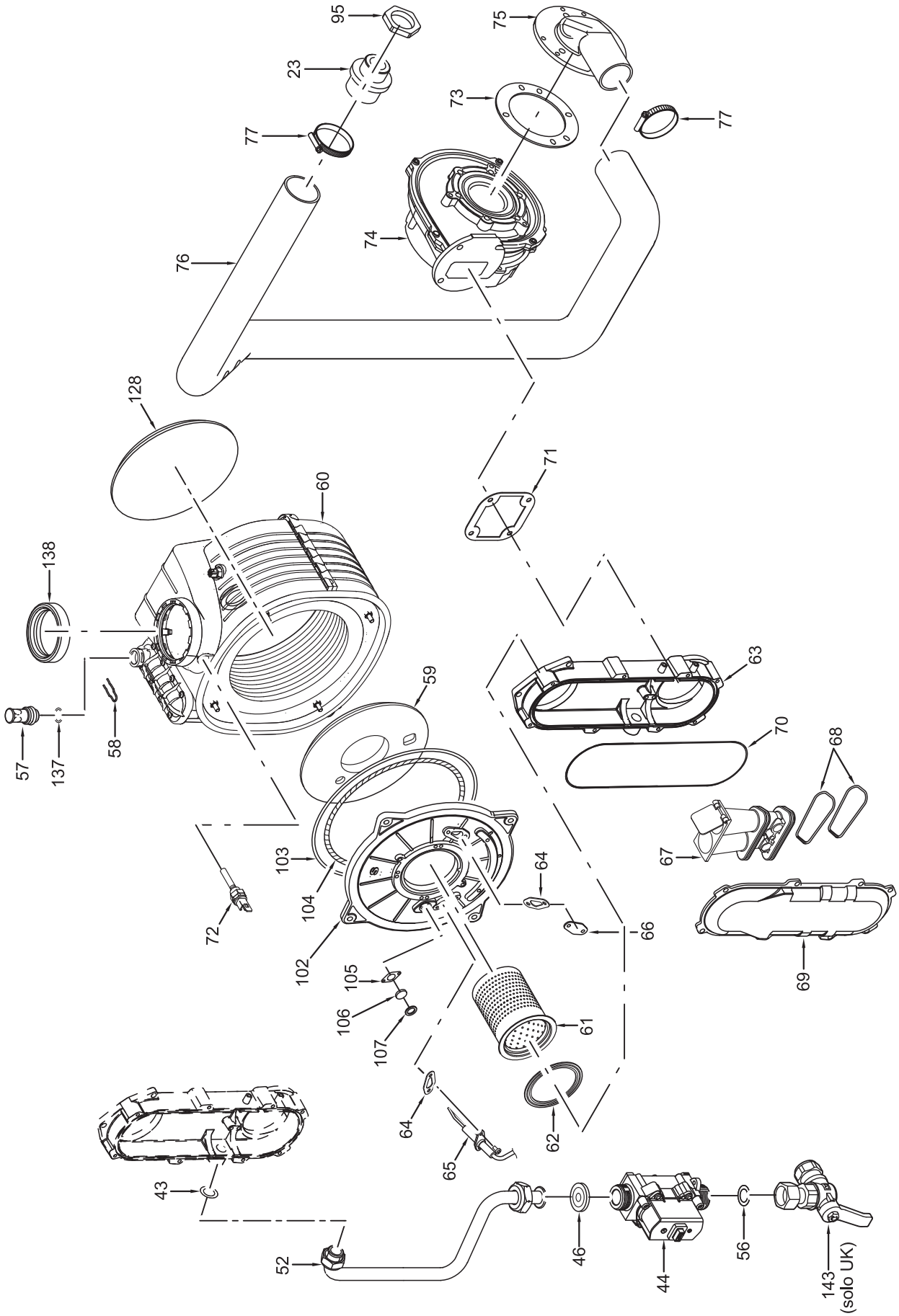
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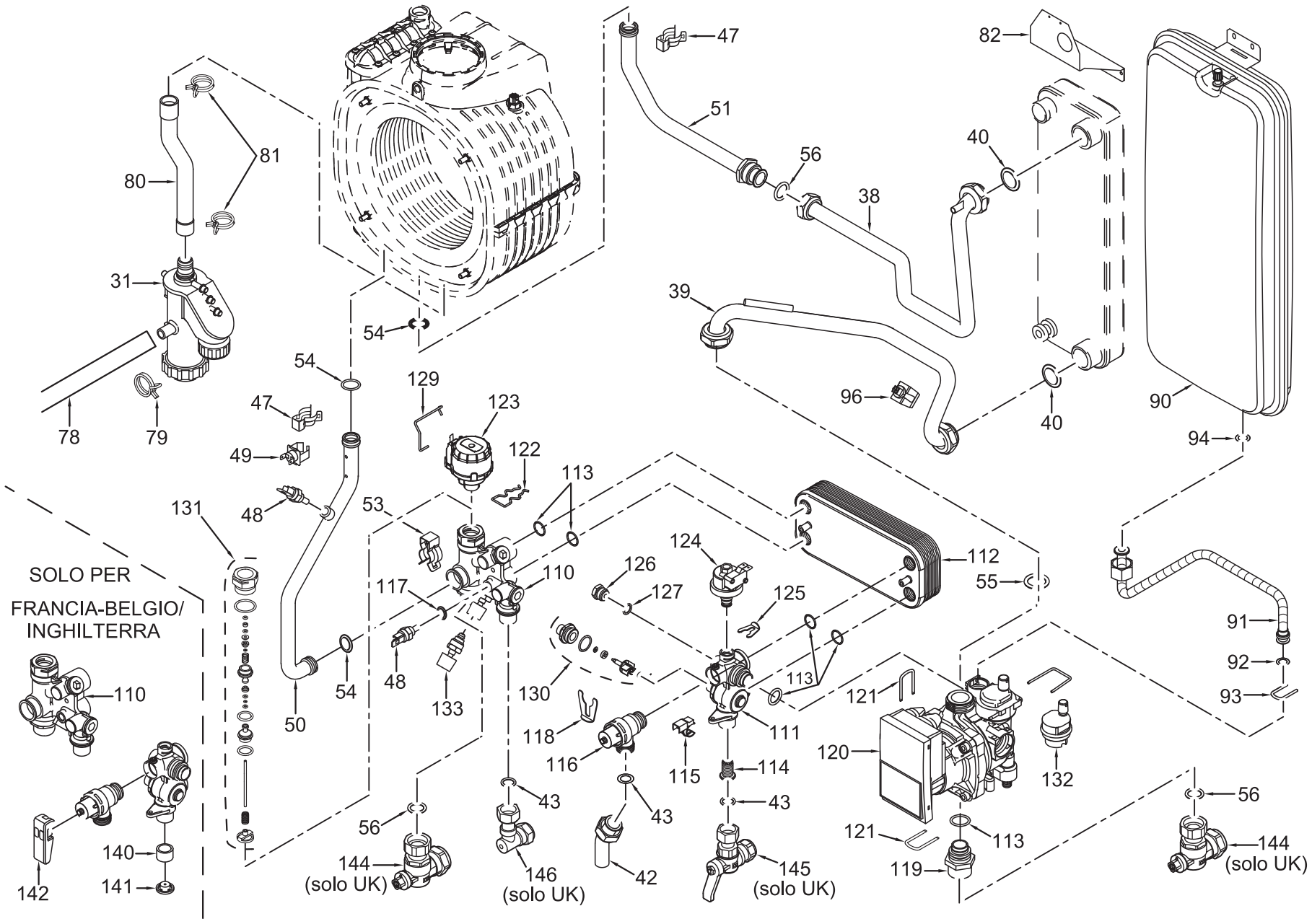
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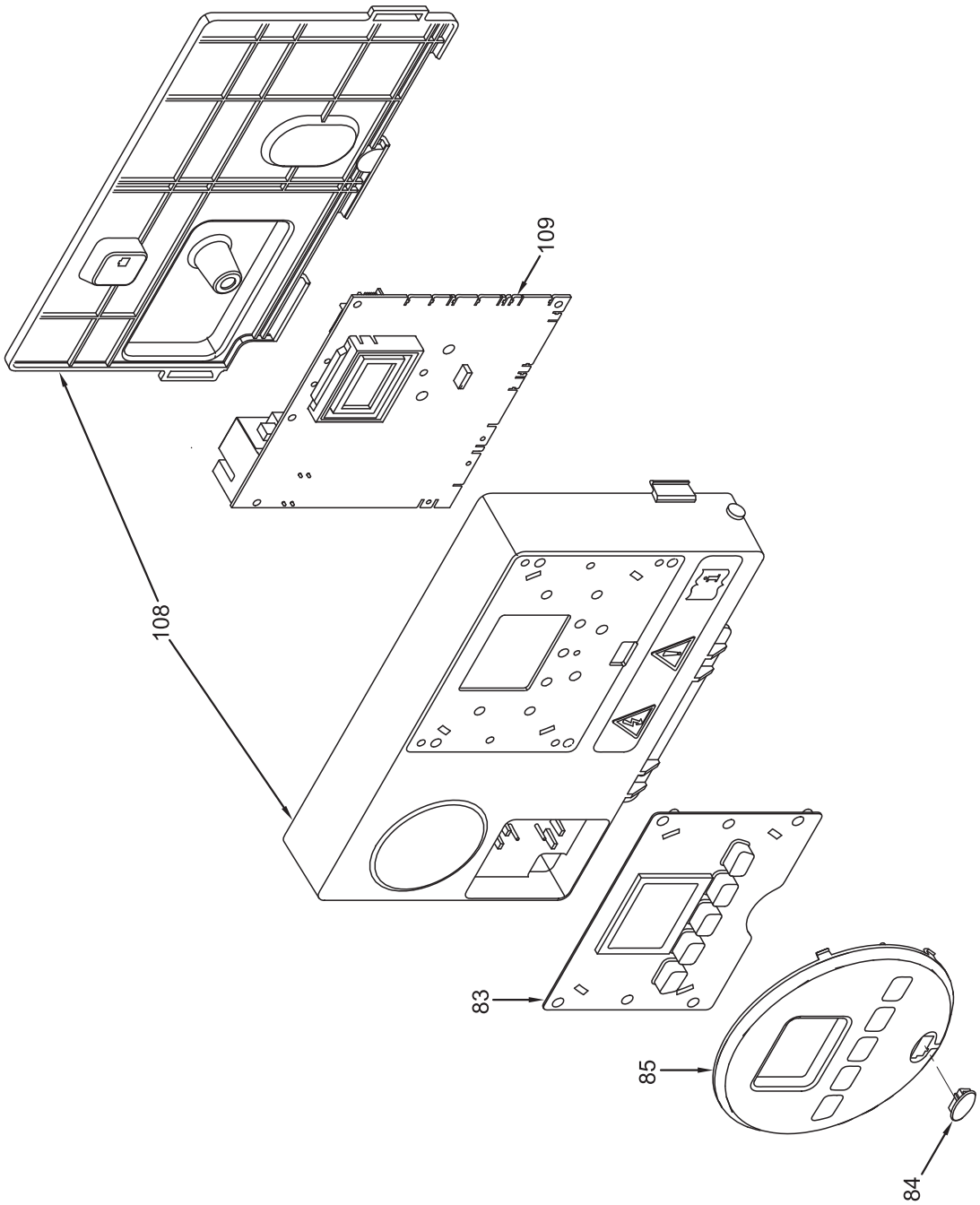
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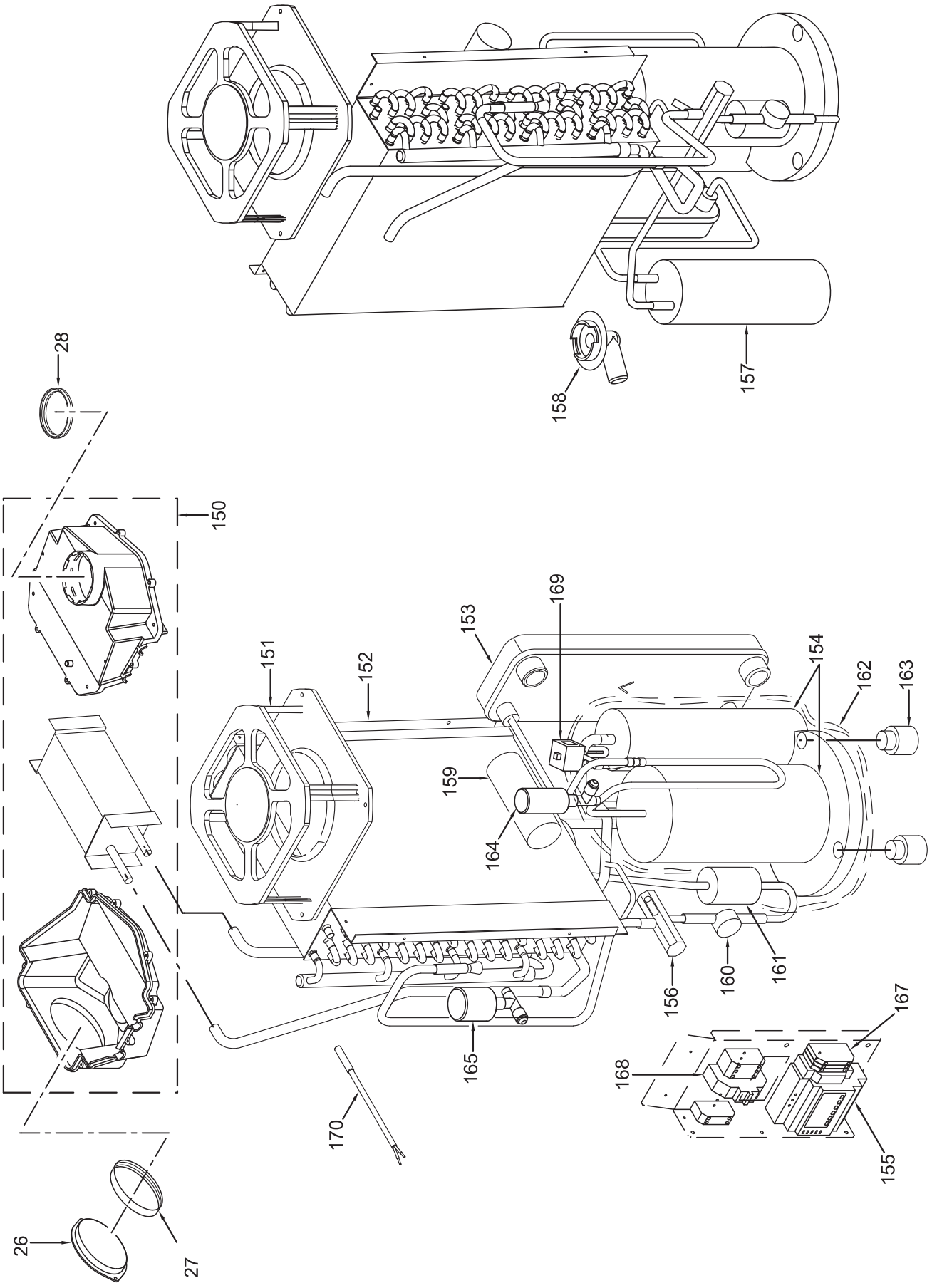
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Pos.	Code	Description	Murelle Revolution
			30
1	6256803	Rear frame assembly	x
2	6256783	Frame assembly lower side	x
3	6256800	Frame handkerchief	x
4	6256782	Hat sheet	x
4A	6256811	Hat sheet	x
5	6287912	Air/smoke manifold	x
6	6028710	Air/smoke manifold gasket	x
7	6147409	Air/smoke manifold plug M14x1.5	x
8	6226417	O-ring 3043	x
9	6248817	Lip seal for Ø 60 pipe	x
10	6256771	Fan support plate	x
11	6133103	Fixing panels pin	x
12	6256773	Battery right closing	x
13	6256772	Fan support	x
14	6256778	Based reinforcement	x
15	6256777	Battery support	x
16	6256775	Fan cover	x
17	6087552	Insulator panel	x
18	6256774	Fan left box closing	x
19	6256780	Air battery lower support	x
20	6256802	Control support	x
21	6256794	Expansion vessel bracket	x
22	6256799	Fumes evaporator support	x
23	6259510	Air intake fitting fan	x
26	6278752	Fumes evaporator inspection plu	x
27	6248825	Lip seal for Ø 100 pipe	x
28	6248818	Lip seal for Ø 80 pipe	x
29	6087555	Water trap insulating	x
30	6256804	Water trap bracket supporting	x
31	6277210	Water trap	x
32	6256807	Exchanger assembly support brac	x
33	6010892	Support exchangers bracket	x
34	8089912	Separ.flue kit PP D80	x
35	6028702	Gasket Ø 95x125x2	x
36	6083067	Intache/exhaust ø160 adaptor	x
36A	6083068	Intache/exhaust ø160 adaptor	x
37	6028713	Neoprene gasket øi160	x
37A	6028715	Neoprene gasket øi160	x
38	6277853	Boiler-exchanger return pipe	x
39	6277854	Circulat.-exchang.pipe connecti	x
40	2030229	Gasket Ø 22x30x2	x
41	6226752	Silicone pipe ring ø12X35	x
42	6157659	Pressure relief valve drain pip	x
43	2030255	Gasket Ø 12,5x18,5x3	x
44	6243839	Gas valve	x
45	6235801	Pressure test nipple M6	x
46	6050471	Nozzle 530	x
47	6226619	Spring for heat exchanger conne	x
48	6231351	Plunged sensor	x
49	6146729	100°C safety stat	x
50	6277852	Flowing pipe to C.H. system	x
51	6277851	Return pipe from C.H. system	x
52	6277850	Valve gas tube	x
53	6226601	Spring for heat exchanger conne	x
54	6226412	O-ring 3068	x
55	2030267	Piracriten gasket Ø 30x17x2	x
56	2030228	Gasket Ø 17x24x2	x
57	6147412	Plug for air vent connection	x
58	6226624	Spring air vent knob	x
59	6269008	Main exchanger door insulation	x
60	6278913	Main exchanger body	x
61	8076115	Burner + gasket kit	x
62	6174828	Gasket for burner flange	x
63	6278813	Air-gas hose lower side	x

Pos.	Code	Description	Murelle Revolution
			30
64	6174809	Gasket for ignition electrode	x
65	6221670	Ignition-ionisation electrode	x
66	6285950	Bracket	x
67	5200301	Air/gas mixer assembly	x
68	6226470	ORing 52,07 x 2,62	x
69	6278812	Air-gas hose upper side	x
70	6226465	O-ring Ø 183,83x2,62	x
71	6174816	Gasket for fan flange	x
72	6277130	Probe NTC D.4X40	x
73	6028703	Gasket for duct flange	x
74	6261412	Fan	x
75	6034305	Elbow flange	x
76	6001168	Air intake pipe 40	x
77	2051203	Hose clamp Ø 40-60	x
78	1010215	Rubber pipe dia. 15x2,5	x
79	2051120	Clamp diam. 17,3	x
80	6034124	Flexible pipe L=210	x
81	2051123	Clamp diam. 24,2	x
82	6256793	Expansion vessel upper bracket	x
83	6305131	Rubber button	x
84	6305140	Rubber cap	x
85	6304833	Interface panel	x
86	6256789	Right bracket	x
87	6256792	Lower bracket	x
88	6256790	Left bracket	x
89	6256791	Lower bracket	x
90	5183732	Rectang. expansion vessel 9 l.	x
91	6017407	Flex. pipe F.M.3/8"x18,65 L=500	x
92	6226476	ORing diam.15x2	x
93	6226643	Pipe fixing spring	x
94	2030226	Gasket Ø 10,2x14,8x2	x
95	6146350	Nut 1/2" M32x1.5	x
96	6231372	Temperature sensor	x
97	6256815	Casing door	x
98	6087553	Front insulation	x
99	6256885	Casing right hand side panel	x
100	6256886	Casing left hand side panel	x
101	6256810	ø160 adaptor fixing bracket	x
102	5188361	Main exchanger door	x
103	6248870	Combustion chamber O-ring	x
104	6248871	Glass fibre sealing cord	x
105	6311810	Glass fixing flange	x
106	6020103	Sight glass	x
107	6248872	Sight glass gasket	x
108	6304720	Control panel	x
109	6324921	Main P.C.B.	x
110	6265871	C.H. flow manifold	x
111	6265830	C.H. return manifold	x
112	6265656	12 plate-type heat exchanger	x
113	6226475	ORing diam.18,64x3,53	x
114	6222003	D.H.W. filter	x
115	6131440	Flowmeter sensor	x
116	6040225	Pressure relief valve 1/2" 3 ba	x
117	6022010	Sensor gasket	x
118	6226645	Spring clip	x
119	6120560	Pump nipple 3/4"	x
120	6272323	Modulating circulating pump	x
121	6226644	Spring clip for rotating connec	x
122	6226636	D.H.W. elektrovalve fix.spring	x
123	6087332	Motor for diverting valve	x
124	6273612	Water pressure transducer	x
125	6226639	Spring clip	x
126	6147401	Plug 1/4"	x
127	2030225	Gasket Ø 5,5x11x2	x
128	6281545	Replacement rear insulat. kit	x

Pos.	Code	Description	Murelle Revolution
			30
129	6226638	Divertor valve motor spring cli	x
130	6319644	Flowmeter group	x
131	6319645	Three-way plates group	x
132	6013182	Automatic air vent	x
134	6248847	Gasket Ø 160	x
135	6248823	OR gasket Ø80	x
137	6226464	O-ring 115 diam. 11,91x2,62	x
138	6248855	P.C. inlet/oulet smokes gasket	x
140	6175180	Flow control spacer	x
141	6281431	14 l/min. flow control	x
142	6275911	Pressure relief valve operation	x
143	6177530	Gas cock 3/4" F x 15	x
144	6177523	Ball cock 3/4"	x
145	6177506	Ball cock 1/2" x 15	x
146	6142330	Quarter bend 1/2" x 15	x
150	6326860	PDC battery fumes + insulation	x
151	6261419	PDC fan	x
152	6326885	PDC air battery	x
153	6265675	PDC plate-type heat exchanger	x
154	6326882	PDC compressor	x
155	6326887	PDC regulator	x
156	6326884	Expansion valve	x
157	6326883	PDC receiver	x
158	6247720	Funnel water trap	x
159	6326888	PDC capacitor	x
160	6326889	PDC sight glass	x
161	6326890	PDC liquid filter	x
162	6326891	PDC coat/insulating	x
163	6087561	Antivibration compressor	x
164	6326892	High pressure switch	x
165	6326893	Low pressure switch	x
166	6240709	Power supply 24VDC DIN	x
167	6326896	Fuse holder	x
168	6326895	Magnetothermal switch C10/1N	x
169	6326894	Valve electrical coil	x
170	6326897	NTC probe -50 +105°C	x
700	8092287	Remote control	x
701	8094101	External sensor	x
702	6319700	Springs / clamps kit DIN	x
703	6281534	Gaskets kit	x
704	6319695	Murelle-Format-.....o-ring kit	x
705	6211794	Peephole kit	x
706	5202555	Complete control panel	x
708	6323875	6 pole cable connector CN12	x
709	6323876	4 pole cable connector CN14	x
710	6325628	14 pole cable connect.CN15+CN5	x
711	6325659	9 pole cable connector CN1	x
712	6325658	6 pole cable connector CN2	x
713	6326898	Fuse 5x20 0,8 AF	x
714	6326899	Fuse 5x20 2 AF	x
715	5184817	Fitting cocks kit	x
716	8092286	Remote control	x

11 APPENDIX 1 (GUIDANCE HHIC)

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.

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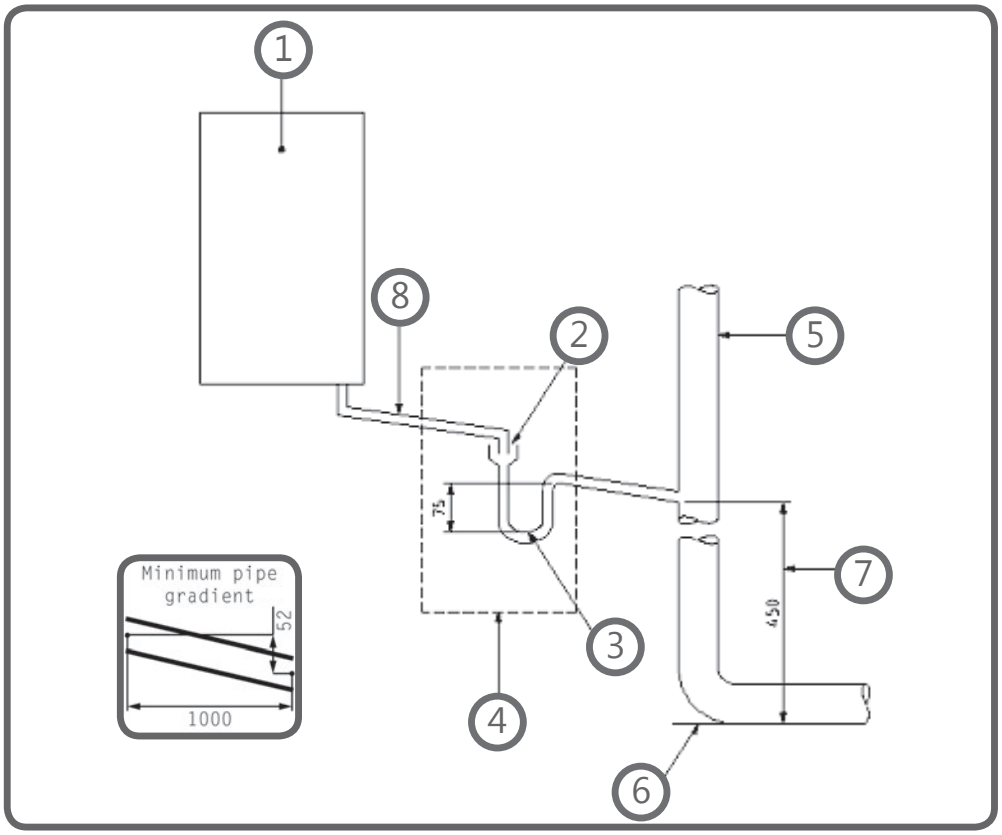
Figure 1 – Connection of condensate discharge pipe to internal soil and vent stack.
Note – Check manufacturer's instructions to see if an air break is required.

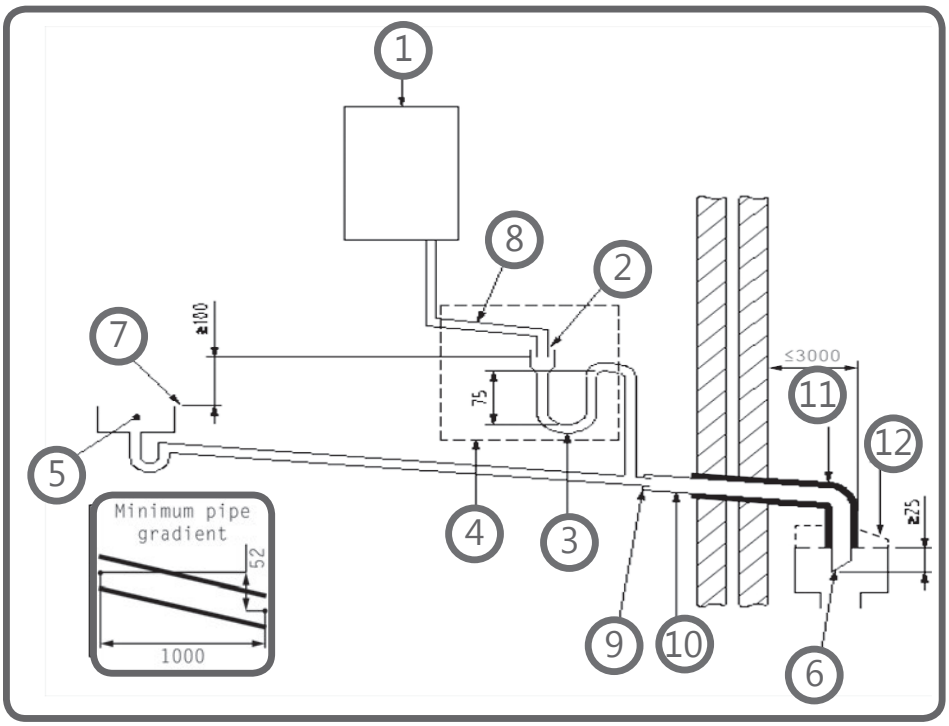


Key

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

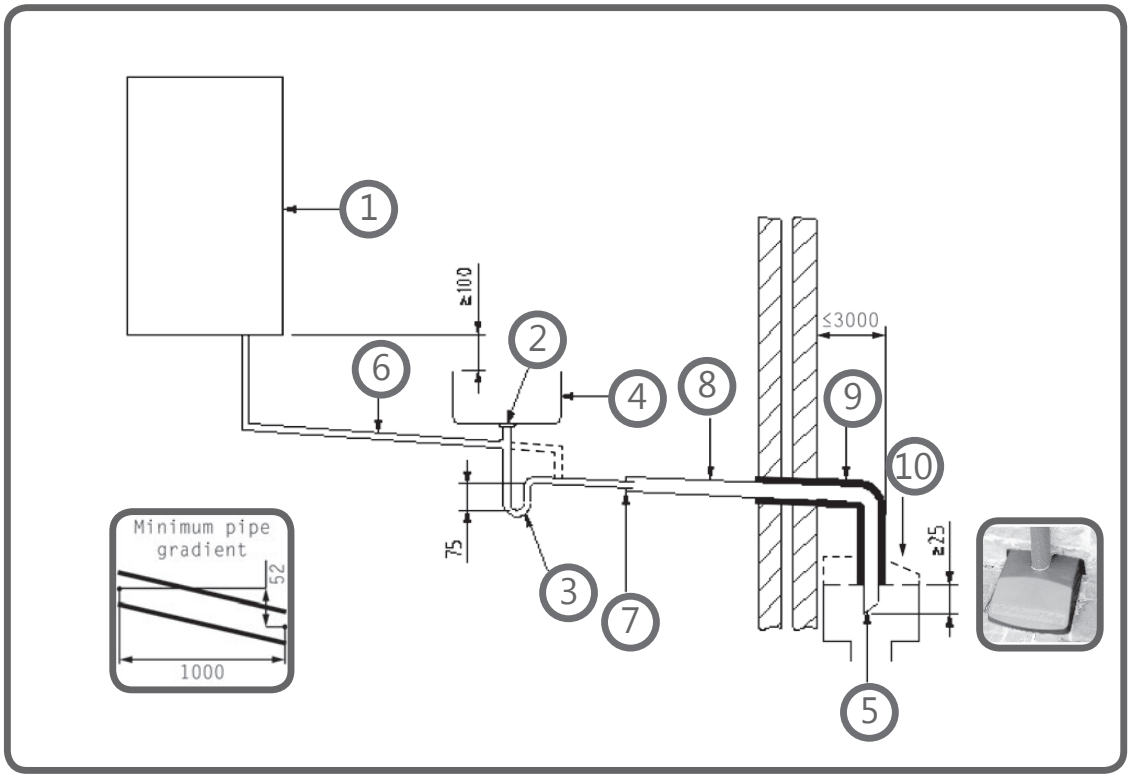
Figure 2(a) – Connection of a condensate discharge pipe downstream of a sink, basin, bath or shower waste trap.
Note – Check manufacturer's instructions to see if an air break is required.



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).

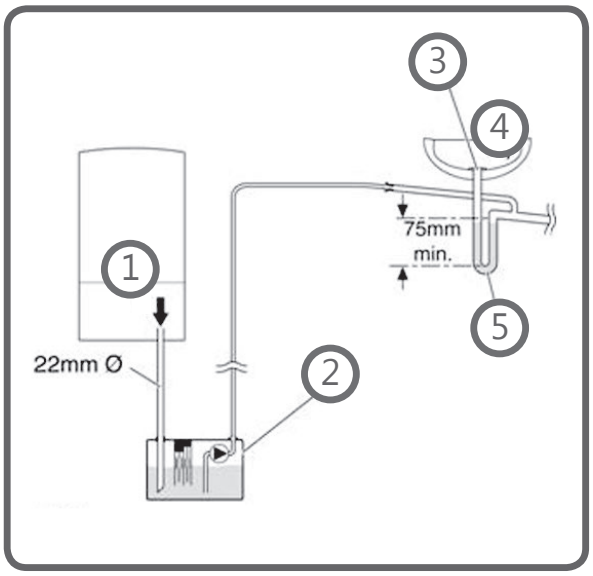
Condensate Pumps

Use of a Condensate Pump to an Internal Termination

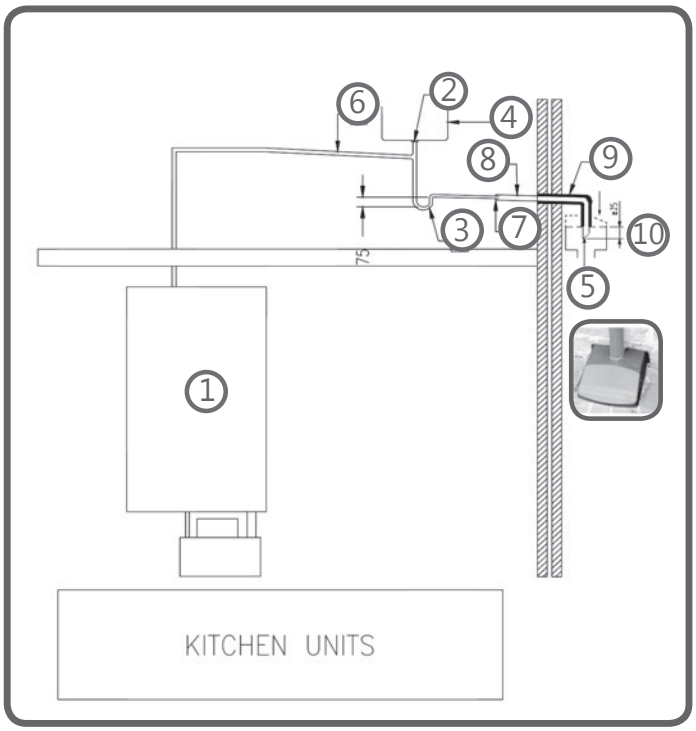
Condensate can be removed using a proprietary condensate pump, of a specification recommended by the boiler or pump manufacturer. In order to minimise the risk of freezing during prolonged sub-zero spells, one of the following methods internal to the property for terminating the boiler condensate pump 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

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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).

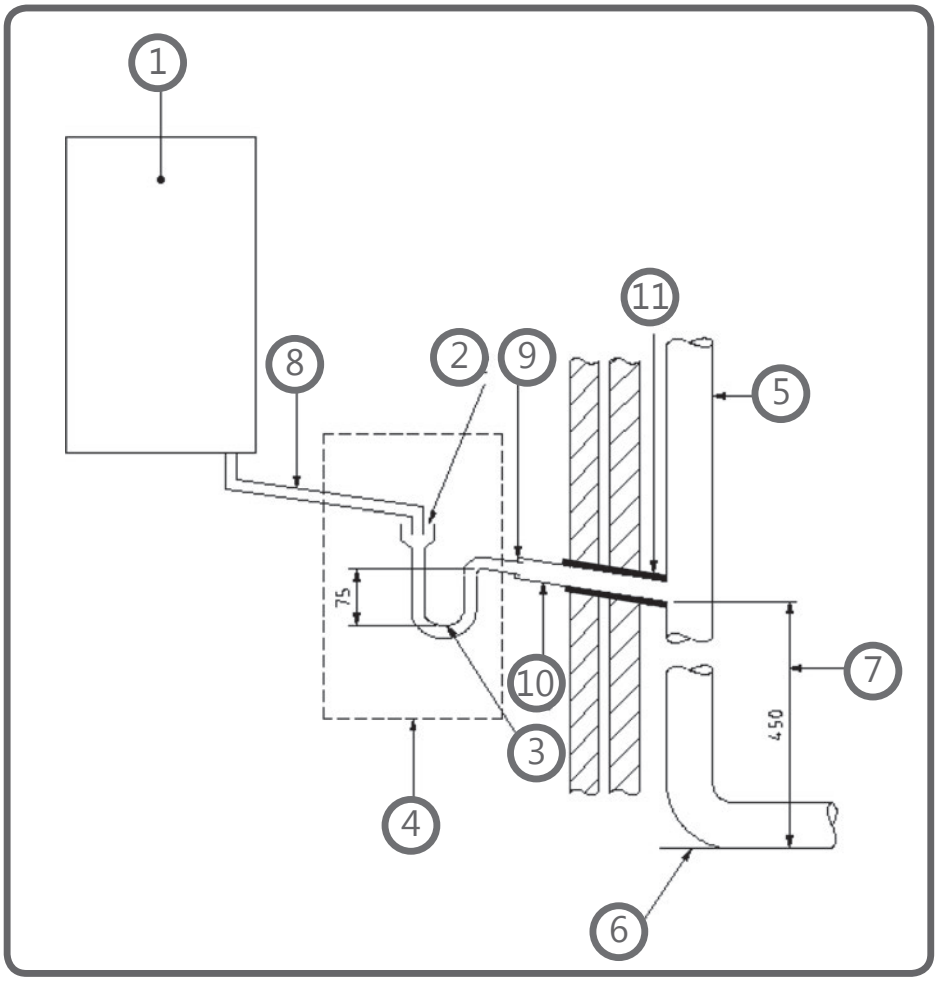
Note - Fixing centres for brackets should be a maximum of 300mm for flexible pipe and 500mm for solid pipe and manufacturer's recommendations should be followed.

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 siphons 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 siphon 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.

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.

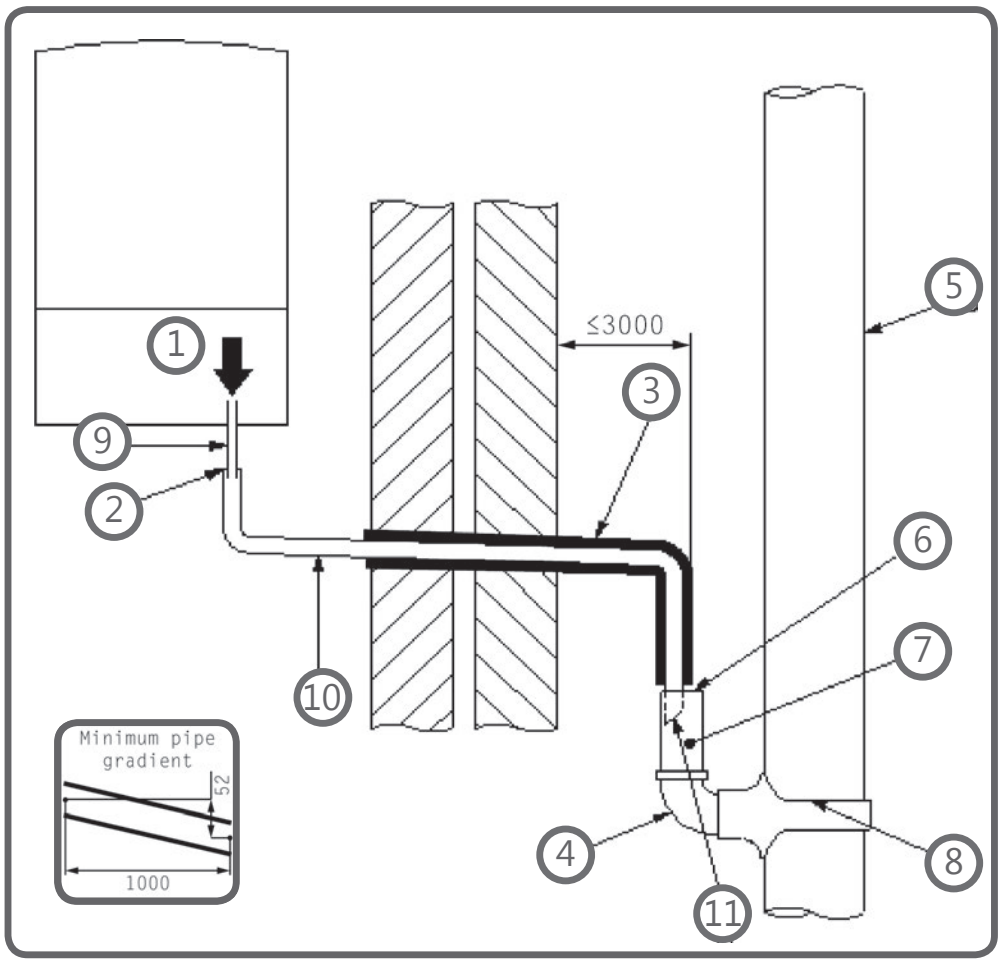
Connecting to a rain water downpipe/External Soil Stack

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 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

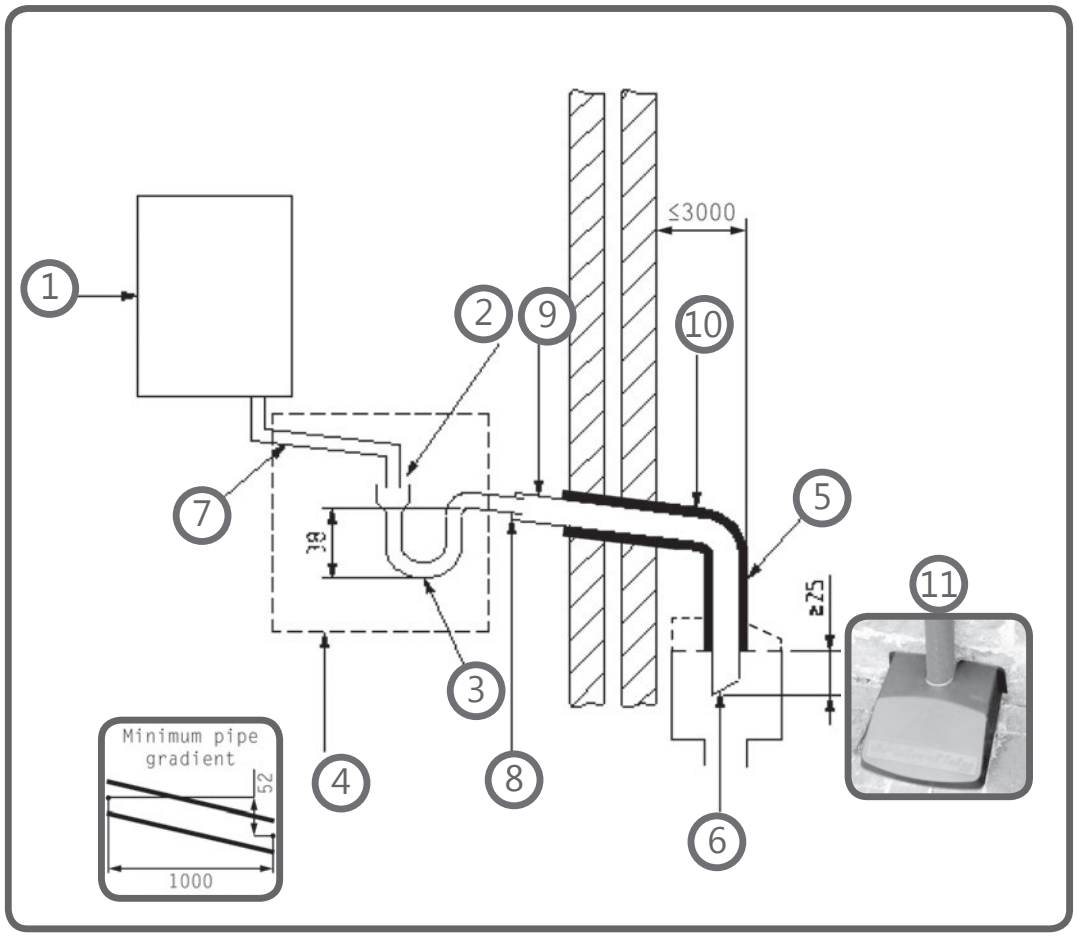
Internal condensate drainage pipes run in unheated areas such as lofts, basements and garages should be treated as external connections and insulated accordingly. Weather proof materials may not be necessary and should be assessed by the heating engineer.

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

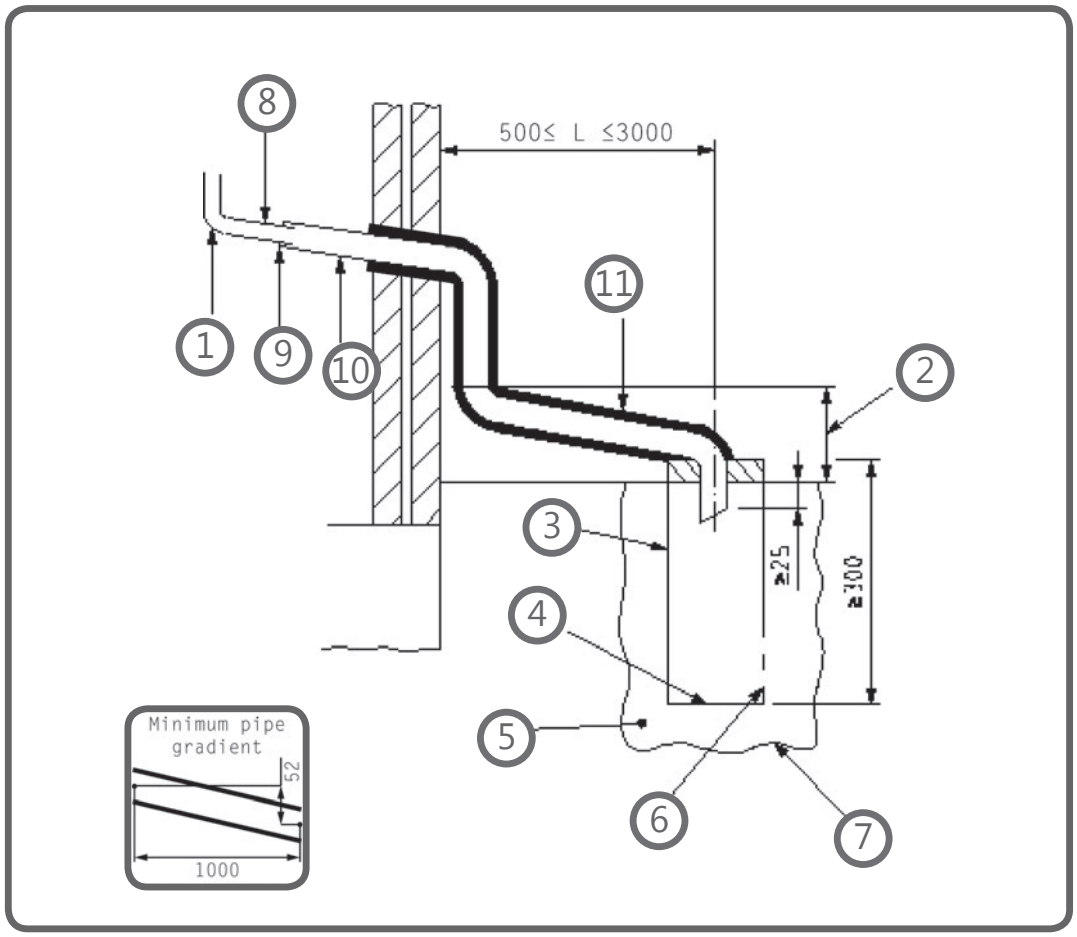
Figure 6 – External drain, gully or rainwater hopper



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

12 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 asembled, 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 TB008).

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.

NOTE
the air gas ratio valve is factory-set and must not be adjusted DURING COMMISSIONING unless this action is recommended after discussions with SIME LTD.

If any such adjustment is recommended and further checking of the boiler is required the installer/service engineer must be competent to carry out this work and to use the flue gas analyser accordingly.

If the boiler requires conversion to operate with a different gas family (e.g. conversion from natural gas to LPG) separate guidance will be provided by the boiler manufacturer and must be followed.

SET BOILER TO MAXIMUM RATE
Set the boiler to operate at maximum rate (full load condition). Allow sufficient time for combustion to stablilise.

NOTE - Do not insert analyser probe during this period to avoid possible "flooding" of sensor.

CARRY OUT FLUE INTEGRITY CHECK USING ANALYSER
Insert analyser probe into the air inlet test point and allow readings to stabilise.

NOTE - The flue must always be installed with flue test point. This will be located within the first piece connected to the boiler.

Is O_2 less than or equal to 20.6% and CO_2 less than 0.2%

NO

VERIFY FLUE INTEGRITY
Analyser readings indicate that combustion products and inlet air must be mixing. Further investigation of the flue is therefore required.

Check that flue components are assembled, fixed and supported as per boiler/flue manufacturer's instructions.

Check that flue and flue terminal are not obstructed.

Is O_2 less than or equal to 20.6% and CO_2 less than 0.2%

YES

NO

Turn off appliance and call SIME LTD Technical Helpline for advice.

the appliance must not be commissioned or used, until problems are identified and resolved.

YES

CHECK CO AND COMBUSTION RATIO AT MAXIMUM RATE
With boiler still set at maximum rate, insert analyser probe into flue gas samplng point. Allow readings to stablise before recording.

Is CO less than 350ppm AND CO/CO_2 ratio less than 0.004

NO

Check all seals around the appliance burner, internal flue seals, door and case seals. Rectify where necessary.

Is CO less than 350ppm AND CO/CO_2 ratio less than 0.004

YES

NO

Turn off appliance and call SIME LTD Technical Helpline for advice.

the appliance must not be commissioned or used until problems are identified and resolved.

NOTE
Check and record CO and combustion ratio at both maximum AND minimum rate before contacting SIME LTD.

YES

SET BOILER TO MINIMUM RATE
In accordance with boiler instructions, set boiler to operate at minimum rate (to minimum load condition). Allow sufficient time for combustion to stablilise.

NOTE: If manufacturer's instructions do not specify how to set boiler to minimum rate contact Technical Helpline for advice.

CHECK CO AND COMBUSTION RATIO AT MINIMUM RATE
With boiler set at minimum rate, insert analyser probe into flue gas samplng point. Allow readings to stablise before recording.

NOTE - if no flue gas sampling point is present and the correct procedure is not specified in the manual, contact SIME LTD Technical Helpline for advice.

Is CO less than 350ppm AND CO/CO_2 ratio less than 0.004

NO

YES

BOILER IS OPERATING SATISFACTORILY
no further actions required

Ensure test points are capped, boiler case is correctly repleced and all other commissioning procedures are completed.

Complete Benchmark Checklist, recording CO and combustion ratio readings as required.

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