Low temperature wall mounted boiler

UNIQA.REVOLUTION

USER, INSTALLATION AND SERVICING INSTRUCTIONS

EN

Fonderie SIME S.p.A.

6330326 - 03/2019 - R2

TRANSLATION OF THE ORIGINAL INSTRUCTIONS

WARNINGS

- After having removed the packaging make sure that the product supplied is integral and complete in all its parts. If this is not the case, please contact the Dealer who sold the appliance.
- The appliance must be used as intended by **Sime** who is not responsible for any damage caused to persons, animals or things, improper installation, adjustment, maintenance and improper use of the appliance.
- In the event of water leaks, disconnect the appliance from the mains power supply, close the water mains and promptly inform professionally qualified personnel.
- Periodically check that the operating pressure of the water heating system when cold is **1-1.2 bar**. If this is not the case, increase the pressure or contact professionally qualified personnel.
- If the appliance is not used for a long period of time, at least one of the following operations must be carried out:
  - *set the main system switch to "OFF";*
  - *close the gas and water valves for the water heating system.*
- In order to ensure optimal appliance operations **Sime** recommends that maintenance and checks are carried out **ONCE A YEAR**.

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 in the event the appliance is transferred or sold to another Owner or User or is installed on another system.
- **Installation and maintenance** of this appliance must be carried out by a qualified company or by a professionally qualified technician, or authorised person, in accordance with the instructions contained in the manual. The company or technician will, at the end of installation operations, issue a statement of compliance with national and local Technical Standards and Legislation in force.

IT IS FORBIDDEN

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

IT IS FORBIDDEN

- Do not block the condensate drain (if present).
- Do not pull, detach or twist the electrical cables coming out of the appliance even if the appliance is disconnected from the mains power supply.
- Do not expose the boiler to atmospheric agents. These boilers can also be installed in partially covered areas, as per EN 15502, with a maximum ambient temperature of 60 °C and a minimum ambient temperature of - 5 °C. It is recommended that the boiler is installed below weathered roofs, on the balcony or in a protected niche, to protect it from exposure to weathering agents (rain, hail and snow). The boiler is equipped as standard with an anti-freeze function.
- Do not block or reduce the size of the ventilation openings of the room where the appliance is installed, if present.
- Remove the mains power and gas supply from the appliance if the external temperature could fall below ZERO (risk of freezing).
- Do not leave containers with flammable substances in the room where the appliance is installed.
- Do not leave packaging material around since it could be dangerous. Therefore dispose of it as prescribed by legislation in force.

RANGE

MODEL	CODE
UNIQA.REVOLUTION	8110438

COMPLIANCE

Our company declares that **UNIQA.REVOLUTION** boilers comply with the following directives:
- Gas Appliances EU Regulation 2016/426
- Boiler Efficiency Directive 92/42/EEC
- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility Directive 2014/30/EU
- Ecodesign Directive 2009/125/EC
- Regulation (EU) No. 813/2013 - 811/2013
- Energy Labeling Directive 2010/30/CE

CE 1312

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

SYMBOLS

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

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

IT IS FORBIDDEN
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

DESCRIPTION OF THE APPLIANCE

INSTALLATION AND SERVICING INSTRUCTIONS

CHECKLIST

WARNING
Before installing and starting up the boiler, make sure you have done the following:
- handle the boiler in an upright position (see the "**Handling**" section)
- make the holes for the wall fastening using an assembly template and spirit level to avoid any inaccuracies (see the section "**Boiler installation**")
- fix the boiler in place, using the cushioning washers supplied (see the section "**Boiler installation**")
- install a Y-filter (not supplied) on the system return as shown in Fig. 11 in the section "**Main water circuit**"
- with separate ducts, use the diaphragm supplied in kit 8089932, inserting it on the outlet duct, calculating the number of sections to be folded upwards, as indicated in Fig. 25 in the section "**Smoke outlet and combustion air inlet**"
- check the pressure readings at the nozzle and the CO_2 values (see sections "**Automatic calibration procedure**" and "**Checking the CO_2 with the chimney sweep function**").

CAUTION
Please always adhere to the instructions in the manual, as well as current installation regulations.

USER INSTRUCTIONS

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1 USING THE BOILER UNIQA.REVOLUTION

1.1 Control panel

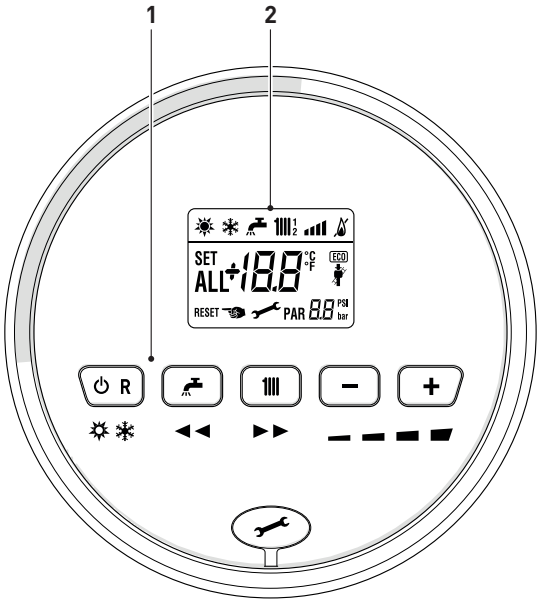


Fig. 1

1 FUNCTIONAL BUTTONS

R If pressed once or more than once for at least 1 second during normal operation, this button allows the user to change the boiler operating mode in a cyclical sequence (Stand-by – Summer – Winter). If the boiler is experiencing a fault which can be reset, it allows boiler operation to be unblocked.

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 user 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 user 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 user 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 user 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 normal conditions are restored.*

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.

"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 repaired the fault, normal boiler operation can be restored by pressing the button R.

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

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

"BLOCK" DUE TO NO FLAME.

"FLAME PRESENCE".

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

PAR **"PARAMETER"**. This indicates that the user may be 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.

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

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

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

Flashing. Waiting time for the compressor to start. **Fixed On**. Compressor operating.

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

1.2 Preliminary checks

WARNING

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

Commissioning of the **UNIQA.REVOLUTION** boiler must be carried out by professionally qualified technicians, 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.
First of all check that the gas isolation and water system valves are open.

1.3 Ignition

After having carried out the preliminary checks, perform the following to start the boiler:

- set the main system switch to "ON" in order for the display to show the pressure level in the system during refilling
- **make sure that the operating mode is set to "Stand-by";** if this is not the case, press the button ⏻ R until "Stand-by" mode has been selected

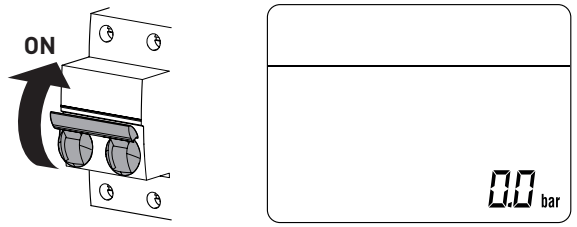


Fig. 2

- on the display (1), check that the heating system pressure when cold is **1-1.2 bar**. If this is not the case, open the filling valve (2) and restore the heating system pressure until the display (1) shows a reading of **1-1.2 bar**
- close the filling valve (2)

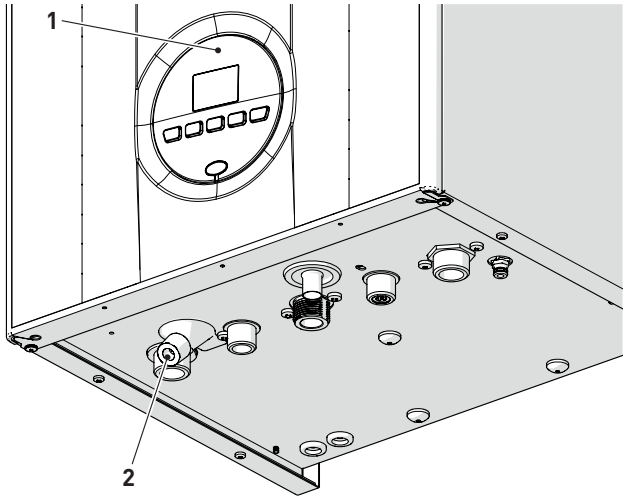
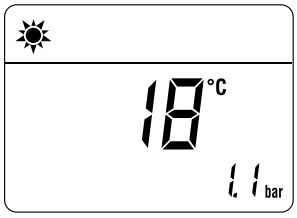


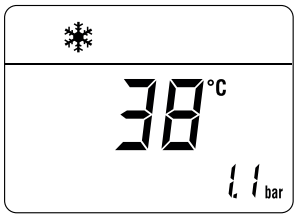
Fig. 3

- select the "SUMMER" ☀ operating mode by pressing and holding the ⏻ R button for at least 1 second. the value of the delivery sensor detected at that moment will appear on the display



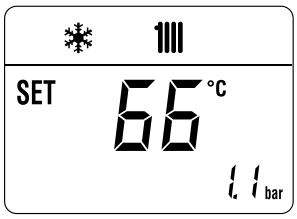
- open one or more than one hot water tap. The boiler will work at maximum power until the taps are closed.

Once the boiler has been commissioned in "SUMMER mode" ☀ "WINTER mode" ❄ can be selected by pressing and holding the button ⏻ R for at least 1 second. The value of the delivery water temperature detected at that moment will appear on the display. In this case it is necessary to adjust the air thermostat/s to the required temperature or if the system has a chrono-thermostat, check that this is "active" and adjusted.



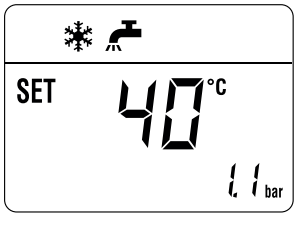
1.4 Adjusting the heating temperature

If the heating temperature is to be increased or decreased, press the button followed by the buttons + or – until the desired temperature is reached. The temperature can be set to between 20 and 80°C.



1.5 Adjusting the domestic hot water temperature

If the domestic hot water temperature is to be increased or decreased, press the button followed by the buttons + or – until the desired temperature is reached. The temperature can be set to between 10 and 60°C.



1.6 Fault / malfunction codes

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

If you see alarm **"02"** (low water pressure in the system):
- on the display (1), check that the heating system pressure when cold is **1-1.2 bar**. If this is not the case, open the filling valve (2) and restore the heating system pressure until the display (1) shows a reading of **1-1.2 bar**
- close the filling valve (2)

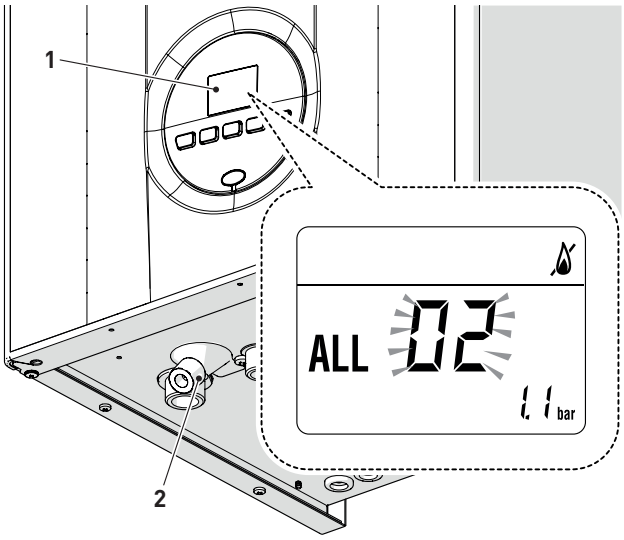
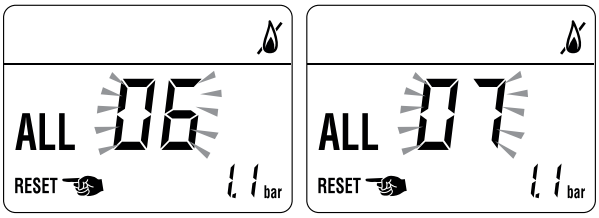


Fig. 4

If you see alarm **"06"** (no flame detected) and **"07"** (safety thermostat intervention):
- press and hold the button ⏻R for more than 3 seconds and check whether normal operating conditions are restored.



If this operation is not successful, **ONLY ONE MORE ATTEMPT** can be made, therefore:
- close the gas isolation valve
- set the main system switch to "OFF"
- contact the Qualified Technical Personnel.

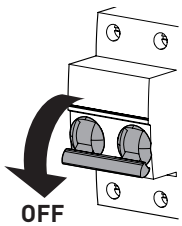


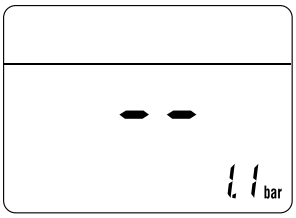
Fig. 5

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

2 SHUTDOWN

2.1 Temporary shutdown

If the user wishes to interrupt boiler operation, press and hold the button ⏻R for at least one second, once if in "WINTER mode" ❄ or twice if in "SUMMER mode" ☀.
"- -" will appear on the display.



ELECTRICAL HAZARD
The boiler will still be powered.

If the user is away temporarily, for a weekend, short trip etc and if the outside temperature is at ZERO:
- press and hold the button ⏻R once if in "WINTER mode" ❄ or twice if in "SUMMER mode" ☀ to put the boiler into stand-by
- set the main system switch to "OFF"
- close the gas valve.

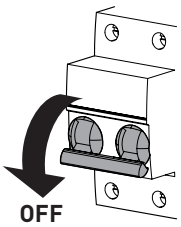


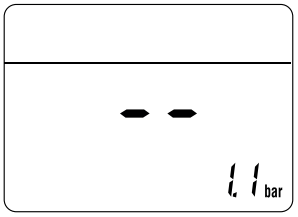
Fig. 6

CAUTION
If the outside temperature might fall below ZERO, since the appliance is equipped with an "antifreeze function"
- ONLY PUT THE BOILER INTO STAND-BY
- leave the main system switch set to "ON" (boiler is powered)
- leave the gas valve open.

2.2 Shutting down for long periods

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

– press and hold the button ⏻ R for at least 1 second, once if in "WINTER mode" ❄ or twice if in "SUMMER mode" ☀ to put the boiler into stand-by **"- -"** will appear on the display



– set the main system switch to "OFF"

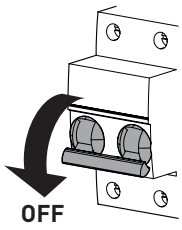


Fig. 7

– close the gas valve
– close the heating and domestic hot water isolation valves
– drain the heating and domestic hot water system if there is the risk of freezing.

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

3 MAINTENANCE

3.1 Adjustments

For the appliance to operate correctly and efficiently it is recommended that the User calls upon the services of a Professionally Qualified Technician to carry out **ANNUAL** maintenance.

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

3.2 External cleaning

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

3.2.1 Cleaning the cladding

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

IT IS FORBIDDEN
to use abrasive products.

4 DISPOSAL

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

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

IT IS FORBIDDEN
dispose of the product with urban waste.

DESCRIPTION OF THE APPLIANCE

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5 DESCRIPTION OF THE APPLIANCE

5.1 Characteristics

UNIQA.REVOLUTION are high-performing, latest-generation, low-NOx, wall-mounted boilers which **Sime** has produced for heating and domestic hot water production. The main elements choices made by **Sime** for the **UNIQA.REVOLUTION**boilers are:

- the low NOx burner combined with a copper heat exchanger, which operates at the same time as the heat pump, for space heating, and a rapid heat exchanger for domestic hot water (DHW) production
- a "type C" combustion chamber, sealed off from the environment in which the boiler is installed
- the microprocessor electronic control board, which makes the heating and domestic hot water production system easier to manage. The appliance has just one heating request input, which ambient thermostats or a remote control can be connected to. In the latter case, the boiler temperature varies on the basis of the external temperature, according to the selected optimal climatic curve. This provides significant energy and cost savings.

Other special features of the **UNIQA.REVOLUTION** boilers are:

- the anti-freeze function which activates automatically if the temperature of the water inside the boiler falls below the threshold of the value set at parameter "PAR 10" and , if there is an external sensor, if the external temperature falls below the threshold of the value set at parameter "PAR 11"
- the anti-blocking function of the pump and diverter valve, this activates automatically every 24 hours if no request for heat has been made
- 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.

5.2 Check and safety devices

The **UNIQA.REVOLUTION** boilers are equipped with the following check and safety devices:

- thermal safety sensor 100°C
- 3 bar relief valve
- heating water pressure transducer
- delivery sensor
- DHW sensor
- refrigerant gas high-pressure pressure switch
- air evaporator inlet probe.

IT IS FORBIDDEN
to commission 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** original spare parts.

5.3 Identification

The **UNIQA.REVOLUTION** boilers can be identified by means of:

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

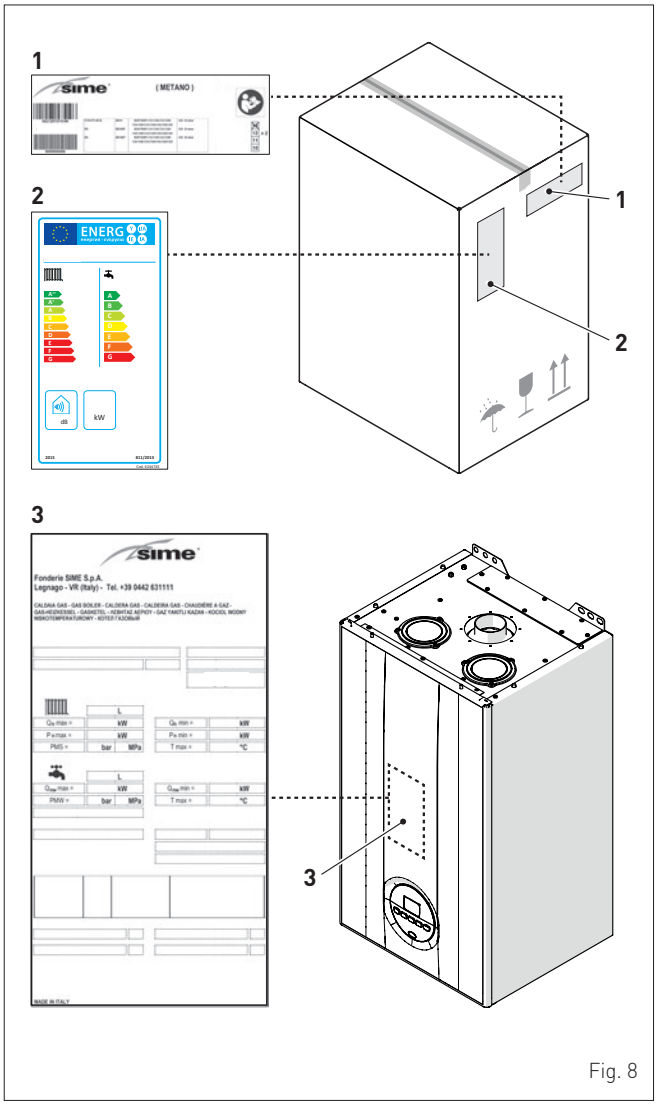


Fig. 8

5.3.1 Technical Data Plate

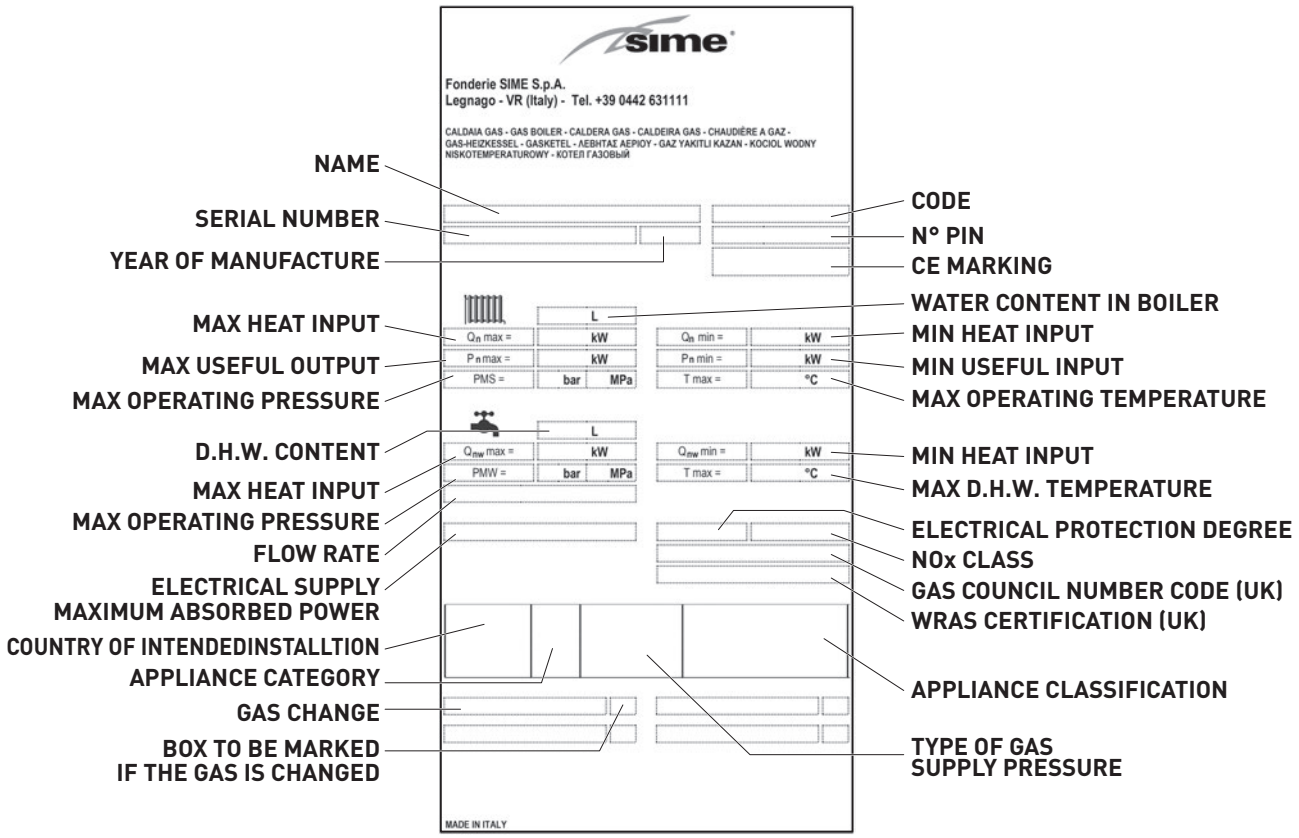
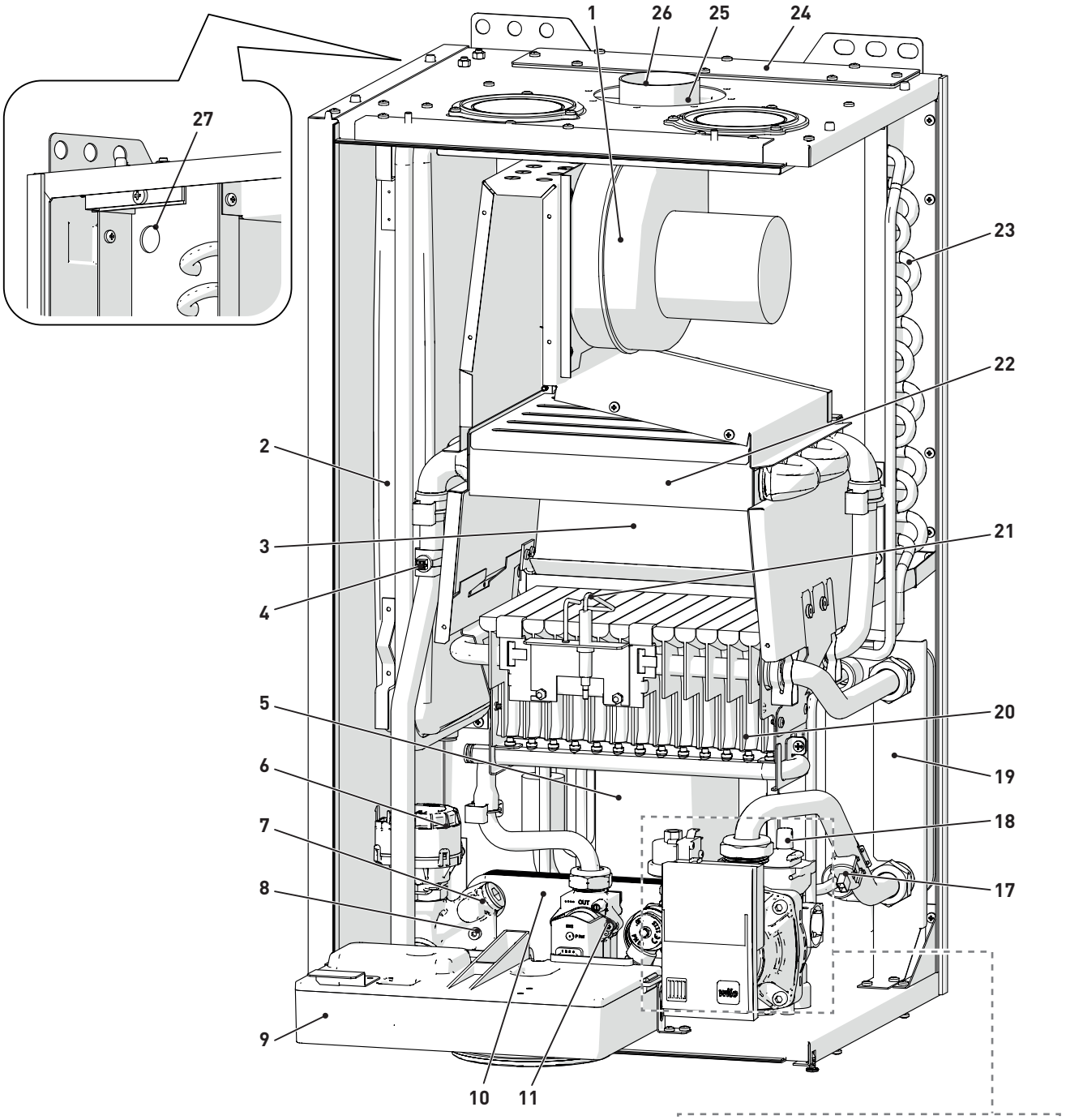


Fig. 9

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

5.4 Structure



1 *Fan*
2 *Expansion vessel*
3 *Combustion chamber*
4 *Dual sensor (thermal safety/ delivery)*
5 *Compressor*
6 *Diverter valve*
7 *System filling unit*
8 *Domestic hot water sensor*
9 *Control panel*
10 *Domestic hot water heat exchanger*
11 *Gas valve*
12 *Domestic water filter and flow regulator*
13 *System relief valve*
14 *Boiler drain*
15 *System pump*
16 *Water pressure transducer*
17 *Return probe*
18 *Automatic bleed valve*
19 *Water/gas capacitor*
20 *Burner*
21 *Ignition/detection electrode*
22 *Primary heat exchanger*
23 *Air evaporator*
24 *Inspection cover*
25 *Air inlet*
26 *Smoke outlet*
27 *Air inlet probe (SIA) housing*

Fig. 10

5.5 Technical features

DESCRIPTION		UNIQA.REVOLUTION
CERTIFICATIONS		
Country of intended installation		IT – EN – ES
Fuel		G20 - G31
PIN number		1312CT6328
Category		II2H3P
Appliance classification		B32 - C10 - C12 - C12X - C32 - C32X - C42 - C42X - C52 - C52X - C62 - C62X - C82 - C82X
Class NOx (*)		6 (< 56 mg/kWh)
HEATING PERFORMANCE		
HEAT INPUT (**)		
Nominal flow (Qn max)	kW	24,5
Minimum flow (Qn min)	kW	10
HEAT OUTPUT		
Nominal (80-60°C) (P_n max)	kW	22,8
Minimum G20 (80-60°C) (G20/G31) [Pn min]	kW	9,0
EFFICIENCY		
Max useful efficiency (80-60°C)	%	93,2
Min useful efficiency (80-60°C)	%	90,0
Useful efficiency at 30% of load (40-30°C)	%	108,8
Losses after shutdown at 50°C	W	111
DOMESTIC HOT WATER PERFORMANCE		
Nominal heat input (Qnw max)	kW	24,5
Minimum heat input (Qnw min)	kW	10,0
Specific D.H.W. flow rate ΔT 30°C (EN 13203)	l/min	10,6
Continuous D.H.W. flow rate (ΔT 25°C / ΔT 35°C)	l/min	12,9 / 9,2
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		B
Heating seasonal energy efficiency	%	86
Sound power	dB(A)	54
DOMESTIC HOT WATER		
Domestic hot water energy efficiency class		A
Domestic hot water energy efficiency	%	81
Stated domestic hot water profile load		XL
ELECTRICAL SPECIFICATIONS		
Power supply voltage	V	230
Frequency	Hz	50
Absorbed electrical power in stand-by	W	3
Electrical protection degree	IP	X5D
Maximum absorbed current	A	2,0
COMBUSTION DATA		
Smoke temperature at Max/Min flow (80-60°C)	°C	95 / 70
Smoke flow Max/Min	g/s	29,7 / 15,8
CO_2 at Max/Min (G20) flow rate with separate chimneys	%	3,5 / 2,5
CO (0% of O_2)	ppm	120
NOx measured	mg/kWh	38
NOZZLES - GAS		
Number of nozzles	No.	38
Nozzle diameter (G20)	mm	0,85
Nozzle diameter (G31)	mm	0,50
Gas consumption at Max/Min flow rate (G20)	m^3/h	2,59 / 1,06
Gas consumption at Max/Min flow rate (G31)	kg/h	1,90 / 0,78
Gas supply pressure (G20/G31)	kg/h	20 / 37
	kPa	2 / 3,7
TEMPERATURE - PRESSURE		
Max operating temperature (T max)	°C	85
Heating adjustment range	°C	40 ÷ 80
Domestic hot water adjustment range	°C	10 ÷ 60
Max operating pressure (PMS)	bar	3
	kPa	300
Water content in boiler	l	3,35
R134a refrigerant gas content	g	250

(*) NOx class according to UNI EN 15502-1:2015
(**) Heat input calculated using the lower heat output (Hi)
Lower Heat Output (Hi)
***G20 Hi.** 9.45 kW/m^3 (15°C, 1013 mbar) - **G31 Hi.** 12.87 kW/kg (15°C, 1013 mbar)*

5.6 Main water circuit

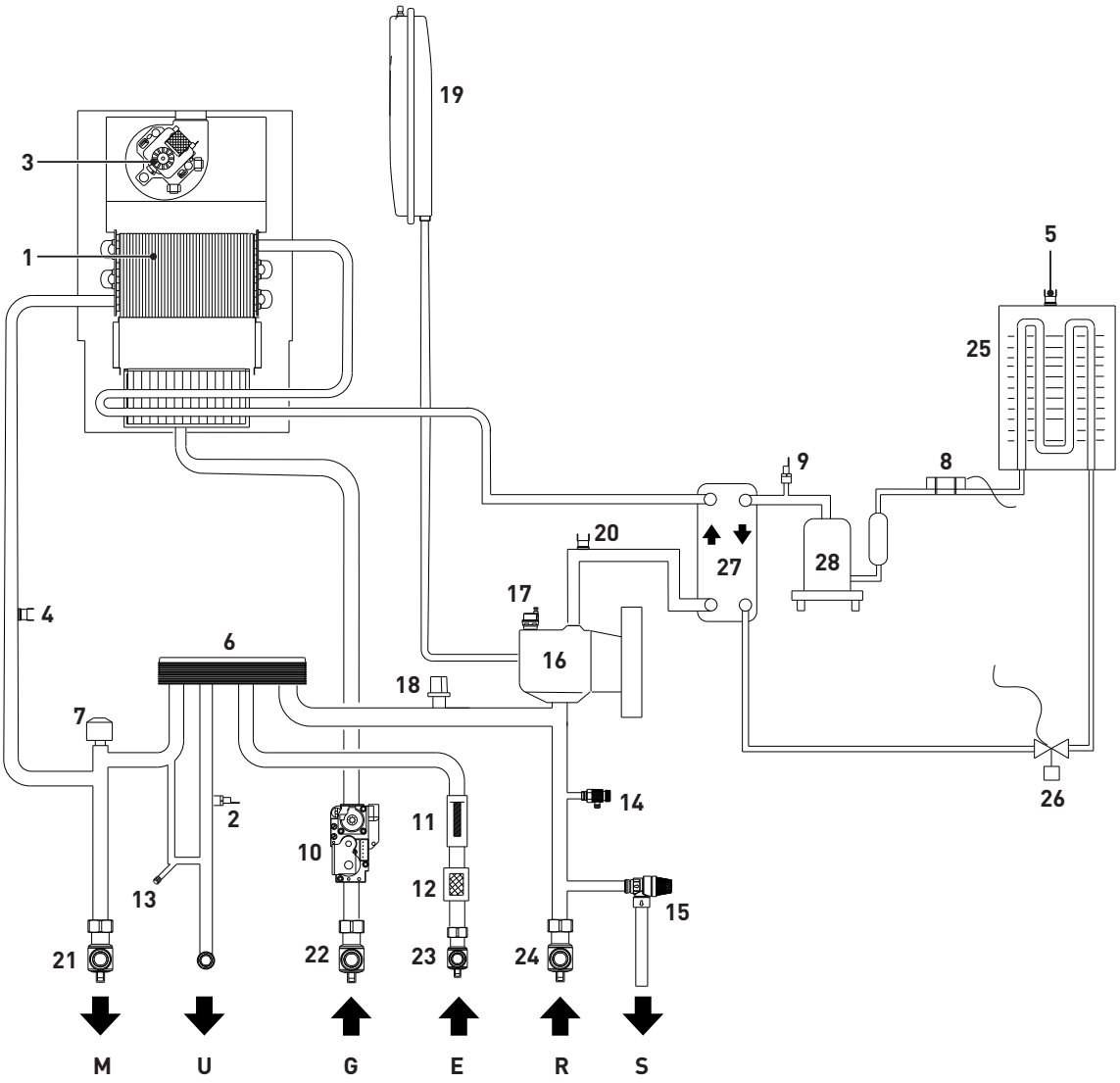


Fig. 11

KEY:

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

1 *Primary heat exchanger*
2 *Domestic hot water sensor*
3 *Boiler fan*
4 *Dual sensor (thermal safety/delivery)*
5 *Air inlet probe (SIA)*
6 *Domestic hot water heat exchanger*
7 *Diverter valve*
8 *Expansion valve thermal bulb*
9 *Refrigerant gas high-pressure pressure switch*
10 *Gas valve*
11 *Domestic hot water flow meter*
12 *Domestic hot water filter*
13 *System filling*
14 *Boiler drain*
15 *System relief valve*
16 *System pump*
17 *Air bleed valve*
18 *Water pressure transducer*
19 *System expansion vessel*
20 *Return probe*
21 *System delivery valve (on request)*
22 *Gas valve (on request)*
23 *Domestic hot water inlet valve (on request)*
24 *System return valve (on request)*
25 *Air evaporator*
26 *Thermostatic expansion valve*
27 *Refrigerant gas/water capacitor*
28 *ON/OFF compressor (CP)*

CAUTION
You MUST install a Y filter (not supplied with the appliance) on the heating system return (R).

5.7 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 sensor NTC R25°C; 10kΩ ß25°-85°C: 3435
- Return probe NTC R25°C; 10kΩ ß25°-85°C: 3435
- Evaporator probe NTC R25°C; 10kΩ ß25°-85°C: 3435

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

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

5.8 Expansion vessel

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

Description	U/M	UNIQA.REVOLUTION
Total capacity	l	8,0
Prefilling pressure	kPa	100
	bar	1,0
Useful capacity	l	4,0
Maximum system content (*)	l	109

(*) Conditions of:
Average maximum temperature of the system 85°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 prearranged.
- The difference in height between the relief valve and the highest point of the system cannot exceed 6 metres. If the difference is greater than 6 metres, increase the prefilling pressure of the expansion vessel and the system when cold by 0.1 bar for each meter increase.

5.9 Circulation pump

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

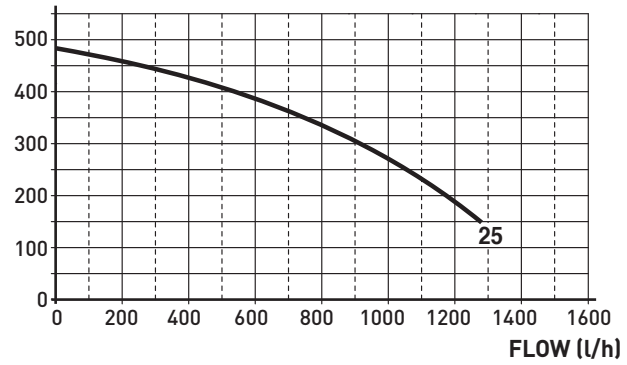


Fig. 12

5.10 Heat recovery system

Certain conditions must apply for the heat recovery system to work. The system return temperature must be below the value set under **(PAR 46)**. The combustion air temperature must be between the value set under **(PAR 06)** and **(PAR 07)**. Once all of these conditions have been met, the **+** symbol shows or flashes on the display. If the **+** symbol is on the screen, the heat recovery system is in operation; if the symbol is flashing, the boiler is calculating the time required to start up correctly.

5.11 Control panel

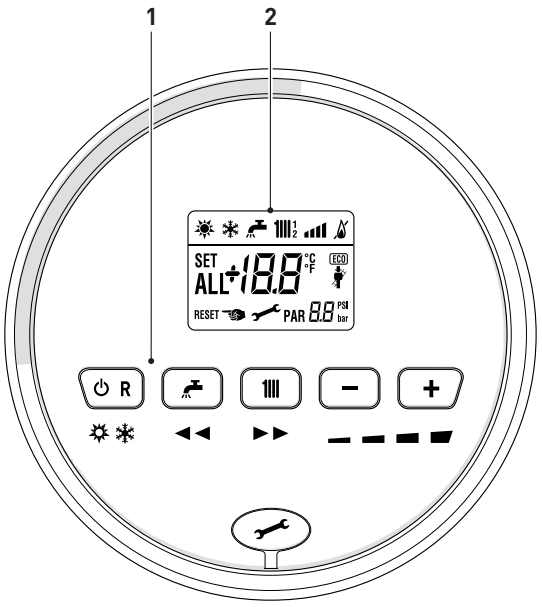


Fig. 13

1 FUNCTIONAL BUTTONS

R If pressed once or more than once for at least 1 second during normal operation, this button allows the user to change the boiler operating mode in a cyclical sequence (Stand-by – Summer – Winter). If the boiler is experiencing a fault which can be reset, it allows boiler operation to be unblocked.

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 user 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 user 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 user 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 user 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 normal conditions are restored.*

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.

"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 repaired the fault, normal boiler operation can be restored by pressing the button R.

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

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

"BLOCK" DUE TO NO FLAME.

"FLAME PRESENCE".

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

PAR **"PARAMETER"**. This indicates that the user may be 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.

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

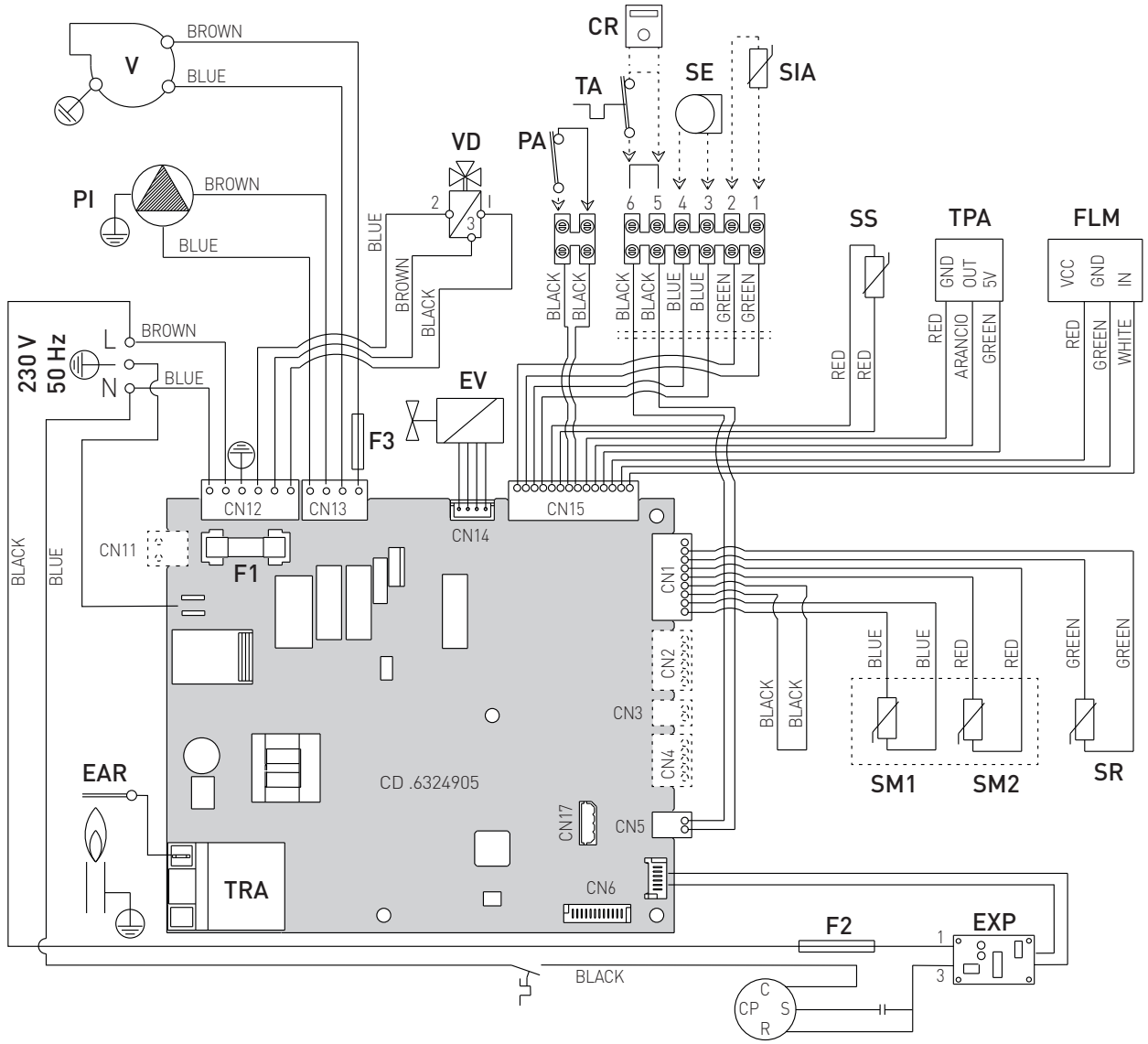
"CHIMNEY SWEEP". This indicates that the "chimney sweep function" has been activated.

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

Flashing. Waiting time for the compressor to start. **Fixed On**. Compressor operating.

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

5.12 Wiring diagram



L	*Line*	***EV***	*Gas solenoid valve*	***PA***	*High pressure switch*
N	*Neutral*	***SS***	*Domestic hot water sensor*	***SE***	*External sensor*
F1	*Fuse (3.15AT)*	***SM1-2***	*Dual sensor (thermal safety/ delivery)*	***SR***	*Return Probe*
F2	*Fuse (4AR)*			***SIA***	*Air inlet probe*
F3	*Fuse (1AT)*	***FLM***	*Flow meter*	***APS***	*Air pressure switch*
TRA	*Ignition transformer*	***VD***	*Diverter valve*	***EXP***	*Expansion card*
PI	*System pump*	***TPA***	*Pressure transducer*	***CP***	*Compressor*
V	*Fan*	***TA***	*Air thermostat*	***CR***	*Remote control (instead of air thermostat)*
EAR	*Ignition / Detection electrode*				

To connect the "Air Thermostat" or, alternatively the "Remote Control", remove the bridge between terminals 5-6.

Fig. 14

CAUTION
Users must:

- Use an omnipolar cut-off switch, disconnect switch in compliance with EN Standards **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
Users must:

- Connect the earth wire to an effective earthing system. The manufacturer is not responsible for any damage caused by failure to earth the appliance or failure to observe the information provided in the wiring diagrams.

IT IS FORBIDDEN
To use water pipes for earthing the appliance.

INSTALLATION AND SERVICING INSTRUCTIONS

TABLE OF CONTENTS

6 INSTALLATION

CAUTION
External casing seals off the appliance from the environment in which it is installed. Check regularly, and always after performing maintenance work, that the front, side and all gaskets have been correctly closed and are not worn or damaged.

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

6.1 Receiving the product

UNIQA.REVOLUTION appliances are delivered in a single unit protected by cardboard packaging.

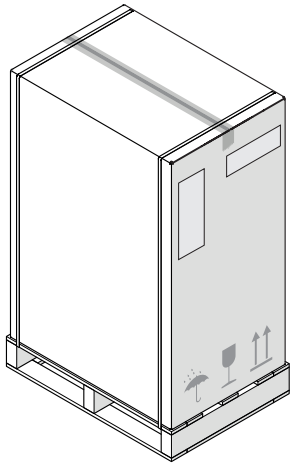


Fig. 15

The plastic bag found inside the packaging contains the following:
- Installation, use and maintenance manual
- Paper template for boiler installation
- Certificate of warranty
- Hydrostatic test certificate
- System booklet
- Bag with expansion plugs.

CAUTION
The boiler must ALWAYS travel vertically (see packaging arrow). Failure to observe this precaution may cause damage to the appliance.

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

6.2 Dimensions and weight

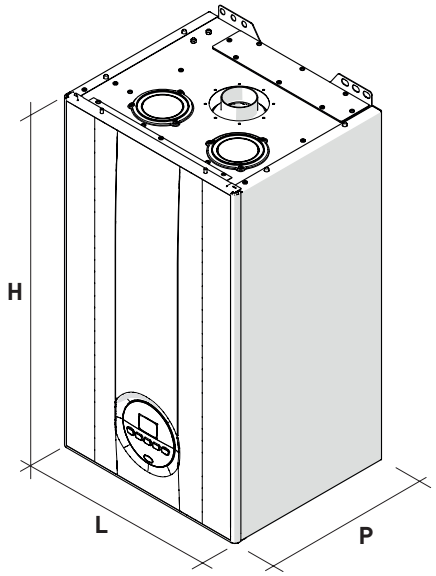


Fig. 16

Description	UNIQA.REVOLUTION
	-
W (mm)	400
D (mm)	345
H (mm)	700
Weight (kg)	45

6.3 Handling

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

IT IS FORBIDDEN
Position the appliance horizontally or on its side.

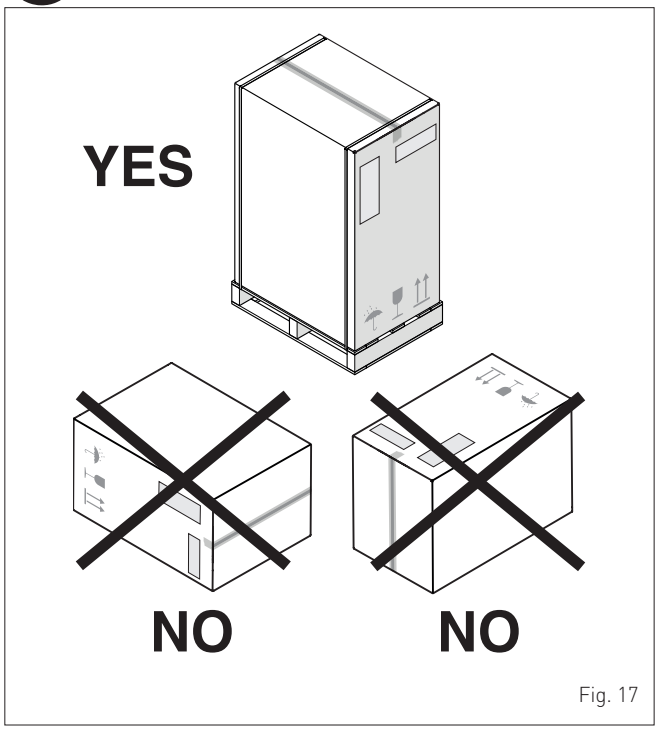


Fig. 17

Once the packaging has been removed, the appliance is to be handled manually, keeping it as vertical as possible, and lifting by gripping it at the points indicated in the figure.

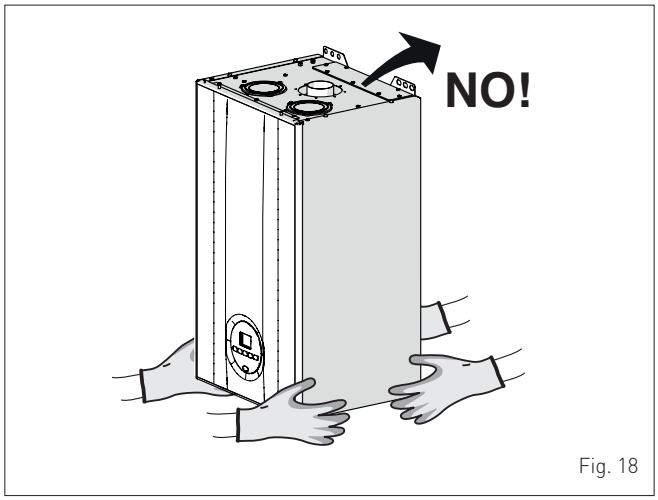


Fig. 18

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

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

6.4 Installation room

The room where the appliance is to be installed must comply with the Technical Regulations and Legislation in force. It must be equipped with suitably sized ventilation openings when the installation is a "TYPE B" installation.
The minimum temperature of the installation room must NOT be lower than **-5 °C**.

CAUTION

- Before assembling the appliance, the installer **MUST** make sure that the wall supports the weight.
- Remember to consider the space needed in order to access the safety/adjustment devices and to carry out maintenance interventions (see Fig. 19).

APPROXIMATE MINIMUM DISTANCES

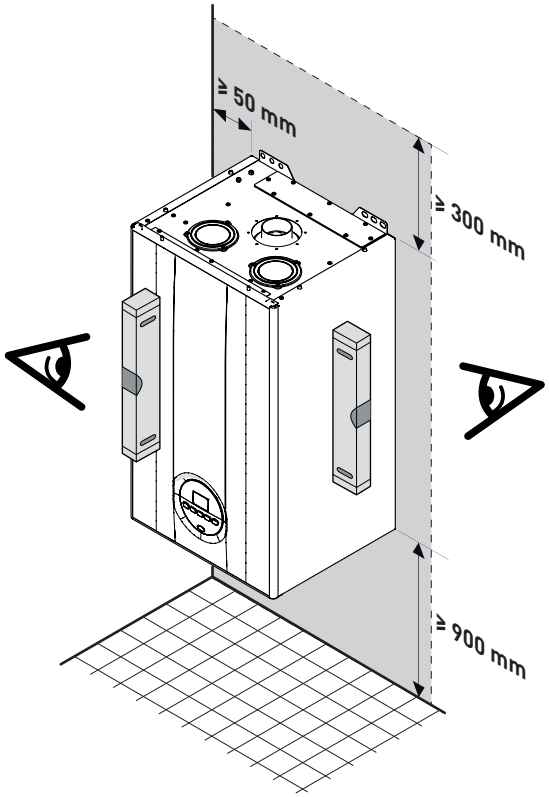


Fig. 19

6.5 New installation or installation of a replacement appliance

When **UNIQA.REVOLUTION** boilers are installed on old systems or systems requiring updating, it is recommended the installer checks that:
- the connecting flue pipe is suitable for the combustion temperature of the appliance, calculated and manufactured in compliance with Standards, that it is as straight as possible, air tight, isolated, with no obstructions or restriction and that it has appropriate condensate collection and evacuation systems
- the electrical system has been manufactured in compliance with specific Standards and by professionally qualified personnel
- the fuel delivery line and the tank (LPG) comply fully with specific Standards
- the expansion vessel ensures total absorption of the fluid dilation in the system
- the pump flow-head performance is sufficient for the system characteristics
- the system is clean, free of any sludge, deposits, de aerated and air tight. For system cleaning, please refer to the relevant paragraph.

CAUTION
The manufacturer declines all liability for any damage caused by an incorrect implementation of the smoke outlet or for an excessive use of additives.

6.6 Cleaning the system

Before installing the appliance on a newly constructed system or replacing a heat generator on an existing system, it is important that the system is thoroughly cleaned to remove sludge, slag, dirt, residue etc.

Before removing an old heat generator from an existing system, it is recommended that the user:
- puts a descaling additive into the water system
- allows the system to work with the generator active for a few days
- drains the dirty water from the system and flushes the system with clean water once or more than once.

If the old generator has already been removed or is not available, replace it with a pump to circulate water in the system and then proceed as described above.
Once cleaning operations have been carried out and before installing the new appliance, it is recommended that a fluid is added to the water system to protect it from corrosion and deposits.

CAUTION
- For further information on the type of additive and usage, please contact the appliance manufacturer.
- Please remember that you **MUST** install a Y filter (not supplied with the appliance) on the heating system return (R).

6.7 Water system treatment

When filling and restoring the system it is good practice to use water with:
- aspect: clear if possible
- pH: 6÷8
- hardness: < 25°f.

If the water characteristics are different from those indicated, it is recommended that a safety filter is used on the water delivery pipe to retain impurities, and a chemical treatment system to protect against possible deposits and corrosion which could affect boiler operation.

If the systems are only low temperature systems, it is recommended that a product is used to prevent the development of bacteria.
In any case, please refer to and comply with Legislation and specific Technical Standards in force.

6.8 Boiler installation

UNIQA.REVOLUTION boilers leave the factory with a paper template for installation onto a solid wall.
For installation:
- position the paper template (1) on the wall (2) where the boiler is to be mounted
- make the holes and insert the expansion plugs (3)
- tighten the screws with a double thread (4)
- insert the first cushioning washer (5) for each screw
- hook the boiler (6) onto the screws (4)
- insert the second cushioning washer (5) for each screw
- insert the flat washers (7) and fix in place using the nuts (8).

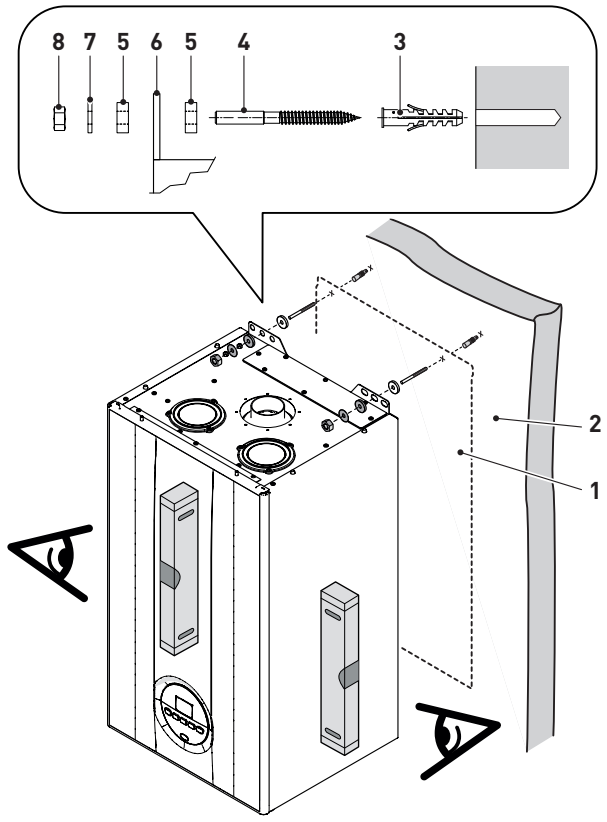


Fig. 20

CAUTION
The height of the boiler is to be such that disassembly and maintenance interventions are facilitated.

CAUTION
The boiler must be perfectly upright. Use a spirit level or other suitable tool to check that it is perfectly vertical.

6.9 Plumbing connections

The plumbing connections have the following characteristics and dimensions.

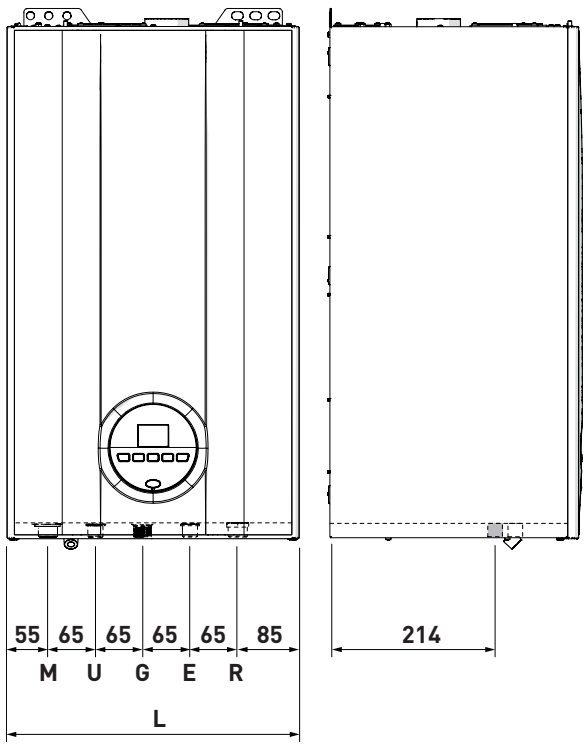


Fig. 21

Description	UNIQA.REVOLUTION
	-
M - System delivery	Ø 3/4" G
R - System return	Ø 3/4" G
U - Domestic hot water output	Ø 1/2" G
E - Domestic hot water inlet	Ø 1/2" G
G - Gas supply	Ø 3/4" G
W (mm)	400

6.9.1 Plumbing accessories (optional)

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

DESCRIPTION	CODE
Curve kit	8075428
Curve and valve kit with connections from DIN to SIME	8075443
Cocks kit	8091819
Valve kit with connections from DIN to SIME	8075442
Wall mount replacement kit for other makers	8093900
G31 nozzle kit	8059250
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.*

6.10 Gas supply

UNIQA.REVOLUTION boilers leave the factory specifically prearranged for G20 gas or G31. The G20 models can be converted to function with G31 using the "specific nozzle kit" (optional) provided by **Sime** on request separately from the boiler.
If changing the type of gas to be used, carry out the entire **"GAS CONVERSION"** phase of the appliance.
Boiler connection to the gas mains must be carried out in full compliance with installation Standards in force.
Before connecting the boiler to the gas mains, the user must ensure that:

- the type of gas is correct for the appliance
- the pipes are clean
- the gas supply pipe is the same dimension as or greater than that of the boiler fitting (G3/4") and with a load loss less than or equal to that contemplated between the gas mains and the boiler.

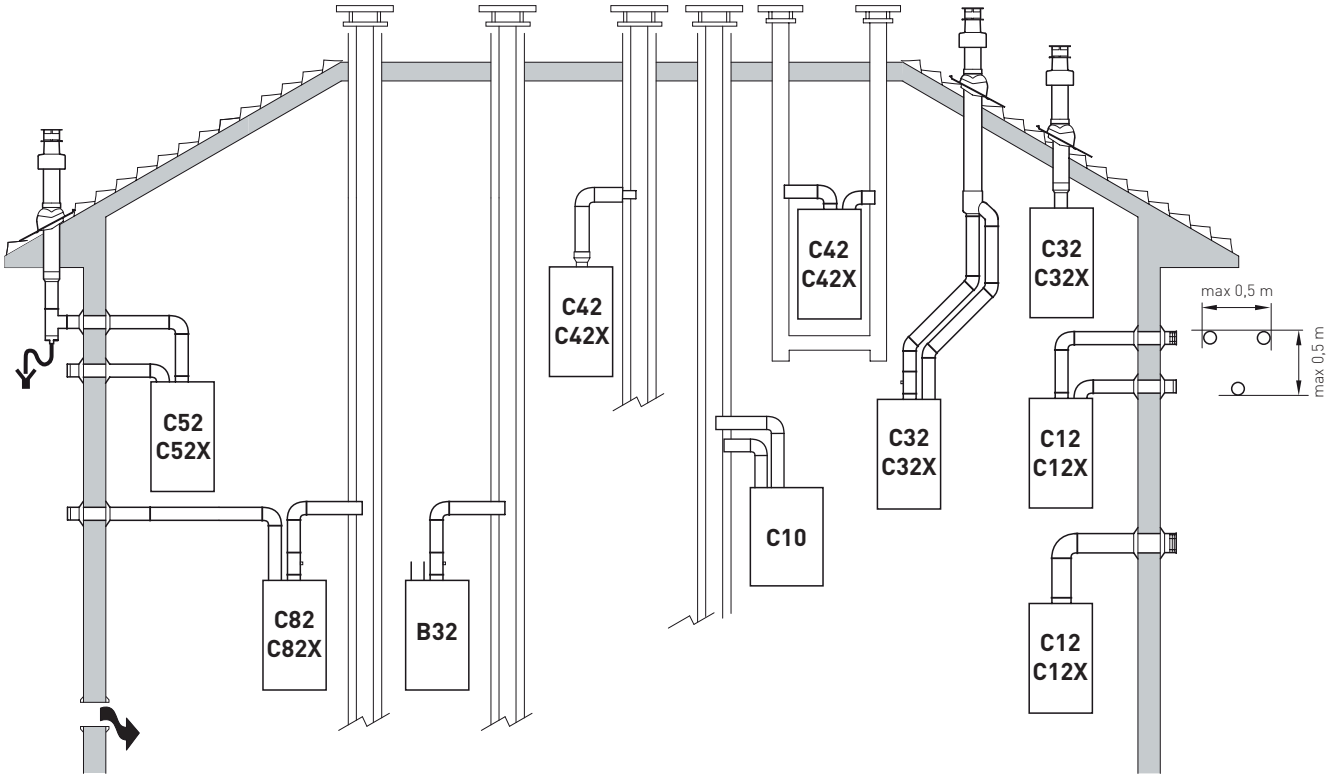
WARNING
Once installation has been completed, check that the joints are air tight as indicated in the installation Standards.

CAUTION
It is recommended that the gas line has a suitable filter.

6.11 Smoke outlet and combustion air inlet

UNIQA.REVOLUTION boilers must be equipped with appropriate smoke flue ducts and combustion air inlet ducts. These ducts are considered an integral part of the boiler and are provided by **Sime** as an accessory kit, to be ordered separately from the appliance on the basis of the type permitted and the system requirements.

Permitted outlets



C10
Type C appliance connected, via conduits, to a collective pipe designed for more than one appliance. The collective pipe is made up of two conduits connected to a terminal which also feeds in air from outside the burner and evacuates the combustion products externally through concentric orifices or those close enough to result in the same wind conditions.
NOTE: *the boiler can be type C(10) only with accessory code 8089560.*

C12-C12X
Concentric wall smoke outlet The pipes can start from the boiler but the outlets must be concentric or close together (no more than 50 cm) to be subject to similar wind conditions.

C32-C32X
Concentric roof outlet Outlet as C12X.

B32
Combustion air inlet into the atmosphere and smoke outlet into single flue.
NOTE: *opening for combustion air (15 cm^2 x kW).*

C42-C42X
Outlet and inlet in shared or separate flue pipes but subjected to similar wind conditions.

C52-C52X
Separate wall or roof inlet and outlet in different pressure areas.
NOTE: *the inlet and outlet must never be positioned on opposing walls.*

C62-C62X
Same type as C42 - C42X but with outlet and inlet made from pipes which are sold and certified separately

C82-C82X
Outlet in single or shared flue or with inlet on wall.

P: smoke outlet system designed to operate with positive pressure.
X: appliances and corresponding smoke outlet which meet German air-tightness requirements.

Fig. 22

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.
- 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.

6.11.1 Coaxial ducts (Ø 60/100mm)

Coaxial accessories

Description	Code
	Ø 60/100 mm
Coaxial duct kit	8084813
Extension W. 1000 mm	8096103
Extension W. 500 mm	8096102
Vertical extension W. 200 mm with smoke analysis take-off point	8086908
Adapter for Ø 80/125 mm	-
Additional 90° curve	8095801
Additional 45° curve	8095900
Tile with joint	8091300
Roof outlet terminal W. 1284 mm	8091200
Vertical condensation recovery W. 200 mm	8092803

Load loss - Equivalent lengths

Model	Leq (linear metres)
	Ø 60/100 mm
90° curve	1
45° curve	0,5

Minimum-Maximum Lengths

Model	Duct Length Ø 60/100			
	W Horizontal (m)		H Vertical (m)	
	Min.	Max.	Min.	Max.
UNIQA.REVOLUTION	-	2,5	1,3 (*)	5

CAUTION
(*) Vertical condensate recovery MUST be introduced for vertical ducts (Type C32) or vertical sections of the duct (Type C42) longer than 1.3m.

Diaphragms for coaxial ducts
Boilers leave the factory equipped with a diaphragm (1) with the following characteristics:
– **UNIQA.REVOLUTION**: diaphragm Ø 87.5 mm.

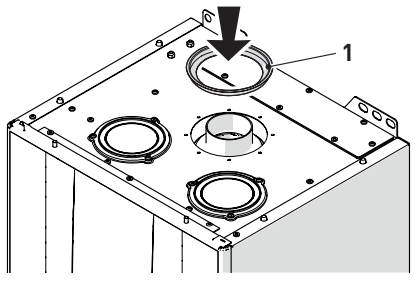


Fig. 23

When the outlets are **Type C12** or **C42** the diaphragm is to be removed or kept following the indications below:

Model	Diaphragm	for duct L
UNIQA.REVOLUTION	YES (leave mounted)	< 1 m
UNIQA.REVOLUTION	NO (remove it)	> 1 m

When the outlet is**Type C32** (vertically straight without any curves), the presence of the diaphragm modifies the maximum length of the duct as shown below:

Model	Diaphragm	Max L (m)
UNIQA.REVOLUTION	YES	2,5
UNIQA.REVOLUTION	NO	5

6.11.2 Separate ducts (Ø 80mm)

The smoke outlet and combustion air inlet can built with separate ducts, instead of concentric ducts, using the "SEPARATE DUCTS KIT, code. 8089932". This is to be ordered separately from the boiler. Connect the other accessories, chosen from those listed in the table below, to it.

Separate accessories

Description	Code
	Diameter Ø 80 (mm)
90° curve M-F (6 pieces)	8077410
90° curve M-F (with take-off point)	8077407
Extension W. 1000 mm (6 pieces)	8077309
Extension W. 500 mm (6 pieces)	8077308
Extension W. 135 mm (with take-off point)	8077304
Wall inlet terminal	8089550
Wall outlet terminal	8089551
Internal and external ring nut kit	8091500
Inlet terminal	8089500
45° curve M-F (6 pieces)	8077411
Condensate recovery W. 135 mm	8092800
Manifold	8091400
Tile with joint	8091300
Roof outlet terminal W. 1390 mm	8091201
Condensate recovery Tee	8093300

Smoke outlet
The smoke outlet can be constructed by attaching the kit components to the boiler fitting: the Ø125/95 sponge seal (1), the collar (2) and the screws (3) to fix everything in place.

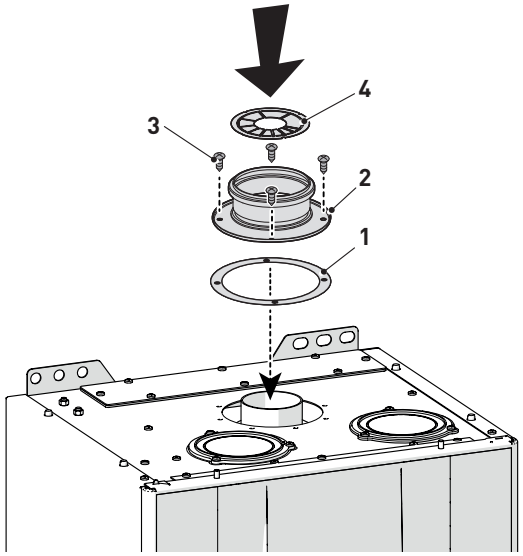


Fig. 24

After folding the numbered sections upwards, the diaphragm (4) must be positioned between the collar (2) and the first part of the outlet pipe, depending on the desired pipe load loss (inlet + outlet total length).

Load loss accessory Ø 80 mm

Description	Code	Load loss (mm H_2O)	
		UNIQA.REVOLUTION	
		Inlet	Outlet
90° curve MF	8077410	2,3	2,5
45° curve MF	8077411	2,0	2,0
Horizontal extension W. 1000 mm	8077309	1,0	1,3
Vertical extension W. 1000 mm	8077309	1,0	1,3
Wall terminal	8089550/51	1,1	3,6
Condensate recovery Tee	8093300	-	5,8
Roof outlet terminal (*)	8091200	1,15	1,0

(*) The losses of the roof outlet terminal at inlet include the manifold code 8091400.

CAUTION

- The total maximum length is obtained by adding the length of the inlet and outlet pipes. The total load loss is determined by the sum of the load losses of the single accessories that make up the piping. It should not exceed 21,0 mmH_2O.
- **The total extension** must not in any case exceed 10 m (inlet) + 10 m (outlet) for ducts Ø 80 mm.

NOTE: *for the boiler to operate correctly it is necessary that a minimum distance of 0.50 m of the duct is respected with a 90° inlet curve.*

Example: calculation of the load loss of a **UNIQA.REVOLUTION** boiler.

Accessories Ø 80 mm	Code	Quantity	Load loss (mm H_2O)		
			Inlet	Outlet	Total
Extension W. 1000 mm (horizontal)	8077309	2	2 x 1.0	-	2,0
Extension W. 1000 mm (horizontal)	8077309	2	-	2 x 1,3	2,6
90° curve	8077410	1	1 x 2,3	-	2,3
90° curve	8077410	1	-	1 x 2,5	2,5
Wall terminal	8089550/51	1	1,1	3,6	4,7
TOTAL					**14,1**

Installation is permitted as the total load loss (14,1 mmH_2O) for the required accessories is less than 21,0 mmH_2O. With this total load loss, fold sections 1 to 8 (inclusive) on the flue gas outlet diaphragm (4).

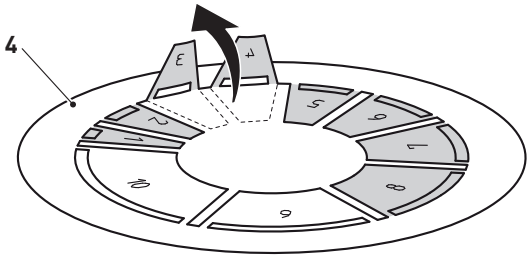


Fig. 25

No. of sections to be removed	Total load loss (mm H_2O)
	UNIQA.REVOLUTION
1 ÷ 5	0 ÷ 5,0
1 ÷ 6	5,1 ÷ 7,5
1 ÷ 7	7,6 ÷ 10,0
1 ÷ 8	10,1 ÷ 15,0
1 ÷ 9	15,1 ÷ 20,0
1 ÷ 10	20,1 ÷ **21,0** (*)

(*) Maximum load loss permitted.

Combustion air inlet
The combustion air inlet, with separate ducts, is assembled as follows:
- remove the air outlet cap (5); choose your preferred outlet
- cut the bottom of the cap (5) using a suitable tool (a)
- turn over the cap (5) as shown (b) and refit it on the air outlet, inserting the new seal (6) provided in the kit
- fix everything in place with the screws removed previously.

The overturned cap (5) is now the attachment for the first component on the air inlet duct

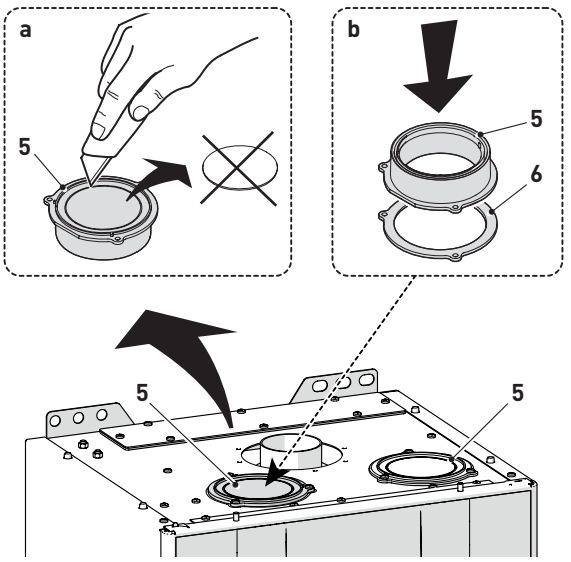


Fig. 26

Smoke outlet and combustion air inlet fittings

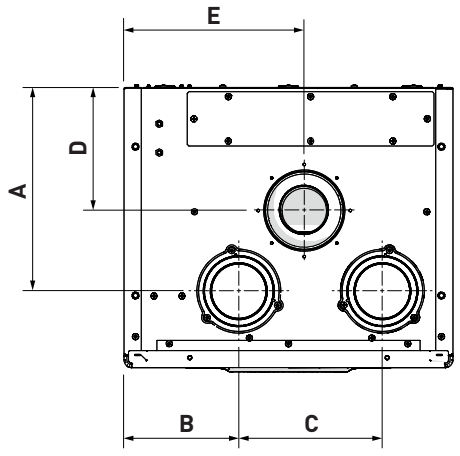


Fig. 27

Description	UNIQA.REVOLUTION
A (mm)	248
B (mm)	140
C (mm)	175
D (mm)	180
E (mm)	220

6.12 Electrical connections

The boiler is equipped with a ready wired power cable which is to be connected to a 230V~50 Hz network.
If this cable needs to be replaced, an original spare must be requested from **Sime**.
Therefore only the connections of the original components as shown in the table are needed. These are to be ordered separately from the boiler.

DESCRIPTION	CODE
External sensor kit (ß=3435, NTC 10KOhm at 25°C)	8094101
Power cable (dedicated)	6329400
Remote control HOME (open therm)	8092280
Remote control HOME PLUS (open therm)	8092281

CAUTION
The maintenance interventions described must ONLY be carried out the professionally qualified personnel.

WARNING
Before carrying out any interventions described:
- set the main system switch to "OFF"
- close the gas valve
- make sure that no hot parts inside the appliance are touched.

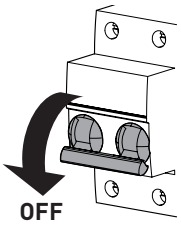


Fig. 28

To facilitate introduction of the connection wires of the optional components into the boiler:
- remove the screws (1), pull the front panel (2) forwards and release it from the top by lifting it

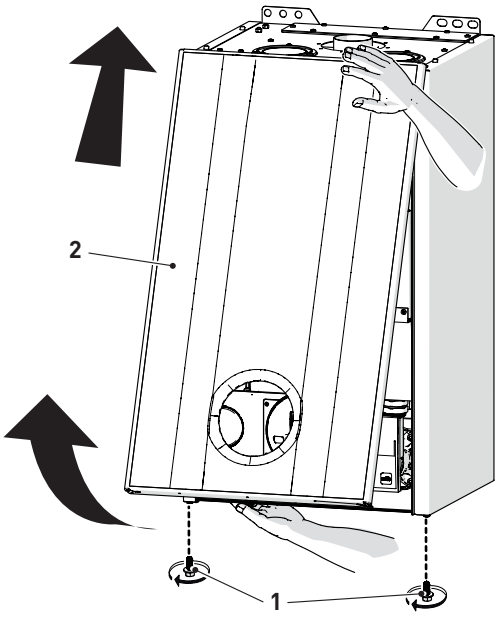


Fig. 29

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

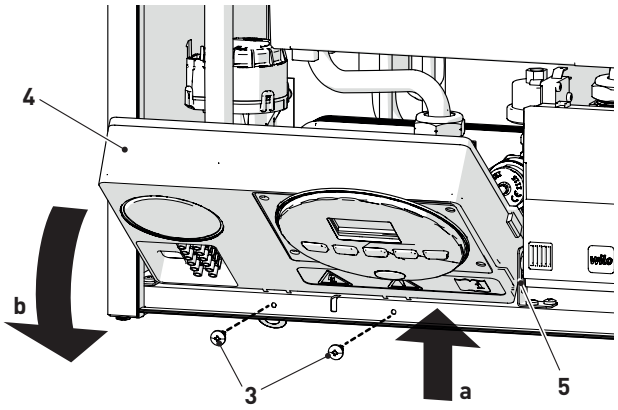


Fig. 30

– insert the connection wires into the cable gland (6) and the opening (7) on the control panel

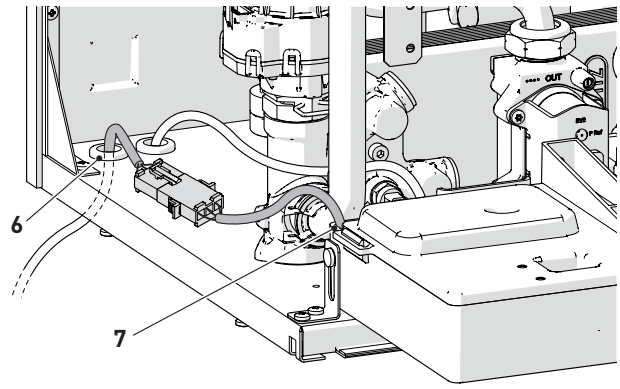


Fig. 31

– bring the control panel (4) to the original position and secure it with the screws (3) which were removed previously
– connect the component wires to the terminal board (8) following the indications provided on the data plate (9).

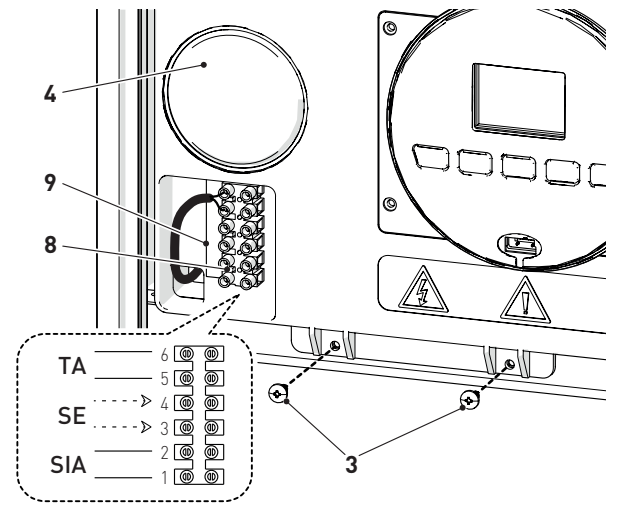


Fig. 32

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

(*) The manufacturer is not responsible for any damage caused by failure to earth the appliance or failure to observe the information provided in the wiring diagrams.

IT IS FORBIDDEN
To use water pipes for earthing the appliance.

6.12.1 External sensor

The boiler is prearranged for connection to an external air temperature sensor and can operate with a sliding temperature.
This means that the delivery temperature sent to the boiler can vary on the basis of the external temperature depending on the climatic curve selected from those shown in the diagram (Fig. 33).
When fitting the sensor on the outside of the building, follow the instructions provided on the packaging of the product itself.

Climatic curve

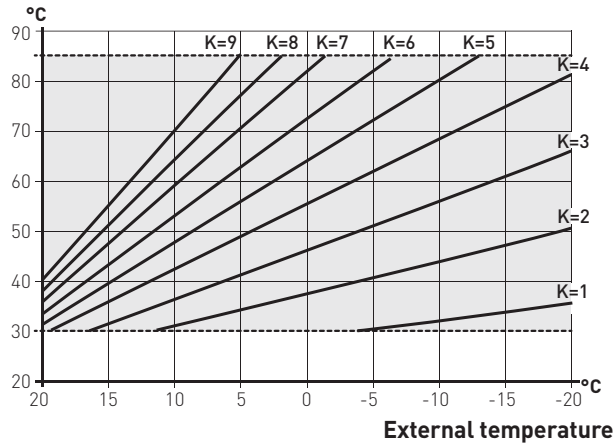


Fig. 33

CAUTION
If there is an external sensor, in order to select the optimal climatic curve for the system and therefore the delivery temperature based on the external temperature:
– press the button for 1 second
– press buttons + or – until the required curve K has been selected (within the range**K=0.0 - K=9.0**).

6.12.2 Chrono-thermostat or Air Thermostat

The electrical connection of the chrono-thermostat or air thermostat has already been described. When fitting the component in the room where the readings are to be taken, follow the instructions provided on the packaging of the product itself.

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

KEY

M	*System delivery*
R	*System return*
CR	*Remote control*
SE	*External sensor*
TA	*Air thermostat for boiler activation*
TZ1÷TZ3	*Air thermostat for the zone*
VZ1-VZ3	*Zone valves*
RL1-RL3	*Zone relays*
P1-P3	*Zone pump*
TSB	*Low temperature safety thermostat*

ONE DIRECT ZONE system , external sensor and air thermostat.

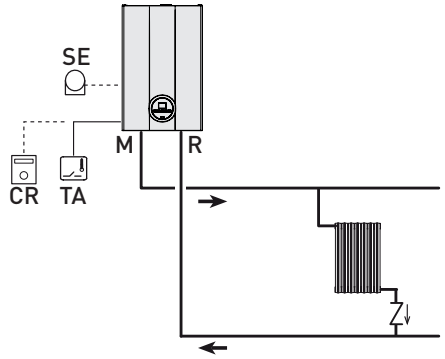


Fig. 34

MULTI ZONE system - with zone valve, air thermostat and external sensor.

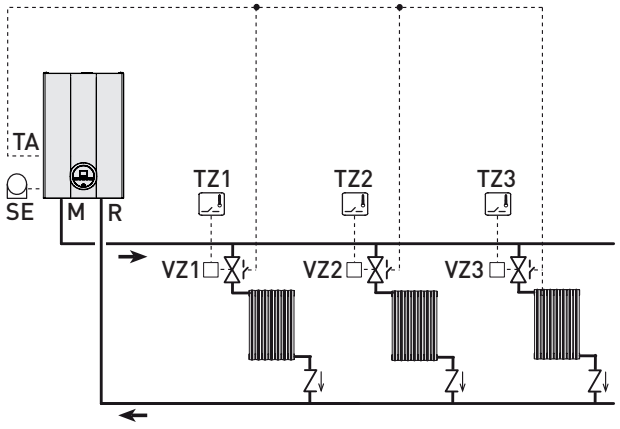


Fig. 35

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

MULTI ZONE system - with pump, air thermostat and external sensor.

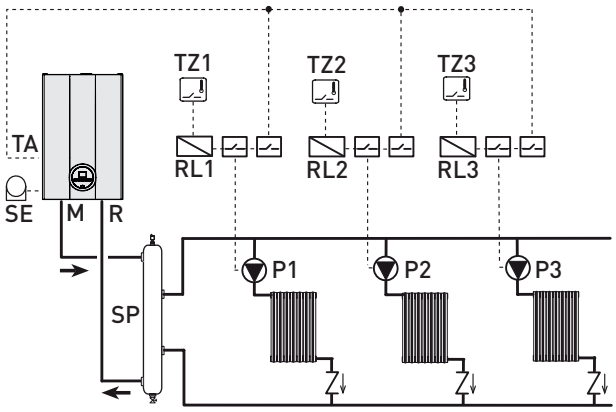


Fig. 36

6.13 Refilling or emptying

Before carrying out the operations described below, make sure that the main system switch is set to "ON" in order for the display to show the pressure level in the system during refilling.
Make sure that the operating mode is set to "Stand-by"; if this is not the case, press the button ⏻R for at least 1 second until this mode has been selected.

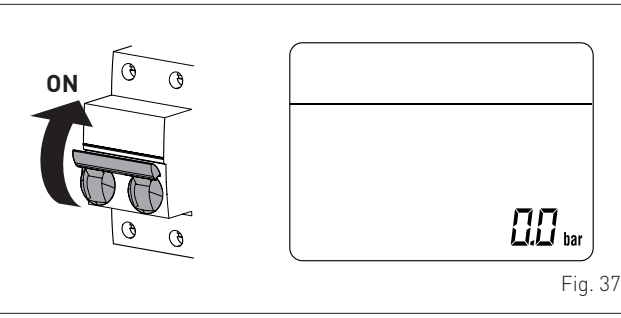


Fig. 37

6.13.1 REFILL operations

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

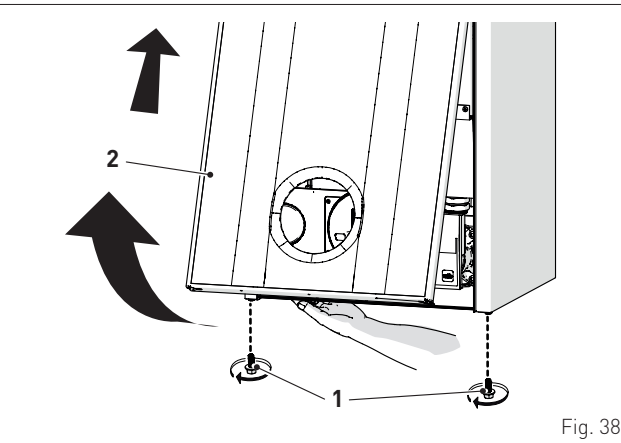


Fig. 38

Domestic hot water circuit:
- open the isolation valves of the domestic hot water circuit (if present)
- open one or more than one hot water valve to fill and bleed the domestic hot water circuit
- 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 (3)
- open the isolation valves of the heating circuit (if present)
- Open the filling valve (4)
- Fill until the water overflows from the air bleeding valves and shut off the valves again
- Continue filling until the pressure reaches **1-1.2** bar as shown on the display
- close the filling valve (4)
- check that there is no air in the system by bleeding all the radiators and the circuit on the high points of the system

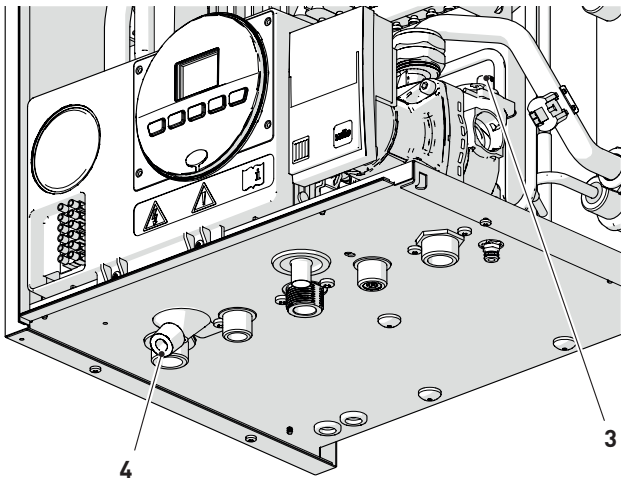


Fig. 39

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
- close the automatic bleed valve (3).

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

6.13.2 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 valve to fill and bleed the domestic hot water circuit.

Boiler:
- loosen the automatic bleed valve (3)
- close the heating circuit isolation valves (prearranged in installation)
- check that the filling valve (4) is shut-off
- connect a rubber hose to the boiler drain valve (7) and open it
- when it has fully emptied, close the drain valve (7)
- close the automatic bleed valve (3).

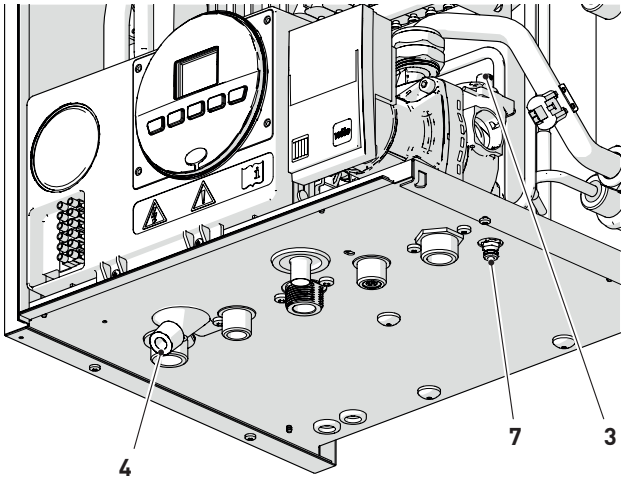


Fig. 40

7 COMMISSIONING

7.1 Preliminary operations

WARNING

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

Before commissioning the appliance, check that:
- the type of gas is correct for the appliance
- the gas isolation valves for the heating system and the water system are open
- the pump impeller rotates freely.

7.2 Before commissioning

After having carried out the preliminary operations, perform the following to start the boiler:
- set the main system switch to "ON"

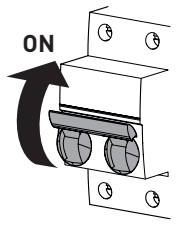
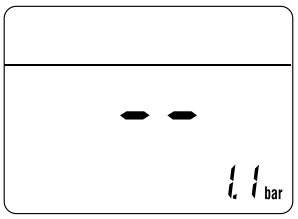
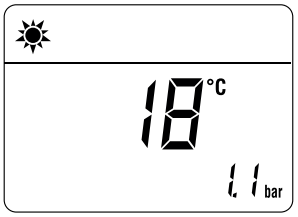


Fig. 41

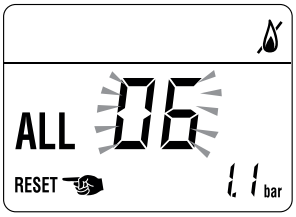
- the type of gas for which the boiler has been calibrated, **"nG"** (methane) or **"LG"** (LPG,) will appear followed by the power. After this the correct representation of the symbols will be checked and finally **"- -"**will appear on the display



- check that the system pressure as shown on the pressure gauge when the system is cold , is between **1 and 1.2 bar**
- press the button ⏻R 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



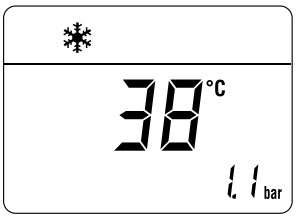
- open one or more than one hot water tap. The boiler will work at maximum power until the taps are closed.
- if there is a fault, the message **"ALL"** will appear on the display, the fault code (eg. **"06"** - no flame detected) and the message RESET ☜.



CAUTION

To restore the start conditions press and hold the button ⏻R for more than 3 seconds. This operation can be carried out no more than 6 times.

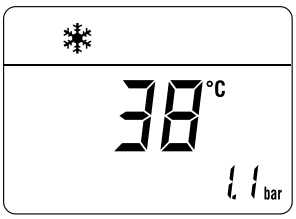
- close the taps opened previously and check that the appliance shuts down
- press the button RESET once for at least 1 second to select "WINTER mode" ❄. The value of the heating water temperature detected at that moment will appear on the display



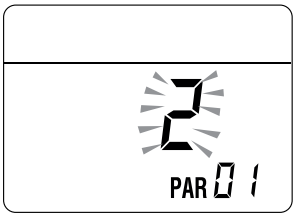
- adjust the air thermostat and check that the boiler starts and operates correctly.

7.3 Parameter setting and display

To go into the parameter menu:
- from the selected mode (eg. WINTER)



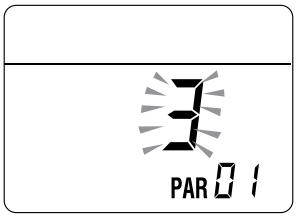
- press the buttons 🚿 and ▥ (for approximately 5 seconds) at the same time until **"PAR 01"** (parameter number) and the value set (0÷4) appears on the display



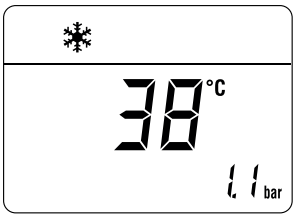
– press the button to scroll up the list of parameters and then to scroll down the list

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

– once the required parameter has been reached, press the buttons+ or –to modify the value within the permitted range. The modifications are stored automatically.



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



7.4 List of parameters

Type	No.	Description	Range	U.M.	Step	Default
			CONFIGURATION			
PAR	01	Index showing boiler power in kW	0 = 25	--	1	0
PAR	02	Hydraulic configuration	5 = Low NOx ErP	-	1	5
PAR	03	Gas Type Configuration	0 = G20 1 = LPG	-	1	0
PAR	04	Combustion configuration	3 = Low NOx ErP APS	-	1	3
PAR	05					
PAR	06	Air inlet probe (SIA) minimum threshold for deactivating compressor (CP)				7
PAR	07	Air inlet probe (SIA) maximum threshold for deactivating compressor (CP)				40
PAR	08	External sensor value correction	-5 .. +5	°C	1	0
PAR	09					
			DOMESTIC HOT WATER - HEATING			
PAR	10	Boiler antifreeze threshold	0 .. +10	°C	1	3
PAR	11	External sensor antifreeze threshold	--, -9 .. +5	°C	1	-2
PAR	12	Curve incline of heating coming on	0 .. 84	-	1	2
PAR	13	Minimum heating Tset	40 .. PAR 14	°C	1	40
PAR	14	Maximum heating Tset	PAR 13 .. 80	°C	1	80
PAR	15	Maximum power heating	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
PAR	19	Domestic hot water modulation with flow meter 0 = disabled; 1 = enabled	0 .. 1	-	-	1
PAR	20	Maximum power domestic hot water	0 .. 100	%	1	100
PAR	21	CH/DHW minimum power (premix)	0 .. 100	%	1	0
PAR	22	Enable DHW exchanger pre-heat	0 = not enabled 1 = enabled	-	-	0
PAR	23	External relay 1 function (K4)	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 = compressor active	--	--	0
PAR	24	External relay 2 function (K3)				9
PAR	25	Auxiliary TA function	3 = Heat pump safety devices	--	--	3

Type	No.	Description	Range	U.M.	Step	Default
PAR	26	Zone valve / relaunch pump activation delay	0 .. 99	Min	1	1
PAR	27					
PAR	28	Domestic hot water activation delay with solar power	0 .. 30			0
PAR	29	Anti-legionella function (only hot water tank)	-- = disabled 50 .. 80	--	--	--
PAR	30	Maximum domestic hot water temperature	35 .. 67	°C	1	60
PAR	31					
PAR	32					
PAR	33					
PAR	34					
PAR	35	Digital / analogue Pressure switch	0 = water pressure switch 1 = water pressure transducer 2 = water pressure transducer (only pressure displayed)	--	1	1
PAR	36	Maximum time of consecutive runs for compressor enabled to operate				13
PAR	37	Rest time for compressor, even where enabled to operate				15
PAR	38	Compressor post-operating time (in minutes)				7
PAR	39	Fan speed in post-ventilation				50
PAR	40	Modulating pump speed	-- = No modulation	%	-	--
PAR	41	ΔT modulating pump delivery/return	10 .. 40	°C	1	20
PAR	42					
PAR	43					
PAR	44	Minimum time between compressor ignitions				14
PAR	45	Minimum time between compressor on-off				13
PAR	46	Return temp. threshold for activating the compressor (temperature read at heat pump)				47
PAR	47	System pump forcing (only in winter mode)	0 = Disabled 1 = Enabled	--	--	0
RESET						
PAR	48	Reset parameters (to default)	0 .. 1	--	--	0

Tampering with the default values may cause serious damage to the appliance.

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

Before repairing the fault:
– disconnect the appliance from the mains power by setting the main switch to "OFF"

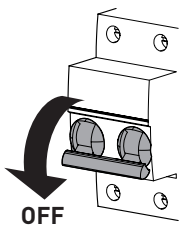
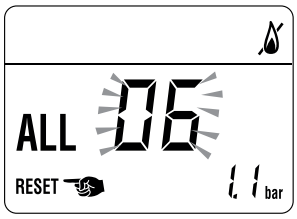


Fig. 42

– as a precautionary measure, close the gas isolation valve.

Repair the fault and start-up the boiler again.

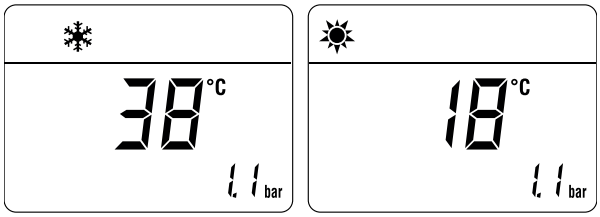
NOTE: *after having repaired the fault, when the alarm number appears on the display together with the message* **RESET** *(see figure), press the button* **R** *for approximately 3 seconds to start the appliance up again.*



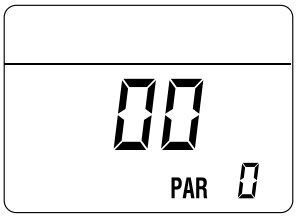
7.5 Display of operating data and counters

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

– from the operating screen in the mode enabled at that moment (WINTER ❄ or SUMMER ☀)

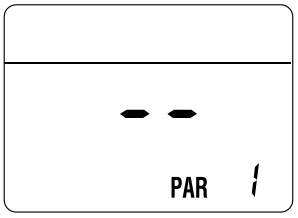


– go into **"DISPLAY"** by pressing the buttons 🚿 and **— at the same time** for more than 3 seconds until the following screen appears

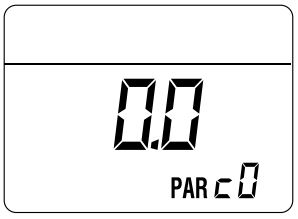


From this point, the technician has 2 options:

– 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.

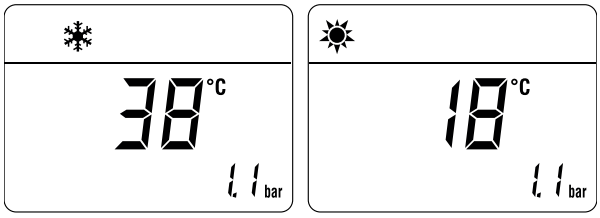


TABLE OF INFORMATION DISPLAYED

Type	No.	Description	Range	U/M	Step
PAR	00	SW version			
PAR	01	External sensor	- 9 .. 99	°C	1
PAR	02	Delivery sensor 1 temperature	- 9 .. 99	°C	1
PAR	03	Delivery sensor 2 temperature	- 9 .. 99	°C	1
PAR	04	Domestic hot water sensor temperature	- 9 .. 99	°C	1
PAR	05	Air inlet probe (SIA) display	- 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	Flow meter rate	0 .. 99	l/min	0.1
PAR	09	Water pressure transducer reading (if resent)	0...99	bar	0.1
PAR	10	Return probe display	0 .. 99	°C	1
PAR	11	Compressor (CP) status	ON/ OFF		

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 PAR parameters accessed	0 .. 99	x 1	1
PAR	c5	total no. of times OEM parameters accessed	0 .. 99	x 1	1
PAR	c6	time unitl next maintenance intervention	0 .. 99	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

7.6 Gas conversion

UNIQA.REVOLUTION models can be transformed from operating with G20 (methane) to G31 (LPG), by installing the "Nozzle kit for G31" code 8059250, to be ordered separately from the boiler, , also modifying **"PAR 03"**.

CAUTION
The maintenance interventions described must ONLY be carried out the professionally qualified personnel.

WARNING
Before carrying out any interventions described:
- set the main system switch to "OFF"
- close the gas valve
- make sure that no hot parts inside the appliance are touched.

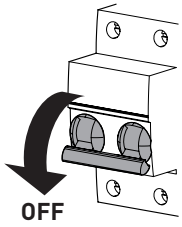


Fig. 43

7.6.1 Preliminary operations

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

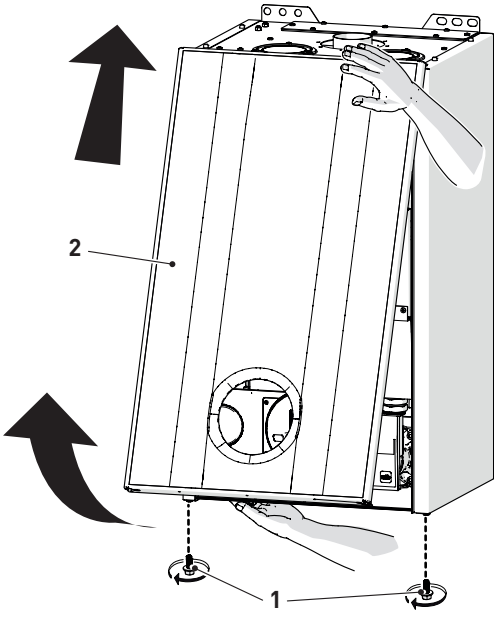


Fig. 44

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

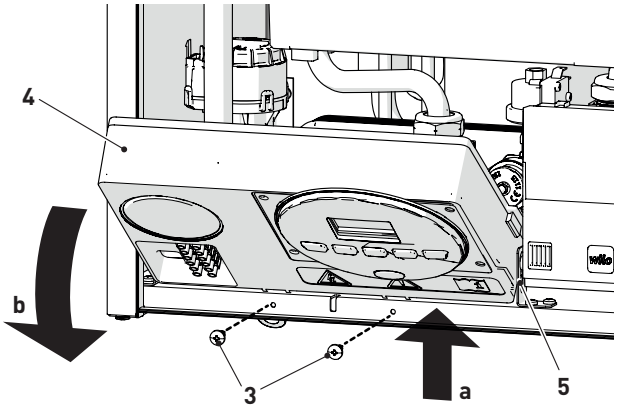


Fig. 45

- unscrew the screws (6) and remove the panel (7) carefully

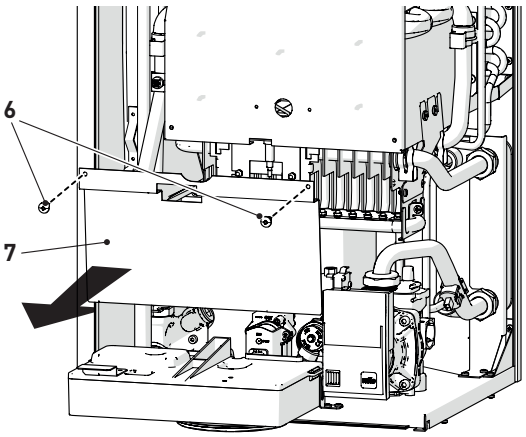


Fig. 46

- unscrew the swivel joint (8)
- remove the clip (9)
- unscrew the two front screws (10)
- replace the nozzle assembly (11) with the one in the kit, fixing it in place with screws (10)
- replace the 3/4" gasket (12) on the gas valve with the new gasket supplied
- refit the components in reverse order and fix in place as appropriate

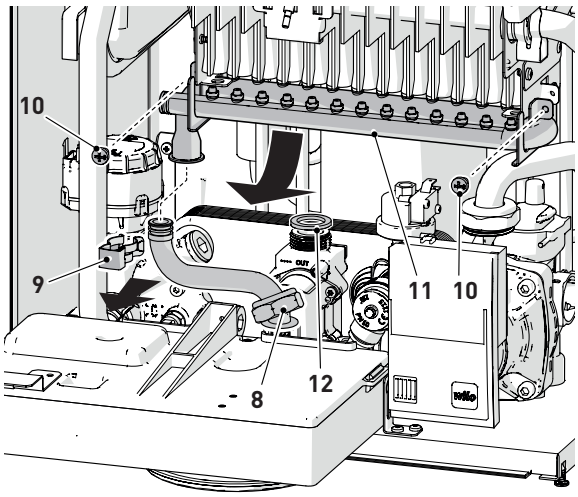


Fig. 47

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

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

G31 - 37 mbar	X ←

- carry out the "**Automatic calibration procedure**" and then refit the front panel (2) securing it with the two screws (1).

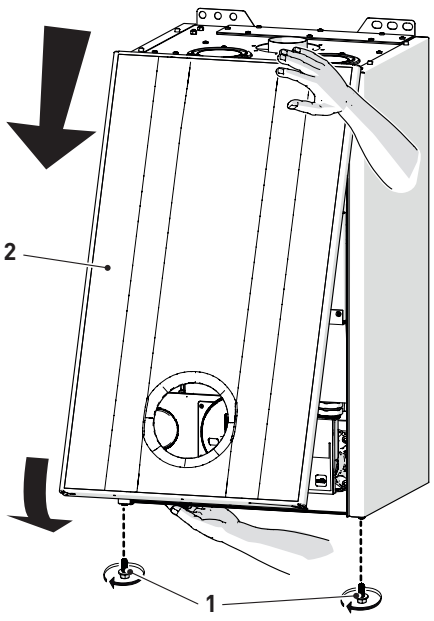


Fig. 48

7.7 Automatic calibration procedure

This procedure MUST ALWAYS be performed when the appliance is first turned on, when the gas is changed and after replacing:
- the nozzles for gas conversion
- the gas valve following a fault
- the electronic board following a fault
- electrode
- fan
- burner

and is necessary so that the new components can be identified and can communicate with those already fitted on the boiler.

CAUTION
Considering that:
- the front panel has been removed, the control panel has been brought forward and down and that the points (6) and (7) of the gas valve have been connected to the pressure gauges
- the main system switch must be set to "ON"
- the gas supply must be open
- there must be no current requests for heat ("Summer" mode with hot water valve closed or "Winter" with air thermostats open)
- **the adjustments described below must be carried out in sequence.**

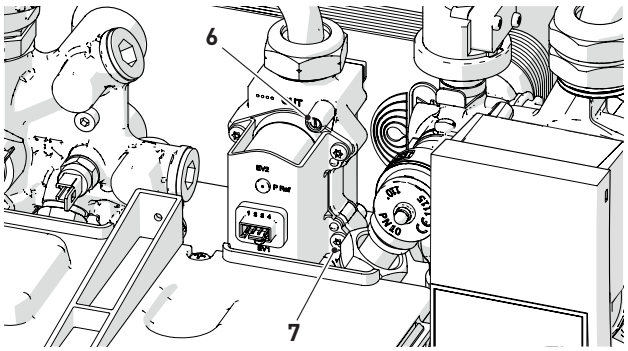
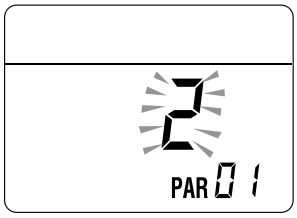


Fig. 49

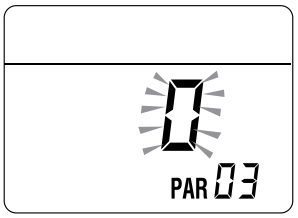
7.7.1 Setting the type of gas (only after GAS CONVERSION)

- go into the parameter section by pressing the buttons and (for approximately 5 seconds) at the same time until **"PAR 01"** (parameter number) and the value set (0) appears on the display

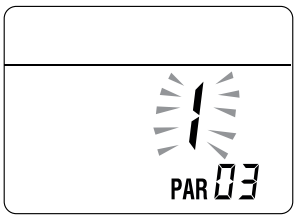


NOTE: *holding the buttons or increases the speed of the scrolling movement. Pressing the button allows the user to scroll through the previous parameters.*

– keep the button pressed and scroll through the parameters until reaching parameter "03"



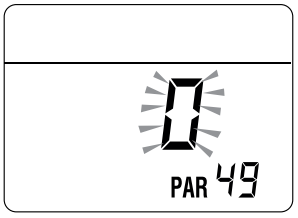
– press the + button and select "0" (METHANE) or "1" (LPG)



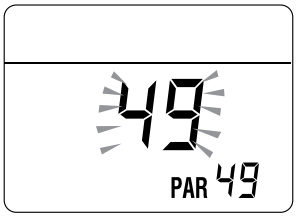
7.7.2 Modifying parameters and adjusting the pressure

Procedure which MUST be carried out after:
- **the nozzles for gas conversion**
- **changing the gas valve following a fault**
- **changing the the electronic board following a fault**
- **electrode**
- **fan**
- **burner**

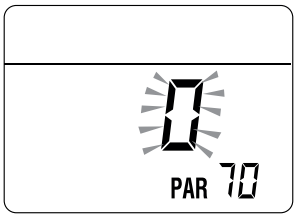
– go into the parameter section (if not already there) by pressing the buttons and (for approximately 5 seconds) at the same time until **"PAR 01"** (parameter number) and the value set (0) appears on the display
– keep the button pressed and scroll through the parameters until reaching parameter **"PAR 49"**



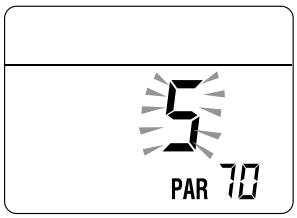
– press and hold the button + to set the value**at "49"**



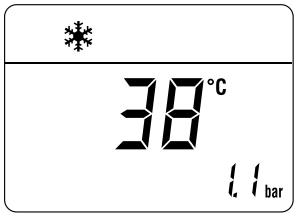
– the modified value will be stored automatically
– keep the button pressed and scroll through the parameters until reaching parameter **"PAR 70"**



– press the button + to set the value**at "5"**
– the modified value will be stored automatically

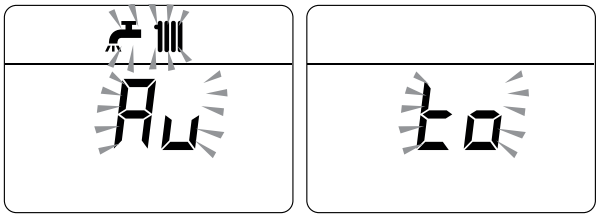


– exit the parameter section by pressing and holding down the buttons and **at the same time** (approximately 5 seconds) until the delivery temperature is displayed.

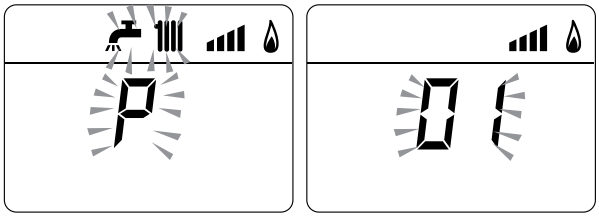


IMPORTANT
To complete this task the user **MUST** carry out the following procedure.

Adjusting maximum gas pressure:
– press the button OR until "SUMMER" mode has been selected
– press button and set the DOMESTIC HOT WATER SET to maximum using the button +
– press and hold down the buttons + and OR at the same time for approximately 6 seconds until the message **"Au"** appears on the display alternating with **"to"**



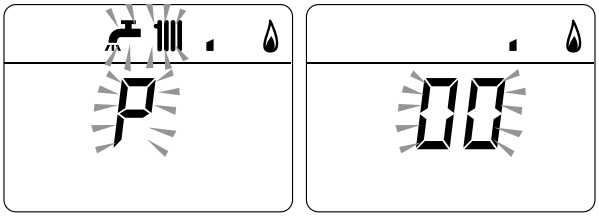
– **open one or more than one hot water tap**
– the boiler will start up and the message **"P01"** will appear on the display (Adjusting maximum gas pressure)



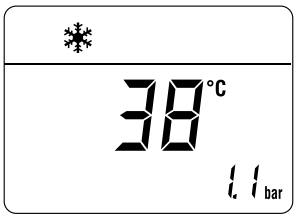
– with a G20 gas supply, press the + or – buttons until the pressure value indicated in the table appears on the pressure gauge
– with a G31 gas supply, press the + button until you reach the maximum value **"99"**
– once the value indicated in the table has been reached, press the button OR for approximately 2 seconds to confirm the value which will then flash once.

Adjusting minimum gas pressure:

– press the button twice, the message **"P00"** will appear on the display



– press the buttons + or – until the pressure value indicated in the table appears on the pressure gauge
– once the value indicated in the table has been reached, press the button ⏻R for approximately 2 seconds to confirm the value which will then flash once
– press and hold down the buttons + and ⏻R at the same time for approximately 6 seconds until the water delivery temperature appears on the display and the boiler shuts down



– close the valves which were opened previously
– disconnect the pressure gauges, carefully close the pressure points (6) and (7), put the control panel back to the original position and refit the front panel (2).

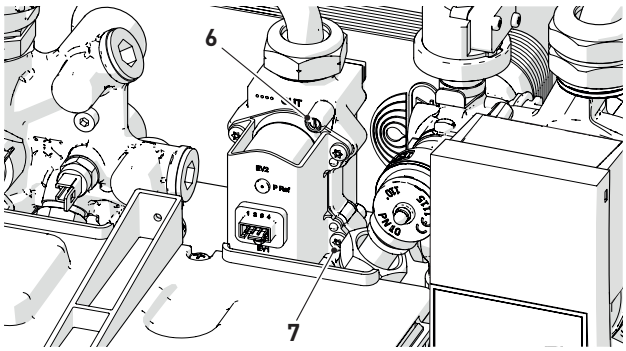


Fig. 50

CAUTION
External casing seals off the appliance from the environment in which it is installed. Check regularly, and always after performing maintenance work, that the front, side and all gaskets have been correctly closed and are not worn or damaged.

Gas supply pressure

Type of gas	G20	G31
Pressure (mbar)	20	37

Installations with SPLIT and CONCENTRIC flue gas outlet pipe systems

Model	Heat Output	Pressure at nozzles (mbar)	
		G20	G31
UNIQA.REVOLUTION	Max	13,3 - 13,8	35,2 - 35,7
	min	2,9 - 3,2	6,1 - 6,5

7.8 Checking the CO_2 with the chimney sweep function

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

CAUTION
There must be no heat requests in progress (hot water valves closed or TA open/not activated).

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

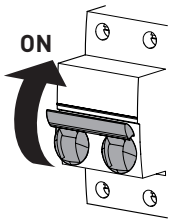
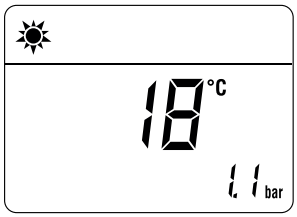
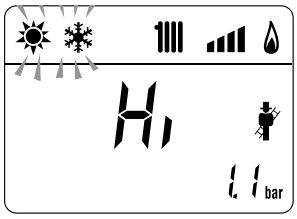


Fig. 51

– press button ⏻R and hold for at least 1 second, until you select "SUMMER" mode, where it is not already selected



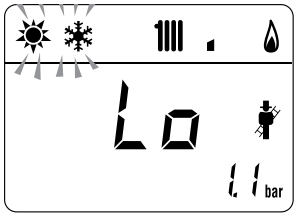
– press and hold down the buttons – and + at the same time for approximately 10 seconds until the message "Hi" appears on the display together with the flashing symbols and



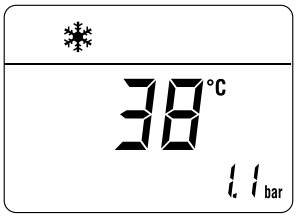
– **open one or more than one hot water tap**
– press the + button to run the boiler at maximum power "Hi"

CAUTION
Ensure that the front panel on the boiler is closed before reading the CO_2 value.

– take the CO_2 reading using the specific points on the outlet ducts
– press the – button to run the boiler at minimum power "Lo". The message "Lo" is displayed on the screen and the and symbols flash



– press the + button again to run the boiler at maximum power again
– press the button ⏻R to exit the "Chimney sweeper Procedure". The boiler water delivery temperature will appear on the display



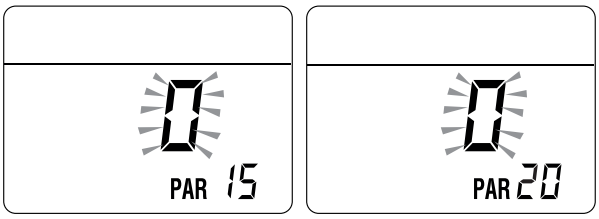
– close the taps opened previously and check that the appliance shuts down.

CO_2 values

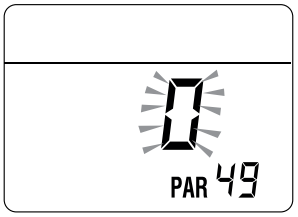
Type of gas		G20	G31
CO_2	max	3,0 - 3,5	3,7 - 4,2
	min	2,1 - 2,5	2,8 - 3,2

7.9 Modifying the CO_2 values

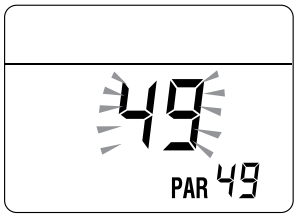
Should the CO_2 values read differ from those in the table, modify **"PAR 73"** as follows:
– keep the flue gas analyser inserted in the take-off point on the outlet ducts
– go into the parameter section by pressing the buttons and (for approximately 5 seconds) at the same time until **"PAR 01"** (parameter number) and the value set (0) appears on the display
– press and hold the button and scroll through the parameters until you reach **"PAR 15"** (maximum heating output) during the winter season, or parameter **"PAR 20"** (maximum DHW output) during the summer season
– press and hold the – button to change the value to **"0"** (force minimum power)



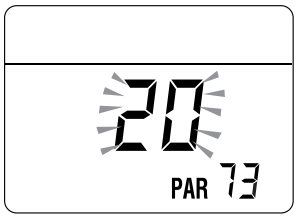
– exit the parameter section by pressing and holding down the buttons and **at the same time** (for approximately 5 seconds) until the delivery temperature is displayed. The modified value will be stored automatically
– go into the parameter section by pressing the buttons and (for approximately 5 seconds) at the same time until **"PAR 01"** (parameter number) and the value set (0) appears on the display
– keep the button pressed and scroll through the parameters until reaching parameter **"PAR 49"**



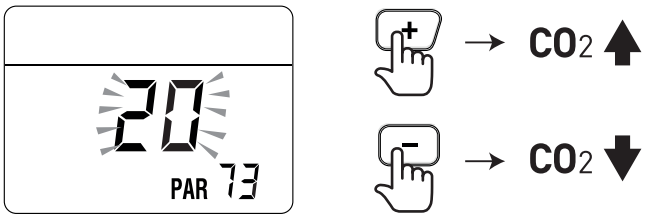
– press and hold the button + to set the value**at "49"**



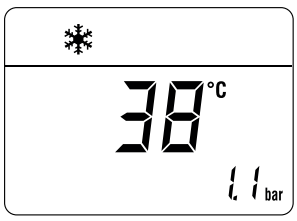
– the modified value will be stored automatically
– press and hold the button and scroll through the parameters until you reach **"PAR 73"** (default value "20")



– increase or decrease **"PAR 73"** one unit at a time using the + or – buttons respectively, checking combustion
– the modified value will be stored automatically



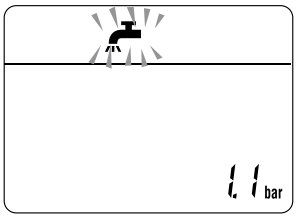
– after the CO_2 values have been modified, set **"PAR 15"** or **"PAR 20"** (depending on which was modified previously) back to **"100"** – or the most suitable heating power
– exit the parameter section by pressing and holding down the buttons and **at the same time** (approximately 5 seconds) until the delivery temperature is displayed.



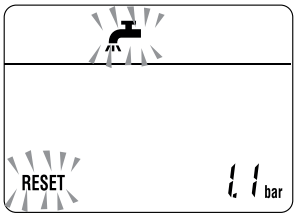
7.10 Domestic hot water comfort function (preheating)

UNIQA.REVOLUTION 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**a 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.



8 MAINTENANCE

8.1 Adjustments

For the appliance to operate correctly and efficiently it is recommended that the User calls upon the services of a Professionally Qualified Technician to carry out **ANNUAL** maintenance.

CAUTION

- The maintenance interventions described must ONLY be carried out the professionally qualified personnel **who MUST wear** suitable protective safety equipment.
- Make sure that the system components and pipes are not hot (risk of burning).

WARNING

Before carrying out any interventions described:

- set the main system switch to "OFF"
- close the gas valve
- make sure that no hot parts inside the appliance are touched.

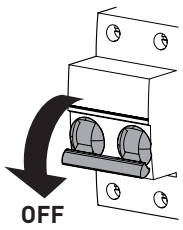


Fig. 52

8.2 External cleaning

8.2.1 Cleaning the cladding

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

IT IS FORBIDDEN

to use abrasive products.

8.3 Cleaning the inside of the appliance

CAUTION

External casing seals off the appliance from the environment in which it is installed. Check regularly, and always after performing maintenance work, that the front, side and all gaskets have been correctly closed and are not worn or damaged.

To clean the inside:

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

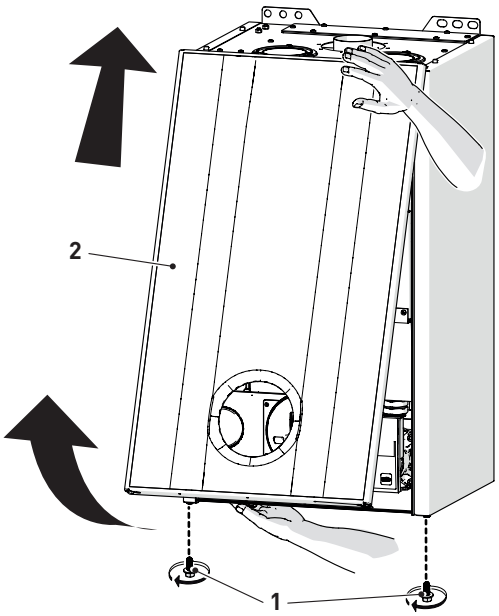


Fig. 53

8.3.1 Cleaning the air evaporator

- unscrew the eight screws (3) and remove the inspection cover (4)
- use a hoover to remove any dirt.

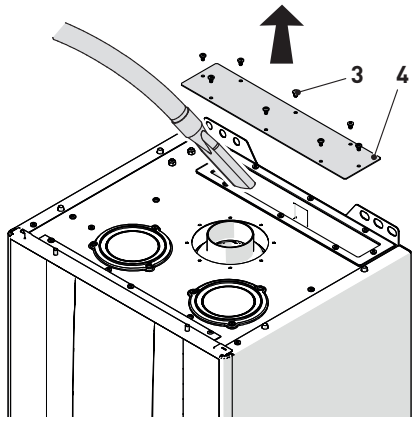


Fig. 54

8.3.2 Cleaning the heat exchanger

– remove the eight screws (5) and remove the front panel (6) from the combustion chamber (6) working carefully so as not to damage the gasket or the panel insulation

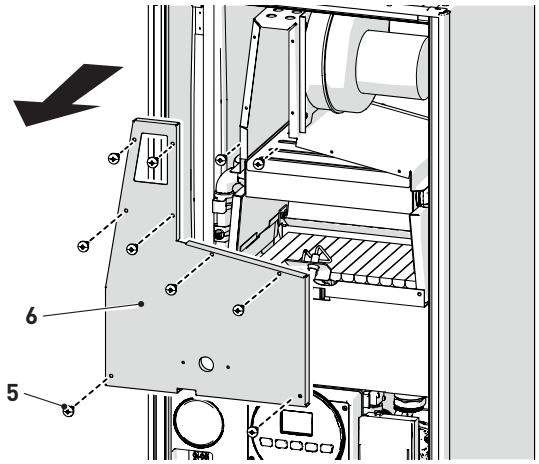


Fig. 55

– if there is any dirt on the heat exchanger (9) fins, protect the burner elements (10) covering them with a sheet of newspaper or a cloth and clean the heat exchanger (9) using a soft brush.

8.3.3 Cleaning the burner

The burner must be cleaned thoroughly. Clean it using suction once a year, taking special care to clean the back part where there is a steel and copper blade (7).

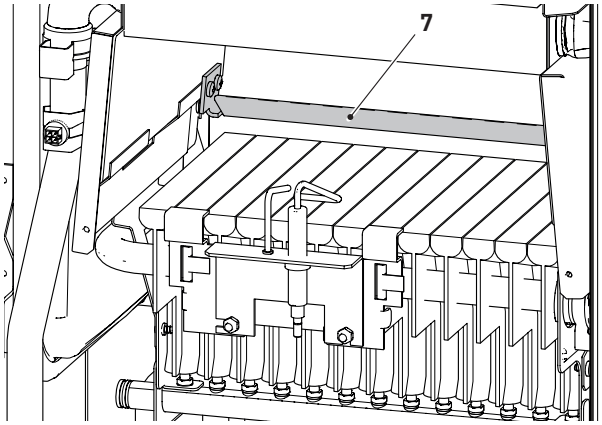


Fig. 56

8.3.4 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.

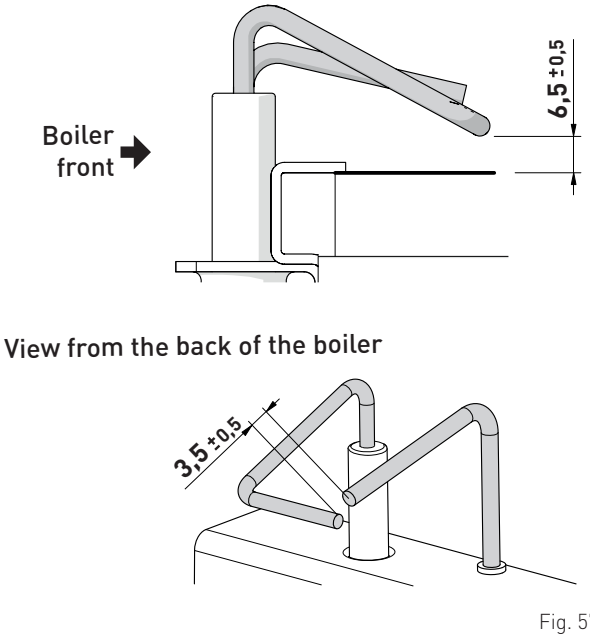


Fig. 57

CAUTION
The position of the electrode is essential for the correct detection of current ionization.

8.3.5 Final operations

After cleaning the inside:
– check that the seals and insulation on the appliance are intact. If they are not, replace them
– refit the front panel (2), securing it with the two screws (1).

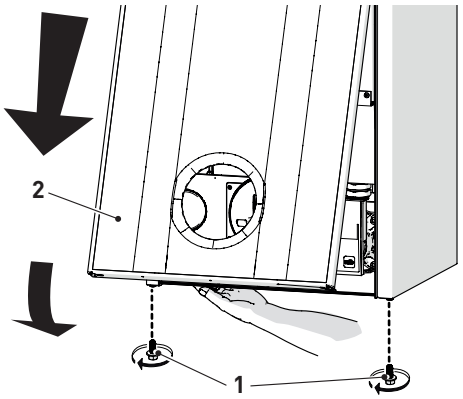


Fig. 58

8.4 Checks

8.4.1 Checking the smoke duct

It is recommended that the user checks that the combustion air inlet duct and smoke outlet duct are integral and airtight.

8.4.2 Checking the expansion vessel pressure

It is recommended that the expansion vessel on the water side is drained and that the prefilling 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 "**REFILL operations**"
- start the boiler up and carry out a smoke analysis and/or measure the combustion efficiency.
- refit the front panel securing it with the two screws which were removed previously

8.5 Reading the pressure at the nozzles with the chimney sweep function

Should the pressure at the nozzle need to be checked, a qualified maintenance technician can activate the chimney sweep function described below.

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

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

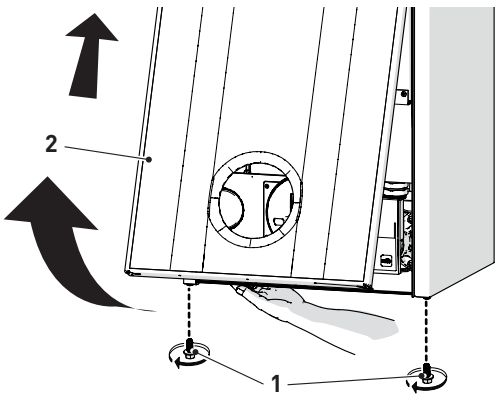


Fig. 59

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

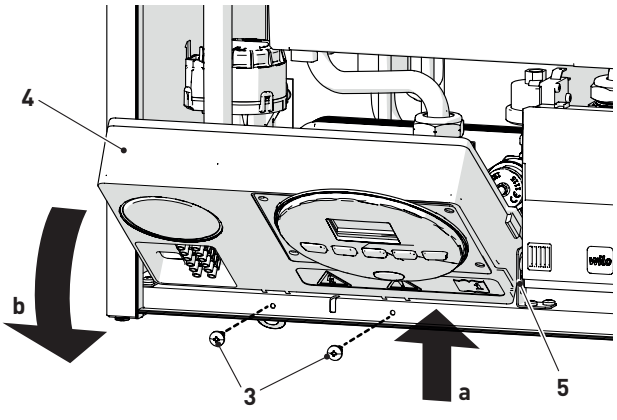


Fig. 60

- close the gas valve
- loosen the "nozzle pressure" point (6) and the screw of the "supply pressure" point (7) and connect each one to a pressure gauge

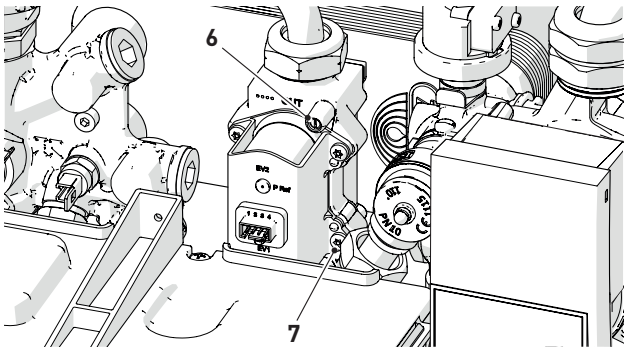


Fig. 61

CAUTION

There must be no heat requests in progress (hot water valves closed or TA open/not activated).

- open the gas valve
- power the boiler by setting the main switch to "ON"

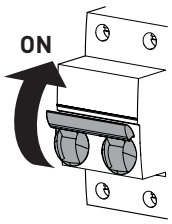
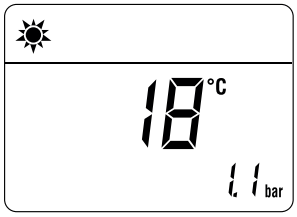
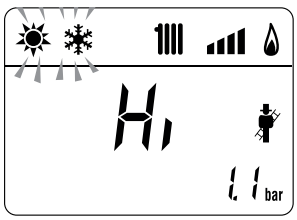


Fig. 62

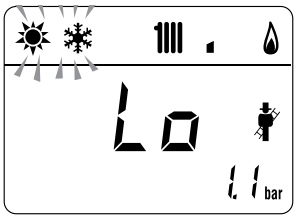
- press button ⏻R and hold for at least 1 second, until you select "SUMMER" mode ☀, where it is not already selected



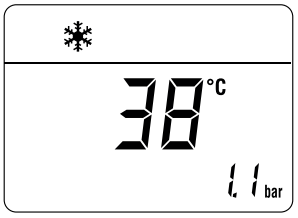
- press and hold down the buttons **–** and **+** at the same time for approximately 10 seconds until the message "Hi" appears on the display together with the flashing symbols ☀ and ❄



– **open one or more than one hot water tap**
– press the button + to make the boiler operate at maximum power **"Hi"** and check that the gas pressure values on the pressure gauges correspond to those indicated in the table below
– read the combustion parameters (CO_2 particularly) and the combustion performance
– press the button – to make the boiler operate at minimum power "Lo" and check that the gas pressure values on the pressure gauges correspond to those indicated in the table below. The message "Lo" will appear on the display together with the flashing symbols and



– press the button + once again to make the boiler operate at maximum power. If the gas pressure values are correct it is possible to determine the combustion data and take a reading of the combustion efficiency as provided for by legislation in force
– press the button R to exit the "Chimney sweeper Procedure". The boiler water delivery temperature will appear on the display



– close the taps opened previously and check that the appliance shuts down
– disconnect the pressure gauges, carefully close the pressure points (6) and (7), put the control panel back to the original position and refit the front panel (2).

Gas supply pressure

Type of gas	G20	G31
Pressure (mbar)	20	37

Installations with SPLIT and CONCENTRIC flue gas outlet pipe systems

Model	Heat Output	Pressure at nozzles (mbar)	
		G20	G31
UNIQA.REVOLUTION	Max	13,3 - 13,8	35,2 - 35,7
	min	2,9 - 3,2	6,1 - 6,5

8.6 Unscheduled maintenance

If replacing the **electronic board**, the user MUST set the parameters as indicated in the table and in the sequence shown.

Type	No.	Description	Setting for UNIQA.REVOLUTION
			-
PAR	01	Index showing boiler power in kW 0 = 25	0
PAR	02	Hydraulic configuration 5 = Low NOx ErP	5
PAR	03	Gas Type Configuration 0 = G20; 1 = LPG	0 or 1
PAR	04	Combustion configuration 3 = Low NOx ErP APS	3

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 "**Automatic calibration procedure**".
If the **gas valve** and/or the **ignition/detection electrode**and/or the **fan**are replaced, the user must still carry out the entire phase of "**Automatic calibration procedure**" described in the specific section.

8.7 Malfunction codes and possible solutions

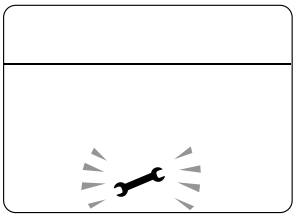
LIST OF MALFUNCTION/FAULT ALARMS

Type	No.	Fault	Solution
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 fault	- Check connections - Replace the sensor
ALL	05	Delivery sensor fault	- Check connections - Replace the sensor
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 integrity of the gas valve and the card
ALL	07	Safety thermostat intervention	- Check the delivery sensor connections - Deaerate the system - Check the bleed valve - Replace the delivery sensor - 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 integrity of the gas valve and the card
ALL	09	No water circulating in the system	- Check the rotation of the pump rotor - Check the electrical connections - Replace the pump
ALL	10	Air inlet probe error	- Check the probe - Check the electrical connection

Type	No.	Fault	Solution
ALL	11	Gas valve modulator disconnected	- Check the electrical connection
ALL	12	Incorrect configuration of the open /sealed chamber	- Set the parameter tS 0.4 (Combustion configuration) to 0
ALL	13	Smoke probe intervention	- Check the sensor is working - Replace the smoke probe
ALL	14	Smoke probe fault	- Replace the smoke probe - Check the electrical connection of the smoke probe - Contact the Technical 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 releases	- 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 network frequency detected	- Contact your network provider
ALL	41	Flame loss more than 6 consecutive times	- Check the 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 electrical connection of the remote control
ALL	44	No flame valve opening time sum anomaly	- Replace the board
ALL	62	Self-calibrating procedure is required	- Carry out the self-calibrating procedure (see the specific section)
ALL	70	HP high pressure time max. interventions	- Decrease setting PAR 46 - Contact the Technical Assistance Centre
ALL	72	Incorrect positioning of the delivery sensor	- Check that the delivery sensor is attached to the delivery pipe
ALL	77	EV current max/min absolute limits error	- Check gas valve and board
ALL	78	EV current upper limit error	- Check gas valve and board
ALL	79	EV current lower limit error	- Check gas valve and board
ALL	80	Fault on the valve control logic line	- Check/replace the connection cable to the gas valve
ALL	81	Block due combustion during start-up	- Check for blockage in chimney or recirculation - Bleed the air from the gas circuit - Check for any dirt on the air evaporator
ALL	82	Block due to numerous combustion control failures	- Check electrode - Check outlets - Check air diaphragm - Check gas calibration - Check for any dirt on the air evaporator
ALL	83	Irregular combustion (temporary error)	- Check for blockage in chimney - Check for any dirt on the air evaporator
ALL	84	Flow rate reduced for (presumed) low pressure on mains gas	- Check gas flow rate
ALL	88	Internal error (board component protection)	- Replace the board
ALL	89	Unstable combustion feedback signal error	- Check electrode - Check outlets - Check air diaphragm - Check gas calibration
ALL	90	Combustion set cannot be reached error	- Check electrode - Check outlets - Check air diaphragm - Check gas calibration
ALL	92	System has reached maximum air correction error (at the minimum flow rate)	- Check electrode - Check outlets - Check air diaphragm - Check gas calibration
ALL	93	Combustion set cannot be reached error	- Check electrode - Check outlets - Check air diaphragm - Check gas calibration
ALL	95	Flame signal micro interruptions error	- Check electrode - Check board - Check electric power supply - Check gas calibration
ALL	96	Block due to clogging in smoke outlet	- Check for blockage in chimney
ALL	98	SW error, board start-up	- Contact the Technical Assistance Centre
ALL	99	General board error	- Contact the Technical Assistance Centre

8.7.1 Maintenance request

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



Contact the technical assistance service to organise the necessary work.

9 PRODUCT DATA SHEET

UNIQA REVOLUTION	
D.H.W load profile declared	**XL**
C.H. energy efficiency class	**B**
D.H.W. energy efficiency class	**A**
Heat output (kW)	**23**
C.H. annual energy consumption (GJ)	**53**
D.H.W. annual combustible consumption (GJ)	**18**
C.H. seasonal energy efficiency (%)	**86**
D.HW. energy efficiency (%)	**81**
Sound power dB(A)	**54**
Specific precautionary measures to be adopted at the time of assembly, installation or maintenance of the equipment are contained in the boiler instruction manual	
Conforming to Annex IV (item 2) of the Delegated Regulations (EU) No. 811/2013 which supplements Directive 2010/30/EU	

10 ANNEX AA.1

Information requirements for boiler space heaters, boiler combination heaters							
Model(s):	UNIQA REVOLUTION						
Condensing boiler:	No						
Low-temperature boiler:	Yes						
B11 boiler:	No						
Cogeneration space heater:	No			Equipped with a supplementary heater:	No		
Combination heater:	Yes						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Nominal heat output for space heating	P_n	23	kW	**Seasonal space heating energy efficiency**	ηs	86	%
For boiler space heaters and boiler combination heaters: useful heat output				For boiler space heaters and boiler combination heaters: useful efficiency			
At nominal heat output and high-temperature regime [a]	P_4	22,9	kW	At nominal heat output and high-temperature regime (*)	η4	84,1	%
At 30% of nominal heat output and low-temperature regime [b]	P_1	8	kW	At 30% of nominal heat output and low-temperature regime (*)	η1	97,9	%
Auxiliary electricity consumption				Other items			
At full load	el_{max}	0,060	kW	Standby heat loss	Pstby	0,111	kW
At part load	el_{min}	0,289	kW	Ignition burner power consumption	Pign	0	kW
In standby mode	PSB	0,003	kW	Emissions of nitrogen oxides	NOx	38	mg/kWh
For combination heaters:							
Declared load profile	XL			**Water heating energy efficiency**	ηwh	86	%
Daily electricity consumption	Qelec	0,255	kWh	Daily fuel consumption	Qfuel	24,131	kWh
Contact details	Fonderie Sime S.p.A. Via Garbo 27, 37045 Legnago (VR) ITALIA						

a. High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.
b. Low-temperature regime means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature.

(*) The yield data have been calculated using the higher heating value.

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