Lamborghini
CALORECLIMA

AZIENDA CERTIFICATA ISO 9001

PREGASI CONSEGNARE L'INSERTO "MANUALE D'USO" AL SIG. UTENTE

PLEASE MAKE SURE THAT THE "USE MANUAL" IS HANDED OVER TO THE USER

TENGAN LA AMABILIDAD DE ENTREGARLE AL USUARIO EL "MANUAL DE USO"

FAVOR ENTREGAR O "MANUAL DE USO" AO SR. UTENTE

CALDAIA MURALE A GAS A CONDENSAZIONE CON BOLLITORE AD ACCUMULO IN INOX
WALL-HUNG CONDENSATION GAS BOILER WITH STAINLESS STEEL WATER-HEATER
CALDERA MURAL A GAS DE CONDENSACIÓN CON ACUMULADOR DE ACERO INOXIDABLE
CALDEIRA DE MURO À GÀS À CONDENSAÇÃO COM FERVEDOR EM INOX PARA ACUMULAÇÃO

CE

Futuria 24 PLUS MB W TOP U/I

MANUALE DI INSTALLAZIONE E MANUTENZIONE

INSTALLATION AND MAINTENANCE MANUAL

MANUAL PARA LA INSTALACIÓN Y EL MANTENIMIENTO

MANUAL DE INSTALAÇÃO E MANUTENÇÃO

INDEX PAGE

Congratulations...

...on an excellent choice.

We thank you for the preference accorded to our products.

LAMBORGHINI CALORECLIMA has been actively present in Italy and throughout the world since 1959 with a widespread network of agents and dealers to constantly guarantee the presence of our product on the market. Alongside this is the support of a technical service, "LAMBORGHINI SERVICE", which is entrusted with the qualified servicing of the product.

For installation and positioning of the boiler:
CAREFULLY OBSERVE THE LOCAL REGULATIONS IN FORCE

GENERAL INSTRUCTIONS

- This booklet constitutes an integral and essential part of the product.
  Read carefully the instructions contained in this booklet as they provide important directions regarding the safety of installation, use and maintenance. Preserve this booklet with care for any further consultation. The installation of the boiler must be carried out in compliance with current regulations, according to the instructions of the manufacturer and by qualified personnel. An incorrect installation can cause injury or damage to persons, animals and objects, for which the manufacturer cannot be held responsible.

- After removing the packaging materials, check the content integrity. In case of doubt, do not use the unit and contact the supplier. The packaging material (wooden crates, nails, clips, plastic bags, foam, etc.) must not be left within reach of children as they are potential sources of danger.

- This boiler is designed to heat water to a temperature below boiling point (atmospheric pressure). It must be connected to a heating system compatible with its performance and output.

- This appliance should only be used for the purposes for which it has been expressly designed. Any other use is to be considered improper and therefore dangerous. The manufacturer cannot be considered responsible for any damages caused by improper or unreasonable use.

ALL INSTALLATION, MAINTENANCE AND GAS CONVERSION OPERATIONS MUST BE CARRIED OUT BY AUTHORISED QUALIFIED TECHNICIANS.

TO ENSURE THAT BOILER IS INSTALLED CORRECTLY AND THAT IT FUNCTIONS PROPERLY, WE RECOMMEND THAT ONLY LAMBORGHINI ACCESSORIES AND SPARE PARTS BE USED.

ON NOTICING THE SMELL OF GAS DO NOT TOUCH ANY ELECTRIC SWITCHES. OPEN DOORS AND WINDOWS. SHUT OFF THE GAS COCKS.

DESCRIPTION

FUTURIA 24 PLUS MB W TOP

Perfectly air-tight with respect to its surroundings, this unit is suitable for heating water to temperatures below boiling point at atmospheric pressure. Fully automatic, the FUTURIA PLUS boiler is governed by an electronic microprocessor-operated control box.
Continuous power modulation is effected both on the heating circuit and the hot water circuit, by means of an electronic board controlling fan r.p.m.
Combustion analysis (indispensable at the first ignition) allows adjustment of gas delivery flow-rate so that the right air/gas mix is always obtained. Each variation in fan r.p.m. (and the resulting air-flow) corresponds to a variation in the gas delivery rate.
This operation ensures a constant air-gas ratio whatever the flame intensity, thus guaranteeing maximum combustion efficiency and hygiene under all working conditions.
The electronic board also provides:

- 3-way valve and circulation pump efficiency test; this prevents the lock-out that might otherwise occur when the boiler remains idle for a prolonged period (the valve and pump are operated for a set time every 24 hours).

- Anti-freeze device: when the heating water temperature falls below 10°C the circulation pump comes on. If temperature continues to fall the burner will ignite at 3°C, burning at minimum. It will be switched off when the water is reheated to 10°C. **This is why the boiler must be left connected to the power supply even when it is not in use.**

- Board memory: The control box microprocessor will memorise and signal any anomalies. This information is stored on the memory even when the power is off and can be recalled by connecting up to a PC.

- **"Sliding temperature"** mode with external temperature compensation.

INSTALLATION

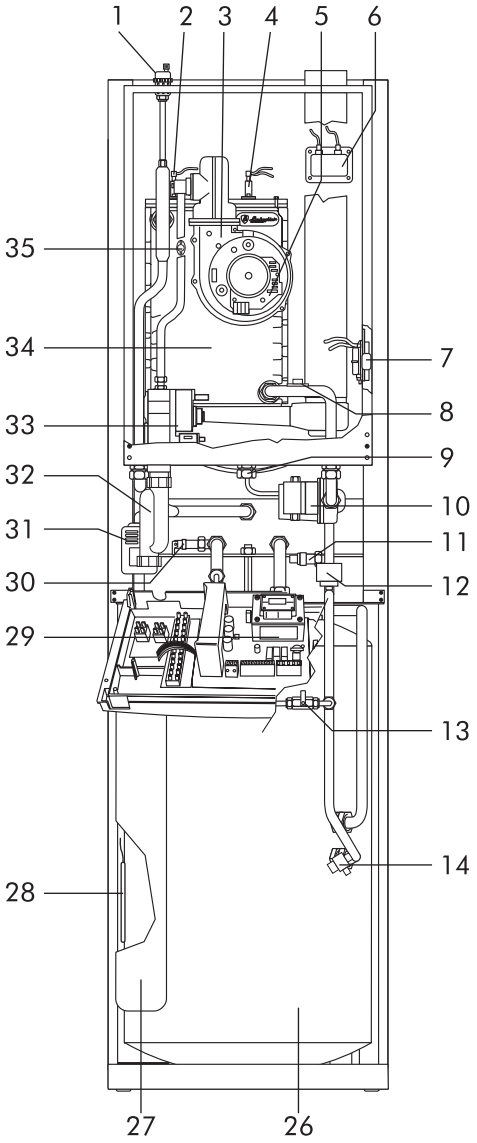
To be carried out by qualified personnel.
The system must be installed in an area free from corrosive vapours and must comply with the legal standards in force regarding evacuation of combustion by-products. It is especially recommended that standards concerning safety, construction and flue positioning be strictly observed.

SYSTEM START-UP

- Open windows and doors and do not light any naked flames.
- Bleed the air
- Check that there are no gas leaks (use soapy water or an equivalent product).

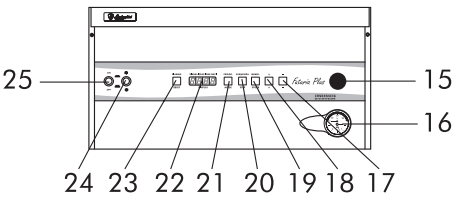
Before installing the boiler it is important to remove any impurities from the water supply pipes; use air or inert gas.
Make sure that the boiler is suitable for the type of gas available to the user.

MAIN COMPONENTS



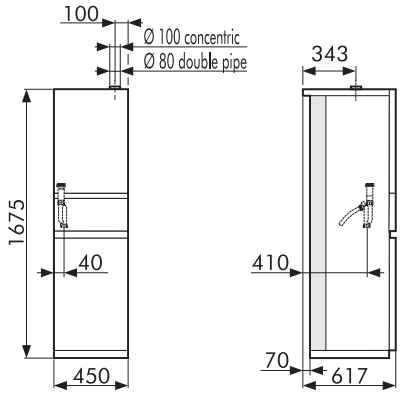
LEGEND

1 Air bleed valve
2 Control electrode
3 Fan
4 Ignition electrodes
5 Board
6 Transformer
7 Fume pressure switch
8 NTC 2 return sensor
9 Heating circuit expansion tank
10 Circulating pump
11 Safety valve
12 Lack of water pressure switch
13 Filling cock
14 Drain cock
15 Hot water adjustment
16 Hydrometer
17 **"-"** key to reduce settings
18 **"+"** key to increase settings
19 **"store"** key to save data
20 **"step"** key to select parameters to be displayed
21 **"mode"** key to select the program
22 Data display
23 Boiler **"reset"** key
24 Summer/winter selector
25 Main switch
26 90 l. water-heater
27 Hot water circuit expansion tank
28 Water-heater sensor
29 Control box
30 Water-heater safety valve
31 3-way valve
32 Condensation discharge trap
33 Gas valve
34 Aluminium boiler body
35 NTC 1 delivery sensor



DIMENSIONS mm

3/4" Ø heating delivery
3/4" Ø heating return
1/2" Ø cold water inlet
1/2" Ø hot water outlet
3/4" Ø gas inlet



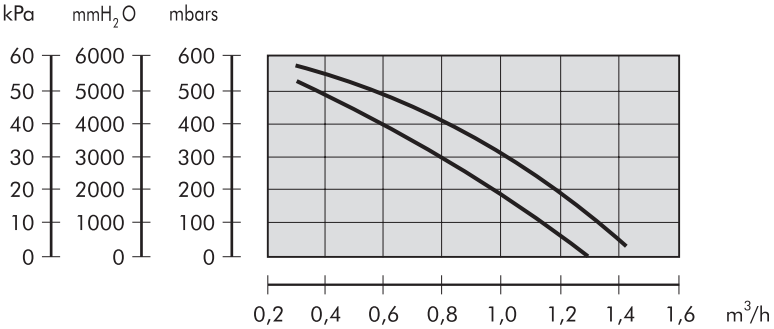
TECHNICAL FEATURES

MODEL	Thermal capacity						Min. thermal capacity						Hot water supply				Expansion tanks		Weight
	Input		Output 50/30°C		Output 80/60°C		Input		Output 50/30°C		Output 80/60°C		Water supply Δ30°C	Peak flow over first 10 min.	Reset	Water-heater capacity	Heating	Hot water	
	kW	kcal/h	kW	kcal/h	kW	kcal/h	kW	kcal/h	kW	kcal/h	kW	kcal/h	l/h	l	min.	l	l	l	kg
FUTURIA 24 PLUS MB W TOP	25	21.500	25,75	22.145	24,5	21.070	8,8	7.568	9,33	8.022	8,98	7.719	680	145	10	90	8	3	89

Boiler version: mod. C type C13-C33-C43-C53-C83
Category: I 2H
Heating circuit operating pressure max. 3 bars
Hot water circuit operating pressure max. 6 bars
Max. water temperature 90°C
Rated gas pressure: Natural gas 20 mbars

CIRCULATING PUMP FEATURES

Delivery/pressure available at the system



WATER SUPPLY CONNECTION

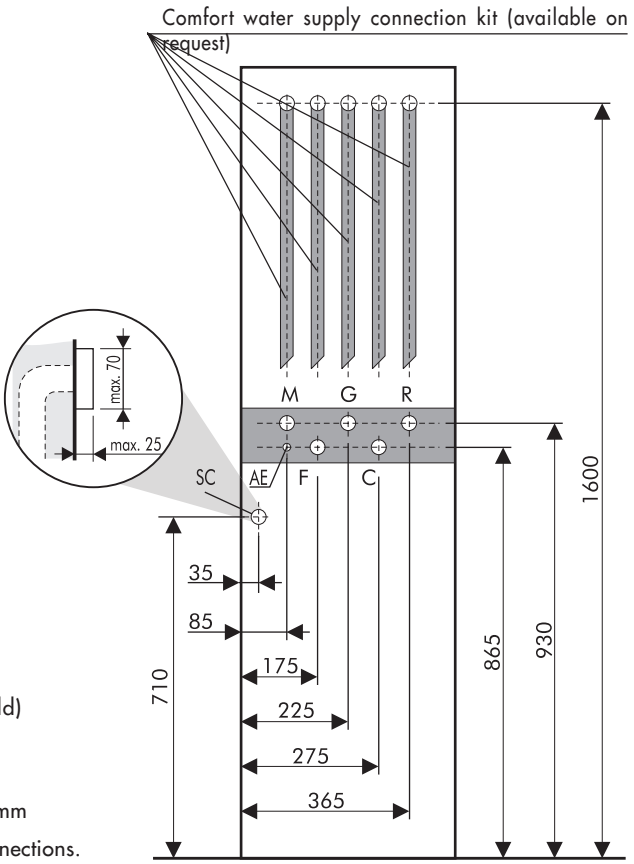
Fit the assembly template up against the wall. Then fit all the piping: system delivery, system return, cold water, hot water, gas, condensation discharge and electrical power supply for the room thermostat. Once the pipes have been fitted the end fittings can be unscrewed and ordinary plugs can be inserted ready for water supply tests to be carried out.

CONDENSATION DISCHARGE

The condensation which forms inside the boiler must be discharged. The boiler is fitted with a condensation trap. The trap fitting must be connected to a Ø 32 mm PVC outlet pipe. It is advisable to instal a second trap upstream from the plumbing system.

Important: When replacing the condensation discharge pipe, supplied with the boiler, use a pipe with an internal diameter of 13 mm.

Maximum external dimensions of discharge: Ø 70 mm max. and H 25 mm max.

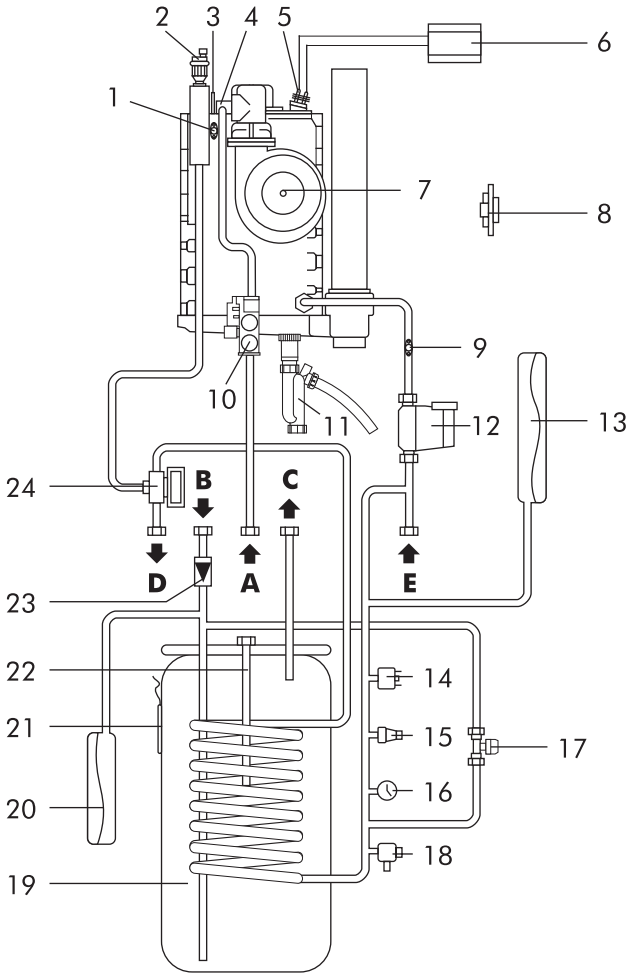


LEGEND

C Hot water Ø 1/2″
G Gas Ø 3/4″
F Boiler water supply Ø 1/2″ (cold)
AE Electrical supply
M System delivery Ø 3/4″
R System return Ø 3/4″
SC Condensation discharge Ø 80 mm

NOTE: Preview hydraulic female connections.

WATER SUPPLY CIRCUIT



LEGEND

A Gas
B Cold water inlet
C Hot water outlet
D System delivery
E System return
1 System delivery control sensor
2 Air bleed valve
3 Control electrode
4 Nozzle connection
5 Ignition electrodes
6 Ignition transformer
7 Fan
8 Air pressure switch
9 System return control sensor
10 Gas valve
11 Condensation discharge trap
12 Circulating pump
13 Heating circuit expansion tank (8 liters)
14 Lack of water pressure switch
15 Safety valve
16 Hydrometer
17 Filling cock
18 Drain cock
19 90 l. water-heater
20 Hot water circuit expansion tank (3 liters)
21 Water-heater sensor
22 Magnesium anode
23 Water-heater safety valve
24 3-way valve

ELECTRICAL CONNECTIONS - WIRING DIAGRAMS

The boiler must be connected to an earthed, single-phase 230V-50 Hz mains supply by means of a three-wire cable, ensuring that connections to the LINE and NEUTRAL terminals are made correctly.
A bipolar switch must be used with contacts opening to at least 3 mm.
The power lead must only be replaced by another with the following characteristics: "HAR H05 vv-F" 3 x 1.00 mm^2. **(We recommend that only LAMBORGHINI accessories and spare parts be used).**

Installation must be made in compliance with safety REGULATIONS IN FORCE.
Ensure that the earth connection is efficient.

Voltage	Frequency	Absorbed power	Protection index	Noise level
V	Hz	kW	IP	dB (A)
230	50	0,274	44	<50

To gain access to the electrical panel which houses the power supply terminal block and any connection to a room thermostat, proceed as follows:

- Disconnect the boiler power supply
- Undo the two control panel fixing screws 1 (fig.1)
- Extract the control panel and rotate it until it comes up against the first safety stop. Lift to release and rotate until it opens completely (fig.3).
  N.B. DO NOT FORCE THE PANEL AS THIS MIGHT BREAK THE OPENING MECHANISM.
- Undo the two cover attachment screws to gain access to the electrical connections (fig.4).

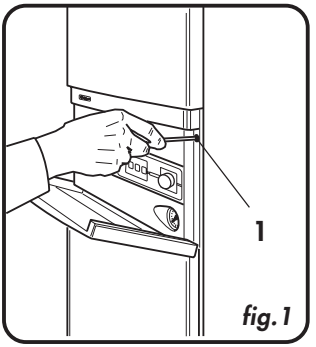


fig.1

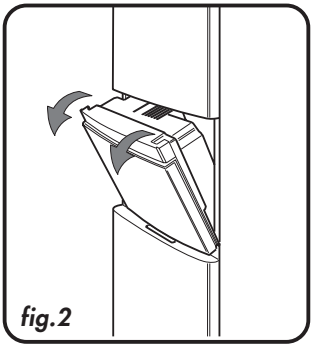


fig.2

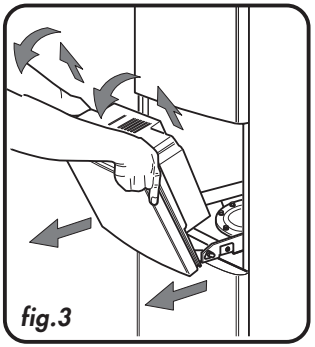
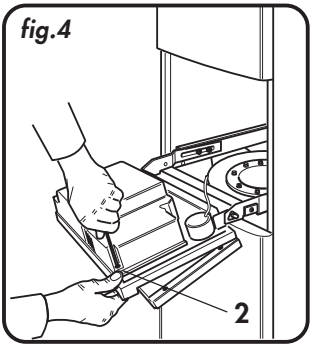
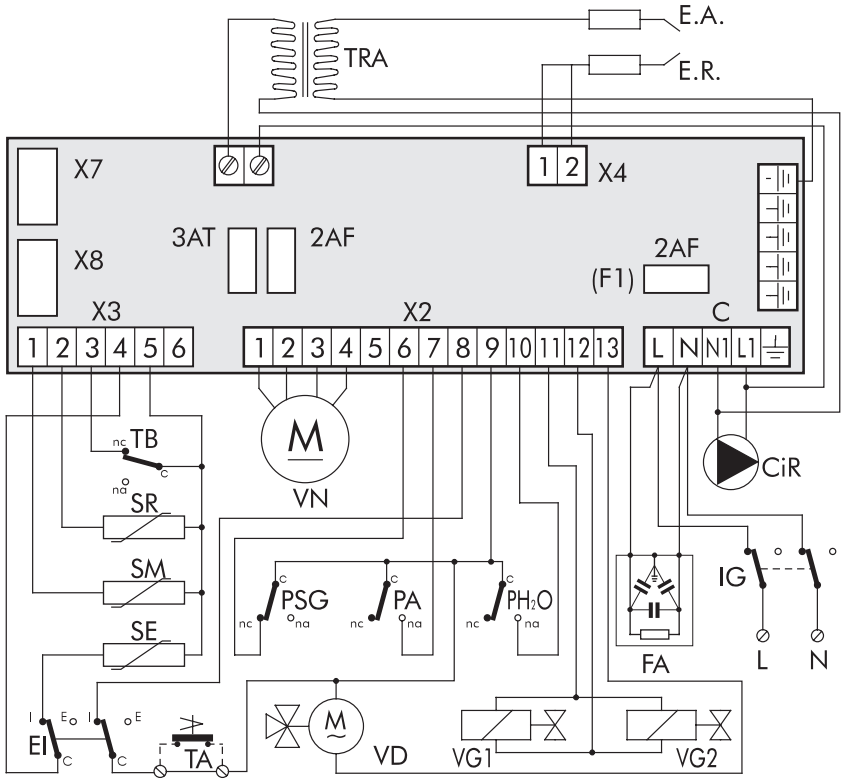


fig.3

fig.4



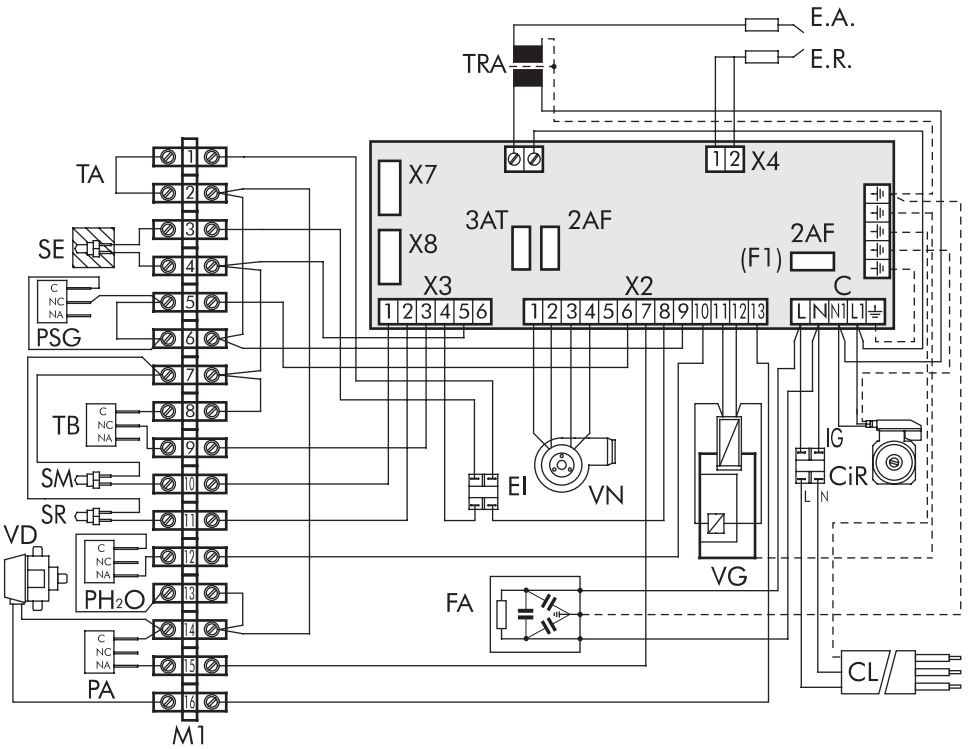
PRINCIPLE DIAGRAM



LEGEND

CiR	System circulating pump
PSG	Safety gas pressure switch
PA	Air pressure switch
PH_2O	Water pressure switch
E.A.	Ignition electrode
E.R.	Detection electrode
TRA	Transformer
IG	Main switch
VG1	Gas valve 1
VG2	Gas valve 2
VD	3-way valve
E/I	Summer/winter switch
TA	Room thermostat
TB	Water-heater thermostat
SE	External sensor
SR	Return sensor
SM	Delivery sensor
VN	Fan
X2	Amp. 13-pole connector
X3	Amp. 6-pole connector
X4	Amp. 2-pole connector
X7-X8	PC connector
3AT	Fuse 3A (electric fan)
2AF	Fuse 2A (24 V circuits)
2AF(F1)	Power supply fuse 230 V (2 A)
L	Line 230 V 50 Hz
N	Neutral
C	Connector Wieland
FA	Anti-interference filter

ASSEMBLY DIAGRAM



LEGEND

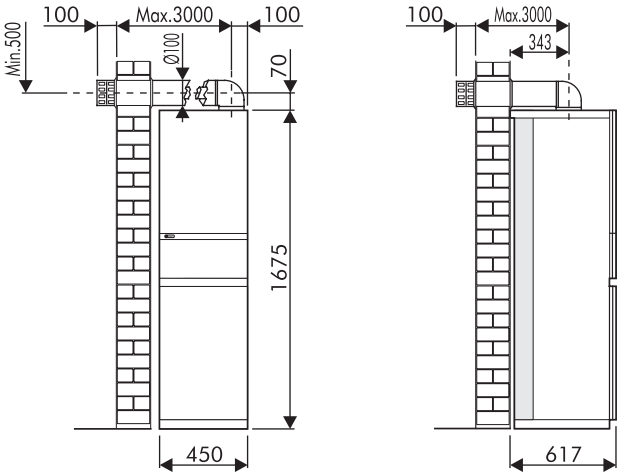
CiR	System circulating pump
PSG	Safety gas pressure switch
PA	Air pressure switch
PH_2O	Water pressure switch
E.A.	Ignition electrode
E.R.	Detection electrode
TRA	Transformer
IG	Main switch
VG	Gas valve 1-2
M1	pa27 terminal board
VD	3-way valve
E/I	Summer/winter switch
TA	Room thermostat
TB	Water-heater thermostat
SE	External sensor
SR	Return sensor
SM	Delivery sensor
VN	Fan
X2	Amp. 13-pole connector
X3	Amp. 6-pole connector
X4	Amp. 2-pole connector
X7-X8	PC connector
3AT	Fuse 3A (electric fan)
2AF	Fuse 2A (24 V circuits)
2AF(F1)	Power supply fuse 230 V (2 A)
CL	230 V 50 Hz power lead
C	Connector Wieland
FA	Anti-interference filter

To connect the room thermostat TA, remove the bridge **1-2** from the **M1** terminal board.

FLUE EXHAUST INSTALLATION

CONCENTRIC FLUE PIPE

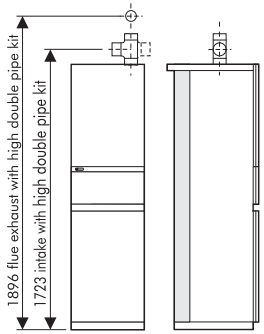
Fit the concentric elbow pipe positioning it in the desired direction and insert the sealing gasket on it. Fit the air intake and flue pipes, observing the distances indicated on the installation diagram. The flue pipe should slope slightly upward (a gradient of about 3%) and outward so that any condensation which forms in the boiler can be collected.



- CONCENTRIC FLUE EXHAUST: max length 3 m
- DOUBLE FLUE PIPE (Intake + Delivery): max length 50 m.

DOUBLE FLUE PIPE

The flue pipe should slope slightly upward (a gradient of about 3%) and outward so that any condensation which forms in the boiler can be collected.



Installing an elbow to connect the boiler to the chimney will cause a drop in pressure.
The values set out in the table below indicate the necessary reduction to the length of the linear pipes.

TYPE OF INSTALLATION	90° ELBOW FITTED	45° ELBOW FITTED
CONCENTRIC FLUE EXHAUST	1 m.	0.5 m.
DOUBLE FLUE PIPE (INTAKE/EXHAUST)	0.6 m.	0.3 m.

ATTENTION: Use only air intake/ fumes evacuation kits produced by Lamborghini Caloreclima.

OPERATION

When the unit is switched on (or when it is reset), and where no heat has been requested, the system runs through the following procedure:

- 5 second safety pause;
- 15 seconds 3-way valve activation;
- 60 seconds circulator activation;
- circulator and 3-way valve switched off.

This cycle is run every 24 hours and 24 hours after the last heat request. The above operations ensure that the components are put in motion at least once a day.

HEATING

The heating start-up cycle, after a period of inactivity, is as follows:

- 15 seconds 3-way valve activation;
- pump activated;
- air pressure switch contacts checked (they must be closed);
- fan switched on;
- when heat is requested pre-ventilation begins;
- ignition transformer switched on and gas valve opened;
- if flame detection reveals normal operation the fan runs for a few seconds at maximum power and then modulation begins.

When heat is no longer requested the burner is switched off while the pump continues to run for 3 minutes (post-circulation time). The 3-way valve is then disactivated.
If the flame is not detected the pre-ventilation/ignition cycle is repeated after a set safety period has elapsed (repeated up to 2 times, after which the unit is shut down).

HOT WATER PRODUCTION

When hot water is requested the 3-way valve switches immediately to the hot water circuit.
When the burner is switched off the pump continues running for another two minutes after which it shuts down.
A hot water request is detected by a temperature sensor on the hot water circuit heat exchanger; this trips the hot water production system when the sensor-detected temperature is lower than the parameter n° 1 setting.
Modulation takes place immediately and proceeds as a function of boiler water return temperature.
When producing hot water, the burner goes out when the sensor-detected temperature exceeds set temperature.

DUAL FUNCTION (HOT WATER + HEATING)

If there is a request for hot water when heating is in progress, the 3-way valve diverts the water flow towards the hot water heat exchanger (hot water has precedence over heating). When hot water is no longer required the burner goes out and the pump continues running for another two minutes, then stops. The three-way valve then diverts the water flow back to the heating circuit. The pump is then restarted and the heating function put back into operation.

IGNITION

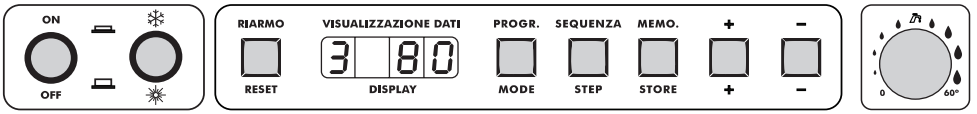
SYSTEM FILLING

Bring the 3-way valve into the manual position. Open the inlet valve slowly until the system reaches a working pressure (indicated on the hydrometer) of approximately 1 bar, then close it.
Check that the automatic air bleed valve has its cap loosened, run the circulator to eliminate the any air in the circuit, proceeding as follows:
press the ON button on the control panel (the display lights up) and activate the heating function (Winter/Summer switch set to in Winter) to start the circulator. Press the OFF button to stop the circulator; repeat the procedure until all the air has been vented.
Reset the 3-way valve to the "automatic" position.

IGNITION

Open the gas tap, press the ON button. The burner will ignite automatically (the heating and hot water functions are set by the manufacturers).
Should the unit fail to ignite there will be another 2 ignition attempts after which there will be a shutdown (the display will flash **2** - **02**). Press RESET: if the unit still fails to ignite contact the technical assistance service.

CONTROL PANEL



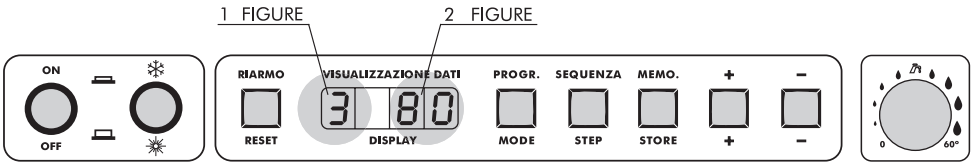
Button	Function
ON/OFF	ON/OFF SWITCH
✳ ❄	SUMMER/WINTER SWITCH
RIARMO/RESET	BOILER RESET
PROG./MODE	PROGRAM SELECTOR (DISPLAY)

Button	Function
SEQUENZA/STEP	SELECTS PARAMETERS TO BE DISPLAYED
MEMO/STORE	ENTERS DATA
+	INCREASES SETTING
-	DECREASES SETTING
🚿	HOT WATER ADJUSTMENT 0-60°C

ADJUSTING HEATING TEMPERATURE

1) Press **(MODE)**. An indicator light on the left-hand display comes on.
2) Press **(STEP)** to phase 4.
3) Press the **(+) (-)** buttons to modify the hot water temperature.
4) Press **(STORE)** to memorise the data.
5) Press **(MODE)** twice to enter the new temperature setting.

OPERATING SEQUENCE (display only)



Button	Function
ON/OFF	ON/OFF SWITCH
✳ ❄	SUMMER/WINTER SWITCH
RIARMO/RESET	BOILER RESET
PROG./MODE	PROGRAM SELECTOR (DISPLAY)

Button	Function
SEQUENZA/STEP	SELECTS PARAMETERS TO BE DISPLAYED
MEMO/STORE	ENTERS DATA
+	INCREASES SETTING
-	DECREASES SETTING
	HOT WATER ADJUSTMENT 0-60°C

During boiler operation the first figure on the digital display indicates the sequence step while the second gives the temperature of the water in the boiler.

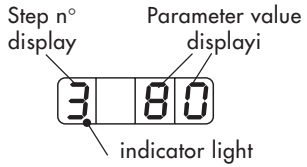
E.g.  means that the unit is heating at a delivery temperature of around 80°C.

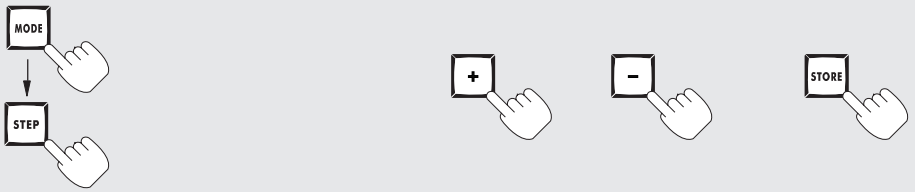
Step	Function
0	pause, no heat required
1	pre-ventilation
2	ignition
3	burner ignited (heating system mode)
4	burner ignited (hot water mode)
5	air pressure switch control
6	burner off (water temp. more than 5°C warmer than setting)
7	post-circulation pump in heating mode
8	post-circulation pump in hot water mode
9	burner off because of fault (see shutdown code)

LIST OF PARAMETERS INDICATED BY 1st FIGURE ON DISPLAY (Values can be adjusted by the user).

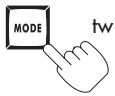
To gain access to the PHASE number press the MODE button once (an indicator light to the right of the 1st figure comes on). Press STEP to display all the available PHASES.

Example:





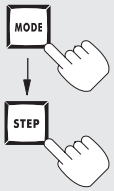
Phase n°	Parameter	Value range	Default settings
1	Hot water temperature	from 60 to 90°C	80
2	Hot water system	00 = domestic hot water excluded 01 = 5 °C hysteresis + pump continuously on Hot water 02 = 5 °C hysteresis 03 = 10 °C hysteresis 04 = 20 °C hysteresis 05 = 30 °C hysteresis	02
3	Heating	00 = heating disabled 01 = heating enabled 02 = heating enabled, pump running continuously	01
4	Water delivery temperature	from 20 to 90 °C	80

To exit the PHASE list press 

twice.

DATA DISPLAY (MONITOR system)

Real-time data (not modifiable) regarding unit operation can be checked on the monitor. Press MODE twice (a flashing indicator light appears to the right of the 1st figure). Press STEP to display all the available PHASES.



Phase n°	Parameter		Notes
1	Water delivery temp.	°C	
2	Return temp.	°C	
3	Hot water temp.	°C	
4	Outdoor temp. (*)	°C	
5	Fume temp.	°C	Unavailable
6	Set or calculated delivery temp.		With OPTIONAL outdoor sensor
7,8	Parameters used by the installer	———	Access code input

(*) Parameter displayed if connected to sensor (optional)

To exit the DATA DISPLAY program press 

once.

FAULT CODE (read-only display)

The boiler control box is equipped with a microprocessor that memorises and signals any faults or shutdowns. The fault type is indicated by a code.
The meaning of each code is given in the table below:

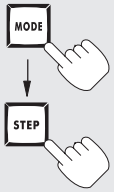
1st figure	2nd figure	Fault
0	00	Flame detection circuit fault
1	01	24 V short circuit
2	02	No detection, no flame on burner
4	03	Board fault
4	04	Internal board fault (e.g. power failure)
4	05	Board fault
4	06	Board fault
4	07	Board fault
4	10	Board fault
4	11	Board fault
4	13	Board fault
4	14	Board fault
4	15	Board fault
4	16	Board fault
4	17	Board fault
4	24	NTC1/NTC2 connection switched over
4	26	Minimum gas pressure (at pressure switch)
4	30	Difference ΔT between T1 and T2 exceeded (>35 °C)
4	31	NTC1 short circuit
4	32	NTC2 short circuit
4	36	NTC1 open
4	37	NTC2 open
4	41	Board fault
4	42	Board fault
4	44	Board fault
4	60	Board fault
5	08	Air pressure switch failure
5	28	Fan not working, no tachometer signal
5	29	Fan continues running, erroneous tachometer signal
9	12	No-water pressure switch
9	18	TST tripped (>98°C)
9	19	Return temperature T2 too high (>88°C)
9	25	Temperature T1 varies too quickly (T1 = delivery temperature)

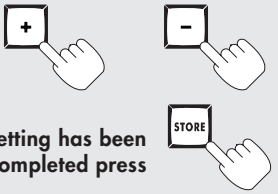
RESETTING

Should there be a fault the system will shut down and flash the fault type on the display.
Check for proper operating conditions (gas tap open, proper feed pressure etc.) and press RESET. Should the fault persist contact your local **LAMBORGHINI ASSISTANCE CENTRE.**

PARAMETER DISPLAY AND MODIFICATION (ACCESS CODE)

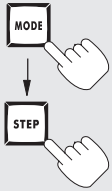
By pressing MODE and STEP simultaneously the letter C will appear on the display. Keeping these buttons pressed, enter the access code (62) by means of the + and – keys. Press STORE to memorise the code (the display will flash twice). Press MODE to highlight the PHASE number on the display. Then press STEP to display the list of PHASES.

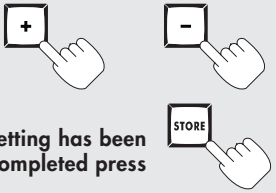




When setting has been completed press

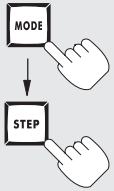
Phase N°	Parameter	Range
1	T_{set} Hot water temperature	From 60°C to 90°C (storage heater)
2	D.H.W. System (NTC3 absent)	00 = Hot water off 01 = Hot water on + pump running continuously with hysteresis of -5°C on T_{set} (Phase 1) 02 = Hot water on with hysteresis of -5°C on T_{set} (Phase 1) 03 = Hot water on with hysteresis of -10°C on T_{set} (Phase 1) 04 = Hot water on with hysteresis of -20°C on T_{set}.(Phase 1) 05 = Hot water on with hysteresis of -30°C on T_{set}.(Phase 1)

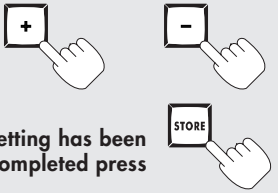




When setting has been completed press

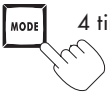
Phase N°	Parameter	Range
3	Central heating system	00 = Central heating off 01 = Central heating on 02 = Central heating on and pump in cont. mode
4	Delivery temperature (T1)	From 20°C to 90°C
5	$T1_{foot}$ (minimum heating temperature)	From 15°C to 25°C (recommended 15°C)
6	T4 minimum (settable outdoor sensor temperature)	From -20°C to +10°C
7	Pause temp. for heating re-ignition	From 15°C to 30°C
8	Parallel shift (with outdoor sensor and on-boiler timer)	From 0°C to 30°C (on T_{set})
9	Central heating hysteresis	From 5°C to 15°C
A	Heating re-ignition waiting time	From 0°C to 30 (x 10 .2 seconds)
b	Post-circulation time. Pump in heating mode	From 3 to 99 minutes
C	PWM pump	**Do not use**
d	Boiler type	
	1, figure as in heating	0x = room thermostat 1x = NTC4 sensor (outdoor sensor)
	2, figure as in Hot water	x0 = 3-way valve x1 = Hot water pump – **Do not use** x2 = inverted 3-way valve – **Do not use**
E	Fan speed control	00 = modulation working. From 01 to 100% manual fan speed control. Chimney-sweep function.
F	Min/max r.p.m. in heating mode	From 10 to 60 (x 100)





When setting has been completed press

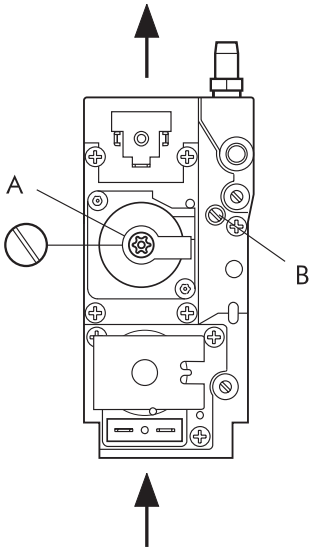
Phase N°	Parameter	Range
G	Max r.p.m. in heating mode	from 00 to 90 (units)
H	Max r.p.m. in Hot water mode	from 10 to 60 (x 100)
I	Max r.p.m. in Hot water mode	from 00 to 99 (units)
J	Min. r.p.m.	from 05 to 60 (x 100)
L	Min. r.p.m.	from 00 to 99 (units)
n	Start r.p.m.	R.p.m. settable at start between 80 and 100% of absolute value.

To exit the program at any time just press 

4 times.

GAS VALVE ADJUSTMENT

The boilers leave the factory already set to their minimum and maximum output and therefore do not need to be set when installed.
Should the settings need to be modified to adapt them to installation requirements it will be necessary to change fan r.p.m. and reset the CO_2 value to between 8.8-9%.



Legend

A **Minimum** heat delivery adjustment screw
B **Maximum** heat delivery adjustment screw.

In the event of gas valve replacement, proceed as follows:

1. Insert a combustion analysis instrument.
2. Position the switch to SUMMER or WINTER and open a tap on the hot water circuit.
3. Wait a few seconds for the boiler to reach max. power (check the fan r.p.m. on the display).
4. Adjust the gas flow-rate by acting on screw B until the CO_2 value is between 8.8 and 9%.
5. Keep the hot water tap open, select PHASE E and set parameter "1" to automatically set the boiler to minimum power.
6. Adjust the gas flow-rate by acting on screw A until the CO_2 value is between 8.8 and 9%.
7. Repeat steps 4-5-6- until combustion values stabilise when passing from minimum to maximum power and vice versa.

When adjustment is over bring PHASE E back from 1 to 0. This parameter variation restores boiler modulation.

VARYING FAN R.P.M.

- Set the access code (62) (see page 48)
- Press MODE
- Press STEP to display the relative PHASE (F-G)
- Use the +/- keys to set the desired r.p.m.
- Press STORE to enter the variation.

GAS - NOZZLE CALIBRATION

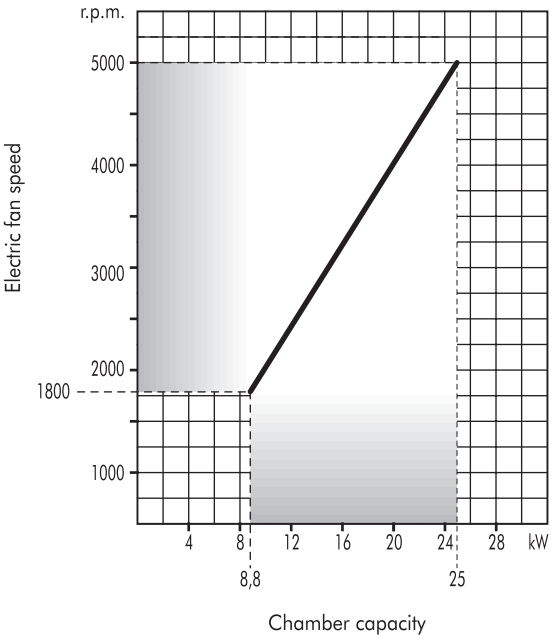
When leaving the factory the burners are set to operate with NATURAL GAS. For the calibration see the table below:

Gas type	ΔP Servo		CO_2 %		Delivery	NOx Class	Burner nozzle	Hi
	min.	max.	min.	max.	m^3/h		Ø mm.	$kcal/m^3$
NATURAL GAS (G20-20mbar)	0,7	5,7	8,8	9	2,64	5	5,8	8.120 *

ΔP Servo = pressure jump measured between points upstream and downstream of nozzle.

* = at 1013 mbars, 15°C.

BURNER PRESSURE CURVE - OUTPUT



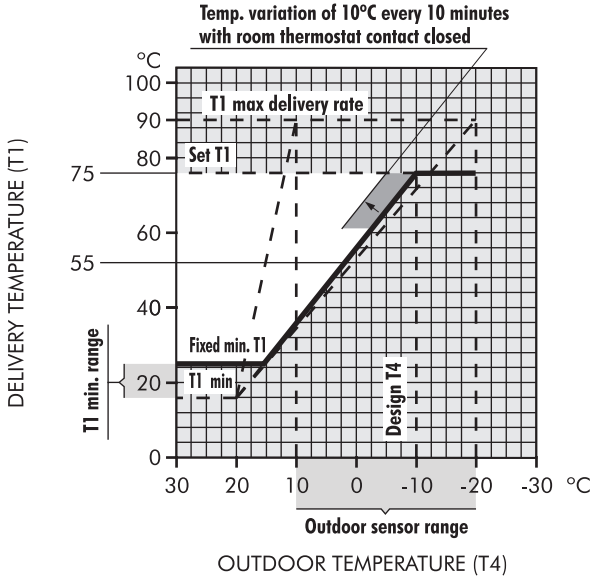
HEATING WITH OUTDOOR SENSOR AND ROOM THERMOSTAT

For proper use of the outdoor sensor it is compulsory to fit the room thermostat which adjusts delivery temperature T1 to ambient conditions.
For each outdoor temperature reading between T4 (via parameter n° 6, adjustable between –20°C and +10°C) and 30°C there corresponds a delivery temperature T1 between the T1 temperature set by the user on the boiler (phase. n° 4) and the minimum operating temperature fixed at 55°C (see boiler operation curve).
The graph-illustrated example shows T4 set to -10°C and delivery temperature set to 75°C. If, for example, the outdoor sensor detects a temperature of –5°C and the room thermostat is requesting heat (contact closed) the boiler will "try" to reach a delivery temperature of 65°C. If the room thermostat continues requesting heat the delivery temperature increases by 10°C every ten minutes. Vice versa, if the thermostat contact opens the delivery temperature falls by 1°C each elapsed minute. The chapter "PARAMETER DISPLAY AND MODIFICATION" (page 48) shows admissible parameter values regarding outdoor sensor operation. The values must be adjusted as follows:

Phase n°

5 T1 heating minimum temperature adjustable between 15°C and 25°C.
6 T4 minimum outdoor temperature range -20°C to +10°C (adjusted on the basis of minimum design temperature).
b BOILER TYPE: adjusted to 00 (fixed): adjustment valid for installation of room temperature thermostat with outdoor sensor.

BOILER OPERATION CURVE



BRUCIATORI
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CONDIZIONAMENTO

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44040 DOSSO (FERRARA)
ITALIA
TEL. ITALIA 0532/359811 - EXPORT 0532/359913
FAX ITALIA 0532/359952 - EXPORT 0532/359947

Cod. 97.50374.0 11/00

Lamborghini CALORECLIMA

AZIENDA CERTIFICATA ISO 9001

IT CALDAIA MURALE A GAS
ALTO RENDIMENTO - MODULANTE
MANUALE PER L'UTENTE **2**

Alla cortese attenzione del sig. INSTALLATORE:
Consegnare il presente manuale d'uso all'UTENTE

GB WALL-HUNG GAS BOILER
FOR HIGH EFFICIENCY - MODULATING
USER MANUAL **10**

For the attention of the INSTALLATION TECHNICIAN:
make sure that this manual is handed over to the USER

ES CALDERA MURAL A GAS
ALTO RENDIMIENTO - MODULANTE
MANUAL PARA EL USUARIO **18**

A la atención del sr. INSTALADOR:
Entregar el presente manual para el uso al USUARIO

PT CALDEIRA DE PAREDE A GÁS
ALTO RENDIMIENTO - MODULANTE
MANUAL DO UTENTE **26**

Àtenção do Sr. INSTALADOR:
Entregue este manual de uso ao UTENTE

CE

Futuria 24 PLUS MB W TOP U/I

INDEX PAGE

Dear User...

...you have entered into possession of a product that is the result of a careful design and advanced production systems ensuring high-top operational reliability and saving. Read carefully this guide in order to know any detail concerning the product's operation system.
The "LAMBORGHINI SERVICE" after-sales centres are at your disposal to ensure QUALIFIED MAINTENANCE and PROMPT SERVICE.

LAMBORGHINI CALORECLIMA

For the installation and positioning of the boiler
CAREFULLY OBSERVE THE LOCAL REGULATIONS IN FORCE

GENERAL INSTRUCTIONS

- This booklet constitutes an integral and essential part of the product and should be preserved for any further consultation.
  Read carefully the instructions contained in this booklet as they provide important directions regarding the operation of the appliance, allowing a great saving in its use and maintenance.

- If the appliance is sold or transferred to other people or if you move house and leave your apartment, ensure that the manual remains with the appliance so that it can be used by the new owner.

- This appliance should be destined only for the use for which it has been expressly envisaged. Any other use is to be considered improper and therefore dangerous. The manufacturer cannot be considered responsible for any damages caused from improper or unreasonable use.

- Do not touch the parts of the boiler which during the operation become overheated. These parts can be dangerous for children or inexperienced persons.

- Do not obstruct the inlet or dissipation screens of the boiler.

- Do not make the boiler wet with splashes of water or other liquids.

- Do not rest any object upon the boiler.

- Use of the boiler is prohibited for children or the inexperienced.

- Do not carry out any cleaning of the boiler with inflammable substances.

- Do not deposit containers of inflammable substances in the location where the boiler is situated.

- In the presence of the risk of freezing suitable provisions must be taken which are not however the concern of the boiler manufacturer.

ALL INSTALLATION, MAINTENANCE AND GAS CONVERSION OPERATIONS MUST BE CARRIED OUT BY AUTHORISED QUALIFIED TECHNICIANS.

TO ENSURE THAT BOILER IS INSTALLED CORRECTLY AND THAT IT FUNCTIONS PROPERLY, WE RECOMMEND THAT ONLY LAMBORGHINI ACCESSORIES AND SPARE PARTS BE USED.

ON NOTICING THE SMELL OF GAS DO NOT TOUCH ANY ELECTRIC SWITCHES. OPEN DOORS AND WINDOWS. SHUT OFF THE GAS COCKS.

NOTE: THE BOILER MUST BE LEFT CONNECTED TO THE POWER SUPPLY EVEN WHEN IT IS NOT IN USE

INSTRUCTIONS FOR THE USE

- In case of breakdown and/or malfunctioning of the appliance, disconnect it avoiding any attempt of repair or direct intervention.
  Call exclusively professionally qualified personnel.
  Any repair must be carried out by an after-sale service centre "LAMBORGHINI SERVICE" authorised by the manufacturing firm, and using original replacements exclusively.
  Non-observance of the above could compromise the safety of the appliance.
  In order to guarantee the efficiency of the appliance and its proper operation it is indispensible to keep to the manufacturer's directions, by ensuring the periodical servicing of the appliance is carried out by professionally qualified personnel.

- Check the system hydraulic pressure during the first ignition and then periodically by using the hydrometer. Check that readings for the system when cold are within manufacturer-specified limits. Should any falls-off in pressure be noticed contact a qualified technician.

- After each reopening of the gas cock wait a few minutes before restarting the boiler.

- As soon as one decides not to use the appliance further, one should take care to render innocuous those parts liable to be potential sources of danger.

- As soon as one decides to disconnect the boiler definitively, one should ask qualified personnel to effect the related works, then ensure that the main supplies have been disconnected.

- For the power supply to the boiler the use of adaptors, multiple sockets or extensions is not permitted.The use of a switch as indicated by the safety regulations in force must be provided.

- The use of appliances which utilise electrical energy involve the observation of fundamental rules which are:

  a) not to touch the appliance with parts of the body which are wet or when in bare feet;
  b) not to pull electrical wires;
  c) not to expose the appliance to the atmospheric agents;
  d) not to allow use of the appliance to children or the inexperienced.

- In the case of structural work positioned near the flue pipe, turn off the boiler and at the end of the work ensure that the efficiency of the flue exhaust is verified by qualified personnel.

- On noticing the smell of gas do not touch any electric switch.Open all doors and windows. Shut off the gas cocks and call qualified personnel.

CHECKS AND MAINTENANCE

- Before starting up the boiler ask qualified personnel "LAMBORGHINI SERVICE" to check:

  a) that the data on the information plate corresponds to that required by the gas, electrical and water supply networks;
  b) that the pipes which branch off from the boiler are lined with suitable thermally-insulated sheathing;
  c) the proper functioning of the flue pipe;
  d) that the comburent air flow and the fumes evacuation take place properly in accordance with the regulations in force;
  e) that correct aeration and maintenance are possible in case of installation in the furniture.

- Ensure that the installer has connected the boiler and water-heater safety discharge to a waste. In the case of the contrary the intervention of the safety valves could flood the premises. The manufacturer would not be held responsible for this.

- Ensure that the piping of the installation is not used as an earth outlet for other installations; beyond not being ideal for such a use it could in short bring serious damage to the other appliances connected to it.

- Ask qualified personnel "LAMBORGHINI SERVICE" to check:

  a) the internal and external tightness of the gas system;
  b) that the gas delivery is that required by the boiler output;
  c) that the type of gas is suitable for the boiler;
  d) that the pressure of gas supply is within the values stated on the boiler plate;
  e) that the gas installation is the correct size and equipped with all the safety and checking devices prescribed by the current regulations.

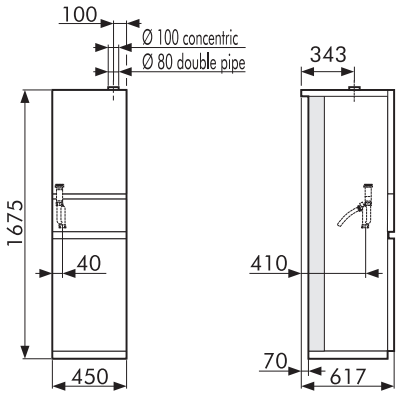
- Ask periodically to check the proper functioning and the good state of the flue exhaust.

- Ensure that the electrical system has been confirmed by qualified personnel to be adequate for the power required by the appliance itself.

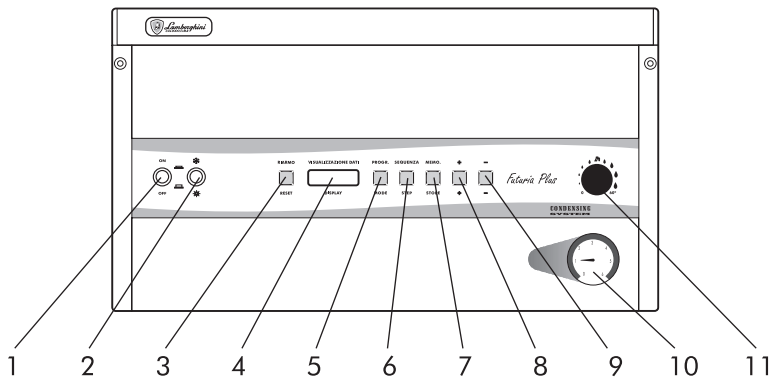
- The electricity supply cable must not be replaced by the user, but by qualified personnel only.

- The electrical safety of the appliance is attained only if the same has been connected to an effective system earthed in accordance with the current regulations. The verification of this fundamental prerequisite should be made by qualified persons as the manufacturer will not be responsible for damage caused by the lack of adequate earthing of the installation.

DIMENSIONS mm

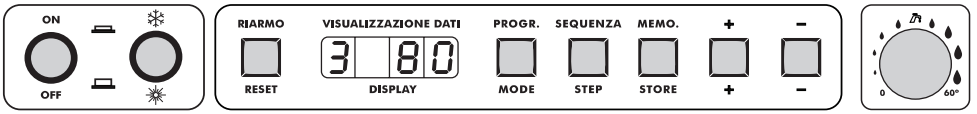


CONTROL PANEL



1 Main switch
2 SUMMER/WINTER selector
3 Boiler "RESET" key
4 Data display
5 "MODE" key to select the program
6 "STEP" key to select parameters to be displayed
7 "STORE" key to save data
8 "+" key to increase settings
9 "-" key to reduce settings
10 Hydrometer
11 Hot water adjustment

ADJUSTMENTS



Button	Function
ON/OFF	ON/OFF SWITCH
✳ ❄	SUMMER/WINTER SWITCH
RIARMO/RESET	BOILER RESET
PROG./MODE	PROGRAM SELECTOR (DISPLAY)

Button	Function
SEQUENZA/STEP	SELECTS PARAMETERS TO BE DISPLAYED
MEMO/STORE	ENTERS DATA
+	INCREASES SETTING
-	DECREASES SETTING
🚿	HOT WATER ADJUSTMENT 0-60°C

1) Press **(MODE)**. An indicator light on the left-hand display comes on.
2) Press **(STEP)** to phase 4.
3) Press the **(+) (-)** buttons to modify the hot water temperature.
4) Press **(STORE)** to memorise the data.
5) Press **(MODE)** twice to enter the new temperature setting.

IGNITION

Open the gas tap, press the ON button. The burner will ignite automatically (the heating and hot water functions are set by the manufacturers).
Should the unit fail to ignite there will be another two ignition attempts after which there will be a shutdown (the display will flash **2** - **02**). Press RESET: if the unit still fails to ignite contact the technical assistance service.

FAULT CODE

The boiler control box is equipped with a microprocessor that memorises and signals any faults or shutdowns. The fault type is indicated by a flashing code.
The meaning of each code is given in the table below:

1st figure	2nd figure	Fault
0	00	Flame detection circuit fault
1	01	24 V short circuit
2	02	No detection, no flame on burner
4	03	Board fault
4	04	Internal board fault (e.g. power failure)
4	05	Board fault
4	06	Board fault
4	07	Board fault
4	10	Board fault
4	11	Board fault
4	13	Board fault
4	14	Board fault
4	15	Board fault
4	16	Board fault
4	17	Board fault
4	24	NTC1/NTC2 connection switched over
4	26	Minimum gas pressure (at pressure switch)
4	30	Difference ΔT between T1 and T2 exceeded (>35°C)
4	31	NTC1 short circuit
4	32	NTC2 short circuit
4	36	NTC1 open
4	37	NTC2 open
4	41	Board fault
4	42	Board fault
4	44	Board fault
4	60	Board fault
5	08	Air pressure switch failure
5	28	Fan not working, no tachometer signal
5	29	Fan continues running, erroneous tachometer signal
9	12	No-water pressure switch
9	18	TST tripped (>98°C)
9	19	Return temperature T2 too high (>88°C)
9	25	Temperature T1 varies too quickly (T1= delivery temperature)

RESETTING

Should there be a fault the system will shut down and flash the fault type on the display. Check for proper operating conditions (gas tap open, proper feed pressure etc.) and press RESET. Should the fault persist contact your local **LAMBORGHINI ASSISTANCE CENTRE.**

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