

Архангельск (8182)63-90-72  
Астана (7172)727-132  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Волгоград (844)278-03-48  
Волгодга (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89  
Иваново (4932)77-34-06

Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3942)65-04-62  
Киров (8332)68-02-04  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Липецк (4742)52-20-81  
Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Новокузнецк (3943)20-46-81  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Россия (495)268-04-70

Пермь (342)205-81-47  
Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Казахстан (772)734-952-31

Сургут (3462)77-98-35  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Ярославль (4852)69-52-93

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AZIENDA CERTIFICATA ISO 9001



cod. 3541T340 - Rev. 00 - 07/2019

Basso NOx  
Low NOx



SI ECO F

IT

ISTRUZIONI PER L'USO, L'INSTALLAZIONE E LA MANUTENZIONE



EN

INSTRUCTIONS FOR USE, INSTALLATION AND MAINTENANCE

## GENERAL WARNINGS

- Read the warnings in this instruction booklet carefully since they provide important information on safe installation, use and maintenance.
- This instruction booklet is an integral and essential part of the product and must be kept with care by the user for future reference.
- If the unit is sold or transferred to another owner or if it is to be moved, always make sure the booklet stays with the boiler so that it can be consulted by the new owner and/or installer.
- Installation and maintenance must be carried out by professionally qualified personnel, according to current regulations and the manufacturer's instructions.
- Incorrect installation or inadequate maintenance can result in damage or injury. The manufacturer declines any liability for damage caused by errors in installation and use or by failure to follow the instructions provided.
- Before carrying out any cleaning or maintenance operation, disconnect the unit from the power supply using the system switch and/or the special cut-off devices.
- In case of a fault and/or poor operation, deactivate the unit and do not try to repair it or directly intervene. Contact professionally qualified personnel. Any repair/replacement of the products must only be carried out by qualified personnel using genuine parts. Failure to comply with the above can compromise the safety of the unit.
- Periodic maintenance performed by qualified personnel is essential in order to ensure proper operation of the unit.
- This unit must only be used for its intended purpose. Any other use is deemed improper and therefore hazardous.
- After unpacking, check the good condition of the contents. The packing materials are potentially hazardous and must not be left within the reach of children.
- The unit can be used by children aged at least 8 years and by persons with reduced physical, sensory or mental capabilities, or lacking experience or the necessary knowledge, only if under supervision or they have received instructions on its safe use and the related risks. Children must not play with the unit. Cleaning and maintenance intended to be done by the user can be carried out by children aged at least 8 years only if under supervision.

- In case of doubt, do not use the unit. Contact the supplier.
- The unit and its accessories must be appropriately disposed of in compliance with current regulations.
- The images given in this manual are a simplified representation of the product. In this representation there may be slight and insignificant differences with respect to the product supplied.

	<b>This symbol means “Caution,” and is displayed next to safety warnings. Carefully observe such warnings to avoid hazardous situations, property damage, and injury to people and animals.</b>
	<b>Important information involving no risk of injury or property damage is indicated by this symbol.</b>

**CE** The CE marking certifies that products meet the fundamental requirements of the applicable European directives.  
 The declaration of conformity can be requested from the manufacturer.

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## 1 USER'S MANUAL

### 1.1 Introduction

The new **SI ECO F** is an instantaneous, high-performance, low-emission heater for domestic hot water production, powered by **natural gas, LPG or propane-air** and equipped with a compact, **WATER-COOLED** burner, electronic ignition, sealed chamber, **MODULATING** fan, and control system with microprocessor.

## 1.2 Control panel

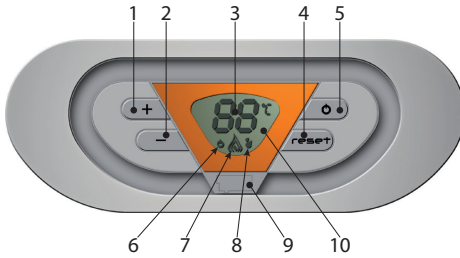


fig. 1 -

- |  |  |
|--|--|
| 1 Key for increasing the DHW temperature | 7 Burner on and current power display. When flashing, this indicates a combustion fault. |
| 2 Key for decreasing the DHW temperature | 8 DHW operation display  |
| 3 Multifunction display                  | 9 Connection for technical support   |
| 4 Reset key                              | 10 LCD panel   |
| 5 On/Off key                             |  |
| 6 OFF symbol                             |  |

### 1.2.1 Display during operation

#### DOMESTIC HOT WATER

When hot water is requested (using the hot water tap), the control panel screen will show the current **DHW outlet** temperature.

This temperature will increase or decrease as the **DHW sensor** temperature reaches the preset value.

In the event of a malfunction (see section 3.4), the **LCD panel** will display the error code, along with “d3” and “d4” during the waiting periods.



### 1.3 Turning the unit on and off

- Plug the unit into the mains.
- Press the **ON/OFF** key on the control panel for 1 second.



fig. 2 - Turning the unit off

When the unit is off, the card remains connected. **DHW production** is deactivated.

- To turn on the unit, press the **ON/OFF** key again for 1 second. The **LCD panel** will display the version of the software on the card for the first 5 seconds, followed by the current **DHW outlet** temperature.



fig. 3 - Turning the unit on

- Open the gas cock located before our unit. The unit will operate whenever domestic hot water is demanded.



fig. 4 - In operation

### 1.4 Adjusting the DHW

- Press the **+** and **-** keys to adjust the **DHW** temperature between **40°C** and **50°C**. As you can see, the (°C) symbol flashes as the adjustment keys are pressed.



fig. 5 - Minimum temperature



fig. 6 - Maximum temperature

## 2 INSTALLATION MANUAL

### 2.1 General information

**The heater must only be installed by an authorized technical installer, in compliance with all instructions contained in this manual, the UNE 26 standard, and local regulations affecting installation and exhaust.**

### 2.2 Location

The combustion circuit is sealed off from the installation environment, so the unit can be installed in any room. Nonetheless, the installation site must be sufficiently ventilated to avoid hazardous situations in the event of a gas leak.

European **directive 90/396/EEC** establishes this safety standard for all gas-powered equipment, including those with a sealed chamber.

The unit can operate in a partially protected environment in accordance with standard **EN 297 pr A6**.

This Water heater is able to operate in a partially protected place, within the ambient temperatures **minimum -5°C and maximum 60°C**.

In any case, the unit must be installed in a location free of dust, flammable objects or materials, or corrosive gases. The unit may be installed on a wall.

Attach it to the wall in accordance with the dimensions indicated in section 4.1. The wall installation must be firm and stable.

**If the unit is installed inside a cabinet or joined laterally to other elements, space must be allowed for removing the casing and performing normal maintenance activities.**

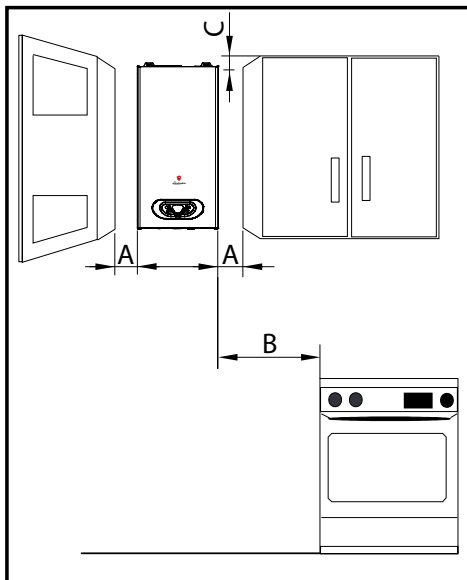


fig. 7 - Minimum distances

A	On each	>2cm
B	-	>50cm
C	In front	>2cm

### 2.3 Assembling the heater

**Before assembling the heater, make sure the water and gas connections are properly secured, identified, and positioned. See the dimensions and connections in section 4.1.**

- 1 - Open the packaging, and you'll find an assembly template for the unit inside. Place it on the wall at the appropriate height (be sure to observe the distances described in the previous section), and make sure the template is as horizontal as possible (using a level).
- 2 - Mark the position of the attachment holes.
- 3 - With a drill and Ø8 mm bit, make the holes and insert the expansion plugs.

4 - Insert the fastenings to be used to attach the unit.

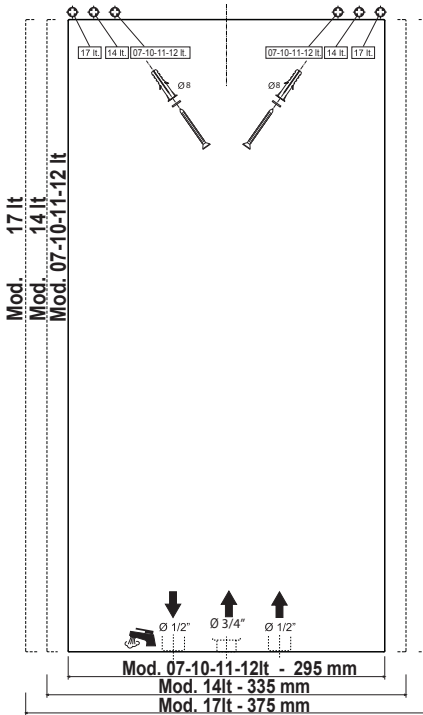



fig. 8 - Assembly template

- 5 - Remove the unit from the packaging.
- 6 - Verify all documents.
- 7 - Remove the plugs from the water and gas connections (see fig. 10).
- 8 - On the rating label, check the destination country reference and the type of gas for which the unit is supplied.




### SI ECO F 12


Appr. nr. DF.96      Ser.n. 1920G80002  
 C12-C22-C32-C42-C52-C62-C72-C82-B22  
 I12H3+ (IT)

---

**2H G20 20 mbar**

Qn (Hi)	23.3	-	8.3	kW
Pn - Pmin	20.93	-	7.6	kW
PMS	bar	PMW	10	bar
tmax	65 °C	D	10.0	l/min
NOx 6				H <sub>2</sub> O


0085 / 19



8 430709 515024

1920680002

230V~50HZ
40 W
IPX4D


 Suitable for operation in a partially protected place  
 MADE IN SPAIN

fig. 9 - Rating label

## 2.4 Hydraulic connections



**Never support the heater by the water and gas connections. Make the connections in accordance with the dimensions and connections in section 4.1.**

There are labels on the unit identifying the 1/2" water inlet pipe (white) and the 3/4" gas inlet pipe (yellow).

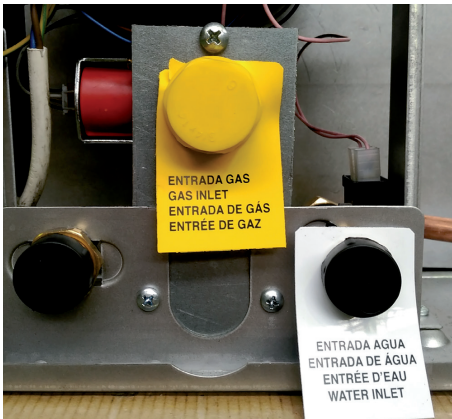



fig. 10 - Connection cards

 **If the water hardness is over 25°Fr (1°F=10ppm CaCO<sub>3</sub>), the water must be treated to avoid possible deposits on the unit.**

## 2.5 Gas connection



**Before making the connection, check that the unit has been prepared to operate with the right type of fuel, and carefully clean the gas pipes to remove any residue that might hinder correct operation. Make this connection in accordance with the dimensions and connections in section 4.1.**

- 1 Connect the corresponding gas inlet (see section 4.1) in accordance with current regulations in the country where the heater is being installed.
- 2 Connect using a rigid **metal pipe (connection to a gas supply network) or a flexible, continuous stainless steel pipe (LPG installation)**, adding a shut-off valve between the installation and the unit **(AS CLOSE AS POSSIBLE TO THE UNIT)**.
- 3 Once the connection to the gas network is complete, check that all gas connections are tight. For this

purpose, a tightness test must be performed. To avoid damage to the unit due to excess pressure, leave the gas inlet valve closed.

Check that the supplied pressure and gas delivery values are those indicated for the unit's consumption. See the technical data table (section 4.4).



**In installations with an approved flexible pipe for LPG, pay special attention to the following:**

- The pipe must comply with applicable regulations.
- Avoid areas with heat emissions.
- Prevent the pipe from bending or being pinched shut.
- The connections on both sides (gas valve and other components) must comply with the regulations of the country where the heater is installed.


## 2.6 Electrical connections



**The unit's electrical safety is only ensured when it's effectively grounded, as established by safety standards. Have qualified personnel check the effectiveness and suitability of the grounding system, as the manufacturer will not be liable for any damage caused by a lack of grounding on the installation.**

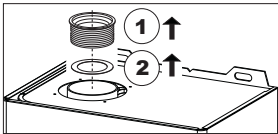
The unit's power cable may not be replaced by the user. If the cable is damaged, turn off the unit and call the authorized technical support center to have it replaced. To replace the cable, use only the 3x0.75mm<sup>2</sup> **HAR H05 VV-F** cable, with a maximum outer diameter of 8 mm.

## 2.7 Air and flue gas ducts

 This is a type C unit, with a sealed chamber and forced draft. The air inlet and flue gas outlet must be connected to systems such as those indicated below. The unit is approved for operation with all Cxy flue configurations shown on the technical data card (some of these are used as examples later). However, some configurations may be limited or prohibited by local laws, standards, or regulations. Before performing the installation, carefully check and observe any such restrictions. Also observe all provisions regarding placement on walls and/or ceilings and minimum distances to windows, walls, air vents, etc. (section 2.2).

### 2.7.1 Diaphragm


For the unit to operate correctly, the included diaphragms must be installed. Make sure the **correct diaphragm** has been installed (when used), and that it's properly installed.



- [1] Flue gas gasket
- [2] Diaphragm

fig. 11 - Replacing the diaphragm with the unit disassembled

### 2.7.2 Condensate collection accessories (optional)

 For vertical pipe installations, type C3x, C5x, B2x, and C1x, it is advisable to install the condensate collection accessory.

- For connection to a  $\varnothing 60/100$  coaxial pipe with condensate collection (010023X0).



- For connection to separate  $\varnothing 80$  pipes, vertical pipe with condensate collection (1KWMA5500).



### 2.7.3 Connection with coaxial pipes

**C1x** - Horizontal aspiration and evacuation on the wall

**C3x** - Vertical aspiration and evacuation on the ceiling

 = Air

 = Flue gases

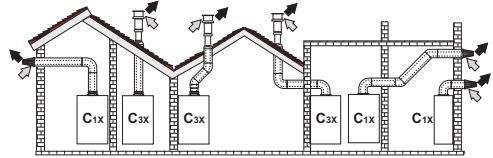


fig. 12 - Example of a connection with coaxial pipes

	Coaxial 60/100	Coaxial 80/125
Maximum permitted length	4 m	10 m
Elbow reduction factor 90°	1 m	0,5 m
Curve reduction factor 45°	0,5 m	0,25 m

		Diaphragm to be used						
$\varnothing$	m	SI ECO F 7	SI ECO F 10	SI ECO F 11	SI ECO F 12	SI ECO F 14	SI ECO F 17	
60/100	0-2	$\varnothing 34$	$\varnothing 40$	$\varnothing 40$	$\varnothing 40$	$\varnothing 47$	$\varnothing 50$	
	2-3	$\varnothing 35$	$\varnothing 43$	$\varnothing 43$	$\varnothing 43$	$\varnothing 50$	$\varnothing 52$	
	3-4	$\varnothing 36$	NO DIAPHRAGM					
80/125	0-3	$\varnothing 34$	$\varnothing 40$	$\varnothing 40$	$\varnothing 43$	$\varnothing 47$	$\varnothing 50$	
	3-6	$\varnothing 35$	$\varnothing 43$	$\varnothing 43$	$\varnothing 47$	$\varnothing 50$	$\varnothing 52$	
	6-10	$\varnothing 36$	NO DIAPHRAGM					

For the coaxial connection, install one of the following initial accessories on the unit. For drilling dimensions on the wall, see section 4.1. Horizontal exhaust segments must slope slightly toward the outside to prevent any condensation from returning to the unit.

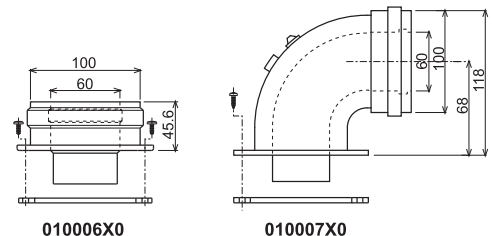


fig. 13 - Initial accessories for coaxial ducts



## 2.7.4 Connection with separate pipes

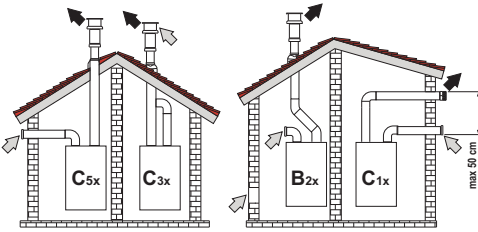


fig. 14 - Example of a connection with separate pipes

- C1x** Horizontal aspiration and evacuation on the wall. Intake and exhaust terminals must be concentric, or close enough to be exposed to similar wind conditions (maximum distance of 50 cm).
- C3x** Vertical aspiration and evacuation on the ceiling. Intake/exhaust terminals suitable for C12.
- C5x** Separate aspiration and evacuation on the wall or ceiling or, in any case, in areas under different pressure. Aspiration and evacuation may not be placed on opposite walls.
- C6x** Aspiration and evacuation with separate certified pipes (EN 1856/1).
- B2x** Aspiration from the installation environment and evacuation on the wall or ceiling.

➡ = Air

➡ = Flue gases

**IMPORTANT - THE ROOM MUST BE EQUIPPED WITH APPROPRIATE VENTILATION.**

Before performing the installation, verify the diaphragm to be used and make sure it does not exceed the maximum permitted length by making a simple calculation:

1. Design the entire separate flue system, including the accessories and outlet terminals.
2. See Table 1 and determine the losses in meq (equivalent meters) for each component, depending on its assembly position.
3. Make sure the total sum of the losses is less than or equal to the maximum length indicated on Table 2 (see section 2.7.4).

Table 1

			Losses in m <sub>eq</sub>		
			Air inlet	Flue gas outlet	
			Vertical	Horizontal	
PIPE	0.5 m MH	1KWMA38A	0.5	0.5	1
	1 m MH	1KWMA83A	1	1	2
	2 m MH	1KWMA06K	2	2	4
CURVE	45° H/H	1KWMA01K	1.2	2.2	
	45° M/H	1KWMA65A	1.2	2.2	
	90° H/H	1KWMA02K	2	3	
	90° M/H	1KWMA82A	1.5	2.5	
	90° MH + outlet for testing	1KWMA70U	1.5	2.5	
	HOSE	With outlet for testing	1KWMA16U	0.2	0.2
For condensate discharge		1KWMA65U	-	3	
T		1KWMA05K	-	7	
TERMINAL	Wall air	1KWMA85A	2	-	
	Wall fumes with wind screen	1KWMA86A	-	5	
	Separate for airflumes 80/80	1KWMA84U	-	12	
FLUE	Only exhaust vent Ø 80	1KWMA83U+	-	4	
		1KWMA86U	-	4	

To connect the separate ducts, install the following initial accessory on the unit (010031X0 / 4740).

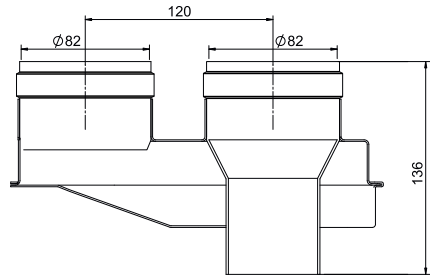


Table 2

Maximum permitted length					
SI ECO F 7	SI ECO F 10	SI ECO F 11	SI ECO F 12	SI ECO F 14	SI ECO F 17
65 m <sub>eq</sub>	65 m <sub>eq</sub>	65 m <sub>eq</sub>	65 m <sub>eq</sub>	55 m <sub>eq</sub>	45 m <sub>eq</sub>


Diaphragm to be used					
SI ECO F 7	0 ÷ 20 m <sub>eq</sub> Ø34	20 ÷ 40 m <sub>eq</sub> Ø35	40 ÷ 65 m <sub>eq</sub> Ø36	//	
SI ECO F 10	0 ÷ 20 m <sub>eq</sub> Ø40	20 ÷ 35 m <sub>eq</sub> Ø43	35 ÷ 50 m <sub>eq</sub> Ø47	50 ÷ 65 m <sub>eq</sub> NO	
SI ECO F 11					
SI ECO F 12					
SI ECO F 14	0 ÷ 20 m <sub>eq</sub> Ø47	20 ÷ 35 m <sub>eq</sub> Ø50	35 ÷ 55 m <sub>eq</sub> NO	//	
SI ECO F 17	0 ÷ 20 m <sub>eq</sub> Ø50	20 ÷ 35 m <sub>eq</sub> Ø52	35 ÷ 45 m <sub>eq</sub> NO	//	

### 3 SERVICE AND MAINTENANCE

All of the adjustments, commissioning operations and periodic checks described below must be performed by an authorized technician in compliance with current regulations. LAMBORGHINI declines all liability for property damage or injuries caused by unauthorized persons tampering with the unit.

#### 3.1 Adjustments

##### 3.1.1 Gas conversion



**Conversion for operation with a gas different from that arranged in the factory must be carried out by an authorised technician, using original parts and in compliance with the regulations in force in the country where the unit is installed.**



**All components damaged during conversion operations must be replaced.**

The unit can run on Natural Gas, LPG and Propane-Air and is factory-set for Natural Gas or LPG, as clearly shown on the packaging and on the data plate. Whenever a gas different from that for which the unit is arranged has to be used, the special conversion kit will be required, proceeding as follows:

CONVERSION KIT		Code
SI ECO F 7	NATURAL GAS	<b>R83000080</b>
	LPG	<b>R83000090</b>
	PROPANE-AIR	<b>37609880</b>
SI ECO F 10	NATURAL GAS	<b>R83000020</b>
SI ECO F 11	LPG	<b>R83000030</b>
SI ECO F 12	PROPANE-AIR	<b>37609850</b>
SI ECO F 14	NATURAL GAS	<b>R83000040</b>
	LPG	<b>R83000050</b>
	PROPANE-AIR	<b>37609860</b>
SI ECO F 17	NATURAL GAS	<b>R83000060</b>
	LPG	<b>R83000070</b>
	PROPANE-AIR	<b>37609870</b>

- Change the parameter for the type of gas:
  - Put the water heater in standby mode (detail 1 - fig. 3).
  - Press the On/Off button (detail 5 - fig. 1) for 25 seconds: the display shows "b" alternating with "01".
  - Press the DHW "+" or "-" buttons to access the parameter.
  - Set parameter 00 (for natural gas operation) or 01 (for LPG operation) or 2 (for operation with propane-air G230).
  - Once the value has been changed, keep the On/Off button pressed for 25 seconds and the water heater returns to standby mode.
- Disconnect the water heater power supply and turn off the gas cock.
- Replace the nozzles at the main burner, fitting those indicated in the technical data table in chap. 4.4, according to the type of gas used.
- Switch on the power to the water heater and turn on the gas cock.
- Adjust the minimum and maximum pressures at the burner (see relevant paragraph "3.1.2 Activation of Auto-setting function for gas valve calibration"), setting the values indicated in the technical data table for the type of gas used
- Apply near the data plate the sticker contained in the conversion kit, as proof of the conversion.

### 3.1.2 Activation of Auto-setting function for gas valve calibration

**THIS PROCEDURE MUST ONLY BE CARRIED OUT IN THE FOLLOWING CASES: GAS VALVE REPLACEMENT, CARD REPLACEMENT, CONVERSION FOR GAS CHANGE.**

The B&P Gas Valve (with integrated modulating operator) does not provide for mechanical calibration: the minimum and maximum power adjustments are therefore electronically done via two parameters:

Contents	Description	Natural Gas	Propane Gas
q01	Absolute MINIMUM current Offset	0+100	0+150
q02	Absolute MAXIMUM current Offset	0+100	0+150

#### Gas valve pre-calibration

1. Connect a pressure gauge to monitor the gas valve outlet pressure.
2. Activate the calibration procedure by pressing the DHW "+" button and "On/Off" button together for 5 seconds. The message "Au" appears alternating with "to" and the burner is lit. Within 8 seconds the water heater finds the ignition point. The values of ignition point, absolute minimum current Offset (parameter q01) and absolute maximum current Offset (value q02), are stored by the card.

#### Gas valve calibration

1. The display will show "q02" flashing; the modulation current is forced to the pre-calibration value of the absolute maximum current Offset parameter (parameter q02).
2. Press the DHW "+" or "-" buttons to adjust parameter "q02" until the maximum nominal pressure minus 1mbar is reached on the pressure gauge. Wait 10 seconds for the pressure to stabilise.
3. If the pressure read on the pressure gauge is different from the maximum nominal pressure, proceed with increments of 1 or 2 units of parameter "q02" by pressing the DHW "+" button: after each change, wait 10 seconds for the pressure to stabilise.
4. When the pressure read on the pressure gauge is equal to the maximum nominal pressure (the value of parameter "q02" just set is automatically saved), press the "On/Off" button: the display will show "q01" flashing; the modulation current is forced to the pre-calibration value of the minimum absolute current Offset parameter (value q01).
5. Press the DHW buttons to adjust parameter "q01"

until the minimum nominal pressure plus 0.5mbar is reached on the pressure gauge. Wait 10 seconds for the pressure to stabilise.

6. Press the DHW "-" button to adjust parameter "q01" until the minimum nominal pressure is reached on the pressure gauge. Wait 10 seconds for the pressure to stabilise.
7. If the pressure read on the pressure gauge is different from the minimum nominal pressure, proceed with decrements of 1 or 2 units of parameter "q01" by pressing the DHW "-" button: after each change, wait 10 seconds for the pressure to stabilise.
8. When the pressure read on the pressure gauge is equal to the minimum nominal pressure (the value of parameter "q01" just calibrated is automatically saved), recheck both adjustments by pressing the "On/Off" button and correct if necessary by repeating the procedure described above.
9. The calibration procedure ends automatically after 15 minutes or by pressing the DHW "+" button and "On/Off" button together for 5 seconds.

#### Checking of gas pressure values and adjustment with limited range

- Check that the supply pressure complies with that indicated in the technical data table.
- Connect a suitable pressure gauge to pressure point "B" located downstream of the gas valve.
- Activate the TEST mode (keeping the "+" and "-" buttons pressed together for 5 seconds) and follow the instructions for checking the gas pressures at maximum power and minimum power (see next paragraph).

If the maximum and/or minimum nominal pressures read on the pressure gauge are different from those indicated in the technical data table, proceed with the next sequence.

- Press the "On/Off" button for 2 seconds to enter the gas valve calibration mode with limited range (variation of 12 points with respect to "autosetting" calibration).
- The card goes to the "q02" setting (maximum power); displaying the currently saved value, by pressing the DHW buttons.
- If the maximum pressure read on the pressure gauge is different from the nominal one, proceed with increments/decrements of 1 or 2 units of parameter

- “q02” (maximum power) by pressing the DHW buttons: after each change, the value is stored; wait 10 seconds for the pressure to stabilise.
- Press the “On/Off” button for one second (ref. 3 - fig. 1).
  - The card goes to the “q01” setting (minimum power); displaying the currently saved value, by pressing the DHW buttons.
  - If the minimum pressure read on the pressure gauge is different from the nominal one, proceed with increments/decrements of 1 or 2 units of parameter “q01” (minimum power) by pressing the DHW buttons: after each change, the value is stored; wait 10 seconds for the pressure to stabilise.
  - Recheck both settings and correct if necessary by repeating the procedure described above.
  - Pressing the “On/Off” button for 2 seconds returns to the TEST mode.
  - Deactivate the TEST mode (keeping the “+” and “-” buttons pressed together for 5 seconds).
  - Disconnect the pressure gauge.

- Make sure there are no flammable liquids or materials near the heater.
- To avoid damaging the connections, do not place the heater on the floor with the connections facing down.

### 3.2.2 Checks during operation

- Turn on the unit.
- Make sure the fuel and water systems are tight.
- Check the efficiency of the air and flue gas ducts while the heater is operating.
- Make sure the gas valve modulates correctly.
- Verify that the heater ignites easily by turning it on and off several times.
- Check that the fuel consumption is as indicated.

## 3.2 COMMISSIONING

**Commissioning of the heater must be performed by a trained, specialized technician.**

**Checks that must be performed during the first ignition, after maintenance operations that require unplugging the unit, and after any operations on the unit's safety devices or components.**



### 3.2.1 Before igniting the water heater

- Carefully verify the tightness of the gas installation using a soap and water solution to check for leaks in the connections.
- Fill the hydraulic system and make sure no air is present in the unit or system.
- Check that there are no water leaks in the system or unit.
- Make sure the grounding and the connection to the electrical installation are suitable.
- Check that the gas pressure is correct.

### 3.3 MAINTENANCE

#### 3.3.1 Periodic checks

In order for the unit to operate correctly, an authorized technician must perform an annual inspection, checking that:

- The control and safety devices (gas valve, flow switch, etc.) operate correctly.
- The exhaust vent is perfectly efficient.
- The air and flue gas ducts and terminal are free of obstacles and leaks.
- The burner and exchanger are free of dirt and deposits. Do not use chemicals or steel brushes to clean them.
- The electrode is free of deposits and properly positioned.

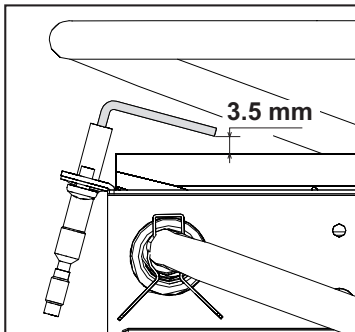



fig. 15 - Electrode position

- The gas and water systems are perfectly tight.
- The gas delivery and operating pressure values are as indicated on the tables.

 **A soft, damp cloth may be used to clean the casing and exterior parts of the heater, using soapy water if necessary. Do not use abrasive detergents or solvents.**

#### 3.3.2 Opening the casing

To open the casing (fig. 16):

- 1 Unscrew the A screws.
- 2 Rotate the casing
- 3 Lift the casing.



**Before performing any operations inside the heater, turn off the electrical power and close the gas cock.**

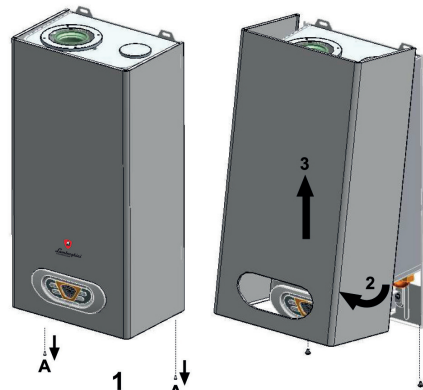


fig. 16 - Opening the casing

#### 3.4 FAULTS

The heater is equipped with an advanced self-diagnostic system. If a problem arises with the unit, the fault symbol will flash on the screen and the respective code will be displayed.

Some faults, identified with the letter "A," will block unit operation.

To restore operation, simply press the **RESET** key (4 - fig. 1) for 1 second. If the heater does not reset, the fault must be resolved.

Faults identified by the letter "F" cause temporary blocks that are automatically resolved when the value returns to the heater's normal operating range.

## 3.4.1 LIST OF FAULTS

Fault code	Fault	Possible cause	Solution
A01	The burner does not ignite.	Lack of gas	Make sure gas is flowing properly to the heater, and no air is present in the pipes.
		Faulty detection/ignition electrode	Make sure the electrode is properly installed, connected, and free of deposits.
		Faulty gas valve	Check the gas valve and replace if necessary.
		Gas valve wiring interrupted	Check the wiring.
		Ignition power too low	Adjust the ignition power.
A02	Flame signal present while the burner is off	Faulty electrode	Check the ionization electrode wiring.
		Faulty card	Check the card.
A03	Protection activated	Faulty DHW sensor	Check the position and operation of the DHW sensor.
		No water is circulating.	Check the flow switch.
A06	No flame is present after the ignition phase.	Low pressure on the gas network	Check the gas pressure.
		Minimum burner pressure adjustment	Check the pressures.
A09	Faulty gas valve	Wiring interrupted	Check the wiring.
		Faulty gas valve	Check the gas valve and replace if necessary.
A16	Faulty gas valve	Wiring interrupted	Check the wiring.
		Faulty gas valve	Check the gas valve and replace if necessary.
A21	Bad combustion fault	Fault F20 generated 6 times in the last 10 minutes	See fault F20.
A41	Sensor position	DHW sensor detached from the pipe	Check the position and operation of the sensor.
A51	Bad combustion fault	Obstruction of the aspiration/evacuation duct	Check the flue.
F04	Card setting fault	Incorrectly configured card setting	Check the card setting and change if necessary.
F05	Faulty fan	Card setting fault	Incorrectly configured card setting
		Wiring interrupted	Check the wiring.
		Faulty fan	Check the fan.
		Faulty card	Check the card.
F07	Card setting fault	Incorrectly configured card setting	Check the card setting and change if necessary.
F10	Faulty DHW 1 sensor	Defective sensor	Check the wiring or change the sensor.
		Short-circuited wiring	
		Wiring interrupted	
F14	Faulty DHW 2 sensor	Defective sensor	Check the fan and the respective wiring.
		Short-circuited wiring	
		Wiring interrupted	
F20	Combustion control fault	Faulty fan	Check the fan and the respective wiring.
		Incorrect diaphragm	Check the diaphragm and replace if necessary.
		Flue badly sized or obstructed	Check the flue.
F34	Supply voltage under 180 V.	Problems in the electrical network	Check the electrical installation.
F42	Faulty DW sensor	Defective sensor	Change the sensor.
F50	Faulty gas valve	Modulating actuator wiring interrupted	Check the wiring.
		Faulty gas valve	Check the gas valve and replace if necessary.

### 3.5 Parameters

#### 3.5.1 Configuration Menu

Press the On/Off button for 20 seconds to access the configuration Menu.

7 parameters are available, indicated by the letter “b”.

Press the On/Off button to scroll the list of parameters, in increasing order.

Press the DHW buttons to view or modify the value of a parameter: the change will be automatically saved.

Contents	Description	Range	Default
<b>b01</b>	Gas type selection	0 = Natural gas (G20) 1 = LPG (G30 - G31) 2 = Propane air (G230)	0
<b>b02</b>	Unit type selection	1 = Water heater	1
<b>b03</b>	Combustion chamber type selection	0 = Sealed Chamber combustion control (without fume pressure switch) 1 = Open Chamber (with fume thermostat) 2 = Sealed Chamber (with fume pressure switch) 3 = Sealed, Comb. Control + LOW NOX	3
<b>b04</b>	Exchanger type selection	0 = 10 - 11 - 12 liters 1 = 14 liters 2 = 17 liters 3 = 7 liters	1
<b>b05</b>	Auxiliary relay card operation selection (b02=1)	0 = External gas valve 1 = Solar 3-way	0
<b>b06</b>	Mains Voltage Frequency	0 = 50Hz 1 = 60Hz	0 = 50Hz
<b>b07</b>	Frost protection burner on time (b02=1)	0-20 seconds	5 seconds

Notes:

Parameters with more than one description vary their function and/or range in relation to the setting of the parameter given in brackets.

Parameters with more than one description are reset to the default value if the parameter given in brackets is modified.

To exit the configuration Menu press the On/Off button for 20 seconds, or exiting occurs automatically after 2 minutes.

#### 3.5.2 Service Menu

The card Service Menu is accessed by pressing the Reset button for 20 seconds. 4 submenus are available: press the On/Off button to select, in order:

- “tS” = Transparent Parameters Menu,
- “In” = Information Menu,
- “Hi” = History Menu: once the submenu is selected, press the Reset button to access it;
- “rE” = History Menu Reset: see description.

#### “tS” - Transparent Parameters Menu

14 parameters are available, indicated by the letter “P”. Press the On/Off button to scroll the list of parameters in increasing order. Press the DHW buttons to view or modify the value of a parameter: the change will be automatically saved.

Contents	Description	Range	Default
<b>P01</b>	Ignition ramp Offset	0 ÷ 40	20
<b>P02</b>	Burner shutdown in DHW (b02=1)	0 = Fixed 1 = Linked to setpoint 2 = Solar 3 = Not used 4 = Not used	0 = Fixed
<b>P03</b>	DHW user max. setpoint (b02=1)	50-65°C	50°C
<b>P04</b>	Anti-inertia function temperature (b02=1)	70-85°C	70°C
<b>P05</b>	Anti-inertia function Post-Ventilation (b02=1)	0-5 (0=Off, 1=5 seconds, 5=25 seconds)	0=Off
<b>P06</b>	DHW maximum power	0-100%	10 Liters = 90% 7, 11, 12, 14, 17 Liters = 100%
<b>P07</b>	Absolute min. power	0-100%	0%
<b>P08</b>	Post-Ventilation	0=default, 1=50 seconds	0= default
<b>P09</b>	CO2 limit Offset (b03=0 - b03=3) No effect on adjustment (b03=1 - b03=2)	0 (Minimum) ÷ 30 (Maximum) --	15 15
<b>P10</b>	Exchanger protection intervention	0 = NO F43 1 ÷ 25 (Example 15= 15'/sec)	25
<b>P11</b>	Fan rpm at maximum power	50 ÷ 250 Example 200 = 2500 rpm 190 = 2400 rpm	200
<b>P12</b>	Fan rpm at minimum power	80 ÷ 180 Example 80 = 800 rpm 180 = 1800 rpm 120=1200rpm)	120
<b>P13</b>	Fan rpm at startup	80 ÷ 180 Example 80 = 800 rpm, 180 = 1800 rpm 140=1400rpm)	140

Contents	Description	Range	Default
P14	Enable manual rpm change from Tsp	0 = enabled 1 = disabled	0
P15	Δ Solar ignition temperature (P02=2)	1 + 20 °C	10
P16	Δ Solar deactivation temperature (P02=2)	1 + 20 °C	10
P17	Solar standby time (P02=2)	0 + 20 Secondi	10

## “In” - Information Menu

4 pieces of information are available.

Press the On/Off button to scroll the list of information in increasing order. Press the DHW buttons to display the value.

Contents	Description	Range
t01	NTC DHW sensor (°C)	between 05 and 125°C
t02	NTC Safety sensor (°C)	between 05 and 125°C
L03	Actual burner power (%)	00%=Min., 100%=Max.
F04	Actual Flame resistance( Ohm)	00-99 Ohm (- = burner off)
R05	Actual rpm (RPM/10)	08-30 (no. x 100) = RPM

**Notes:** In case of damaged sensor, the card displays hypens.

## “Hi” - History Menu

The card can store the last 18 faults: the History datum item H1 represents the most recent fault that occurred, whereas the History datum item H18 represents the least recent.

Press the On/Off button to scroll the list of faults in increasing order. Press the DHW buttons to display the value.

**Press the Reset button to return to the Service Menu.**

**Press the Reset button for 20 seconds to exit the card Service Menu, or exiting occurs automatically after 15 minutes.**

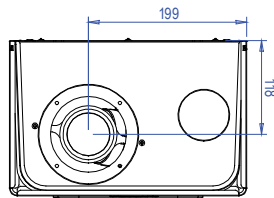
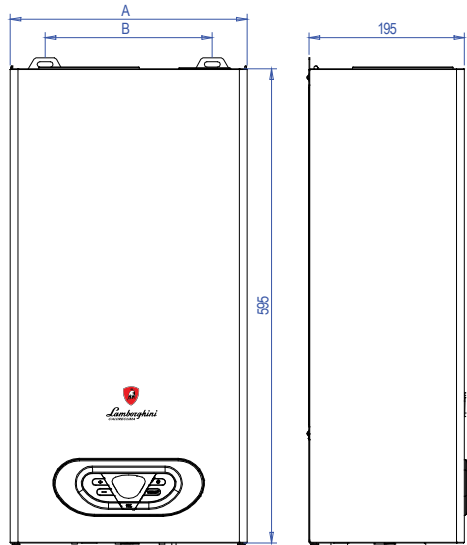
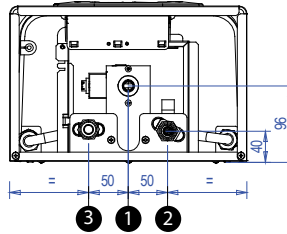
## “rE” - History Reset

Press the ON/OFF button for 3 seconds to delete all faults stored in the History Menu: the card automatically exits the Service Menu, in order to confirm the operation.

Press the Reset button for 20 seconds to exit the card Service Menu, or exiting occurs automatically after 15 minutes.

## 4 TECHNICAL DATA AND CHARACTERISTICS

### 4.1 Dimensions and connections



- 1 3/4" gas inlet
- 2 1/2" cold water inlet
- 3 1/2" domestic hot water outlet

Model	A (mm)	B (mm)
SI ECO F 7	295	210
SI ECO F 10		
SI ECO F 11		
SI ECO F 12		
SI ECO F 14	335	250
SI ECO F 17	375	290



#### 4.2 Overview and main components

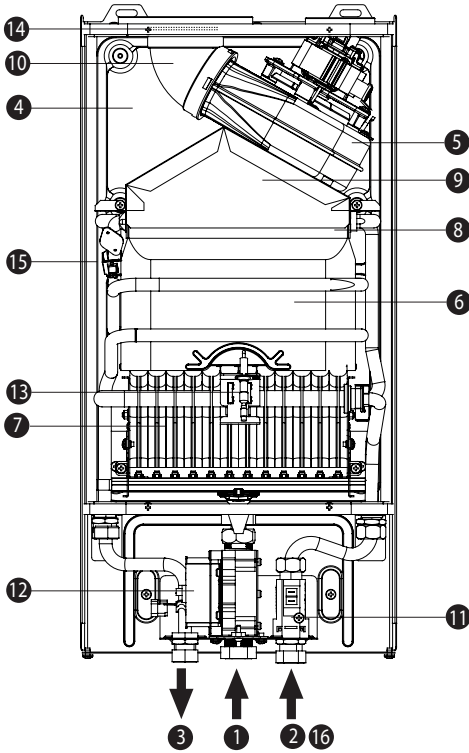


fig. 17 - Overview

- |                             |                                     |
|-----------------------------|-------------------------------------|
| 1 Gas inlet                 | 10 Flue gas outlet collector        |
| 2 Cold water inlet          | 11 Flow switch                      |
| 3 Domestic hot water outlet | 12 Gas valve                        |
| 4 Sealed chamber            | 13 Ignition and detection electrode |
| 5 Fan                       | 14 Exhaust diaphragm                |
| 6 Combustion chamber        | 15 Double sensor (safety + DHW)     |
| 7 Burner assembly           | 16 Flow regulator                   |
| 8 Copper exchanger          |                                     |
| 9 Combustion gas collector  |                                     |

#### 4.3 Hydraulic circuit

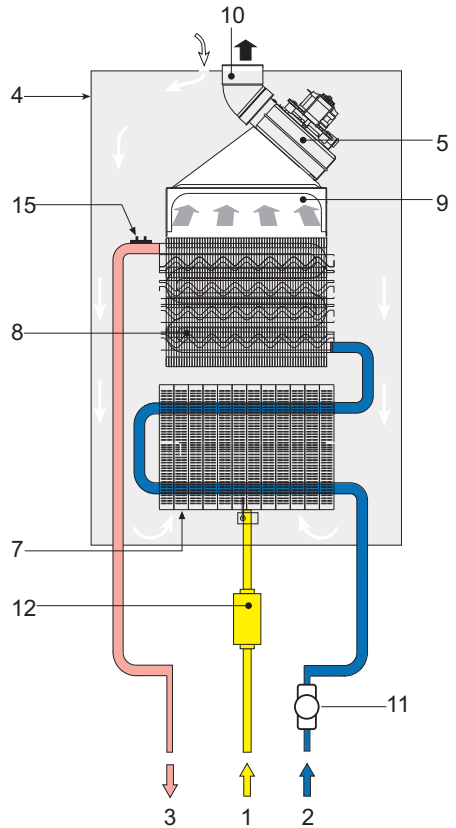


fig. 18 - Hydraulic circuit

- |                             |                                 |
|-----------------------------|---------------------------------|
| 1 Gas inlet                 | 9 Combustion gas collector      |
| 2 Cold water inlet          | 10 Flue gas outlet collector    |
| 3 Domestic hot water outlet | 11 Flow switch                  |
| 4 Sealed chamber            | 12 Gas valve                    |
| 5 Fan                       | 15 Double sensor (safety + DHW) |
| 7 Burner assembly           |                                 |
| 8 Copper exchanger          |                                 |

## 4.4 Technical data table

Data	Units	SI ECO F 7	SI ECO F 10	SI ECO F 11	SI ECO F 12	SI ECO F 14	SI ECO F 17	
		CODE ØDF92IAD ØDF92KAD	ØDF93IAD ØDF93KAD	ØDF94IAD ØDF94KAD	ØDF96IAD ØDF96KAD	ØDF95IAD ØDF95KAD	ØDF97IAD ØDF97KAD	
Maximum heat capacity	kW	13.8	19.73	21.70	23.30	26.9	32.9	Q
Minimum heat capacity	kW	5.3	8.30	8.30	8.30	10.3	12.6	Q
Maximum heat capacity	kW	12.4	17.80	19.50	20.93	24.2	29.6	
Minimum heat capacity	kW	4.9	7.60	7.60	7.60	9.53	11.61	
Burner injectors G20	n. x Ø	14 x 0.85	24 x 0.85	24 x 0.85	24 x 0.85	28 x 0.85	32 x 0.85	
Diaphragm gas G20	Ø	/	/	/	/	/	/	
Gas supply pressure G20	mbar	20	20	20	20	20	20	
Max. burner pressure with G20	mbar	12.7	9.4	11.3	13.0	12.5	14.8	
Min. burner pressure with G20	mbar	2.0	1.6	1.6	1.6	2.0	2.5	
Maximum gas delivery G20	m³/h	1.46	2.09	2.30	2.47	2.85	3.48	
Minimum gas delivery G20	m³/h	0.56	0.88	0.88	0.88	1.09	1.33	
Burner injectors G230	n. x Ø	14 x 0.95	24 x 0.95	24 x 0.95	24 x 0.95	28 x 0.95	32 x 0.95	
Diaphragm gas G230	Ø	/	/	/	/	/	/	
Gas supply pressure G230	mbar	20	20	20	20	20	20	
Max. burner pressure with G230	mbar	11.8	7.0	8.0	9.5	10.2	11.5	
Min. burner pressure with G230	mbar	2.0	1.3	1.3	1.3	1.7	1.8	
Maximum gas delivery G230	m³/h	1.13	1.62	1.78	1.91	2.21	2.70	
Minimum gas delivery G230	m³/h	0.44	0.68	0.68	0.68	0.85	1.03	
Burner injectors G30	n. x Ø	14 x 0.5	24 x 0.5	24 x 0.5	24 x 0.5	28 x 0.5	32 x 0.5	
Diaphragm gas G30	Ø	/	5	5	5	/	/	
Gas supply pressure G30	mbar	29	29	29	29	29	29	
Max. burner pressure with G30	mbar	27.7	24.0	24.9	27.0	26.2	26.9	
Min. burner pressure with G30	mbar	5.0	4.7	4.7	4.7	5.2	4.9	
Maximum gas delivery G30	m³/h	1.09	1.56	1.71	1.84	2.12	2.59	
Minimum gas delivery G30	m³/h	0.42	0.65	0.65	0.65	0.81	0.99	
Burner injectors G31	n. x Ø	14 x 0.5	24 x 0.5	24 x 0.5	24 x 0.5	28 x 0.5	32 x 0.5	
Diaphragm gas G31	Ø	/	5	5	5	/	/	
Gas supply pressure G31	mbar	37	37	37	37	37	37	
Max. burner pressure with G31	mbar	35.5	26.2	31.7	35.5	35.5	35.5	
Min. burner pressure with G31	mbar	5.0	5.3	5.3	5.3	5.8	6.2	
Max. gas delivery G31	kg/h	1.07	1.53	1.69	1.81	2.09	2.56	
Min. gas delivery G31	kg/h	0.41	0.64	0.64	0.64	0.80	0.98	
NOx emission class	-	6						NOx
Max. operating pressure	bar	10	10	10	10	10	10	PMS
Min. operating pressure	bar	0.2	0.2	0.2	0.2	0.2	0.2	
DHW delivery Δ25°	l/min	7.1	10.2	11.2	12.0	13.9	17.0	
DHW delivery Δ30°	l/min	5.9	8.5	9.3	10.0	11.6	14.2	D
Degree of protection	IP	IPX4D						
Supply voltage	V/Hz	230 V/50 Hz						
Absorbed electrical power	W	40	40	40	40	40	55	
Empty weight	Kg	13.5	14.0	14.0	14.0	15.0	18.0	
Weight with packaging	Kg	15	15.5	15.5	15.5	16.5	19.5	
Type of unit		C12-C22-C32-C42-C52-C62-C72-C82-B22						

Trademark: LAMBORGHINI								
Type: Conventional water heater								
Item	Symbol	Unit	Value					
Model			SI ECO F 7	SI ECO F 10	SI ECO F 11	SI ECO F 12	SI ECO F 14	SI ECO F 17
	CODE		ØDF92IAD	ØDF93IAD	ØDF94IAD	ØDF96IAD	ØDF95IAD	ØDF97IAD
Declared load profile			S	S	M	XL	XL	XL
Water heating energy efficiency class (from A+ to F)			A+	A+	A	A	A	A
Daily electricity consumption	Qelec	kWh	0,055	0,053	0,068	0,083	0,093	0,084
Annual electricity consumption	AEC	kWh	12	11	15	18	20	18
Water heating energy efficiency	NWh	%	69	79	78	84	84	85
Daily fuel consumption	Qfuel	kWh	3,149	3,050	7,772	23,345	23,357	23,303
Annual fuel consumption	AFC	GJ	2	2	6	18	18	18
Thermostat temperature settings of the water heater, as placed on the market			MAX	MAX	MAX	MAX	MAX	MAX
Sound power level	LWA	dB	54	53	54	55	54	55
Emissions of nitrogen oxides	NOx	mg/kWh	43	33	34	28	36	39

Trademark: LAMBORGHINI								
Type: Conventional water heater								
Item	Symbol	Unit	Value					
Model			SI ECO F 7	SI ECO F 10	SI ECO F 11	SI ECO F 12	SI ECO F 14	SI ECO F 17
	CODE		ØDF92KAD	ØDF93KAD	ØDF94KAD	ØDF96KAD	ØDF95KAD	ØDF97KAD
Declared load profile			S	S	M	XL	XL	XL
Water heating energy efficiency class (from A+ to F)			A+	A+	A	A	A	A
Daily electricity consumption	Qelec	kWh	0,055	0,053	0,068	0,083	0,093	0,084
Annual electricity consumption	AEC	kWh	12	11	15	18	20	18
Water heating energy efficiency	NWh	%	69	79	78	84	84	85
Daily fuel consumption	Qfuel	kWh	3,149	3,050	7,772	23,345	23,357	23,303
Annual fuel consumption	AFC	GJ	2	2	6	18	18	18
Thermostat temperature settings of the water heater, as placed on the market			MAX	MAX	MAX	MAX	MAX	MAX
Sound power level	LWA	dB	54	53	54	55	54	55
Emissions of nitrogen oxides	NOx	mg/kWh	72	40	50	35	43	72

## 4.5 Wiring diagram

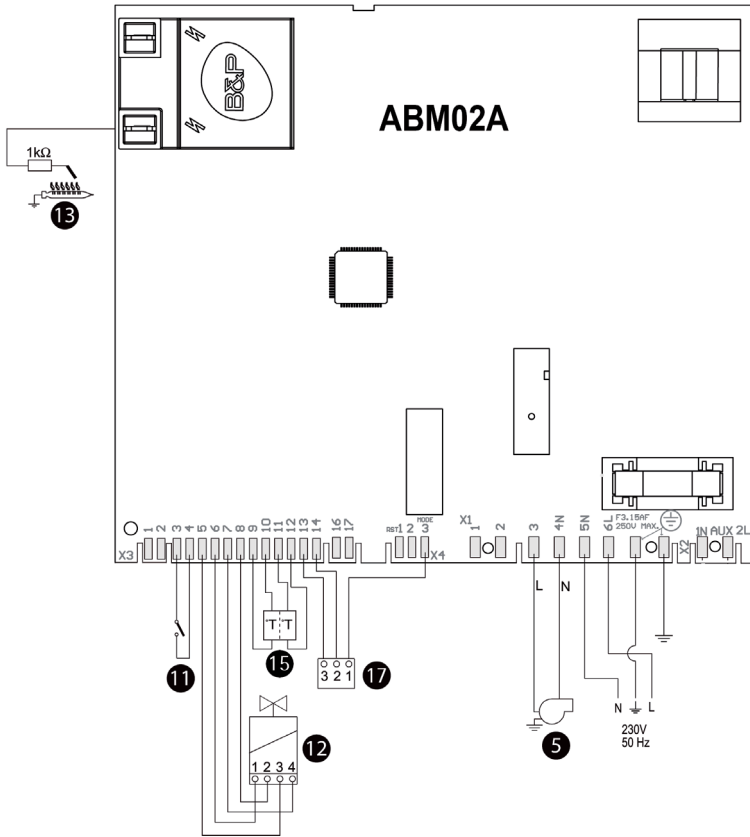


fig. 19 - Wiring diagram

- 5 Fan power supply
- 11 Flow switch
- 12 Gas valve
- 13 Ignition and detection electrode
- 15 Double sensor (safety + DHW)
- 17 Hall fan sensor

Архангельск (8182)63-90-72  
 Астана (7172)727-132  
 Астрахань (8512)99-46-04  
 Барнаул (3852)73-04-60  
 Белгород (4722)40-23-64  
 Бринск (4832)59-03-52  
 Владивосток (423)249-28-31  
 Волгоград (844)278-03-48  
 Вологда (8172)26-41-59  
 Воронеж (473)204-51-73  
 Екатеринбург (343)384-55-89  
 Иваново (4932)77-34-06

Ижевск (3412)26-03-58  
 Иркутск (395)279-98-46  
 Казань (843)206-01-48  
 Калининград (4012)72-03-81  
 Калуга (4842)92-23-67  
 Кемерово (3842)65-04-62  
 Киров (8332)68-02-04  
 Краснодар (861)203-40-90  
 Красноярск (391)204-63-61  
 Курск (4712)77-13-04  
 Липецк (4742)52-20-81  
 Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13  
 Москва (495)268-04-70  
 Мурманск (8152)59-64-93  
 Набережные Челны (8552)20-53-41  
 Нижний Новгород (831)429-08-12  
 Новокузнецк (3843)20-46-81  
 Новосибирск (383)227-86-73  
 Омск (3812)21-46-40  
 Орел (4862)44-53-42  
 Оренбург (3532)37-68-04  
 Пенза (8412)22-31-16  
 Россия (495)268-04-70

Пермь (342)205-81-47  
 Ростов-на-Дону (863)308-18-15  
 Рязань (4912)46-61-64  
 Самара (846)206-03-16  
 Санкт-Петербург (812)309-46-40  
 Саратов (845)249-38-78  
 Севастополь (8692)22-31-93  
 Симферополь (3652)67-13-56  
 Смоленск (4812)29-41-54  
 Сочи (862)225-72-31  
 Ставрополь (8652)20-65-13  
 Казахстан (772)734-952-31

Сургут (3462)77-98-35  
 Тверь (4822)63-31-35  
 Томск (3822)98-41-53  
 Тула (4872)74-02-29  
 Тюмень (3452)66-21-18  
 Ульяновск (8422)24-23-59  
 Уфа (347)229-48-12  
 Хабаровск (4212)92-98-04  
 Челябинск (351)202-03-61  
 Череповец (8202)49-02-64  
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