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Installation, Use and Maintenance Manual for model

SF 14 EVOLUTION NOx

Room sealed chamber water heater

CE 0476

SF 14 EVOLUTION NOx - RAD - ING - Manuale - 2009.1_HDIMS13_firm.05_R9

TABLE OF CONTENTS

INTRODUCTION

WARNING

Before starting any operation it is mandatory to read this instruction manual, in relation to the activities to be carried out as described in each relevant section. Proper operation and optimal performance of the water heater are ensured by strict compliance with all the instructions given in this manual.

The installation, use and maintenance manual is an integral and essential part of the product and must be delivered to the user.

MANUAL USERS

The manual users are all those who install, use and maintain the water heater.

The water heater must be used and accessed only by qualified operators that fully read and understood the use and maintenance manual, paying particular attention to the warnings.

READING AND SYMBOLS OF THE MANUAL

To ease the understanding of this manual, recurrent symbols where used, in particular:

› On the outer margin of the page is placed a thumb index indicating the type of user to which the instructions in that section address.

› The titles are differentiated by thickness and size in accordance with their hierarchy.

› The images contain important parts described in the text, marked with numbers or letters.

› (See chap "chapter name"): this entry indicates another section in the Manual that you should refer to.

› Device: this term is used referring to the water heater.

DANGER

It identifies an information related to a general danger that if not complied with, may cause serious personal damage or even death.

ATTENTION

It identifies an information that if not complied with may cause small or medium level lesions to the person or serious deterioration to the water heater.

WARNING

It identifies a precaution information that must be observed in order to avoid damaging the machine or parts of it.

MANUAL STORAGE

The manual must be carefully stored and replaced in case of deterioration and/or low legibility.

If you misplace the use and maintenance manual, you can request it from the Technical Support Centre giving the serial number and model of the water heater indicated on the plate placed on the right side of its casing.

MANUFACTURER WARRANTY AND RESPONSIBILITY

The technical and functional features of the device are ensured by its use in compliance:

1. With the use and maintenance instructions contained in the manuals accompanying the product, the content of which the customer certifies that he is aware;

2. With the conditions and purposes to which assets of the same type are intended.

For more information on the warranty validity, its duration, the obligations and the exemptions, please consult the First start-up certificate attached to this manual.

The manufacturer reserves:

› the right to modify the tools and relative technical documentation without any obligation to third parties; neither will the company be held responsible for any inaccuracies in this handbook deriving from printing or translation errors;

› the material and intellectual ownership of this manual and forbids its distribution and duplication, even partial, without prior written authorization.

PRODUCT CONFORMITY

The materials used such as copper, brass, stainless steel create a homogeneous, compact and functional assembly, easy to install and manage.

In its simplicity, the water heater is equipped with all accessories necessary to render it a veritable independent heating unit. All water heaters are tested and delivered with a quality certificate signed by the tester.

1. INSTALLER SECTION

The installation operations described in this section should be performed only by qualified personnel, having the appropriate technical training in the field for the installation and maintenance of components of civil and industrial domestic hot water production and heating plants.

1.1. INSTALLATION

1.1.1. GENERAL INSTALLATION WARNINGS

ATTENTION

This machine may be used only for the purpose for which it has been designed: heat water to a temperature below boiling point at atmospheric pressure. Any other use is considered wrong and dangerous. The manufacturer is excluded from any contractual or out of contract responsibility for damage caused to people, animals or property due to errors during installation.

ATTENTION

This water heater should be installed only by qualified personnel, having the appropriate technical training in the field for the installation and maintenance of components of civil and industrial domestic hot water production and heating plants.

ATTENTION

After having removed the packing, make sure the equipment is intact. In case of doubt, do not use the equipment and contact the supplier.

BEFORE INSTALLING THE WATER HEATER, THE INSTALLER MUST MAKE SURE THAT THE FOLLOWING CONDITIONS ARE MET:

› The device is connected to a heating plant and a water supply network appropriate for its power and performance.

› The location must be properly vented through an air vent.

› The air vent must be placed at floor level to prevent it from being obstructed, protected by a grid that does not hamper the useful section of passage.

› The device is suitable for use with the type of gas available by checking the water heater data plate (placed on the inner side of the front casing.

› Make sure that the tubes and couplings are perfectly sealed, without any gas leaks.

› Make sure that the grounding system works properly.

› Make sure that the electrical systems is suitable for the maximum power absorbed by the equipment, value indicated on the data plate.

1.1.2. WATER HEATER LOCATION ENVIRONMENTAL REQUIREMENTS

The device's installation location should be vented due to the presence of threaded joints on the gas adduction line. The location should be therefore provided with vents as to ensure air exchange, with output grid in the natural accumulation area of eventual gas losses.

WARNING

If the temperature in the water heater installation location goes below 4 °C please insert electrical resistances kit (see chapter 'ANTI-FREEZE PROTECTION').

WARNING

The manufacturer will not be held responsible for damages caused by incorrect installation not in conformity with the over mentioned

instructions and not protected adequately from the freeze.

1.1.3. REFERENCE LEGISLATION

The installation must be realized according to the requirements of current legislation and in compliance with local technical regulations, according to the indications of the good technique.

1.1.4. UNPACKING

WARNING

Please unpack the water heater just before installing it. The Company is not responsible for the damages caused to the device due to incorrect storage.

WARNING

The packing elements (cardboard box, wooden crate, nails, fasteners, plastic bags, expanded polystyrene, etc.) must be kept out of the reach of children as they may be dangerous. Therefore they should be dismantled suitably differentiating them in accordance with the standards in force.

To unpack the water heater, proceed as follows:

› Place the packed water heater on the floor (fig. 1-A) and remove the fasteners opening the four flaps of the box outwards.

› Turn the water heater at 90° holding it with your hand (fig. 1-B).

› Lift the box (fig. 1-C) and remove the guards (fig. 1-D).

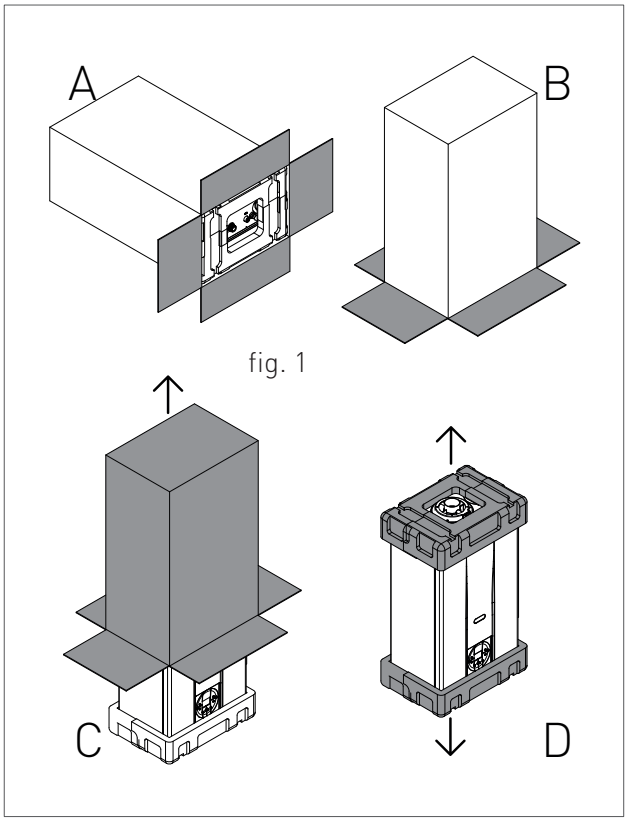
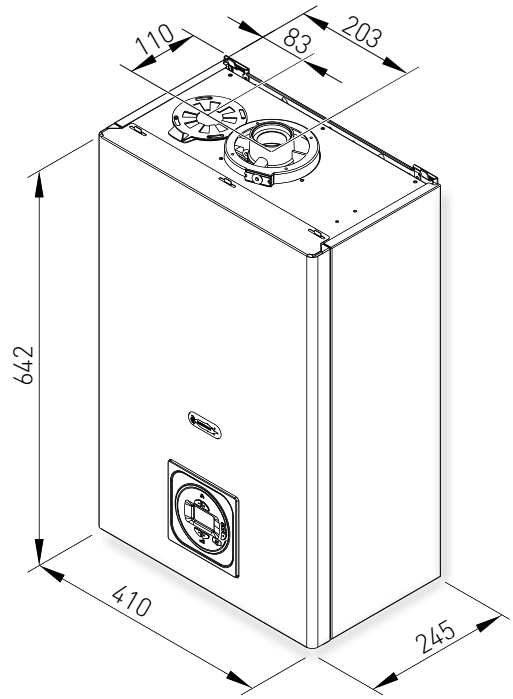
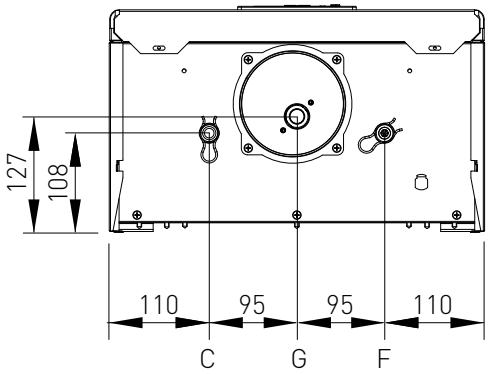


fig. 1

1.1.5. OVERALL DIMENSIONS



1.1.6. HYDRAULIC CONNECTIONS



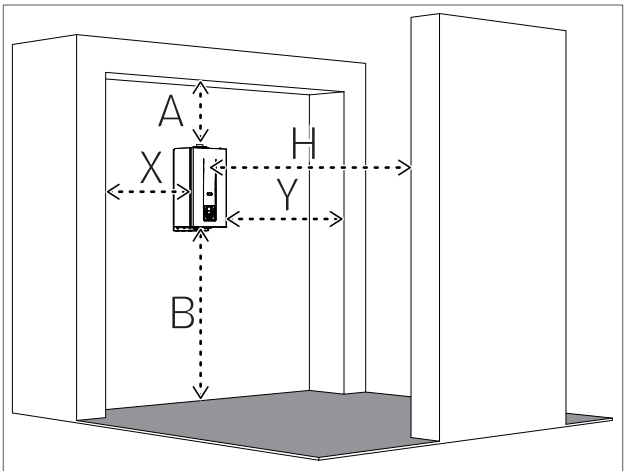
C-	D.H.W. OUTLET	Ø 1/2
G-	GAS	Ø 3/4
F-	COLD WATER INLET	Ø 1/2

1.1.7. POSITIONING AND MINIMAL TECHNICAL SPACES

The water heater must be installed only on a vertical solid wall, able to sustain its weight.

In order to allow the access inside the water heater for maintenance operations, you have to respect the minimum technical spaces indicated in figure 1.

To facilitate the installation, the water heater is provided with a jig that allows setting in advance the connections to the tubes offering you the possibility of connecting the water heater to completed masonry works.



A - 200 mm
B - 300 mm
X - 60 mm
Y - 60 mm
H - 1000 mm

fig.1

For machine positioning, proceed as follows (see fig. 2):

1. Trace a line using a spirit level (min. length 25 cm) on the installation wall.
2. place the top of the jig along the traced line respecting the distances of the water connections; then mark the two points to insert the two knobs or the fasteners, then trace the points for the fume exhaust fittings;
3. remove the jig and drill the wall;
4. hang the device using the knobs or the bracket and perform the connections.

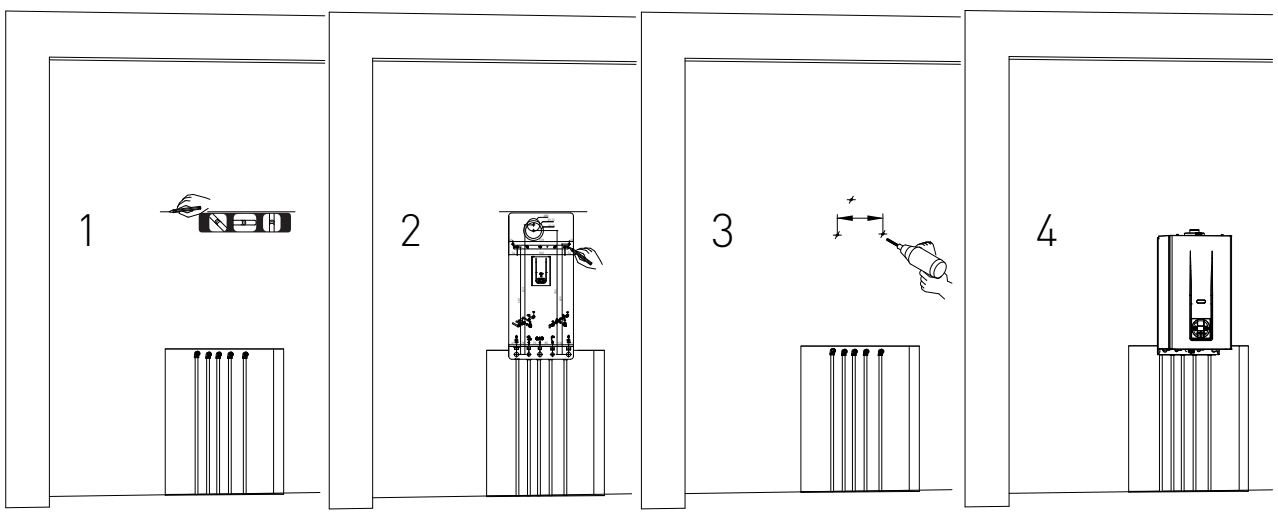


fig.2

1.1.8. HYDRAULIC CONNECTION

DANGER

Make sure that the tubes of the water and heating plant are not used as grounding system for the electrical plant. There are not suitable for such use.

WARNING

To prevent voiding the warranty and to ensure the proper operation of the water heater, please wash the plant (if possible when hot) with suitable pickling or descaling solutions in order to remove the impurities coming from tubes and radiators.

WARNING

If the water heater is installed in a hydrostatic position lower than those of the user devices (radiators, fan coils, etc.), mount the shut-off valves on the domestic water heating circuit to ease the performance of the maintenance operations if it is necessary only to empty the water heater.

WARNING

When connecting the equipment to water supply, avoid excessive bending and recovery operations from any off axis positioning that may damage the tubes causing leaks, malfunction or early wear.

WARNING

In order to avoid any vibrations and noises, do not use tubes with small diameters or elbows with small radius and significant cut-off of the passage sections.

WARNING

Connect the water heater safety drains to a discharge funnel. The manufacturer is not responsible for any floods due to safety valve opening in case of plant overpressure.

In order to prevent limestone build-up and damages to the domestic water heat exchanger, the hardness of the domestic supply water should not exceed 15 °f. However, please check the characteristics of the water used and install suitable treating devices.

The heat exchanger coil cleaning frequency depends on the hardness of the supply water and on the presence of solid residues or impurities inside the water that are often present in case of recently installed plants. Based on the characteristics of the infeed water, you should install suitable water treating devices, for residues presence please install a line filter.

The pressure of the cold infeed water should be between 0.5 and 6 bar. In case of greater pressure values, please install a pressure reducer upstream from the water heater.

Please note

Because the minimum power of the SF14 Water heater is 10 kW, at low water flows (i.e., 5 Litres/ minute or less) the temperature may exceed the set temperature programmed on the unit. This is to avoid continuous shutdowns, it initially heats the water up to 60°C, within the heat exchanger (as a by-product this is good for anti-legionella purposes, as although this is a little volume of water within the heat exchanger , if the unit hasn't been used for some time – it's good to heat it up to this level), then a downward output adjustment is performed by the burner, to adjust to the required power to achieve your desired temperature.

This can be avoided / overcome by installing a mixing valve on the hot water outlet – which can limit the hot water temperature to 43C to prevent any scalding issues.

A TMV (Thermostatic mixing valve) are also good for applications, whereby you might want lower hot water temperatures than the unit can produce which is 35°C on the control panel. For example, we supply these units to the equine sector, for warm washing down of horses etc – in the summer months, they may only require a temperature °of 30C – by using one of the above valves fitted to the hot water outlet – you can reduce the temperature down to 30C , as most of these TMV mixing valves can control the water temperature between 30°C to 50°C.

1.1.9. FROST PROTECTION KIT

Thanks to the optional electrical heating elements (code 50-00106), it is possible to protect the water heater up to an outside temperature of 0 °C.

The kit of electrical heating elements is a frost protection that is triggered when the water probe detect a temperature of 4°C to heat up the exchanger pipes to a temperature of 8°C.

ATTENTION

The system operates even if the water heater is in OFF mode, as long as it is electrically powered.

Whenever there is a risk of freezing and no optional kit of electrical heating elements is fitted on the water heater, the water circuit will have to be drained (see chapter 'DRAINING THE DOMESTIC HOT WATER SYSTEM').

1.1.10. GAS CONNECTION

DANGER

In order to connect the gas connector of the boiler to the supply pipe use a stop seal of an appropriate size and material. The use of hemp, teflon tape or similar materials is strictly forbidden.

BEFORE PERFORMING THE GAS CONNECTION, MAKE SURE THAT:

› the gas adduction line complies with the standards and regulations in force;

› the tubing's section suits the requested capacity and its length;

› the tubing is equipped with all safety and control devices required by the standards in force;

› the internal and external seals of the gas infeed plant are checked;

› the device is suitable for use with the type of gas available by checking the boiler data plate (placed on the inner side of the front casing. If they do not match you must take the necessary measures to adapt the boiler to another type of gas (see chapter GAS TRANSFORMATION);

› the gas supply pressure falls within the values indicated on the data plate.

1.1.11. ELECTRICAL CONNECTION

DANGER

The equipment is electrically safe only if it is properly connected to an efficient grounding system, performed in compliance with the safety standards in force. You should check this essential safety requirement. If in doubt, request an accurate check of the electrical system performed by qualified staff, as the manufacturer is not responsible for any damages caused by lack of grounding system.

› Make sure that the electrical systems is suitable for the maximum power absorbed by the equipment, value indicated on the data plate.

› make sure that the cables section is appropriate for the maximum power absorbed by the equipment and that it is however not lower than 1 mm^2.

› The equipment works with alternating current of 230 V and 50 Hz.

WARNING

Make sure that the phase and neutral cables connection is performed in compliance with the wiring diagram (see chapter WIRING DIAGRAM).

WARNING

It is strictly forbidden the use of adaptors, multiple plugs and/or extensions for the general power supply of the equipment from the electrical network.

1.1.12. OPTIONAL ELECTRICAL CONNECTIONS

DISABLING THE D.H.W. MODE BY CONTACT

It is possible to enable/disable the request to turn on the burner in DHW mode, when there is a connection (for example of a storage tank time clock, a temperature thermostat or a solar control box) on the 'CS', D.H.W. contact (see chapter 'ELECTRICAL DIAGRAM').

Example 1: With 'CS' D.H.W. contact open, upon D.H.W. request, the flow-switch activates and the water heater starts.

Example 2: With 'CS' D.H.W. contact closed, upon D.H.W. request, the flow-switch activates but the water heater doesn't start.

1.1.13. FLUE SYSTEMS

WARNING

In order to ensure proper operation and efficiency of the device you have to connect the choosen flue system to the flue exhaust duct using appropriate flue systems for traditional water heaters.

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WARNING

You cannot use plastic material (polypropelene) flue fittings for the flue exhaust of non-condensing units.

› For all horizontal sections of discharge ducts and air suction, with regard to the air path, you should provide an uphill slope (towards the boiler) of a minimum of 2% (see fig. 1) so as to avoid water, dust or foreign object ingress inside the duct.

› In order to discharge fumes through a fume exhaust duct, carefully follow the technical standards in force.

› Suction and discharge systems, tailored to individual installations, must be protected with accessories that prevent the ingress of foreign objects and atmospheric agents.

› Make sure that the discharge tube does not rotrude inside the fumes exhaust duct, stop efore it reaches the inner surface of the latter.

he discharge duct must be perpendicular with he opposite internal wall of the chimney or of he fumes exhaust duct (fig. 2).

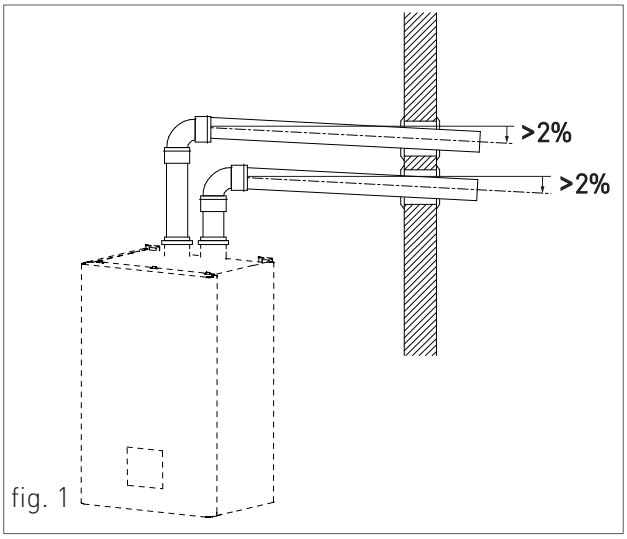


fig. 1

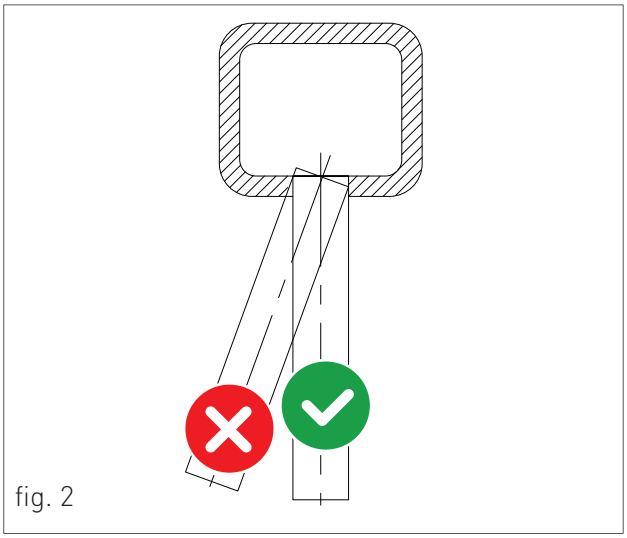


fig. 2

1.1.14. TYPES OF INSTALLATION

For this type of boiler are available the following fumes discharge configurations: B22, C12 and C32 (see Fig. 1).

› B22- Indoor suction and outdoor discharge.

› C12- Concentric wall discharge. The tubes can be split but the outputs must be concentric or close enough to each other to undertake similar wind conditions (within 50 cm).

› C32- Roof concentric discharge.

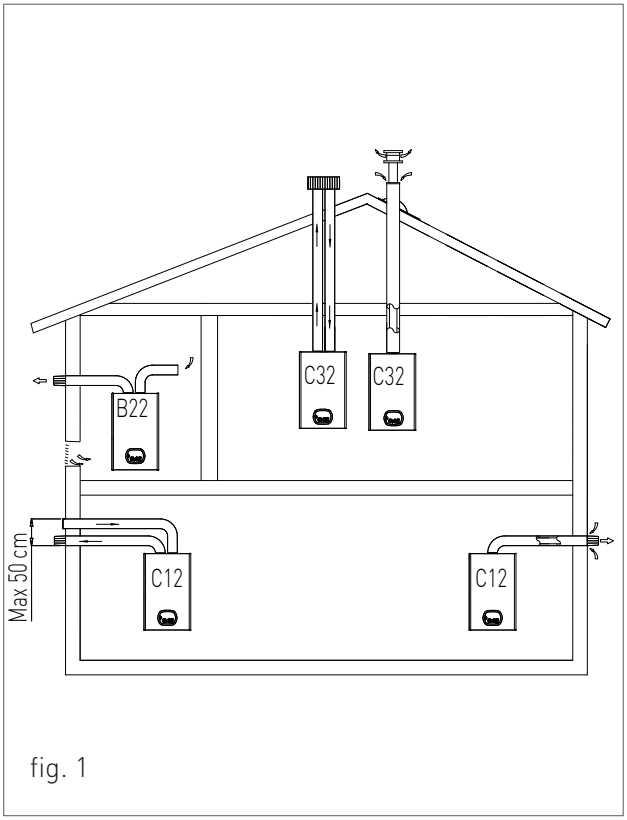


fig. 1

DISCHARGE OF COMBUSTION PRODUCTS FOR B-TYPE DEVICES.

The gas devices, provided with connection for fumes exhaust tube, must be directly connected to efficient chimneys or fume exhaust ducts: only if these are missing you can discharge the combustion products directly through the wall.

The connection to the chimney or to the fume exhaust ducts must respect the following requirements:

· Be sealed and realised in materials suitable to resist normal mechanical stress, heat, the action of combustion products and any condensate forming;

· have no more than three changes in direction, including the chimney and/or fume exhaust duct inlet connection, made with internal angles greater than 90°. The changes in direction must be made only by using curved curved elements;

· have the axis of the inlet end perpendicular to the internal wall opposite to the chimney or fume exhaust duct;

· have, along its entire length, a section equal to or greater then that of the connection of the device discharge tube;

· have no shut-off devices (shutters).

· for direct external discharge there must be no more than two changes in direction.

LOCATIONS VENTING FOR B-TYPE DEVICES

The locations in which are installed gas devices must be vented so as to ensure the amount of air necessary for a regular combustion and for location ventilation. The natural air intake must take place directly through:

- permanent openings on the external walls of the location (windows);

- single or collective, ramified ventilation ducts.

The openings on the external walls of the location must respect the following requirements:

- have a net overall free passage section of at least 6 cm^2 for every kW of heat capacity installed with a minimum of 100 cm^2;

- they must be realized so as to make sure that the opening inlets are not obstructed (neither indoors nor outdoors);

- they must be protected with grids, metal meshes, etc. so as to keep the useful section mentioned above.

- they must be placed at a height next to the floor level such as to allow proper operation of the combustion products discharge systems; if such position can not be obtained, please increase by at least 50% the section of the vents.

1.1.15. TYPES OF FLUE SYSTEMS

KIT A - HORIZONTAL CONCENTRIC FLUE KIT Ø60/100 mm.

It allows the flue exhaust and the air intake from external wall.

Suitable only for traditional water heaters.

It allows the combustion gas exhaust and the combustion air intake through concentric pipes, the external one for air intake, the internal one for flue exhaust.

PLEASE SEE THE MAXIMUM EXHAUST LENGTH IN THE TABLE OF "TECHNICAL DATA" CHAPTER.

The maximum exhaust length (or linear length) can be calculated summing the length of the linear pipe and the equivalent length of each flue bend additional to the first one.

For the further addition of a bend, the linear length must be updated according to the indications below:

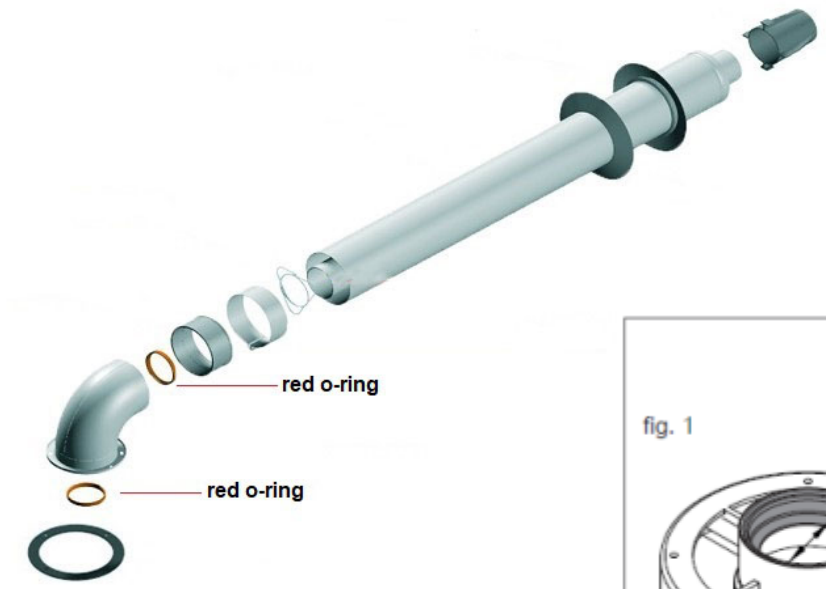
concentric flue bend Ø60/100 at 90°= 1 m

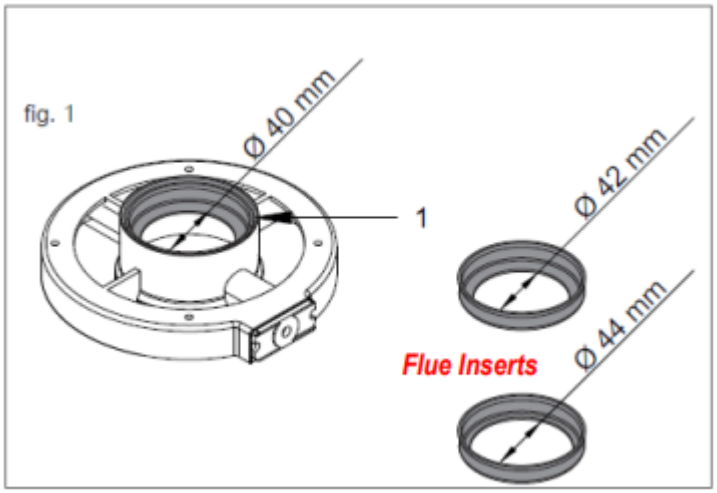
concentric flue bend Ø60/100 at 45°= 0.6 m

Warning! A fixed Ø 40mm flue insert is factory fitted on the flue inspection flange (Fig.1)

See the next paragraph table to select the correct flue insert to be installed, among those supplied with the water heater (Ø 40-42-44 mm), according to the maximum exhaust length.

HORIZONTAL COAXIAL FLUE KIT - 82101LP





FLUE INSERTS FOR THE CONCENTRIC FLUE KIT Ø60/100 mm

Maximum discharge length - Ø60/100 mm	m	4
from 0,5 to 1 m - Ø60/100 mm	diaf. pos.	USE FLUE INSERT **Ø42 mm** in the flue inspection flange (Do NOT install an adjustable flue diaphragm)
from 1 to 2 m - Ø60/100 mm	diaf. pos.	USE FLUE INSERT **Ø44 mm** in the flue inspection flange (Do NOT install an adjustable flue diaphragm)
from 2 to 3 m - Ø60/100 mm	diaf. pos.	No flue insert
from 3 to 4 m - Ø60/100 mm	diaf. pos.	No flue insert

KIT B - HORIZONTAL TWIN PIPE FLUE KIT Ø80/80mm

The twin pipes system allows the flue exhaust through the flue exhaust pipe and the air intake from outside.

Suitable for traditional water heaters only.

It allows the combustion gas exhaust and the combustion air intake through two separated pipes.

PLEASE SEE THE MAXIMUM EXHAUST AND INTAKE LENGTH IN THE TABLE IN CHAPTER "TECHNICAL DATA".

The maximum exhaust and intake length (or linear lenght) can be calculated summing the length of the linear pipe and the equivalent lenght of each flue bend additional to the first one.

For the further addition of a bend, the linear lenght must be updated according to the indications below:

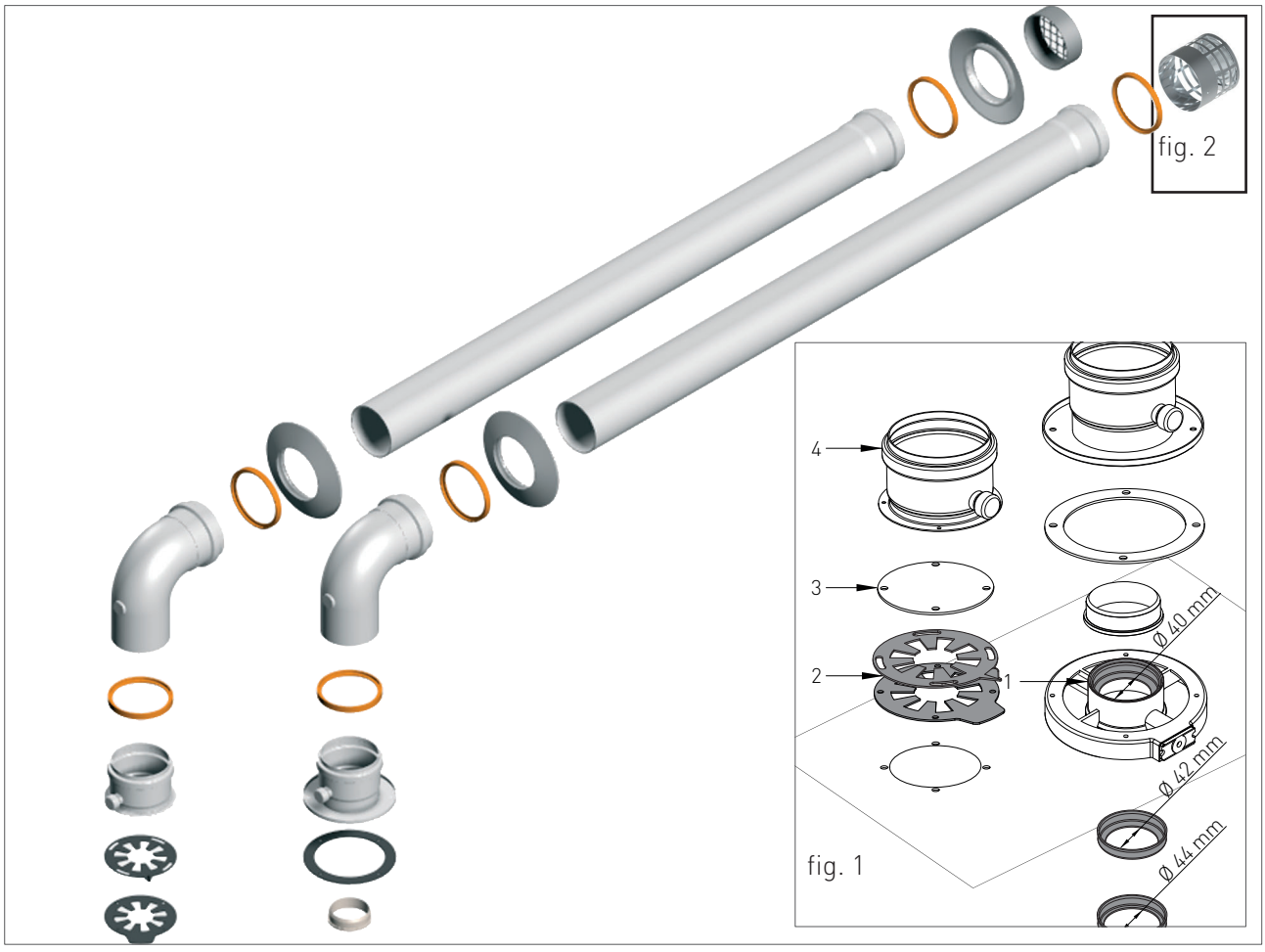
Flue bend Ø80 at 90°= 1.5 m

Flue bend Ø80 at 45°= 1.2 m

Flue terminal part no. 80009LA (fig.2) Ø80mm = 3 m

WARNING! IN CASE THE FLUE EXHUAST PIPE TERMINATES TO AN OUTSIDE WALL INSTEAD OF A FLUE DUCT, IT IS MANDATORY TO INSERT THE FLUE TERMINAL PART NO. 80009LA (FIG.2) IN THE FLUE EXHAUST PIPE.

WARNING! A FIXED Ø 40MM FLUE INSERT IS FACTORY FITTED ON THE FLUE INSPECTION FLANGE (FIG.1). SEE THE NEXT PARAGRAPH TABLE TO SELECT THE CORRECT FLUE INSERT TO BE INSTALLED, AMONG THOSE SUPPLIED WITH THE WATER HEATER (Ø 40-42-44 MM), ACCORDING TO THE MAXIMUM EXHAUST LENGTH. FOR THE TWIN PIPES SYSTEM, THE ADJUSTABLE DIAPHRAGMS ('2' - FIG.1) ARE ALREADY INSTALLED ONTO THE AIR INTAKE HOLE. REMOVE THE AIR INTAKE HOLE COVER PLATE ('3' - FIG.1), INSERT THE FLANGED FLUE ADAPTER ('4' - FIG.1) AND SCREW THE FIXING SCREWS WITHOUT TIGHTENING THEM COMPLETELY. ADJUST THE DIAPHRAGMS DESCRIBED IN THE NEXT PARAGRAPH.



FOR TWIN PIPES SYSTEM

In order to adjust the flue diaphragms, proceed as follows (see fig.2)

› Depending on the maximum exhaust length in use, see the corresponding diaphragm regulation in the table below;

› Move the reference index (A-fig.2) by sliding along the graded index (B-fig.2), depending on the adjustment to be made;

› tighten the diaphragm fixing screws completely.

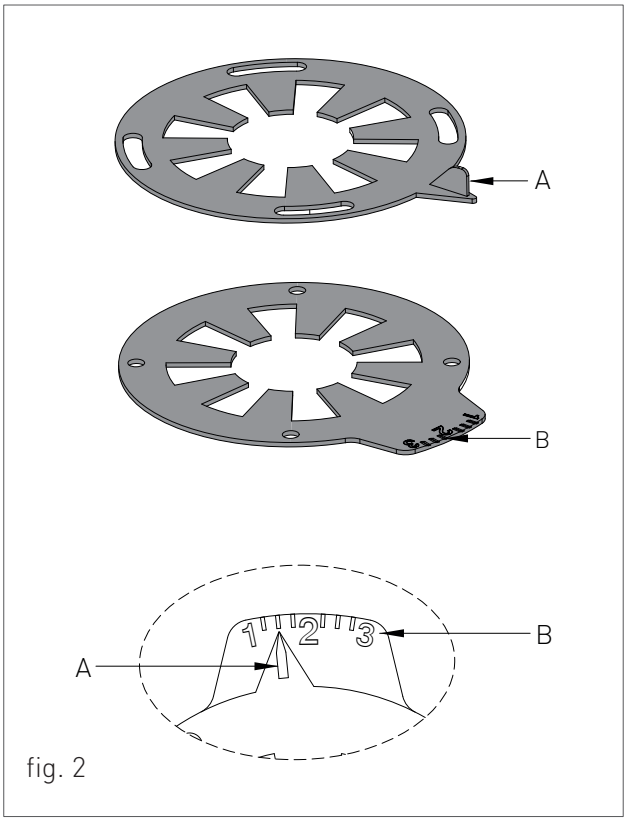


fig. 2

TWIN PIPES FLUE KIT Ø80/80 mm DIAPHRAGMS REGULATION

Maximum exhaust lenght - Ø80/80 mm	m	26
until 0,5+0,5 m - Ø80/80 mm	diaf. pos.	**FIXED DIAPHRAGM Ø40 mm** in the flue inspection flange **+ adjustable diaphragm on the air intake set at 2**
from 0,5+0,5 to 4+4 m - Ø80/80 mm	diaf. pos.	**FIXED DIAPHRAGM Ø40 mm** in the flue inspection flange **+ adjustable diaphragm on the air intake set at 3**
from 4+4 to 7+7 m - Ø80/80 mm	diaf. pos.	**FIXED DIAPHRAGM Ø42 mm** in the flue inspection flange **+ adjustable diaphragm on the air intake set at 2,2**
from 7+7 to 10+10 m - Ø80/80 mm	diaf. pos.	**FIXED DIAPHRAGM Ø42 mm** in the flue inspection flange **+ adjustable diaphragm on the air intake set at 3**
from 10+10 to 12+12 m - Ø80/80 mm	diaf. pos.	**FIXED DIAPHRAGM Ø44 mm** in the flue inspection flange **+ adjustable diaphragm on the air intake set at 2,2**
from 12+12 to 13+13 m - Ø80/80 mm	diaf. pos.	**FIXED DIAPHRAGM Ø44 mm** in the flue inspection flange **+ adjustable diaphragm on the air intake set at 3**

2. SUPPORT CENTER SECTION

All operations described below relative to first start-up, maintenance and replacement should be performed only by qualified personnel

2.1. COMMISSIONING

2.1.1. COMMISSIONING PRELIMINARY OPERATIONS

The first start-up operations consist in checking the correct installation, adjustment and operation of the device. Proceed as follows:

› check the inner system sealing in accordance with the indications provided by standard and regulations in forced;

› check if the gas used is suitable for the water heater;

› check if the gas capacity and relative pressures comply with those on the plate;

› check the intervention of the safety device in case of lack of gas;

› make sure that the device supply voltage corresponds with that on the plate (230 V – 50 Hz) and that the wiring is correct;

› make sure that the grounding system works properly;

› make sure that the combustion air adduction and fumes and condensate discharge take place properly in compliance with the Local and National Laws and Standards in force;

› make sure that the fumes discharge tube and its connection to the fume exhaust duct comply with the requirements of the Local and National Laws and Standards;

› make sure that the heating system gate valves are open;

› make sure that there is no intake of gaseous products within the system;

› make sure that there are no flammable liquids or materials near the device;

› open the water heater gas tap and make sure that there are no gas leaks upstream from the device (the burner gas connection must be checked while the machine is running);

› in case of new installation of the gas supply network, the air inside the tubes may block the device at its first start-up. You might have to repeat the start-up procedure to purge all the air inside the tube.

2.1.2. WATER HEATER IGNITION

Proceed with water heater commissioning as follows:

› Power the water heater.

› Open the gas tap.

› ignite the unit by pressing the button '  '.

› When DHW is needed, the burner will switch on. The operation will be confirmed by the blinking symbol '  ' on the display.

› if the flame is missing the board will repeat the start-up operations after post-ventilation (20 seconds).

› You might have to repeat the start-up operation several times to release all air inside the gas tube. Before repeating the operation, wait at least 5 seconds from the last start-up attempt and unlock the boiler from "A01" error code by pressing the Reset key ''.

2.1.2. GAS PRESSURE CHECK AND CALIBRATION

With this procedure, it is possible to adjust the minimum and maximum output values in a range of ±12 units. To edit the values beyond the range of ±12, follow the instructions described in the chapter "TOTAL GAS VALVE CALIBRATION".

Proceed as follows to check and calibrate the modulation values:

› Remove the front casing of the water heater (see the chapter "ACCESSING THE WATER HEATER");

› insert a digital pressure gauge into the gas outlet pressure point 'B' (Fig. 1), after having completely unscrewed the screw inside.

› Activate the chimney sweeper function by pressing the Ⓡ and ⏻ keys at the same time, a value will be shown in the display.

› If the flame does not light or is not detected, the flame symbol will not appear on the display and it will not be possible to enter in this parameter. You must resolve the problem and restart this procedure.

› Press the '⏻' key, until the display shows the parameter 'q02', which corresponds to the **maximum power value**.

› Make sure that the gas pressure read on the pressure gauge complies with the information contained in the chapter "HEAT CAPACITY / GAS PRESSURE DIAGRAM".

› Press the '⊕' and '⊖' keys of the D.H.W. to adjust the value of the parameter. You must wait 10 seconds for stable pressure for each edit. The edit is saved automatically.

› press the 'Ⓡ' key to exit from parameter 'q02'.

› Press the '⏻' key to go to parameter 'q01', which corresponds to the **minimum power value**.

› Make sure that the gas pressure read on the pressure gauge complies with the information contained in the chapter "HEAT CAPACITY / GAS PRESSURE DIAGRAM".

› Press the '⊕' and '⊖' keys of the D.H.W. to adjust the value of the parameter. You must wait 10 seconds for stable pressure for each edit. The edit is saved automatically.

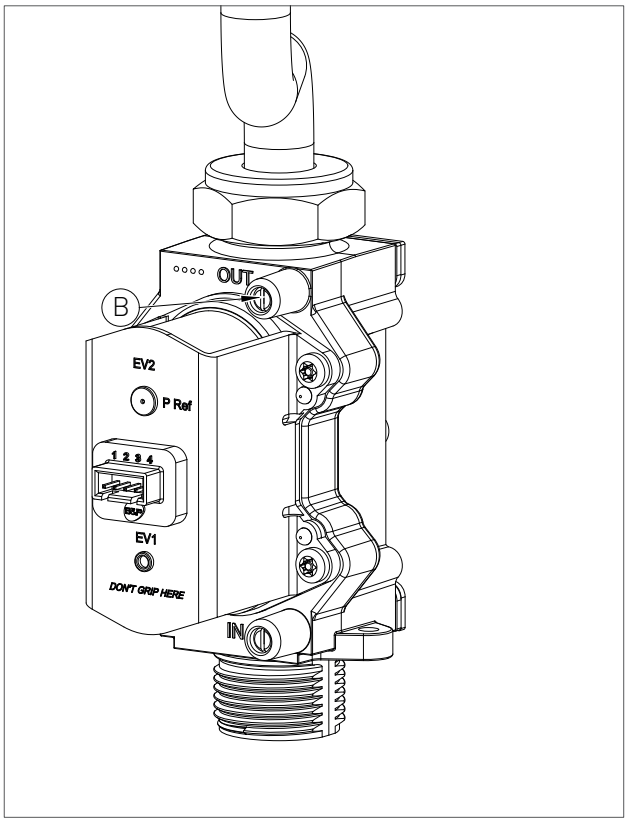


fig. 01

› Press the 'Ⓡ' key to exit from the parameter 'q01' and 'q02' editing mode, to return to the chimney sweeper function.

› Exit form the chimney sweeper function by simultaneously pressing the 'Ⓡ and ⏻' keys until the display shows the main screen.

› Remove the pressure gauge from the pressure outlet of the gas valve and tighten the screw;

› switch on the water heater and make sure that no gas leaks occur.

2.1.3. TOTAL GAS VALVE CALIBRATION

In the event of replacement of the gas valve or the electronic board, proceed with total calibration of the gas valve as follows:

› Remove the front casing of the water heater (see the chapter "ACCESSING THE WATER HEATER");

› insert a digital pressure gauge into the gas outlet pressure point 'B' (Fig. 1), after having completely unscrewed the screw inside.

› Access parameter 'P20', following the procedure described in the chapter "ACCESSING AND PROGRAMMING THE PARAMETERS" and set the parameter value to '1'.

› Exit from the parameter menu and activate the automatic modulation value setting mode by simultaneously pressing the '⊕' key of the power adjustment and '⏻' key. The message "Au-to" (alternating) will appear on the display.

› If the flame is on, the display will show 'q02', which corresponds to the maximum power value.

› If the flame does not light or is not detected, the flame symbol will not appear on the display and it will not be possible to enter into this parameter.

› Make sure that the gas pressure read on the pressure gauge complies with the information contained in the chapter "HEAT CAPACITY / GAS PRESSURE DIAGRAM".

› Press the '⊕' and '⊖' keys of the D.H.W. to adjust the value of the parameter. You must wait 10 seconds for stable pressure for each edit. The parameter 'q02' is stored automatically.

› Press the 'R' key to exit from the 'q02' value editing mode.

› Press the '⏻' key to go to parameter 'q01', which corresponds to the minimum power value.

› Make sure that the gas pressure read on the pressure gauge complies with the information contained in the chapter "HEAT CAPACITY / GAS PRESSURE DIAGRAM".

› Press the '⊕' and '⊖' keys of the D.H.W. to adjust the value of parameter 'q01'. You must wait 10 seconds for stable pressure for each edit. The parameter 'q01' is stored automatically.

› Press the 'R' key to exit from the 'q01' value editing mode.

› It is possible to check parameters 'q01' and 'q02' by pressing the '⏻' key. In case it is necessary to adjust them, repeat the above described procedure.

› Exit from the automatic modulation value setting mode by simultaneously pressing the '⊕' key of the power adjustment and '⏻' key.

› Cut off and reset boiler power or access parameter 'P20', following the procedure described in the chapter "ACCESSING AND PROGRAMMING THE PARAMETERS" and set the parameter value to '0'.

› Close the gas valve, remove the pressure gauge from the pressure outlet of the gas valve and tighten the screw.

› Open the gas valve, switch on the water heater and make sure that no gas leaks occur.

2.1.4. CO2 VALUE CHECK AND CALIBRATION

WARNING

The CO_2 value should be checked with the casing assembled.

To check and calibrate the CO_2 value to maximum and minimum power proceed as follows:

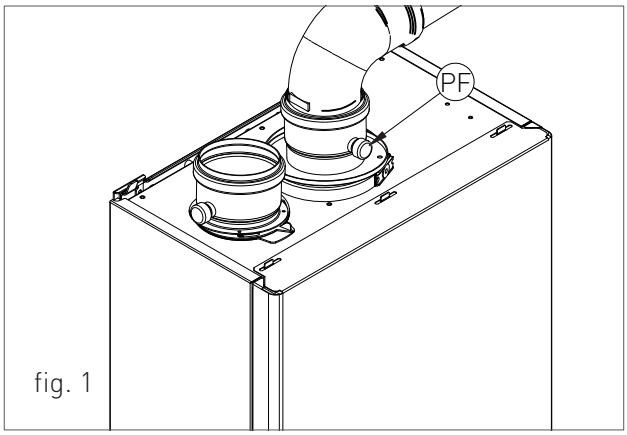


fig. 1

FOR MAXIMUM POWER

1. Activate the chimney sweeper function by pressing the 'R and keys at the same time, a value will be shown in the display. Press the '+' and of the D.H.W. to adjust the value of the parameter until 100 is reached.

2. Insert the flue analyser probe in the suitable 'PF' test point (fig. 1), then make sure that the CO_2 value at maximum power complies with the requirements indicated in chapter "Technical data", if it is not compliant, adjust the amount of the incoming air through the diaphragms until the correct CO_2 value is obtained.

FOR MINIMUM POWER

3. Press the '−' key of the D.H.W. to check the CO_2 value at minimum power.

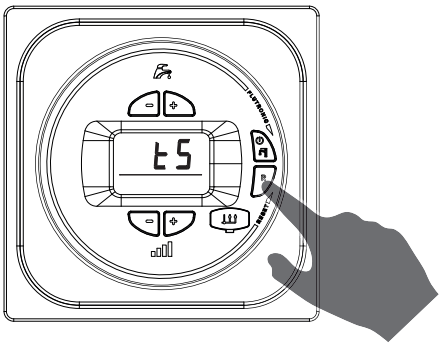
4. Make sure that the CO_2 value at minimum power complies with the requirements indicated in chapter "Technical data", if it is not compliant, adjust the amount of the incoming air through the diaphragms until the correct CO_2 value is obtained.

5. Disattivare la funzione spazzacamino premendo contemporaneamente i tasti 'R e ' finché il display non visualizzi la schemata principale.

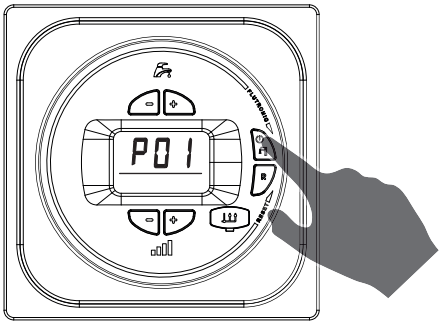
2.1.5. ACCESSING AND PROGRAMMING THE PARAMETERS

To access the parameters menu and adjust their values, follow the procedure below:

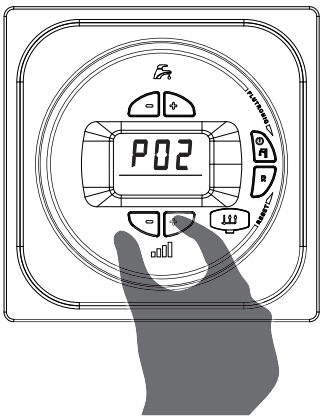
1. When the operating mode is anything other than OFF, press and hold the '(R)' key for 10 seconds and wait for the flashing message "tS" to appear on the display, then release the key. You have now entered into the Installer menu.



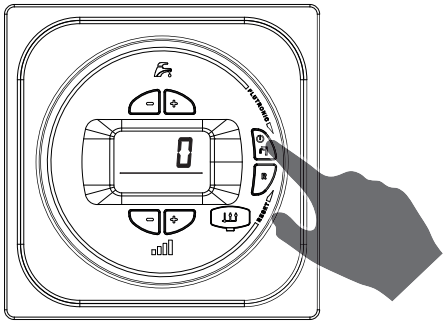
2. Press the '⏻' key to access the parameters menu. The display will show the message 'P01'.



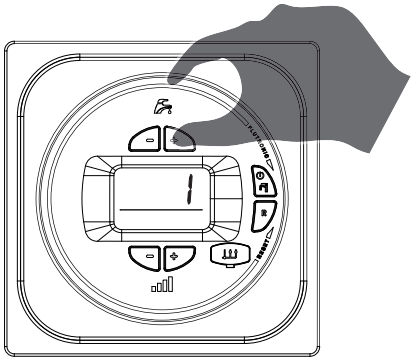
3. Use the keys '⊕' and '⊖' of the power adjustment ▁▃▅▇ to select the parameter to be edited.



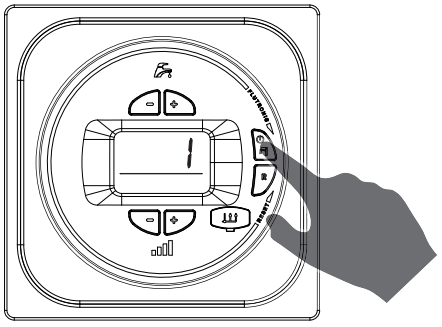
4. Keep key '⏻' pressed until the display shows the parameter value.



5. Use the keys '⊕' and '⊖' of the domestic circuit to change the value of the parameter.



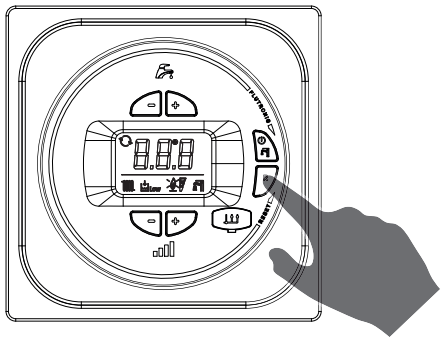
6. To make the adjustment made operational, press the '⏻' key; the parameter value will flash twice.



7. To exit from the parameter, press the '(R)' key just once.

8. To exit from the parameters menu, press the '(R)' key just once; the message "tS" will appear.

9. Press and hold the '(R)' key for 10 seconds to instead exit from the Installer menu.



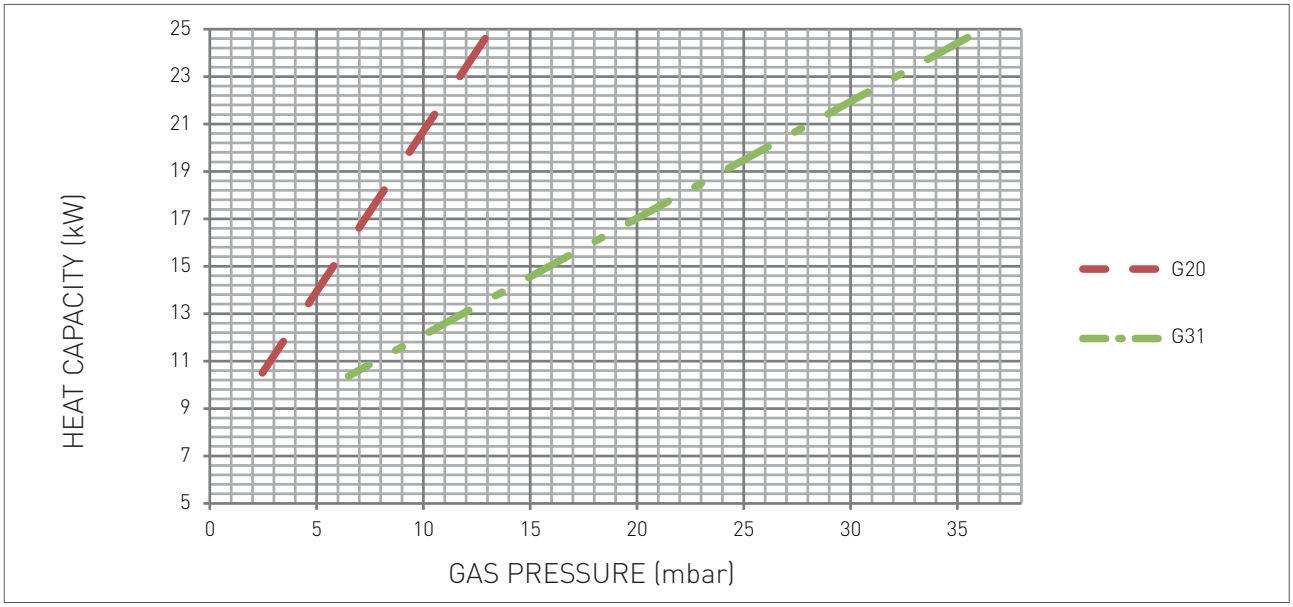
2.1.6. HDIMS13 PARAMETERS TABLE

PARAMETER	DESCRIPTION	RANGE	FUNCTION
P01	***OPERATING TYPE SELECTION***	2 - 5	2 = MONOTHERMAL INSTANT
			3 = HEATING ONLY
			4 = ACCUMULATION
			5 = WATER HEATER
P02	***GAS TYPE SELECTION***	0 - 1	0 = METHANE
	ATTENTION: READ THE INSTRUCTION IN CHAPTER 'GAS TRANSFORMATION' BEFORE CHANGING THIS PARAMETER.		1 = LPG
P03	N.A.		
P04	N.A.		
P05	***ANTI-WATER HAMMER SELECTION***	0 - 20	0 = DISABLED
	BY ACTIVATING THIS FUNCTION, THE DOMESTIC CONTACT IS DELAYED FOR A TIME EQUAL TO THAT SET.		THE VALUE IS EXPRESSED IN SECONDS (PRE-SET TO 2 SECONDS)
P06	N.A.		
P07	N.A.		
P08	N.A.		
P09	***ADJUSTMENT OF MINIMUM POWER IN D.H.W.*** USE THIS PARAMETER TO SET THE MINIMUM GAS PRESSURE OF THE BURNER IN D.H.W. PHASE. [SEE THE CHAPTER 'HEAT CAPACITY / GAS PRESSURE DIAGRAM'].	0 - 100	THE VALUE IS EXPRESSED IN PERCENTAGE (PRE-SET TO 0)
P10	N.A.		
P11	N.A.		

PARAMETER	DESCRIPTION	RANGE	FUNCTION
P12	***DJUSTMENT OF MAXIMUM POWER IN D.H.W.*** USE THIS PARAMETER TO SET THE MAXIMUM GAS PRESSURE OF THE BURNER IN D.H.W. PHASE. [SEE THE CHAPTER 'HEAT CAPACITY / GAS PRESSURE DIAGRAM'].	0 - 100	THE VALUE IS EXPRESSED IN PERCENTAGE (PRE-SET TO 100)
P13	N.A.		
P14	N.A.		
P15	N.A.		
P16	N.A.		
P17	***MAXIMUM DOMESTIC SETPOINT*** THROUGH THIS PARAMETER YOU CAN SET THE USER-ADJUSTABLE MAXIMUM DOMESTIC TEMPERATURE.	45 - 60	THE VALUE IS EXPRESSED IN °C
P18	N.A.		
P19	N.A.		
P20	***ENABLING THE TOTAL GAS VALVE CALIBRATION PROCEDURE*** USE THIS PARAMETER TO ENABLE THE PROCEDURE DESCRIBED IN THE CHAPTER "TOTAL GAS VALVE CALIBRATION" IF YOU NEED TO REPLACE THE GAS VALVE OR THE ELECTRONIC BOARD.	0 - 1	0 = DISABLED (PRE-SET BY DEFAULT) 1 = ENABLED
P21	N.A.		
P22	***ENABLING PARAMETERS P23 - P24 - P25***	0 - 1	0 = DISABLED (PRE-SET BY DEFAULT) 1 = ENABLED
P23	***MAXIMUM FAN SPEED (CAN ONLY BE EDITED IF PARAMETER P22 IS SET TO '1')*** USE THIS PARAMETER TO INCREASE OR DECREASE THE MAXIMUM SPEED OF THE FAN BASED ON THE LENGTH OF THE FUME EXHAUST UTILISED, AS DESCRIBED IN THE CHAPTER "TECHNICAL DATA".	140 - 180	**DO NOT MODIFY** (PRE-SET TO 175)

PARAMETER	DESCRIPTION	RANGE	FUNCTION
P24	***MINIMUM FAN SPEED***	100 - 140	**DO NOT MODIFY** (PRE-SET TO 100 FOR NATURAL GAS)
P25	***STARTING STEP ADJUSTMENT***	110 - 140	**DO NOT MODIFY** (PRE-SET TO 130 FOR NATURAL GAS)

2.1.7. HEAT INPUT/ GAS PRESSURE DIAGRAM



GAS TYPE		MINIMUM GAS PRESSURE	MAXIMUM GAS PRESSURE
G20	mbar	2,5	13
G31	mbar	6,5	35,5

2.2. MAINTENANCE

2.2.7. GENERAL MAINTENANCE WARNINGS

DANGER

Before each components cleaning or replacement operation, ALWAYS cut off the POWER, WATER and GAS supply of the water heater.

WARNING

To ensure greater life span and proper operation of the device, during the maintenance operations use only original spare parts.

ATTENTION

To ensure the efficiency and safety of the device, the maintenance operations must be realized on an annual basis. The operations described below, are essential to the validity of the standard warranty and must be performed by professionally qualified personnel in accordance with current legislation

Please perform the following operations once a year:

› check the sealing of the water components, and replace if necessary the gaskets;

› check that the wiring is performed in compliance with the requirements in the water heater instruction manual;

› check the wiring inside the control panel;

› check the primary exchanger, if necessary, clean it;

› check the max. and min. pressures as described in the "GAS PRESSURE CHECK AND CALIBRATION" section;

› check the operation of the gas light up and safety systems. If necessary, remove and clean the flame detection and light up electrode from incrustations paying attention to respect the distances with respect to the burner (see chapter "POSITIONING OF THE ELECTRODE");

› check the limit temperature safety thermostat;

› check the sealing of the gas components, and replace if necessary the gaskets;

› visually check the flame and the condition of the combustion chamber;

› remove and clean the burner from oxidation;

› check the integrity of the fume exhaustion system for safety and proper operation;

› make sure that the permanent ventilation outlets are present, correctly sized and functioning, based on the installed devices. Respect the requirements provided by Local and National legislation;

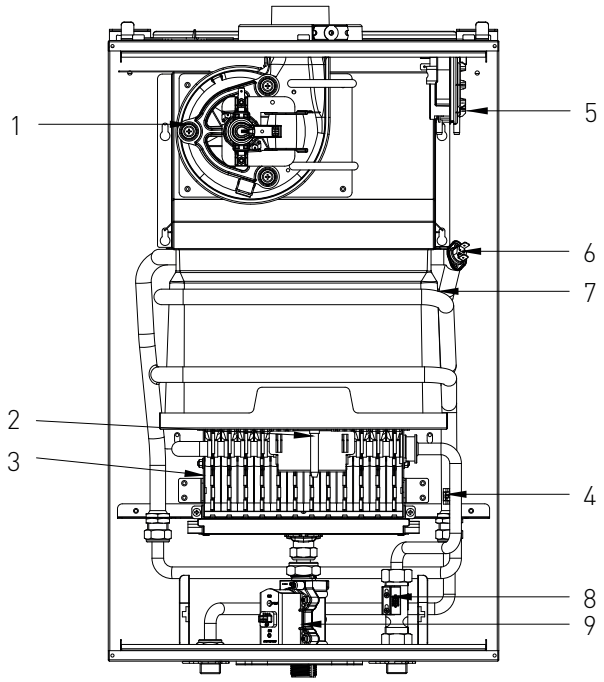
› check the flow and temperature of domestic hot water.

2.2.8. TECHNICAL DATA

Model		**SF 14 Evolution NOx**
CE certification	no.	0476CU3685
Gas category		II2E 3P
Flue system type	type	B22-C12-C32
Heat Input max (D.H.W.)	kW	24,5
Heat Input min (D.H.W.)	kW	10,5
Maximum combustion efficiency	%	90,1
Minimum combustion efficiency	%	93,6
Flue efficiency losses with burner on (Heat Input max.)	%	9,9
Flue efficiency losses with burner on (Heat Input min.)	%	6,4
Fumes temperature - Heat Input max.	°C	170,9
Fumes temperature - Heat Input min.	°C	95,5
CO - Heat Input max.	ppm	72
CO - Heat Input min.	ppm	7
Fumes mass - Heat Input max.	g/s	14,45
Fumes mass - Heat Input min.	g/s	7,34
Weighted NOx (0% O2) ppm	ppm	31
Weighted NOx (0% O2) on GCV mg/kWh	mg/kWh	50
Domestic Hot Water (D.H.W.) circuit		
Temperature setting - D.H.W.	°C	35-60
Max. operating pressure - D.H.W.	bar	6
Min. operating pressure - D.H.W.	bar	0,5
D.H.W. flow rate - continuous flow - Δt 30°C	litres/min	10,6
Dimensions		
Width	mm	410
Depth	mm	245
Height	mm	642
Gross weight	Kg	22
Hydraulic Connections		
Cold water inlet	Ø	1/2"
D.H.W. outlet	Ø	1/2"
Gas	Ø	3/4"
Flue systems		
Fan - Max. available pressure	Pa	39
Fan - Min. available pressure	Pa	2
Max. Flue length Ø60/100 - Horiz. Conc.	m	4
from 0,5 to 1 m - Horiz. Conc.	diaf. pos.	FIXED DIAPHRAGM Ø42 mm in the flue inspection flange
from 1 to 2 m - Horiz. Conc.	diaf. pos.	FIXED DIAPHRAGM Ø44 mm in the flue inspection flange
from 2 to 3 m - Horiz. Conc.	diaf. pos.	No Diaphragm
from 3 to 4 m - Horiz. Conc.	diaf. pos.	No Diaphragm
Max Flue length Ø80/80 - Horiz. Twin	m	26

from 0,5+0,5+F149:F167 m - Horiz. Twin	diaf. pos.	FIXED DIAPHRAGM Ø40 mm in the flue inspection flange + adjustable diaphragm on the air intake set at 2
from 0,5+0,5 to 4+4 m - Horiz. Twin	diaf. pos.	FIXED DIAPHRAGM Ø40 mm in the flue inspection flange + adjustable diaphragm on the air intake set at 3
Max. Flue length Ø60/100 - Vert. Conc.	m	4
Max. Flue length Ø80/80 - Vert . Twin	m	26
Max. Flue length Ø80 - Vert. Pipe	m	16
from 0,5 to 1 m - Vert. Conc. F191:F223	diaf. pos.	FIXED DIAPHRAGM Ø42mm in the flue inspection flange (NO adjustable flue diaphragm)
from 1 to 2 m - Vert. Conc.	diaf. pos.	FIXED DIAPHRAGM Ø44mm in the flue inspection flange (NO adjustable flue diaphragm)
from 2 to 3 m - Vert. Conc.	diaf. pos.	No Diaphragm
from 3 to 4 m - Vert. Conc.	diaf. pos.	No Diaphragm
Electrical specifications		
Voltage-frequency	V/Hz	220-230/50
Max Power consumption	W	35
Protection rating	IP	X4D
Gas supply		
Injectors	n°	24
Supply pressure - G20	mbar	20
Supply pressure min. - G20	mbar	17
Supply pressure max. - G20	mbar	25
Burner pressure max. - G20	mbar	13
Burner pressure min. - G20	mbar	2,5
Injector diameter - G20	Ø	0,85
Gas consumption - G20	m^3/h	2,59
Supply pressure - G31	mbar	37
Supply pressure min. - G31	mbar	25
Supply pressure max. - G31	mbar	45
Burner pressure max. - G31	mbar	35,5
Burner pressure min. - G31	mbar	6,5
Injector diameter - G31	Ø	0,51
Gas consumption - G31	kg/h	1,90

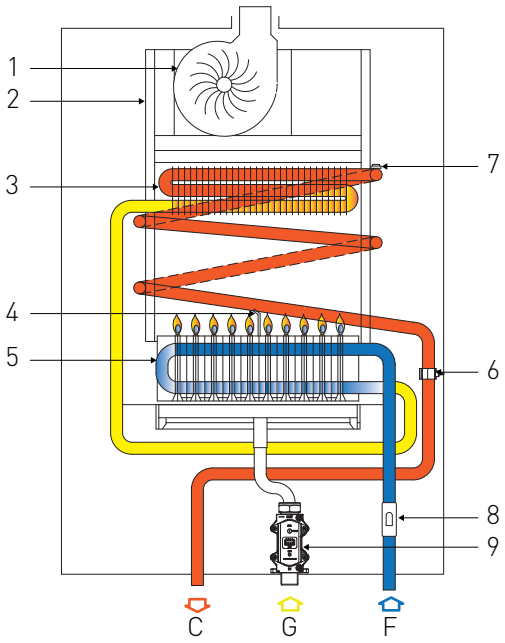
2.2.9. TECHNICAL ASSEMBLY



KEY

1. FAN
2. IGNITION / FLAME DECTION ELECTRODE
3. LOW NOX BURNER
4. DOMESTIC HOT WATR SENSOR
5. AIR PRESSURE SWITCH
6. SAFETY THERMOSTAT
7. HEAT EXCHANGER
8. FLOW SWITCH
9. GAS VALVE

2.2.10. HYDRAULIC DIAGRAM

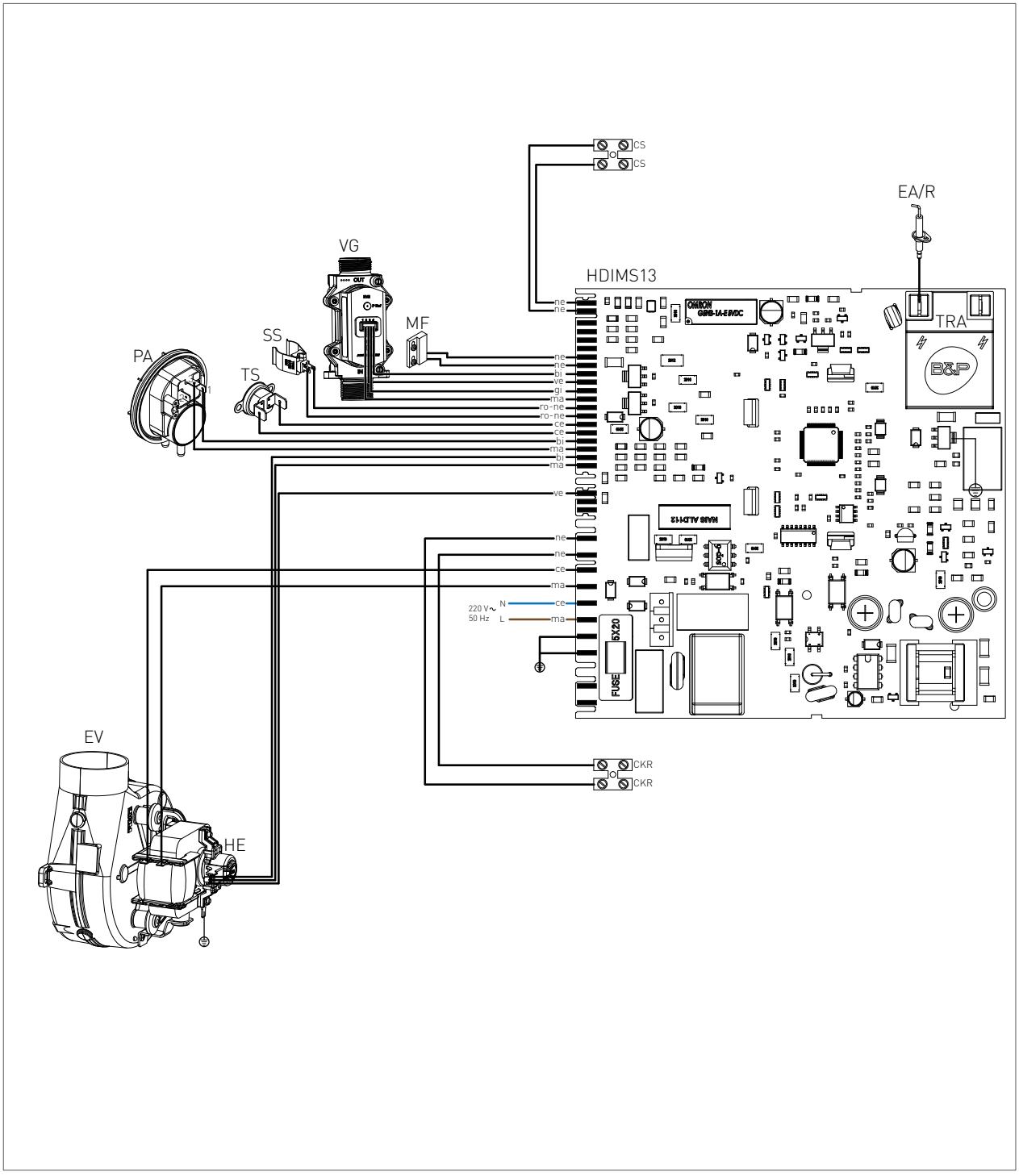


KEY

C. DOMESTIC HOT WATER OUTLET
G. GAS
F. COLD WATER INLET

1. FAN
2. FLUE HOOD
3. HEAT EXCHANGER
4. LIGHT UP/DETECTION ELECTRODE
5. LOW NOX BURNER
6. DOMESTIC HOT WATR SENSOR
7. SAFETY THERMOSTAT
8. FLOW SWITCH
9. GAS VALVE

2.2.11. WIRING DIAGRAM



EA/R: LIGHT UP/DETECTION ELECTRODE
TRA:START-UP TRANSFORMER
MF: MICRO-FLOW SWITCH
CS: D.H.W. CONTACT
VG: GAS VALVE
SS: DOMESTIC CIRCUIT PROBE
TS: SAFETY THERMOSTAT

EV: ELECTRIC FAN
HE: HALL EFFECT SENSOR
PA: AIR PRESSURE SWITCH

NE: BLACK
BI: WHITE
RO: RED
CE: BLUE
MA: BROWN
VE: GREEN
GI: YELLOW

AR: ORANGE
L: LINE
N: NEUTRAL

CKR: FROST PROTECTION CONTACT THROUGH THE OPTIONAL ELECTRICAL HEATING ELEMENTS KIT (CODE 50-00106)

2.2.9. ACCESSING THE WATER HEATER

For the majority of the control and maintenance operations you have to remove one or more panels of the casing.

The side panels can be removed only after removing the front panel.

To intervene on the front of the water heater proceed as follows:

› remove the fastening screws (1 - fig.1) placed on the lower edge of the front panel;

› grab the front panel from the bottom and remove it pulling it to yourself and then upwards (see fig. 1).

To intervene on the side panels of the water heater proceed as follows:

› remove the fastening screws (2 - fig.1) placed on the front edge of the side panel;

› remove the fastening screws (3 - fig.1) placed on the lower edge of the side panel;

› grab the bottom of the panel and remove it by moving it sideways and then pulling it upwards (see fig. 1).

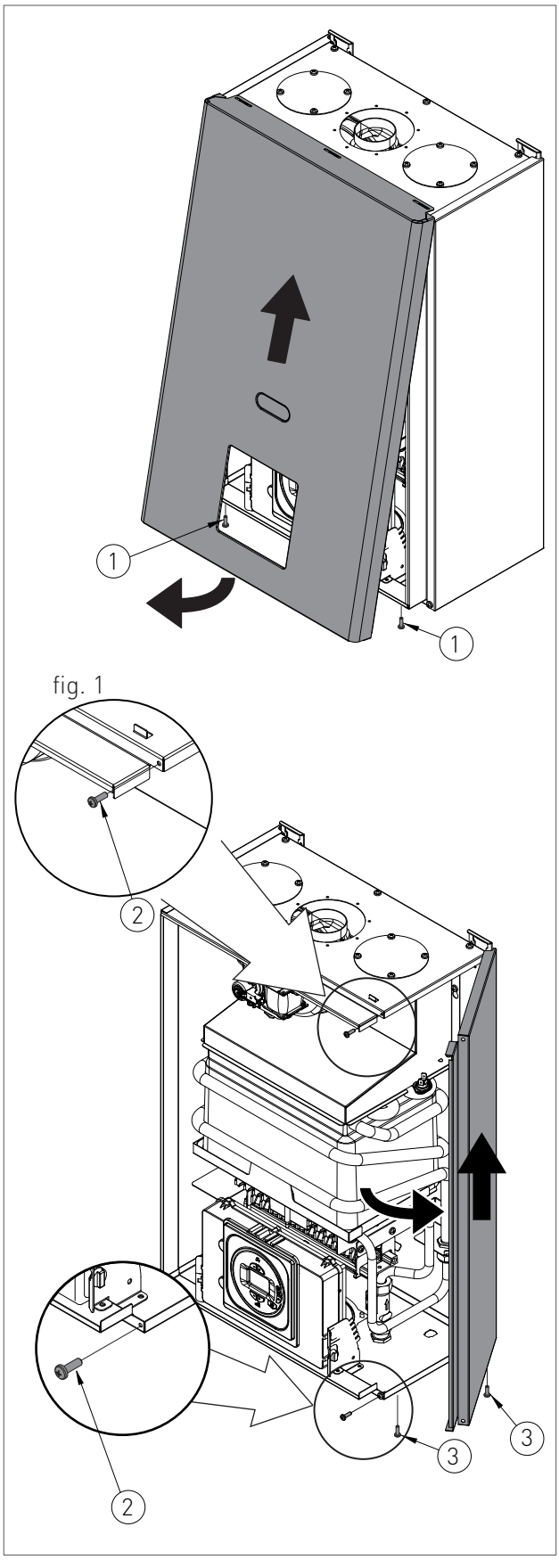


fig. 1

2.2.10. ACCESSING THE ELECTRONIC P.C.B.

In order ot intervene on the wirings of the control panel, please proceed as follows:

DANGER
Cut off the voltage from the main switch.

› Grab at the same time the support brackets of the control panel (fig. 1) loosening them and turn the panel downwards;

› unscrew the two fastening screws 1 - fig. 1;

› disengage the four hooks ‘2’ - fig. 1;

› remove the crankcase pulling it upwards.

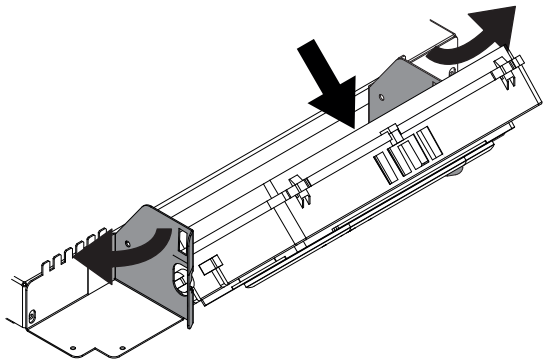
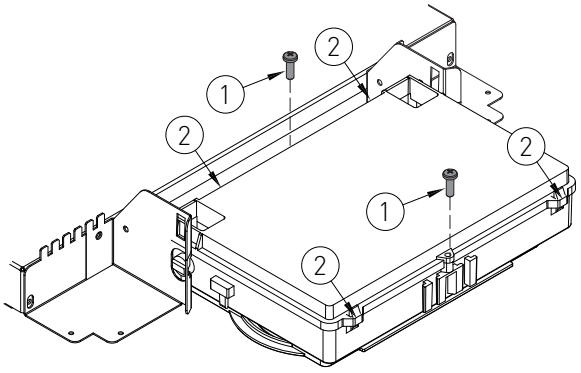
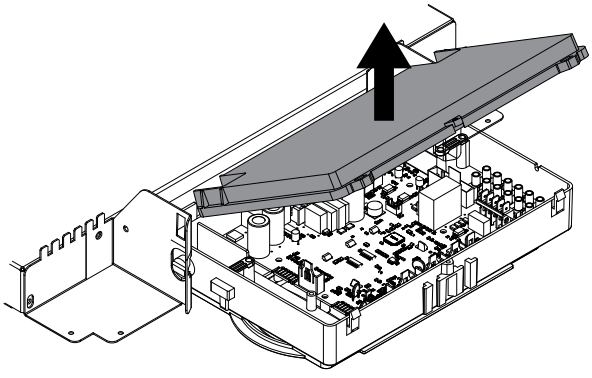


fig. 1





2.2.11. EMPTYING THE DOMESTIC SYSTEM

If there is freezing risk, you have to empty the domestic system as follows:

› close the main supply tap of the water supply network;

› open all cold and hot water taps;

› after completing all operations, close the discharge tap and all previously opened water taps.

2.2.12. ERROR CODES

CODE	FAULT	POSSIBLE CAUSE	SOLUTION	RESET
A01	***FLAME BLOCK***	**NO FLAME LIGHT UP**		PRESS THE RESET "R" KEY
		GAS MISSING;	CHECK THE ADDUCTION NETWORK;	
		MASS OR BROKEN START-UP ELECTRODE;	REPLACE IT;	
		GAS VALVE BROKEN;	REPLACE IT;	
		PRESSURE TOO HIGH AT THE INPUT OF THE GAS VALVE	CHECK THE MAXIMUM ADJUSTMENT PRESSURE	
		WITH FLAME LIGHT UP		
		ELECTRODE CABLE DISCONNECTED OR INTERRUPTED;	CHECK THE WIRING;	
		ELECTRODE BROKEN;	REPLACE IT.	
		THE CONDENSATE DISPOSAL SYSTEM IS BLOCKED.	CHECK THE CONDENSATE DISPOSAL SYSTEM AND EMPTY THE CONDENSATE TRAP.	
A02	***SAFETY THERMOSTAT (70°C)***	THERMOSTAT CABLE BROKEN OR DISCONNECTED;	CHECK THE WIRING;	AUTOMATIC.
		BROKEN THERMOSTAT	REPLACE IT.	
		CLOSED FLOWSWITCH CONTACT WITHOUT WATER FLOW	VERIFY THE MICRO SWITCH LEAD CONNECTION AND THAT THE FLOWSWITCH PISTON IS NOT STUCK.	
A03	***AIR PRESSURE SWITCH***	AIR PRESSURE SWITCH CABLE DISCONNECTED;	CHECK THE WIRING;	MANUAL RESET (PRESS THE RESET KEY).
		DISCHARGE OR SUCTION CLOSED;	CHECK THE FUMES DISCHARGE DUCT;	
		AIR PRESSURE SWITCH DEFECTIVE.	REPLACE IT.	

CODE	FAULT	POSSIBLE CAUSE	SOLUTION	RESET
A06	***DOMESTIC CIRCUIT PROBE***	BROKEN OR INCORRECTLY CALIBRATED PROBE (RESISTANCE VALUE 10 KOHM AT 25 °C NTC);	REPLACE IT;	AUTOMATIC.
		DISCONNECTED OR WET PROBE CONNECTOR.	CHECK THE WIRING.	
A16	***GAS VALVE***	AFTER THE BURNER SHUTS DOWN, THE SYSTEM CHECKS THE FLAME SIGNAL: IF THE FLAME STAYS LIT FOR 5 SECONDS, THE SYSTEM GENERATES A BLOCK CONDITION.	IF NOTHING OCCURS AFTER RESET, YOU WILL NEED TO REPLACE THE GAS VALVE AND FOLLOW THE PROCEDURE DESCRIBED IN THE CHAPTER "TOTAL GAS VALVE CALIBRATION".	PRESS THE RESET "Ⓡ" KEY
A35	***RESIDUAL FLAME***	FAULTY DETECTION ELECTRODE;	CLEAN IT OR REPLACE IT;	PRESS THE RESET "Ⓡ" KEY
		FAULTY DETECTION ELECTRODE CABLE;	REPLACE IT;	
		FAULTY MODULATION BOARD.	REPLACE IT.	
A40	***SUPPLY VOLTAGE***	SUPPLY VOLTAGE OFF THE OPERATION RANGE (≤180 VOLTS).	CHECK THE POWER SUPPLY NETWORK (THE ERROR DEACTIVATES AUTOMATICALLY AS SOON AS THE SUPPLY VOLTAGE FALLS BACK WITHIN THE REQUESTED LIMITS).	AUTOMATIC.
A72	***CLOSED AIR PRESSURE SWITCH CONTACT O BROKEN FAN***	CLOSED AIR PRESSURE SWITCH CONTACT	CHECK ELECTRICAL CONNECTION;	AUTOMATIC.
		ELECTRIC FAN BROKEN.	REPLACE IT.	

CODE	FAULT	POSSIBLE CAUSE	SOLUTION	RESET
A80	***ELECTRIC FAN***	INCORRECT CONNECTION OF THE ELECTRIC FAN; ELECTRIC FAN BROKEN.	CHECK ELECTRICAL CONNECTION; REPLACE IT.	AUTOMATIC.
		HALL EFFECT SENSOR WRONG CONNECTION; BROKEN SENSOR	CHECK ELECTRICAL CONNECTION; REPLACE IT.	
A81	***FLAME LOSS***	THE FLAME GOES OUT 6 TIMES IN 10 MINUTES.		PRESS THE RESET "Ⓡ" KEY
A84	***GAS VALVE***	GAS VALVE CABLE DISCONNECTED OR BROKEN;	CHECK ELECTRICAL CONNECTION;	PRESS THE RESET "Ⓡ" KEY
		GAS VALVE BROKEN.	REPLACE THE GAS VALVE AND PERFORM THE PROCEDURE IN THE CHAPTER "TOTAL GAS VALVE CALIBRATION".	

PROCEED AS FOLLOWS TO MANUALLY RESET THE BLOCKED FAULTS:

1. Press the 'Ⓡ' key to deactivate the fault.
2. Remove and restore power to the boiler, pressing and holding the 'Ⓡ' key.
3. As soon as the flame lights up, activate the chimney sweep function by simultaneously pressing and holding the 'Ⓡ and ' keys.
4. Exit from this function by simultaneously pressing the 'Ⓡ and ' keys.
5. Set the boiler to OFF operating mode.
6. Remove and restore power to the boiler, pressing and holding the 'Ⓡ' key.

TO VIEW THE LAST 11 FAULT SIGNALLING CODES, FROM THE MOST RECENT IN CHRONOLOGICAL ORDER:

› When the operating mode is anything other than OFF, press and hold the 'Ⓡ' key for 10 seconds and wait for the flashing message "tS" to appear on the display, then release the key. You have now entered into the Installer menu.

› To enter the fault history menu, press the '⊕' key of the power adjustment ▂▃▅ until the message "Hi" appears. Confirm by pressing ' '.

› Scroll through the list of stored faults using the '⊕' and '⊖' keys of the power adjustment ▂▃▅. A fault signalling code preceded by the chronological index will be displayed (for example:' 01' - 'last fault'). If not errors are present, the message '- -' will be displayed.

› To exit from the fault history menu and go back to the Installer menu, press ' '.

› To reset the fault history, press the '⊕' key of the power adjustment ▂▃▅ until the message "rE" appears. Confirm by pressing and holding the ' ' key for 3 seconds.

2.2.13. FUNCTION CODES

CODE	FUNCTION	DESCRIPTION
XX (NUMBER BETWEEN 00 AND 100)	***CHIMNEY SWEEP ACTIVE***	SIMULTANEOUSLY PRESS AND HOLD THE 'R' AND '⏻' KEYS TO ACTIVATE. THE DISPLAY WILL SHOW THE MAXIMUM PERCENTAGE VALUE SET BY THE D.H.W. CIRCUIT. THIS VALUE CAN BE EDITED DIRECTLY BY PRESSING THE '⊕' AND '⊖' KEYS OF POWER ADJUSTMENT ▯▯▯. THIS FUNCTION CAN BE DEACTIVATED BY SIMULTANEOUSLY PRESSING AND HOLDING THE 'R' AND '⏻' KEYS OR BY SWITCHING OFF THE WATER HEATER. THIS FUNCTION BRINGS THE BOILER TO ITS MINIMUM AND MAXIMUM D.H.W. POWER FOR 15 MINUTES DEACTIVATING THE MODULATION FUNCTION. GENERALLY USED FOR PERFORMING THE COMBUSTION AND CALIBRATION TESTS.
F09	***D.H.W CIRCUIT ANTI-FREEZE***	IF THE OPTIONAL HEATING ELEMENTS KIT (CODE 50-00106) IS FITTED, THE FROST PROTECTION SYSTEM WILL START THE UNIT WHEN THE D.H.W. SENSOR DETECTS A 4°C TEMPEARATURE AND WILL HEAT THE EXCHANGER PIPES UNTIL A 8°C TEMPERATURE IS REACHED.

2.2.14. DELAY CODES

CODE	DELAY	DESCRIPTION
T3	***DELAY BETWEEN EACH IGNITION TEST***	IF THE FLAME GOES OUT DURING BURNER IGNITION, A DELAY TIME "T3" (50 SECONDS) WILL OCCUR BEFORE ANOTHER BURNER START-UP CAN BE ATTEMPTED.
T4	***DELAY AFTER BLOCK RESET (TIME REMAINING LESS THAN 30 SECONDS)***	WAIT FOR REGULAR COMPLETION OF THE OPERATION. YOU CAN IMMEDIATELY PERFORM RESET, BUT ACTUAL UNLOCK WILL ONLY OCCUR 30 SECONDS AFTER APPEARANCE OF THE ERROR CODE.

2.2.15. INFO MENU DISPLAY DATA

To view the water heater data from the info menu:

› When the operating mode is anything other than OFF, press and hold the '(R)' key for 10 seconds and wait for the flashing message "tS" to appear on the display, then release the key. You have now entered into the Installer menu.

› To enter the info menu, press the '⊕' key of power adjustment ▂▃▅ until the message "Ini" appears. Confirm by pressing '⏻'.

› The info code alternating with the associated value will be displayed. To scroll through the list of viewable data, use the '⊕' and '⊖' keys of power adjustment ▂▃▅.

› To exit from the fault history menu and go back to the Installer menu, press '⏻'.

› Press and hold the '(R)' key for 10 seconds to exit the Installer menu.

LIST OF DISPLAYED DATA

INFO CODE	DESCRIPTION
01	DOMESTIC CIRCUIT PROBE TEMPERATURE
02	N.A.
03	N.A.
04	BURNER ACTUAL OUTPUT POWER (EXPRESSED IN PERCENTAGE)
05	CURRENT FLAME RESISTANCE (EXPRESSED IN OHM)
06	CURRENT FAN SPEED (0 = OFF; 1 = MINIMUM; 2 = MEDIUM; 3 = MAXIMUM)

2.2.16. POSITIONING OF THE ELECTRODE

Check that the electrode is positioned at the right distance from the burner and with the correct inclination, see fig. 1.

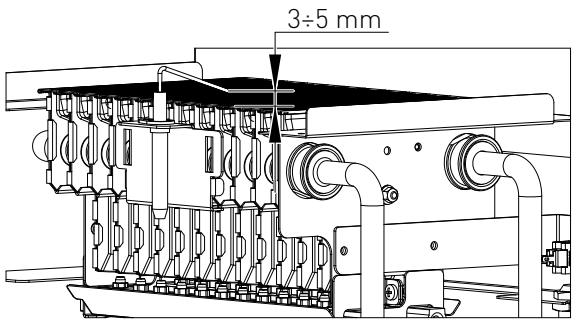
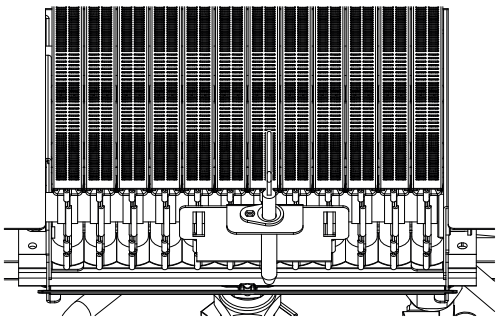


fig. 1



2.2.17. GAS CONVERSION

WARNING

Make sure that the gas adduction tube is suitable for the new type of fuel with which the water heater is supplied.

WARNING

Once transformation is complete, adjust the water heater again by following the instructions in the relevant paragraph and apply the new identification plate in the gas transformation kit.

WARNING

Remember that when using LPG gas, mechanical couplings must not be sealed with flax.

In order to carry out transformation, proceed as follows (see fig. 1):

1. cut off the electrical supply to the water heater and close the gas tap;

2. remove the water heater's front casing and rotate the control panel (refer to the 'ACCESSING THE WATER HEATER' chapter).

3. unscrew the gas connector '1' using a 24mm open wrench and separate the collector '2' from the burner '3' by unscrewing the screws '4';

4. replace the burner manifold '2' (fig. 1) with the new gas type manifold (kit code 65-00921 for Natural Gas abd Kit code 65-00920 for L.P.G.);

5. replace the air deflector 'B' (fig.1) with the new gas type air deflector, under the manifold '2' and tight the gas connector '1'.

6. After every dismantling and refitting of gas connectors, carefully check for any leaks by using soapy water;

7. affix the two 'gas data' stickers in the transformation kit, one on the inside of the control panel covering the existing plate, and the other inside the front panel of the water heater, near the data plate. On the latter, data relating to the old type of gas in use must be deleted with a permanent marker.

8. Set the parameter value for the new type of gas in use (see the instructions in the ' HDIMS13 PARAMETER TABLE' and 'ACCESSING AND PROGRAMMING THE PARAMETERS' chapters);

9. adjust the minimum and maximum pressures (see the 'GAS PRESSURE CHECK AND CALIBRATION' chapter).

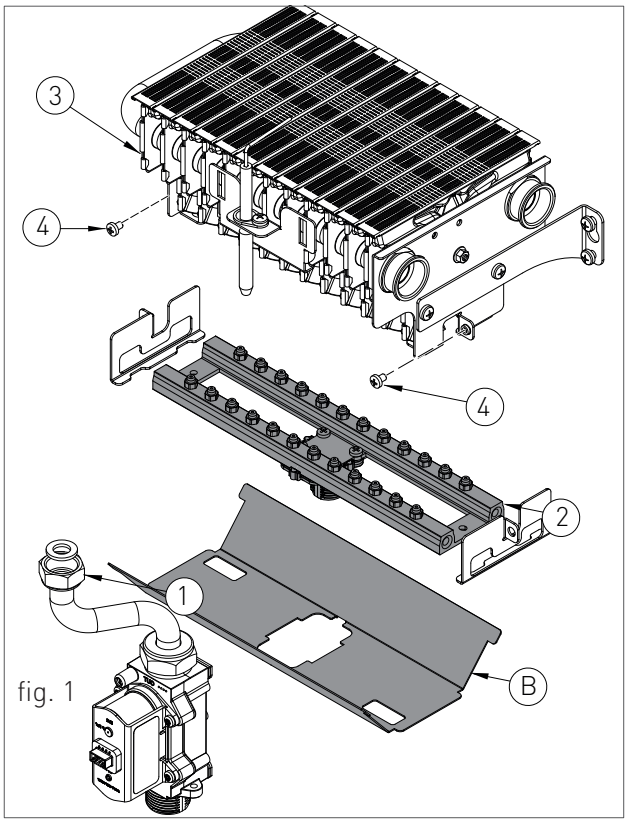


fig. 1

3. USER SECTION

The operations described in this section are addressed to all those who will use the machine. The machine must be used and accessed only by qualified operators that fully read and understood the User section, paying particular attention to the warnings.

3.1. USE

3.1.1. GENERAL USE WARNINGS

WARNING

Before starting the water heater the User must make sure that the First start-up certificate has the stamp of the technical Support Centre proving the testing and the first start-up of the water heater .

WARNING

In order to take advantage of the guarantee provided by the manufacturer, the customer should carefully and exclusively observe the instructions given in the USER section of the manual.

ATTENTION

This machine may be used only for the purpose for which it has been designed: heat water to a temperature below boiling point at atmospheric pressure. Any other use is considered wrong and dangerous. The manufacturer is excluded from any contractual or out of contract responsibility for damage caused to people, animals or property due to incorrect use.

DANGER

The water heater should not be used by persons (including children) with reduced physical, sensory or mental capacities or without suitable knowledge or experience unless they are instructed on the device use or monitored by a person responsible for their safety.

DANGER

DO NOT obstruct the air vents of the location in which the gas device is installed to prevent the formation of toxic explosive mixes.

DANGER

If you sense a gas odour in the location in which the water heater is installed, proceed as follows:

› DO NOT use electrical switches, the telephone or any other device that might generate electrical discharges or sparks;

› Immediately open all doors and windows to create an air exchange that can quickly clean the location;

› Close the gas valves;

› Request immediate intervention of qualified staff.

DANGER

The use of the electrical power water heater implies respecting some fundamental rules such as:

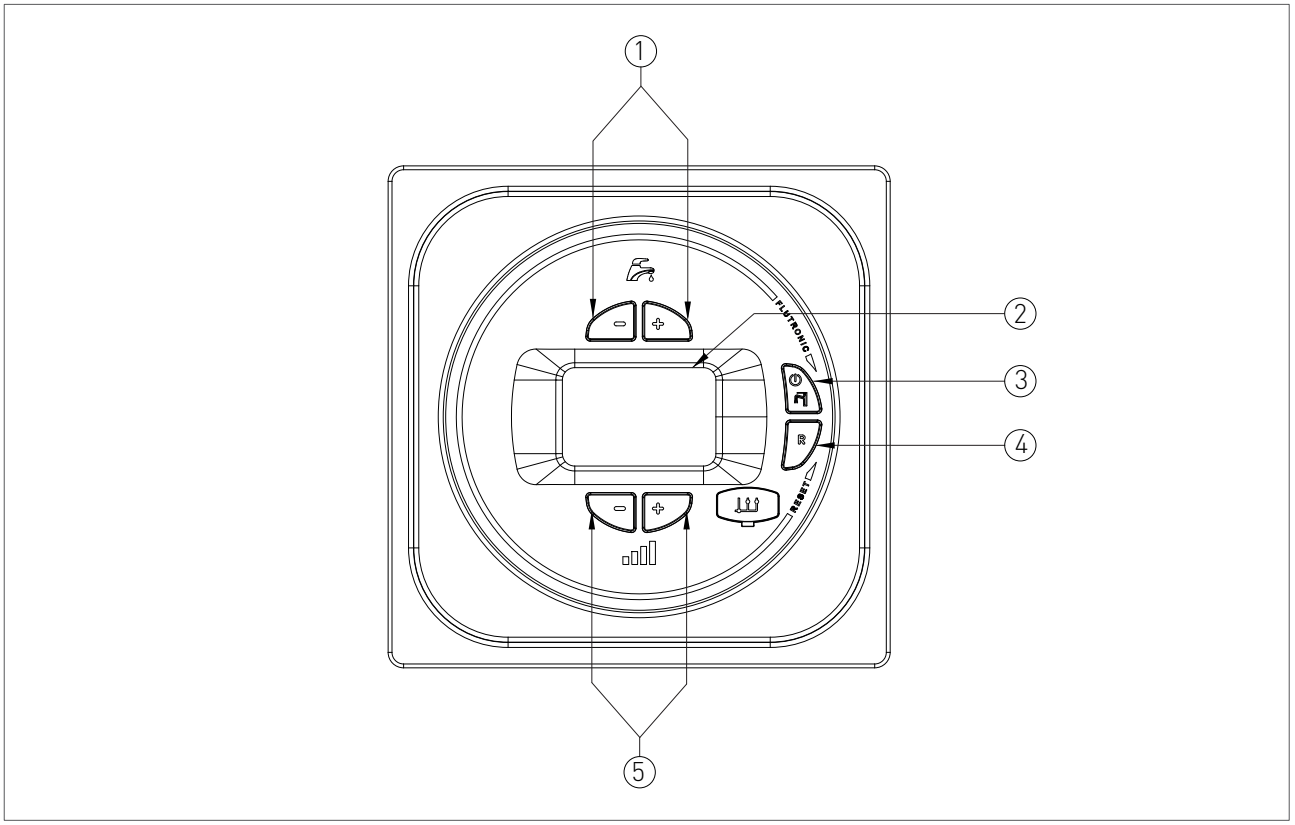
› DO NOT touch the device with wet and/or humid parts and/or with bare feet;

› DO NOT pull the electrical cables;

› DO NOT leave the device exposed to atmospheric agents (rain, sun, etc.) unless specifically intended;

› in case of cable damage, turn off the device and contact qualified professional staff to replace it.

3.1.2. CONTROL PANEL



KEY

1. DOMESTIC HOT WATER TEMPERATURE ADJUSTMENT KEYS

2. DISPLAY

3. OPERATING MODE SELECTION KEY: D.H.W. ONLY / OFF

4. RESET KEY: ANOMALY RESET

5. POWER ADJUSTMENT KEYS

3.1.3. DISPLAY ICONS

KEY

1. INDICATION OF PARAMETER NUMBER, TEMPERATURE OR INFO CODE DISPLAYED (THE WRITING "SA" WITH INTERMITTENT SIGNAL ON THE DISPLAY, ALTERNATED WITH THE VALUE OF D.H.W. TEMPERATURE INDICATES THAT D.H.W. REQUEST IS ACTIVE);

2. OPERATION IN DOMESTIC MODE ENABLED;

3. FLAME PRESENT SIGNALLING / IT ALSO INDICATES, ON 3 PERCENTAGE LEVELS, THE MODULATING POWER LEVEL OF THE BOILER (fig.2). THE CROSSED FLAME (FLASHING) INDICATES THAT A BLOCK FAULT IS ACTIVE; RESET IS REQUIRED.

4. INSUFFICIENT SYSTEM WATER PRESSURE SIGNALLING;

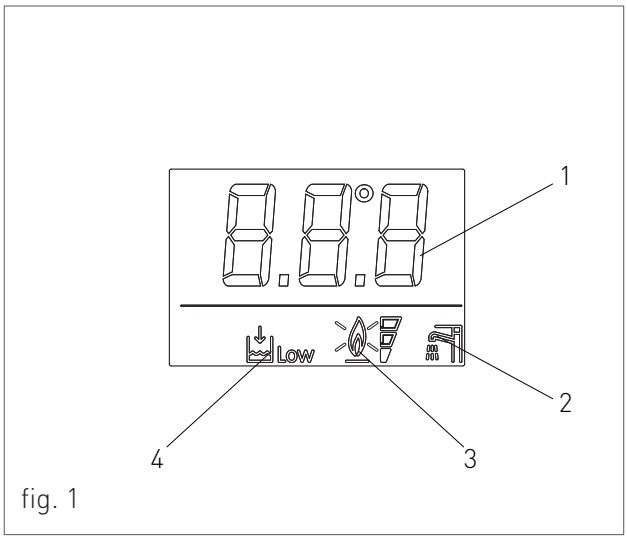


fig. 1

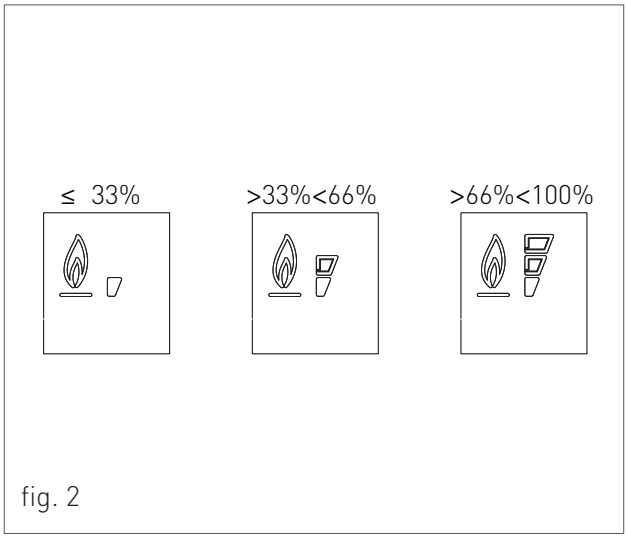


fig. 2

3.1.4. START-UP

Before starting the water heater make sure that it is powered and that the gas tap below the water heater is open.

To start the water heater, press the function button ' ' and select the D.H.W. ONLY operating mode. If the symbol ' ' is displayed fixed, it means that the function was activated.

Whenever there is a demand for domestic hot water, the automatic ignition system will turn the burner on; the operation is represented by the lighting of the symbol ' ' with intermittent 'SA' signal on the display alternating with the value of the domestic hot water temperature.

3.1.5. DOMESTIC HOT WATER TEMPERATURE ADJUSTMENT

You can adjust the temperature using keys '⊕' and '⊖' of the domestic circuit :

- press key '⊖' to decrease the temperature.
- press key '⊕' to increase the temperature.

The hot domestic water temperature adjustment field ranges from 40 °C to 60 °C.

3.1.6. OUTPUT ADJUSTMENT

The output regulation of the water heater guarantees the conditions of well-being by keeping account of water flow and inlet temperature of DHW.

The power adjustment is made throught '⊕' and '⊖' keys of power adjustment :

- Press '⊖' key to decrease the power.
- Press '⊕' key to increase the power.

The output regulation field ranges from min 10.5 kW to max 24.5 kW.

3.1.7. OFF MODE

In this mode the water heater no longer meets the D.H.W. requests. The frost protection system remains still active.

To switch the boiler to OFF operating mode, press the function ' ' button. The message 'OF' indicates that the function is activated.

If the water heater was previously running, it will be turned off and the post-ventilation function will be enabled.

If you have to deactivate the water heater for a long period of time, proceed as follows:

› contact the Technical support centre that will empty the water system and will cut off the power, water and gas supply.

› Or ask the installation of the optional electrical resistances kit (see chapter 'INFORMATIONAL NOTE ON ANTI-FREEZE FUNCTION').

3.1.8. FROST PROTECTION FUNCTION INFORMATION

The water heater can be protected against freezing thanks to the optional electrical resistances kit (code 50-00106).

When the optional electrical resistances kit is installed in the water heater, the D.H.W. frost protection function of the P.C.B. heats the concerned parts when their temperature goes below the minimum pre-set values.

WARNING
This function is available only if:

› the optional electrical resistances kit is installed;

› the water heater is powered.

3.1.9. ERROR CODES

The boiler might signal some faults by displaying a code. Below you have a list of the codes and of the operations to be performed in order to unlock the boiler.

CODE	FAULT	INTERVENTION
A01	***FLAME BLOCK***	MAKE SURE THAT THE BOILER AND CONTACTOR GAS VALVES ARE OPEN.
		PRESS THE RESET '(R)' BUTTON ON THE CONTROL PANEL TO RESET THE FAULT, AS SOON AS THE ERROR CODE DISAPPEARS FROM THE DISPLAY, THE BOILER WILL START AUTOMATICALLY.
		IF THE BLOCK PERSISTS CONTACT THE TECHNICAL SUPPORT CENTRE.
A02	***SAFETY THERMOSTAT (70 °C)***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A03	***AIR PRESSURE SWITCH***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A06	***DOMESTIC CIRCUIT PROBE***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A16	***GAS VALVE***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A35	***RESIDUAL FLAME***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A40	***SUPPLY VOLTAGE***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A72	***CLOSED AIR PRESSURE SWITCH CONTACT OR BROKEN FAN***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A80	***ELECTRIC FAN***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A81	***FLAME LOSS***	CONTACT THE TECHNICAL SUPPORT CENTRE.
A84	***GAS VALVE***	CONTACT THE TECHNICAL SUPPORT CENTRE.

3.1.10. FUNCTION CODES

CODE	FUNCTION	INTERVENTION
F09	***D.H.W CIRCUIT ANTI-FREEZE FUNCTION ACTIVE***	WAIT UNTIL THE OPERATION IS COMPLETED

3.1.11. MAINTENANCE

To ensure proper boiler safety and efficiency, please check the device every year.

An accurate maintenance should improve system management.

3.1.12. EXTERNAL CASING CLEANING

Clean the cover of the device using a wet cloth and come neutral soap.

WARNING

DO NOT use abrasive or powder detergents as they might damage the plastic cover and control elements.

3.1.13. DISPOSAL

The boiler and all its accessories must be differentiated, suitably disposed of in accordance with the standards in force.

The use of the symbol WEEE (Waste Electrical and Electronic Equipment) shows that this product can not be dismantled as domestic waste. Proper dismantle of this product helps preventing potentially negative consequences on human health and environment.

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