# GAS STORAGE WATER HEATER
# SEALED CHAMBER AND FORCED DRAFT
# (type C).

SX160

SX220

SX300

SX400

SX600

SX800

# ENG - Manual installation, use and maintenance.

Original instructions.
Read and follow these instructions before installing the unit.
Always keep on hand this manual during the maintenance phase.
This manual is also available in electronic format and downloadable from the website. www.atimariani.it
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IVA IT 00281090407 - REA 143693

ed 2023-06

# SUMMARY

# 1. GENERAL WARNINGS

⚠ THIS BOOKLET IS AN INTEGRAL PART OF THE APPLIANCE AND ESSENTIAL AND MUST BE KEPT WITH CARE IN THE VICINITY OF THE APPLIANCE ITSELF FOR FUTURE CONSULTATION. It CONTAINS IMPORTANT INFORMATION REGARDING SAFETY, INSTALLATION, OPERATION AND MAINTENANCE.

⚠ THE APPLIANCE HAS BEEN BUILT FOR THE PRODUCTION OF HOT WATER: ANY OTHER TYPE OF USE IS TO BE DEEMED NOT SUITABLE AND DANGEROUS.

⚠ THE APPLIANCE SHOULD NOT BE INSTALLED IN DAMP, it MUST BE PRESERVED BY JETS, JETS OF WATER OR OTHER LIQUIDS TO AVOID TROUBLE TO ELECTRICAL AND THERMAL.

⚠ INSTALLATION MUST BE CARRIED OUT BY PROFESSIONALLY QUALIFIED PERSONNEL RESPONSIBLE FOR COMPLIANCE WITH THE CURRENT SAFETY STANDARDS. INCORRECT INSTALLATION, WITHOUT FOLLOW THE INSTRUCTIONS GIVEN BY THE MANUFACTURER MAY CAUSE DAMAGE TO PERSONS, ANIMALS OR THINGS, FOR WHICH THE MANUFACTURER IS NOT RESPONSIBLE.

⚠ PARTS OF THE PACKAGING (PLASTIC BAGS, POLYSTYRENE, WOOD, CLIPS, ETC.) MUST NOT BE LEFT TO THE REACH OF CHILDREN AS DANGEROUS.

⚠ THE APPLIANCE CAN BE USED BY CHILDREN AGED LESS THAN 8 YEARS AND PERSONS WITH REDUCED PHYSICAL, SENSORY OR MENTAL, OR LACK OF EXPERIENCE OR KNOWLEDGE REQUIRED, PROVIDED UNDER SURVEILLANCE OR AFTER THAT THEY WILL GET ALL INSTRUCTIONS ' SAFE USE OF THE APPLIANCE AND UNDERSTANDING HAZARDS RELATING TO IT.

⚠ CHILDREN SHOULD NOT PLAY WITH THE APPLIANCE.

⚠ CLEANING AND MAINTENANCE TO BE PAID BY THE USER MUST NOT BE MADE BY CHILDREN WITHOUT SUPERVISION.

⚠ IF THE APPLIANCE SHOULD BE SOLD OR TRANSFERRED TO ANOTHER OWNER, MAKE SURE THAT THIS booklet stays with the, SO AS TO BE CONSULTED BY THE NEW OWNER AND / OR INSTALLER.

⚠ DO NOT PUT ANY KIND OF PURPOSE OF THE DEVICE. TO AVOID RISK OF DAMAGE DUE TO FROST IN THE EVENT REQUIRES TO LEAVE THE EQUIPMENT STORED FOR A LONG PERIOD IN AN ENVIRONMENT NOT HEATED, it IS RECOMMENDED drained completely. THE MANUFACTURER IS NOT RESPONSIBLE FOR FAILURE OR BROKEN PARTS DUE TO FROST AND RELEASE OF WATER IN THE SYSTEM.

⚠ TO GET THE BEST RESULTS AND RECOGNITION OF WARRANTIES WE RECOMMEND YOU TO FOLLOW THE INSTRUCTIONS BELOW AND ONLY USE ORIGINAL SPARE PARTS AND KIT PROVIDED BY THE MANUFACTURER.

⚠ MORE APPLIANCES IN THE SAME ROOM FOR A TOTAL THERMAL CAPACITY HIGHER A 35 KW, ARE HEATING PLANT AND ARE SUBJECT TO THE PROVISION OF THE CIRCULAR # 68 firemen.

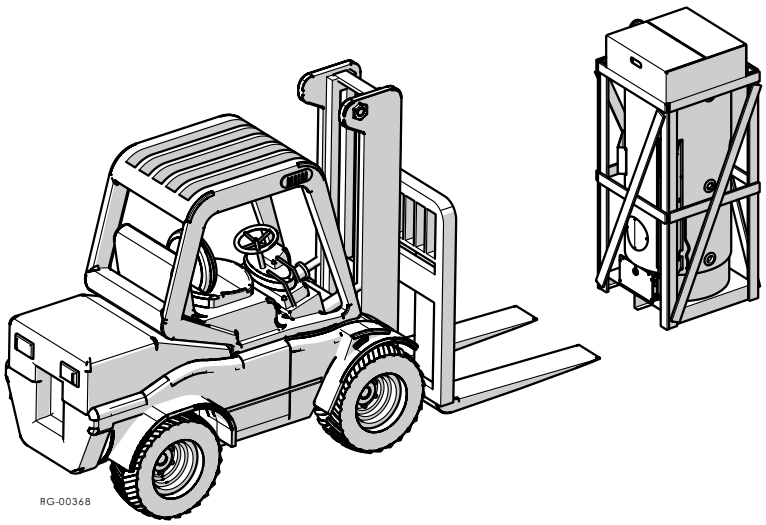
⚠ And 'ABSOLUTELY NO TAMPERING WITH ANY DEVICE SETTINGS AND FACTORY SEALED BY THE MANUFACTURER.

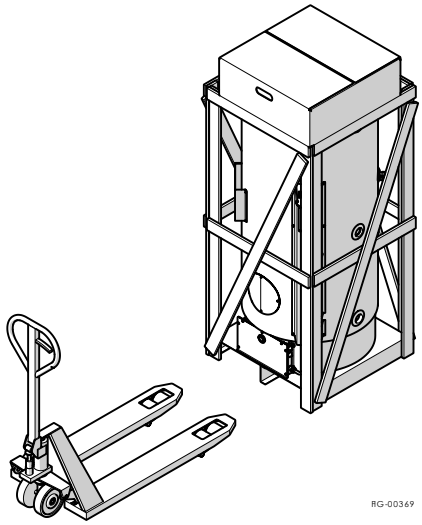
⚠ THE EQUIPMENT SHOULD BE PERIODICALLY CHECKED AND VERIFIED BY A COMPETENT PERSON ACCORDING TO THE LAW OF THE COUNTRY WHERE THE UNIT IS INSTALLED.

⚠ POSSIBLE REPLACEMENT COMPONENTS OF OPERATIONS TO BE PERFORMED BY AUTHORIZED BY THE MANUFACTURER.

## 2. TRANSPORTATION, STORAGE AND RECYCLING

- The appliance must be transported and stored dry and protected from frost.
- The appliance must be stored, transported and used at a temperature between +10 and +40 ° C and at a humidity between 40% and 80%.
- The appliance must not be handled and / or laid horizontally: it is only and exclusively in the vertical can carry it.
- Use, handling, a lift truck or a manual trans pallet. As shown in the figure below, enter the parallel arms of the carriage in the lower part of the appliance.



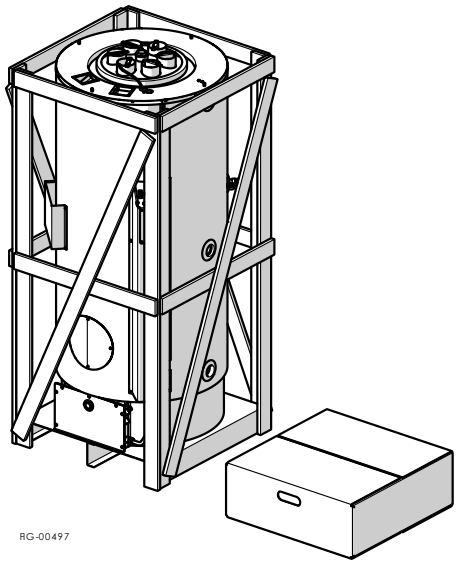

- Remove the packing 4 by unscrewing the screws at the bottom corners of the appliance, then pull upwards the packaging for whole, taking care not to damage the appliance.

## 3. CORRECT DISPOSAL OF THIS PRODUCT

PRODUCT IN COMPLIANCE WITH EU DIRECTIVE 2012/19 / EU-D.Lgs.49 / 2014 pursuant to art. 26 of Legislative Decree 14 March 2014, n. 49 "Implementation of Directive 2012/19 / EU Waste Electrical and Electronic Equipment (WEEE)" (Applicable in the European Union countries and countries with separate collection systems)
The marking on the product or its literature indicates that the product should NOT be disposed of with other household waste at the end of the life cycle. To prevent possible harm to the environment or human health from uncontrolled waste disposal, the user is encouraged to separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where you purchased the product or their local government office, for details on separate collection and recycling for this type of product. Business users should contact their supplier and check the terms and conditions of the purchase agreement.

## 4. CONTENT, WEIGHT AND DIMENSIONS OF PACKAGE

The appliance is delivered packaged in a wooden box with appropriate protection. See table below for size.




Dimensions in mm: mm - Weight in kilograms: Kg

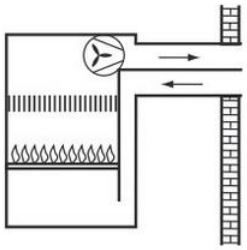
| | SX160 | SX220 | SX300 | SX400 | SX600 | SX800 |
|---|---|---|---|---|---|---|
| **Width** | 580 | 780 | 780 | 780 | 980 | 980 |
| **Depth** | 580 | 780 | 780 | 780 | 980 | 980 |
| **Height** | 1850 | 1410 | 1760 | 2110 | 1800 | 2100 |
| **Weight with packaging** | 125 | 210 | 260 | 300 | 290 | 335 |

## 5. CATEGORIES OF APPLIANCE

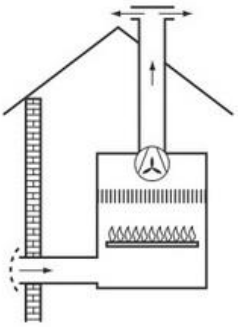
These appliances are classified as: "Gas storage water heater."

- Classes apparatus (EN 483) TYPE C (see table):

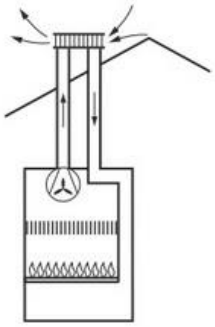
**C12** The air intake and evacuation of the combustion products takes place by means of a horizontal coaxial duct or with openings close enough so that they can be considered in the same wind conditions.



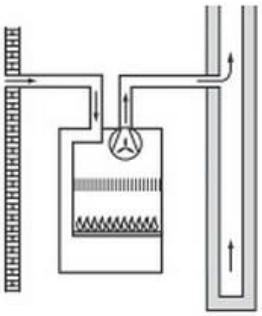
**C52** The openings of the air intake duct and evacuation of the combustion products must be located in different pressure conditions.



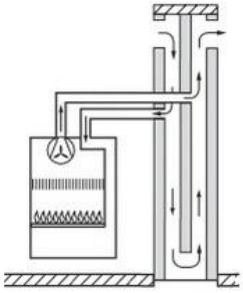
**C32** The air intake and evacuation of the combustion products takes place by means of a vertical conduit coaxial.



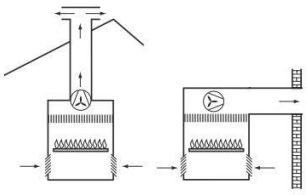
**C82** The air intake takes place through a suction terminal while the evacuation of the combustion products using a connector to an individual or collective chimney.



**C42** An apparatus connected to a collective duct system consists of a duct for combustion air supply and a conduit for evacuation of the combustion products. The orifices of this system are concentric or close enough to be exposed to wind conditions comparable.



**B52** The evacuation of the combustion products takes place by means of a smoke duct outside the environment. The air intake takes place in the same environment where the appliance is installed.



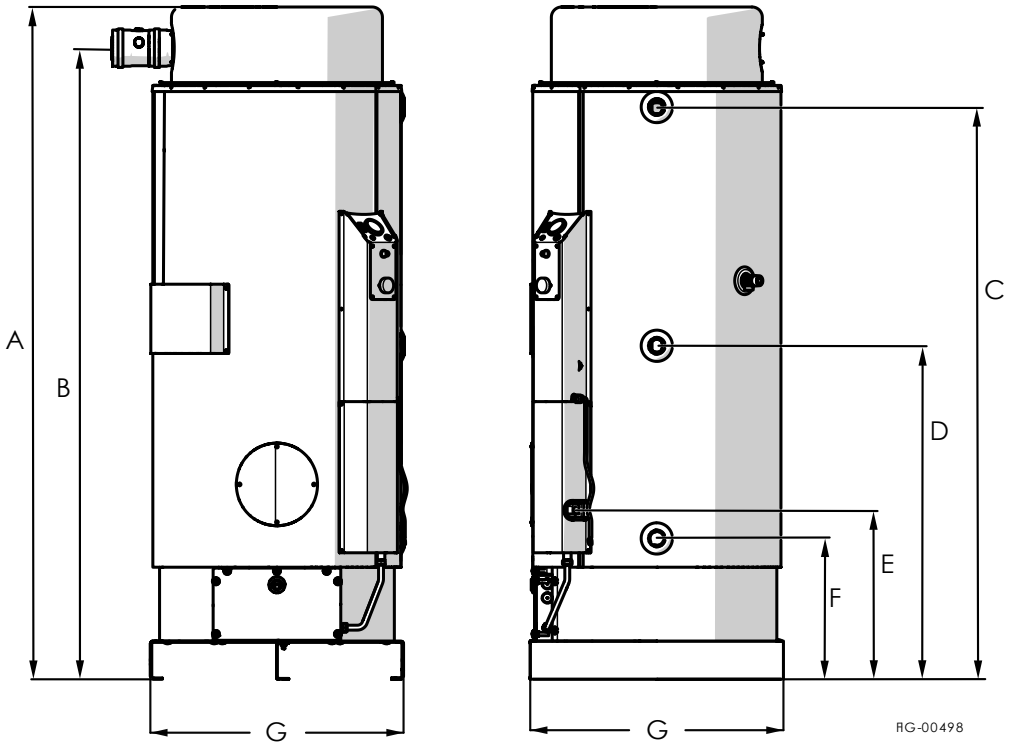
# 6. TECHNICAL DATA

| | | SX160 | SX220 | SX300 | SX400 | SX600 | SX800 |
|---|---|---|---|---|---|---|---|
| Classe efficienza sanitaria - efficiency class | | B | B | B | B | B | B |
| Profilo di carico - load profile | | XL | XXL | XXL | XXL | XXL | XXL |
| Capacità nominale serbatoio - *tank nominal capacity* | l | 160 | 220 | 300 | 400 | 560 | 740 |
| Efficienza – *efficiency* | % | 95 | 95 | 96 | 97 | 95 | 96 |
| Portata termica nominale Q - *nominal calorific flow rate QN* | kW | 13 | 22 | 23 | 23 | 23 | 23 |
| Potenza termica nominale P - *nominal power output PN* | KW | 12 | 20 | 21 | 21 | 21 | 21 |
| Consumo gas - *gas consumption* | $m^3/h$ | 1.4 | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 |
| Temperatura fumi – *flue gas temperature* | °C | 75 | 92 | 70 | 64 | 88 | 69 |
| CO2 (G20) | % | 5.5±1 | 5.5±0.5 | 5.5±0.5 | 5.5±0.5 | 5.5±0.5 | 4.5±1 |
| CO2 (G31) | % | 6±0.5 | 6.5±0.5 | 6±0.5 | 6±0.5 | 6±0.5 | 5±0.5 |
| NOx (G20) | mg/kWh | 55 | 50 | 50 | 30 | 24 | 5 |
| Pressione di esercizio pressostato – *APS operativity pressure* | Pa | ≥140 | ≥140 | ≥140 | ≥140 | ≥140 | ≥140 |
| Apertura pressostato – *APS opening pressure* | Pa | <110 | <110 | <110 | <110 | <110 | <110 |
| Pressione max acqua - *max water pressure* | kPa | 600 | 600 | 600 | 600 | 600 | 600 |
| η combustione - *H combustion* | % | 95 | 95 | 96 | 97 | 95 | 96 |
| η acqua - *H water* | % | 93 | 91 | 90 | 94 | 92 | 93 |
| Grado di protezione – *protection level for electrical appliance* | IP | 20 | 20 | 20 | 20 | 20 | 20 |
| Potenza elettrica nominale - *nominal electric power* | W | 51 | 51 | 51 | 51 | 51 | 51 |
| Caratteristiche elettriche - *Electrical characteristics* | V/Hz | 230~50 | 230~50 | 230~50 | 230~50 | 230~50 | 230~50 |

# 7. DESTINATION COUNTRIES AND GAS CATEGORIES

| Country (EN ISO 3166-1): | Category: | gas / pressure type (EN 437): |
|---|---|---|
| TO THE | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| AT | I2H | G20 - 20 mbar |
| CH | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| CY | I2H | G20 - 20 mbar |
| CZ | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| DK | I2H | G20 - 20 mbar |
| EE | I2H | G20 - 20 mbar |
| ES | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| FI | I2H | G20 - 20 mbar |
| GB | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| GR | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| HU | I2H | G20 - 25 mbar; G31 - 37 mbar |
| IE | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| IT | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| LT | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| LV | I2H | G20 - 20 mbar |
| MK | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| MT | I2H | G20 - 20 mbar |
| NO | I2H | G20 - 20 mbar |
| PT | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| RO | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| SELF | I2H | G20 - 20 mbar |
| YES | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| SK | I2H, II 2H3P | G20 - 20 mbar; G31 - 37 mbar |
| TR | I2H, II 2H3P | G20 - 20 mbar |

# 8. DIMENSIONS AND EQUIPMENT




| | SX160 | SX220 | SX300 | SX400 | SX600 | SX800 |
|---|---|---|---|---|---|---|
| **A HEIGHT APPARATUS** | 2035 | 1563 | 1913 | 2263 | 1928 | 2278 |
| **B IN OUT SMOKE** | 1915 | 1446 | 1796 | 2146 | 1821 | 2171 |
| **C OUTPUT HOT G 1-1 / 4 "** | 1743 | 1278 | 1628 | 1978 | 1639 | 1989 |
| **RECIRCULATION D G 1 "** | 738 | 952 | 952 | 952 | 1021 | 1021 |
| **ENTRY AND GAS G ½ "** | 420 | 481 | 481 | 481 | 481 | 481 |
| **F INLET** | 408 | 404 | 404 | 404 | 404 | 404 |
| **G WIDTH** | 520 | 720 | 720 | 720 | 920 | 920 |

Dimensions in millimeters: mm

# 9. DESCRIPTION FUNCTIONAL AND CONSTRUCTION

The function of this device is to generate hot water through the heat exchange between the combustion products of the burner and the water present in the storage tank.
The combustion takes place in a completely sealed with respect to the device that contains, by withdrawing the air required for combustion from the outside and discharging the products of combustion itself always outside.
The sealed combustion chamber, is placed in the lower part of the appliance.

**BOILER**
E 'it built with a sturdy sheet and ensures a remarkable resistance to pressure. It 'also subjected internally to a cryolite glass treatment. To allow for the inspection of the inner part and the cleaning is provided a Ø120 flange.

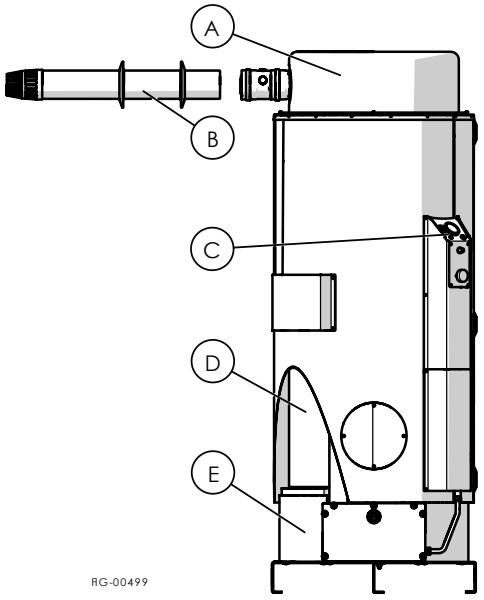
**BURNING ROOM**
E 'at the bottom of the appliance and contains: the burner manifold, injectors. The chamber is sealed off from the environment in which the appliance is installed.

**COVER SMOKE EXTRACTION**
A fan located in the top cap provides both air supply both the evacuation of the combustion products. The cap can be rotated 360 °. In case of abnormal operation of the fan or obstruction of the ducts, a pressure cut off the gas flow to the burner.

**KIT EXHAUST FUMES** (Required to install the kit provided by the manufacturer)
To be selected from those estimated by the installation requirements. It allows the connection of the combustion chamber with the outside, to bring the combustion air to the burner and to allow the discharge of the fumes.

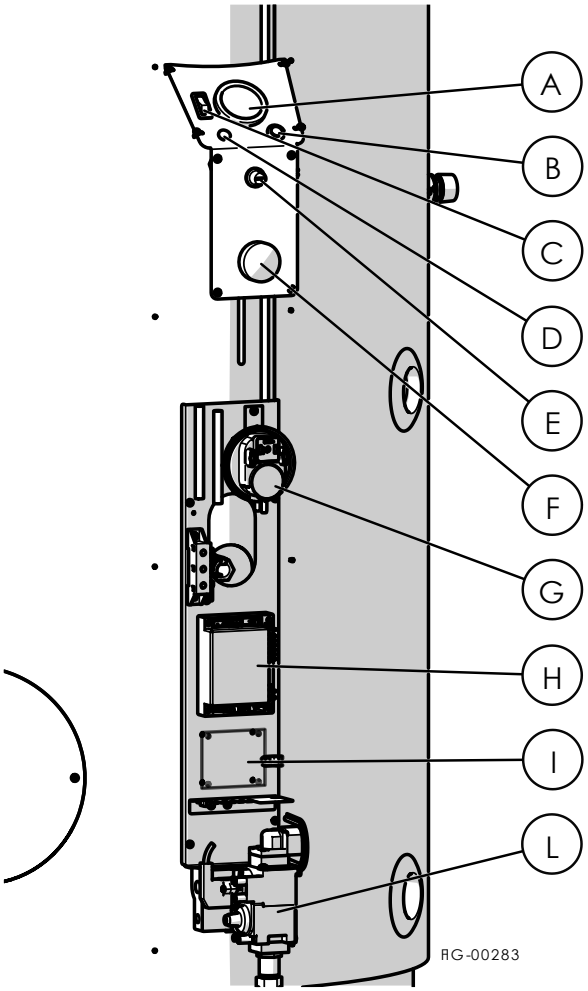
**INSTRUMENT PANEL**
It contains everything you need to control and regulate the normal functioning: regulating thermostat, ignition switch, button unlock bright, bright operation indicator, thermometer.

**MAGNESIUM ANODE**
To protect the device from galvanic currents that can corrode the interior of the device, they are installed two magnesium anodes series, one in the inspection flange and one in the upper part of the appliance.




A. COVER SMOKE
B. KIT EXHAUST FUMES
C. CONTROL PANEL
D. BOILER
E. BURNING ROOM

# 10.COMPONENTS OF THE APPLIANCE




**A. THERMOMETER**
Measure the temperature inside the tank.

**B. RED LIGHT BLOCK**
Report device lock, to unlock, hold down the button for 3 seconds.

**C. SWITCH**
It allows switching on and off.

**D. LIGHT GREEN POWER**
Report proper burner ignition. Comes into operation when the combustion chamber is fed.

**E. SAFETY THERMOSTAT**
When the device temperature rises above the maximum threshold, the safety thermostat comes into operation by blocking the appliance. To unlock it, unscrew the lid and hold the button sub-

**F. THERMOSTAT**
Used to adjust the internal temperature of the tank.

**G. AIR PRESSURE**
It is used to verify and monitor the correct operation of the air blower, placed on top of the appliance.

**H. CONTROL UNIT**
The control unit has the purpose of controlling, handle the electrical devices and appliance gas.

**I. PCB CONNECTIONS**
The connection card is used to centralize the user control devices with the controller interface.

**L. GAS VALVE**
The gas valve allows to manage and control the gas inlet to the combustion chamber

# 11.LOCAL REGULATIONS, AND INSTALLATION OF SAFETY

**LOCAL REGULATIONS**

In the installation the local regulations must be observed regarding:

- ⚠ Fire fighters
- ⚠ Gas Company
- ⚠ power Company
- ⚠ Office hygiene and health

**SAFETY RULES**

- Do not perform any cleaning or maintenance work without turning off the water heater and interrupting power supply.
- E 'absolutely forbidden to operate the water heater with protection of electrical parts or disassembled safety equipment excluded. E 'absolutely forbidden to remove or tamper with safety devices.
- In case of failure and / or malfunction switch off the appliance, close the gas valve and not groped to repair it but contact an authorized service center.
- In case of fire should be used in powder extinguishants: not direct jets of water directly against the heaters as they may cause short circuits.
- Apply tools and / or equipment manuals and / or electrical proper use, they are in good condition and used properly.
- Make sure that ladders and / or any rolling ladders are positioned securely, that are appropriate and that the steps are intact and not slippery, that they are not moved when someone climbs them and ensure someone supervises.

**INSTALLATION INSTRUCTIONS**

- Make sure, for installation and maintenance work at height (generally with higher altitude to two meters), which are used in scaffolding standards and the space below is free during the eventual fall of tools and objects.
- Make sure that, in case of installation and maintenance, the workplace has adequate hygienic conditions with regard to lighting, aeration and solidity.
- Wear during installation and maintenance, clothing and adequate personal protective equipment.
- Do not take any action without a prior assessment of the absence of gas leaks using special detector.
- The installer must be enabled in the installation of heating equipment according to the law n. 46 of 05/05/1990 and after work must issue the CONFORMITY 'DECLARATION to the customer.
- The appliance must be connected to a hot water distribution network compatible with its performance and its power. Make sure the installation site and any systems to which it must connect the device comply with the current regulations.
- Since the C-type unit, this unit can be installed in any type of local, without any limitation on aeration conditions and volume of the room.
- Before each installation, maintenance or repair, remove the power supply. Protecting tubes and external connection cables in such a way as to prevent them from being damaged.
- The device is to be installed on the floor surface, leaving a suitable distance from the side walls to allow the gas and water connections, as well as any maintenance interventions. Furthermore, the appliance must be installed on a solid floor, not subject to vibration, not uneven or non-planar.
- Reseal the openings used to make the readings of the exhaust emission values.
- The operations inside the unit must be performed with caution so as to avoid abrupt contact with sharp parts.
- Do not take any action without a prior assessment of the absence of an open flame or ignition sources.
- If you detect a smell of burning, see the smoke out exit from the apparatus, or is felt strong smell of gas, remove the power supply, close the gas valve, open the windows and notify the authorized service centers nearest

IN ANY SITUATION AND 'WELL ALWAYS REMEMBER THAT COMMON SENSE IS THE BEST SECURITY AGAINST ANY AND / OR INJURY.

# 12.INSTALLATION

**OPERATION CARRIED OUT BY A QUALIFIED**

Warning! The installation of the residential ventilation system must be performed only by qualified personnel in order to avoid damage or injury.

Before installing the appliance, ensure that the nominal supply voltage is 220 / 240V - 50 / 60Hz.

- Make sure that the electrical system is adapted to deliver, in addition to the operating current required by the unit, also the necessary current for powering appliances and equipment already in use.
- Make the electrical connections in accordance with national laws and regulations.
- Upstream of the unit to provide a single-pole switch with a minimum distance of 3.5 mm contacts.

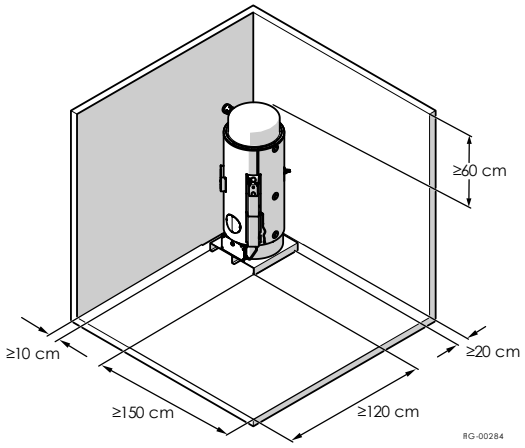
The installation of the device is divided into 6 distinct phases, listed below, to be followed with attention and respecting the order.

1. Positioning device
2. fume extraction hood Installation
3. Installing flue
4. Water connections
5. Connection gas circuit
6. Electrical connection

You should always make the grounding of the unit. Check that the power cord is in perfect condition. Under no circumstances must repair the cable, possibly damaged, with tape or clamps. If the power cord is damaged, it must be replaced by service agent or a similarly qualified person in order to avoid a hazard.
Incorrect installation can cause damage to people and things for which the manufacturer can not be held responsible.

# 13.POSITIONING APPARATUS

The location of the device must be chosen bearing in mind the maximum length allowed for each type of discharge, gas and electrical connection. The device has been designed to have the water connections, electrical and gas to the right of the appliance and the flue above: it is recommended to place the heater in such a way as to facilitate the installation and maintenance operations.
Since the C-type unit, this unit can be installed in any type of local, without any limitation on aeration conditions and volume of the room.
Refer to the clearances required as in the figure below.

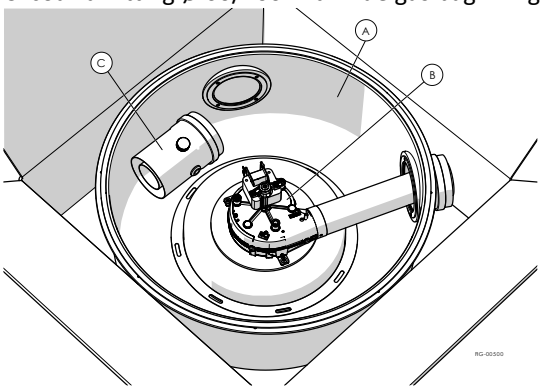



The front and right of the appliance must be easily accessible, in order to facilitate proper installation and periodic maintenance. To prevent possible infiltration of water during a thunderstorm, we recommend a slight downward slope of the drain pipe and air suction.

**IMPORTANT:** FOLLOW THE EXTENT TO INSTALL NATIONAL STANDARDS.

# 14.INSTALLATION COVER SMOKE EXTRACTION

The fume hood box, delivered separately, contains:
A. cap in black painted aluminium
B. Fan Group
C. coaxial fitting Ø 60/100 with Flue gas bag fixing screws




Place the fan assembly on the appliance with the flue gas outlet Ø 60 in the desired direction, and fix with the screws supplied.

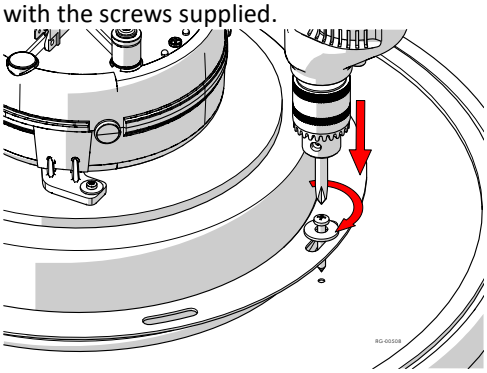


Figure for model SX 160

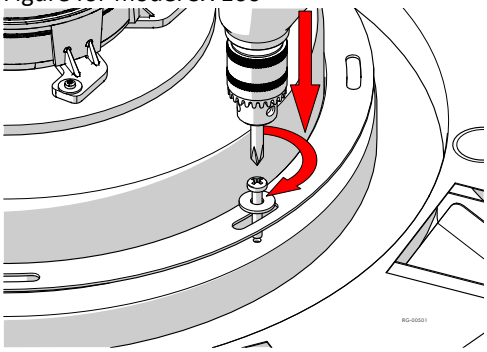
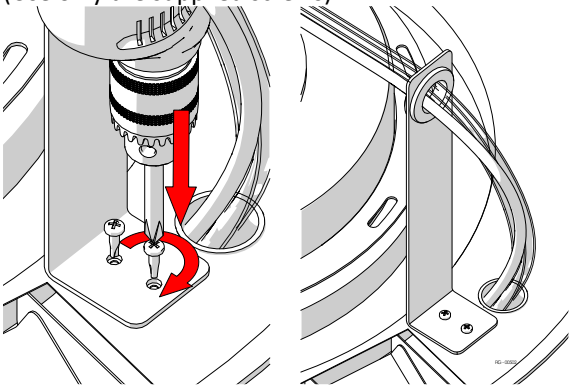
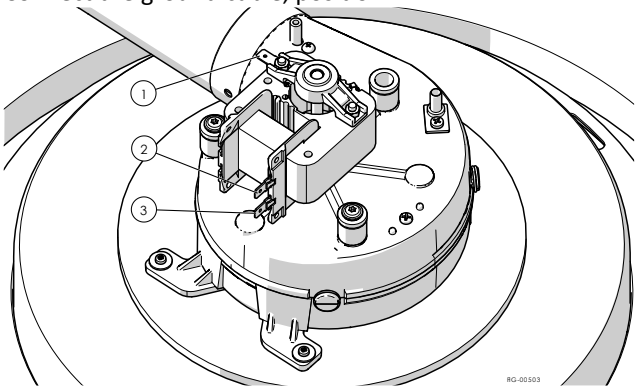


Figure for all other models

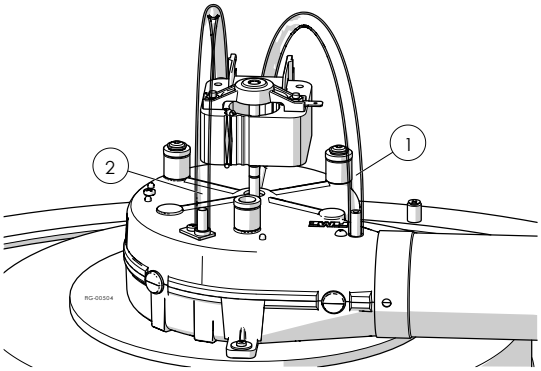
Fix the cable holder bracket in the vertical position (Use only the supplied screws)



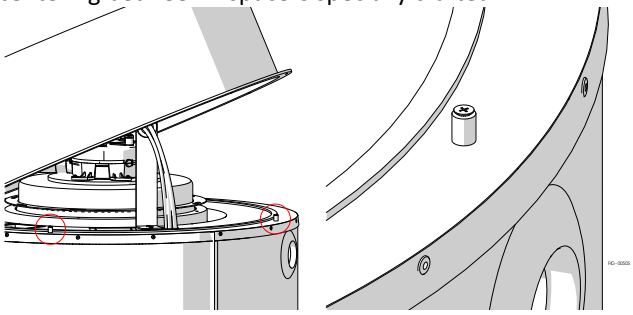
Connect the motor supply cables, position 2 and 3.
Connect the ground cable, position 1.



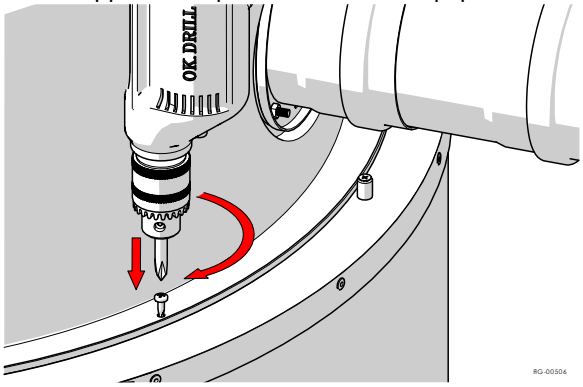

Connect the two rubber hoses to the pressure taps.
IMPORTANT:
pink rubber hose: socket 2 (metal)
neutral rubber hose: socket 1 (plastic)




Place the cap on the device in black aluminium, centering between 4 spacers specially crafted

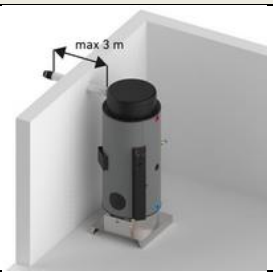
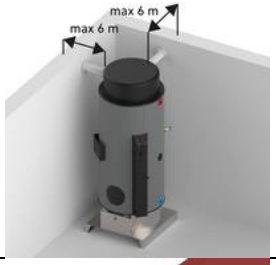
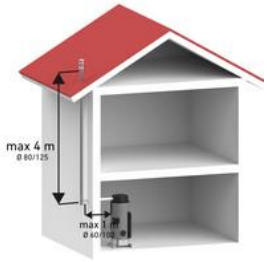


Fix the appliance cap with the screws equipment



# 15.EXHAUST FUMES

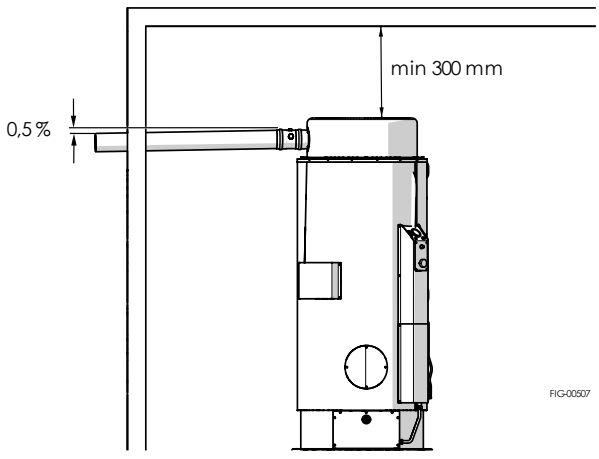
The installation of the exhaust terminals must comply with the regulations in force.
In any case, any provisions foreseen by municipal, provincial or sectorial regulations must be respected. The flue gases of several boilers must not be conveyed inside the same flue gas exhaust pipe: each boiler must have its own independent exhaust pipe.
The boiler is supplied as standard without exhaust kit. The following table shows the kits available for this appliance. Use only the original kits (to be purchased separately depending on the type of exhaust you want to make) supplied by the manufacturer.

| SMOKE EXHAUST KIT | COMPOSITION | LIMITS | APPLICATION |
|---|---|---|---|
| **AKIT21**<br>*Horizontal coaxial drain Ø60 / 100*<br>*Material: White aluminum* |  | **C1**<br>Min 1m<br>Max 3m |  |
| **AKIT22**<br>*Split horizontal exhaust Ø80 / 80*<br>*Material: White aluminum* |  | **C4, C5, C8**<br>Min 1m + 1m<br>Max 6m + 6m |  |
| AKIT23<br>*Vertical coaxial discharge Ø60 / 100*<br>*Material: White aluminum* |  | **C3**<br>Max 1m |  |
| **AKIT24**<br>*Vertical coaxial exhaust Ø80 / 125*<br>*Material: stainless steel* |  | **C3**<br>Min 1m vertical<br>Max 4m vertical<br>Min 0m horizontal<br>Max 1m horizontal |  |
| **AKIT25**<br>*Horizontal single wall drain Ø80*<br>*Material: stainless steel* |  | **B5**<br>Min 1m horizontal<br>Max 6m horizontal |  |
| **AKIT26**<br>*Vertical double wall drain Ø80 / 130*<br>*Material: stainless steel (inside))*<br>*Black painted aluminum (outside)*<br>*Insulation: rock wool* |  | **B5**<br>Min 1m horizontal<br>Max 6m horizontal<br>Min 1m vertical<br>(including terminal)<br>Max 5m vertical<br>(including terminal) |  |

To increase the drain length it is necessary to purchase the appropriate extensions proposed in the following table. The maximum supported extension is shown in the previous table. Each curve is equivalent to 1 meter of the total length. The choice of the type of drain must take into account local and national regulations.

| EXHAUST FUMES KIT | DESCRIPTION | CODE |
|---|---|---|
| AKIT21<br>*Coaxial horizontal drain Ø60 / 100* | Coaxial extension Ø60 / 100 L = 500 | AIPC05 |
| | Coaxial extension Ø60 / 100 L = 1000 | AIPC10 |
| | Coaxial bend Ø60 / 100 at 45 ° | AICC45 |
| | Coaxial bend Ø60 / 100 at 90 ° | AICC90 |
| AKIT22<br>*Split horizontal drain Ø80 / 80* | Extension Ø80 L = 250 | AIPR802 |
| | Extension Ø80 L = 500 | AIPR805 |
| | Extension Ø80 L = 1000 | AIPR80 |
| | Curve Ø80 at 45 ° | AICV804 |
| | 90 ° bend Ø80 | AICV809 |
| AKIT24<br>*Vertical coaxial drain Ø80 / 125* | Coaxial bend Ø80 / 125 45 ° | AKIT24-01 |
| | Coaxial extension Ø80 / 125 L = 500 | AKIT24-02 |
| | Coaxial extension Ø80 / 125 L = 1000 | AKIT24-03 |
| | Adjustable wall collar Ø125 Inox | AKIT24-04 |
| | Coaxial extension Ø60 / 100 L = 1000 | AIPC10 |
| AKIT25<br>*Single wall horizontal drain Ø80* | Extension Ø80 L = 500 | AKIT25-01 |
| | Extension Ø80 L = 1000 | AKIT25-02 |
| | Curve Ø80 at 45 ° | AKIT25-03 |
| | 90 ° bend Ø80 | AKIT25-04 |
| AKIT26<br>*Double wall vertical drain Ø80 / 130* | Horizontal extension Ø80 L = 500 | AKIT25-01 |
| | Horizontal extension Ø80 L = 1000 | AKIT25-02 |
| | Double wall vertical extension Ø80 / 130 L = 500 | AKIT26-01 |
| | Double wall vertical extension Ø80 / 130 L = 1000 | AKIT26-02 |
| | Double wall bend Ø80 / 130 45 ° | AKIT26-03 |
| | Wall support | AKIT26-04 |

Make sure you have always guaranteed the mechanical stability of the duct.
The hole, for the passage through the wall of the exhaust and air intake pipe, must not be concreted: the flue gas exhaust must be free to slide through the hole so that it can be extracted later.
For this purpose, the wall cover rosettes supplied with the flue gas exhaust kit can be used to cover the empty space of the hole.




**IMPORTANT:**

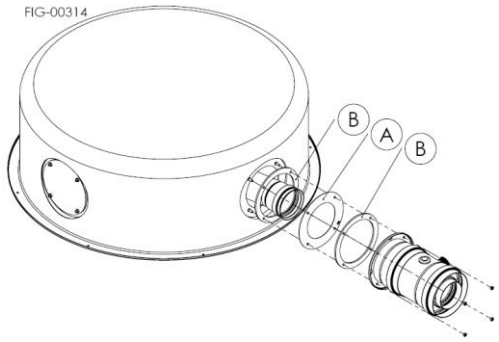
LEAVE A SPACE NOT LESS THAN 30 CM ABOVE THE APPLIANCE TO ALLOW ANY MAINTENANCE INTERVENTION ON THE UPPER PART.

TO AVOID POSSIBLE WATER INFILTRATION DURING THORMS, WE RECOMMEND A SLIGHT SLOPE DOWNWARDS OF THE AIR INTAKE AND EXHAUST PIPE.

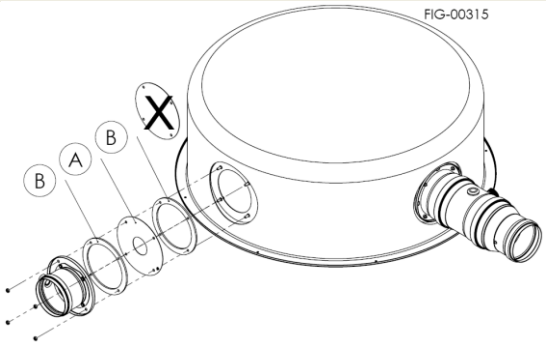
**DIAPHRAGM**

For correct operation of the appliance it is mandatory to install the diaphragm A contained in the exhaust kit together with the additional gasket B on the intake duct.

AKIT21 and AKIT24 diaphragm mounting



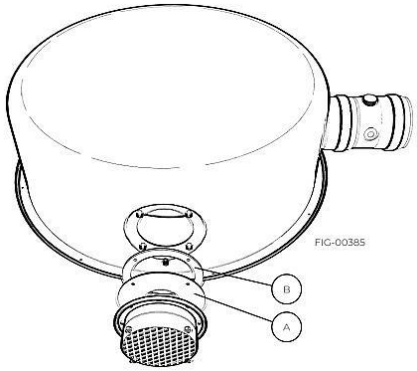

AKIT22 diaphragm assembly




According to the model of the appliance and the length of the suction pipe, install the diaphragm shown in the table.

| | AKIT21 | | | AKIT22 | | | | | | AKIT24 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *1 m* | *2 m* | *3 m* | *1 m* | *2 m* | *3 m* | *4 m* | *5 m* | *6 m* | *1 m V* | *1 m H + 1 m V* | *1 m H + 2 m V* | *1 m H + 3 m V* | *1 m H + 4 m V* |
| SX160 | Ø84 | Ø86 | - | Ø40 | Ø42 | Ø44 | Ø44 | Ø44 | no | Ø82 | Ø82 | Ø82 | Ø82 | Ø84 |
| SX220 | Ø82 | Ø86 | - | Ø42 | Ø46 | Ø46 | Ø48 | Ø50 | no | Ø82 | Ø84 | Ø84 | Ø90 | Ø92 |
| SX300 | Ø82 | Ø86 | - | Ø45 | Ø45 | Ø45 | Ø45 | Ø45 | no | Ø82 | Ø84 | Ø83 | Ø84 | Ø84 |
| SX400 | - | - | - | Ø48 | Ø48 | Ø52 | Ø56 | Ø56 | no | no | no | no | no | no |
| SX600 | Ø82 | Ø86 | - | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | no | Ø78 | Ø78 | Ø80 | Ø80 | Ø80 |
| SX800 | Ø82 | Ø82 | - | Ø38 | Ø38 | Ø40 | Ø40 | Ø50 | Ø58 | Ø78 | Ø80 | Ø80 | Ø82 | Ø82 |

AKIT25, AKIT26 diaphragm mounting

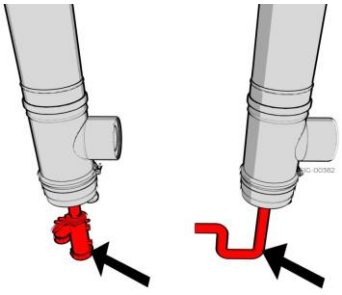



| | **AKIT25** | | | | | | **AKIT26** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *1 m* | *2 m* | *3 m* | *4 m* | *5 m* | *6 m* | *+ 1.5m H + 5m V* | *+ 3m H + 5m V* | *+ 6m H + 1m V* | *+ 6m H + 2m V* | *+ 6m H + 3m V* | *+ 6m H + 4m V* | *+ 6m H + 5m V* |
| SX160 | Ø44 | Ø44 | Ø46 | Ø44 | Ø44 | Ø48 | Ø48 | Ø48 | Ø48 | Ø48 | Ø48 | Ø48 | Ø48 |
| SX220 | Ø46 | Ø46 | Ø48 | Ø48 | Ø48 | Ø48 | Ø48 | Ø48 | Ø52 | Ø52 | Ø52 | Ø52 | Ø52 |
| SX300 | Ø48 | Ø48 | Ø50 | Ø50 | Ø50 | Ø50 | Ø50 | Ø52 | Ø52 | Ø52 | Ø52 | Ø52 | Ø52 |
| SX400 | Ø50 | Ø50 | Ø50 | Ø52 | Ø52 | Ø54 | Ø54 | Ø54 | Ø54 | Ø54 | Ø54 | Ø54 | Ø54 |
| SX600 | Ø42 | Ø42 | Ø42 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 |
| SX800 | Ø38 | Ø38 | Ø40 | Ø42 | Ø42 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 | Ø44 |

**IMPORTANT:**

DURING THE INSTALLATION OF THE KIT AKIT24, AKIT25, AKIT26, THE SPECIAL CONDENSATE DRAIN CONNECTION MUST BE CONNECTED TO A CLEAR WATER DRAIN.

At the end of the operation, carefully check all the seals of the ducts for the evacuation of the combustion products and the air intake.

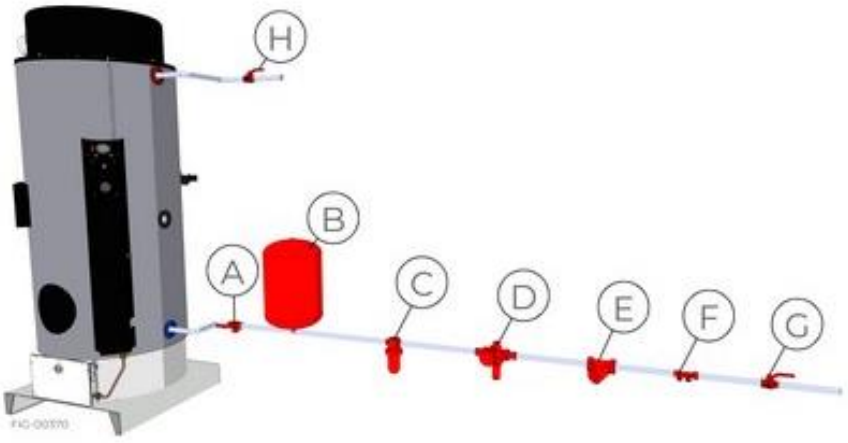


# 16.HYDRAULIC CONNECTIONS

The connection to the water mains must be made with a G 3/4 "pipe for the SX160 model or G 1-1 / 4" for the rest of the models. The cold water inlet is identified by the blue ring, while the hot water outlet is identified by the red ring).

**HYDRAULIC COMPONENTS TO BE MANDATORY INSTALLED (NOT INCLUDED)**

A. T-shaped drain cock
B. Expansion vessel with a capacity of not less than 5% of the contents of the appliance.
C. Chemical treatment: <25 ° F polyphosphate dispenser or softener, ≥25 ° F softener.
D. Pressure reducer (for inlet water with pressure ≥ 600 kPa).
E. Filter to eliminate water impurities.
F. Check valve.
G. Shut-off valve.
H. Shut-off valve.




Respect the following water parameters, as required by Legislative Decree. 31 of February 2, 2001 (implementation of Directive 98/83 / EC relating to the quality of water intended for human consumption):

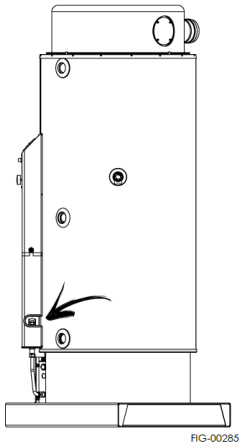
1. Total hardness: between 10 ° F and 25 ° F.
2. PH: between 6 and 8
3. Chlorides: max 200 mg / l
4. Conductivity: max. 2500 µS / cm

**SAFETY VALVE**

It drains the water from the tank in the presence of an internal pressure higher than 6.5 ± 0.5bar. The valve is sealed by the manufacturer and tampering is prohibited: in case of tampering, the appliance warranty will not be recognized. If the valve starts operating releasing water, it will be necessary to reduce the water inlet pressure in the appliance

## 17.TRUNK GAS

Connect the gas supply line of the thread, present on the appliance, by means of a removable rigid connector: the pipe must exit through the slot of the appliance. The attack gas connection is G 1/2 ": it is recommended to mount along the pipe, in the vicinity of the generator and in an easily accessible location, a faucet interception manual gas. See in the figure below, the gas attack and the slot of the tube passage.




Check the tightness of the gas pipe and make sure that it has been performed in accordance with regulations on gas system (seeLOCAL REGULATIONS, AND INSTALLATION OF SAFETY).

## 18.ELECTRICAL CONNECTIONS

The machine is sold without mains plug: CPU must be mounted to the first installation.

Connect electrically to a power network at 230V-50Hz, single phase, and to an effective grounding. E 'need to perform a polarized connection. The appliance cable is composed of three distinct colors cables (refer to the table below to identify the correct polarization).

Connect the power cord of the appliance, taking care to comply with the electrical standards of the country in which the appliance is installed. If the power cord is damaged, it must be replaced by a technical service center authorized by the manufacturer, or by a similarly qualified person in order to avoid a hazard. For the eventual stopping of the appliance, in the feeding of the same network is necessary to provide a disconnect device (not supplied) with an opening distance of the contacts that allows complete disconnection in the conditions dictated by the overvoltage category III

LINE AND NEUTRAL PLUG TO BE THE SAME AS LINE AND NEUTRAL THE ELECTRICAL OUTLET.

| Land | Neutral | Line |
|---|---|---|
|  |  |  |
| green yellow | blue | Brown |

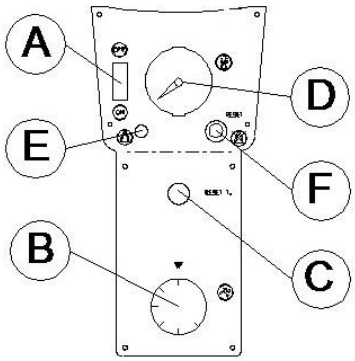
Assemble the apparatus in the vicinity of an isolating switch for the eventual general stopping of the appliance. This disconnect device must be incorporated in the supply system in accordance with installation rules. Connect the power cord of the appliance, taking care to comply with the electrical standards of the country in which the appliance is installed. In case of replacement of the electric power cable, use only a cable with the same characteristics (cable H05 VV-F - 3x0.75).

Warning: The device has no protection against the effects caused by lightning. Before accessing any electrical part of the appliance, remove the power supply using the bipolar switch.

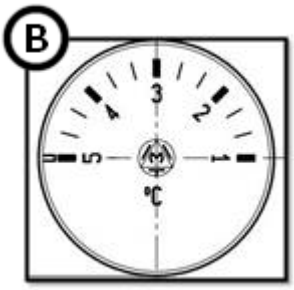
INSTALLATION AND 'FINISHED, THE UNIT AND' READY TO BE LIT AND REGULATED.

# 19.IGNITION AND TEMPERATURE CONTROL

**POWER AND CONTROL THERMOSTAT**




A. switch
B. control thermostat
C. thermostat safety limiter (manual reset)
D. thermometer
E. bright green light operation
F. reset button




1. 44°
2. 50°
3. 58°
4. 62°
5. 68°

1. Press the switch in position "I"
2. Turn the thermostat setting index B on the desired water temperature value
3. Check that the red light button F lock is turned off. If it is on, this means that the control apparatus is located in a state of "block". In this case push the same button to unlock the control apparatus. The button's light goes out
4. After the ignition of the burner, indicated by the green light And, it starts the step of heating water. The burner will operate until the water temperature set on the thermostat.

From that moment on the generator power cycle. The depression exerted by the operation of the fume extraction fan (under proper conditions the state of the combustion circuit) ago closes the differential pressure switch contacts, and the control unit starts the pre ventilation in the combustion chamber (the pre ventilation duration: 30 sec.). At the end of the pre-ventilation phase they are controlled at the same time the opening of the gas valve and the action of the electrode for the spark ignition of the burner. When the power of the burner the flame must be detected from the special ionization probe within the safety time (10 sec), otherwise the control apparatus goes into a locked state. This is reported dell ' switching on of the red light of the button. This can easily happen in a new plant, where it can still be present air in the gas pipe. In this case, wait about a minute, unlock the device by pressing the illuminated button and start again a new cycle. Repeat until the residual air has been purged and the ignition is regular.

**SHUTDOWN**

To turn off the generator for a short period to rotate the control thermostat knob on the minimum value and press the switch to position "0".

To turn off the generator for a long time:

- turn the thermostat knob on the minimum value
- press the switch to position "0"
- disconnect the electrical supply to the appliance at the main switch
- close the gas shut-off valve.
- If it is expected to leave the unit unused for a long period in an environment not heated and with the possibility of frost, it is advisable to empty it completely.

**PREVENTION AGAINST FREEZING**

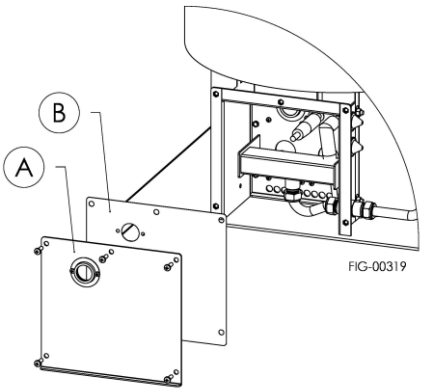
If the machine is switched off and exposed to very low temperatures, it will be necessary to empty the water tank to prevent freezing risks

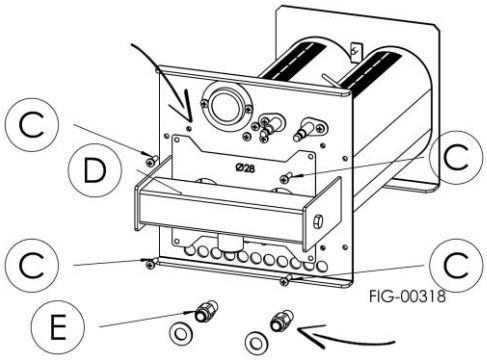
# 20.GAS CHANGE

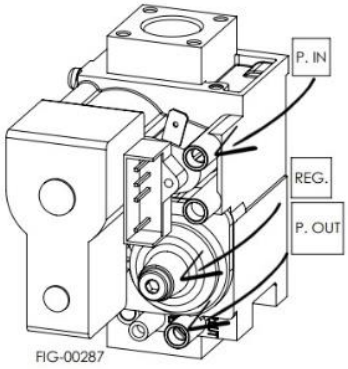
To change the gas, use only the special gas conversion kit prepared by the manufacturer, indicated in the table below, carefully following the following instructions contained in the kit.

| | Device | SX160 | SX220 | SX300 | SX400 | SX600 | SX800 |
|---|---|---|---|---|---|---|---|
| G20 | Kit code | AKMETSX160 | AKMETSX220 | AKMETSX300 | AKMETSX400 | AKMETSX600 | AKMETSX800 |
| | P. entrance | 20 mbar | 20 mbar | 20 mbar | 20 mbar | 20 mbar | 20 mbar |
| | P. output | 12.2 mbar | 12.5 mbar | 12.5 mbar | 12 mbar | 13 mbar | 12.5 mbar |
| G31 | Kit code | AKPROSX160 | AKPROSX220 | AKPROSX300 | AKPROSX400 | AKPROSX600 | AKPROSX800 |
| | P. entry | 37 mbar | 37 mbar | 37 mbar | 37 mbar | 37 mbar | 37 mbar |
| | P. output | 27.5 mbar | 25 mbar | 27.5 mbar | 27.5 mbar | 27.5 mbar | 27.5 mbar |

## Model SX160




1) Switch off the appliance, close the gas interception valve and disconnect the power supply
2) Remove the burner door (A) and the insulating material (B)

## TRANSFORMATION OF GAS SUPPLY TO PROPANE G31

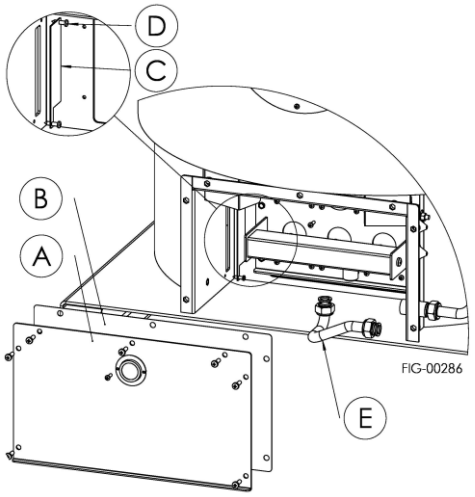
3) Unscrew the 4 screws (C), position the mask (D) in front of the burners and tighten the screws (C)

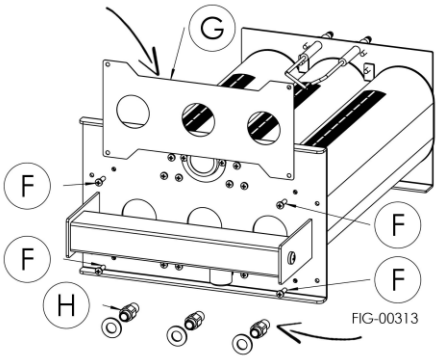
## TRANSFORMATION OF GAS SUPPLY TO METHANE G20

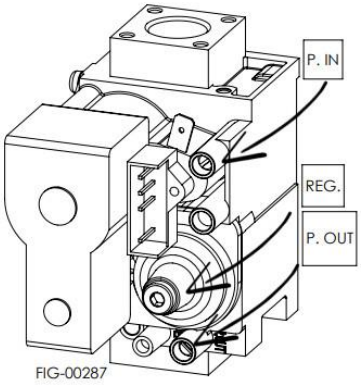
3) Unscrew the 4 screws (C), remove the mask (D) in front of the burners and tighten the screws (C)

4) Replace the injectors (E). Be careful not to lose the sealing washers
5) Start up the appliance and check the tightness of the gas circuit with a special spray
6) Put the burner door (A) and the insulating material (B) back in their original positions and tighten with the fixing screws.
7) Adjust the burner pressure, according to the indicated value, using the REG screw on the gas valve. The P.OUT pressure point can be used to check the value
8) Attach the label contained in the kit to indicate the new type of gas supply

**Models SX220 SX300 SX400 SX600 SX800**




1) Switch off the appliance, close the gas interception valve and disconnect the power supply
2) Remove the burner door (A) and the insulating material (B)
3) Unscrew the gas pipe (E)

## TRANSFORMATION OF GAS SUPPLY TO PROPANE G31

4) SX300 / SX400 / SX600 / SX800 models only: unscrew the screws (D) and replace (or remove for SX800) the two slot closing plates (C) with those present in the gas conversion kit. The opening must remain in the lower part
5) Unscrew the 4 screws (F), position the mask (G) in front of the burners and tighten the screws (F)

## TRANSFORMATION OF GAS SUPPLY TO METHANE G20

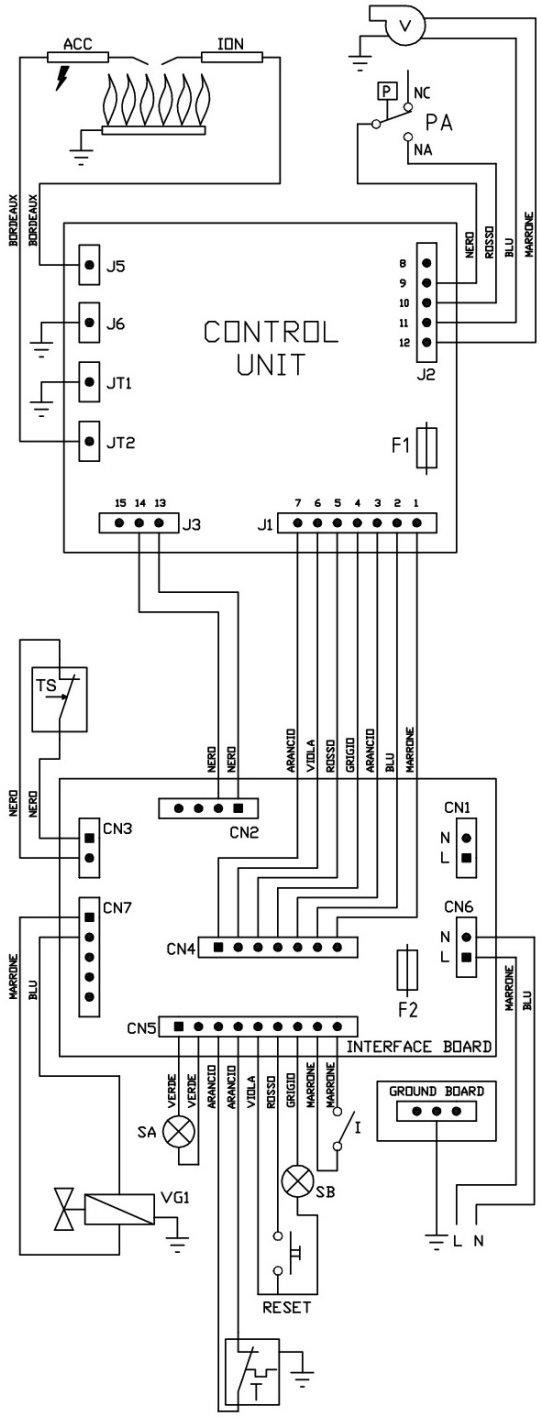
4) SX300 / SX400 / SX600 / SX800 models only: unscrew the screws (D) and replace (or insert for SX800) the two slot closing plates (C) with those present in the gas conversion kit. The opening must remain in the lower part
5) Unscrew the 4 screws (F), remove the mask (G) in front of the burners and retighten the screws (F)

6) Replace the injectors (H). Be careful not to lose the sealing washers
7) Connect the gas pipe (E)
8) Start up the appliance and check the tightness of the gas circuit with a special spray
9) Adjust the burner pressure, according to the indicated value, using the REG screw on the gas valve. The P.OUT pressure point can be used to check the value
10) Put the burner door (A) and the insulating material (B) back in their original positions and tighten with the fixing screws.
11) Attach the label contained in the kit to indicate the new type of gas supply.

**IMPORTANT:**

CHECK THE SEALING OF THE GAS PIPES, SCREWS AND JOINTS BEFORE TURNING THE APPLIANCE ON. THE WORN GASKETS MUST NOT BE REUSED, IT IS COMPULSORY TO REPLACE THEM WITH NEW PARTS SUPPLIED WITH THE CONVERSION KIT.

# 21.WIRING




**THE:** Line

**N:** Neutral

**THE:** Switch

**SB:** red lock lamp

**RESET:** reset button

**T:** Control thermostat

**SA:** Power indicator

**VG1:** valve GAS

**TS:** Water Safety thermostat

**ACC:** Ignition electrode

**ION:** Detection electrode

**V:** Frequency Ventilator

**AP:** Air pressure

**F1:** Fuse 4 A fast type 250 V

**F2:** Fuse 2 A quick type 250 V

## 22.PERIODIC MAINTENANCE

To ensure the safety of the appliance and extend its life, it is mandatory to have it checked at least once a year by an authorized service center, which will carry out the following operations:

- replacement of the magnesium anode
- internal inspection of the boiler and possible cleaning of the calcium deposited on the bottom
- check the tightness of the gas pipe
- burner maintenance

## 23. PREVENTION AGAINST FROST

If the appliance is switched off and exposed to very low temperatures, it will be necessary to empty the water tank to prevent the risk of freezing

## 24.POSSIBLE OPERATING DEFECTS

Any component replacement operations must be carried out by personnel authorized by the manufacturer.

The control equipment locks out without commanding the ignition.

- the flame detection circuit of the control equipment is faulty and the control self-test does not allow the cycle to continue
- the flame detection electrode has a ground dispersion

At the end of the pre-purge phase, the ignition electrode does not spark and the control equipment locks out.

- the ignition transformer is faulty
- the connection of the ignition electrode to the terminal board of the equipment is interrupted

At the end of the pre-purge phase the ignition electrode gives off a spark, but the flame does not form and the appliance locks up.

- there is no gas supply or there is air inside the pipe
- the gas valve does not open because the coils are faulty or their electrical connection is interrupted

At the end of the pre-purge phase, the ignition electrode gives off a spark, the flame forms, but the appliance locks up.

- the flame does not stabilize properly due to lack of gas pressure
- the detection electrode is not correctly positioned and is not in contact with the flame
- the electrical connection of the detection electrode is interrupted

The equipment locks up during normal operation.

- the gas supply was interrupted, even if momentarily: the appliance, not detecting the presence of a flame, went into lockout
- one of the cases of the previous point has occurred during an intermittent operating cycle.

The generator runs for short intermittent periods, even if the thermostat is working properly and is in the heat demand position.

- the regulation thermostat is faulty and does not correctly detect the water temperature
- the pressure switch stops the burner because the fan flow rate is not correct, due to an obstruction of the ducts or an excessive length of the same.

The control equipment is not blocked but the cycle remains in anticipation.

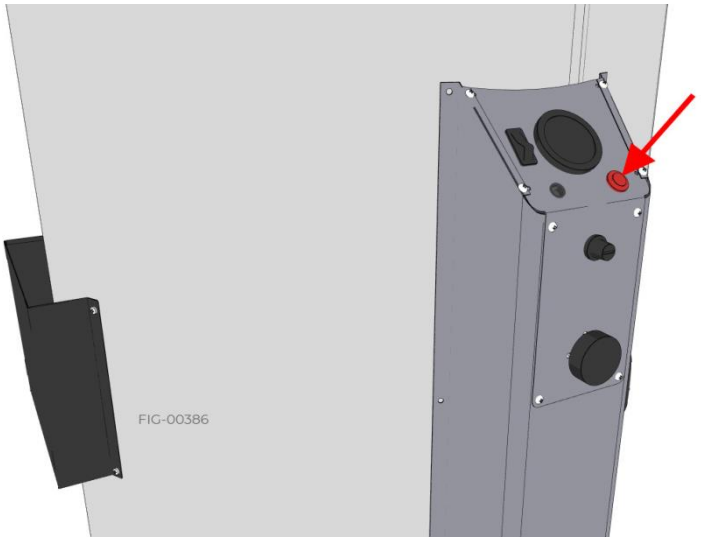
- the differential pressure switch does not allow the cycle to continue because the smoke evacuation ducts or the air intake are blocked
- the pressure switch does not allow the cycle to continue because the fan does not work and does not exert sufficient pressure
- the differential pressure switch does not give consent because it is faulty or its electrical connection is interrupted
- the differential pressure switch does not give consent because the pressure intake tube is clogged or the silicone tube is detached or broken.

The control equipment is not blocked but the cycle does not start.

- during the initial check by the equipment, the contacts of the pressure switch were found in the closed position (because they are stuck or due to an incorrect calibration of the pressure switch itself) and consequently no consent is given to continue the cycle
- check if the printed circuit board fuse has blown

## 25.DIAGNOSTIC TOOL

The red light in the reset button is able to indicate the type of error. The light switches on intermittently according to the type of burner ignition impediment, with a series of pulses and a pause of 2s between one series and the next.




| ERROR DIAGNOSTIC TABLE | |
|---|---|
| **Type of signal** | **Mistake** |
| 0 ON | There are no errors |
| 2 ON •• | The ignition cycle does not occur due to failure to close the pressure switch |
| 3 ON ••• | The ignition cycle does not occur due to a glued pressure switch (closed without fan) |
| Steady on | Water heater blocked due to burner ignition failure |

To solve problems related to intermittent signals, check the fan and pressure switch. To unblock the appliance from the fixed light, check the gas and / or burner circuit and press the reset button for 2 seconds to unlock the appliance and repeat the ignition cycle.

## 26.VALIDATION OF THE WARRANTY

The guarantee starts from the date of purchase, proven by a document valid for tax purposes (receipt or tax receipt), considered indispensable in order to exercise the right to the guarantee.

For any further details regarding the terms of the guarantee, see the guarantee certificate supplied with the appliance. The warranty certificate must be kept together with the purchase document (receipt or receipt) and must be shown to the authorized service center personnel in the event of a warranty claim. Ownership of the device alone does not entitle the holder to warranty.

**IMPORTANT:** It is absolutely forbidden to tamper with any device, calibrated and sealed in the factory by the manufacturer.

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