

INSTALLATION, USE AND MAINTENANCE MANUAL

WALL-MOUNTED GAS
POWERED CONDENSING
WATER HEATER

AGUADENS

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1 - GENERAL SAFETY RECOMMENDATIONS

If you smell gas

1. - Close the gas cock.
2. - Ventilate the room.
3. - Do not switch on any electric device, telephone included.
4. - From another room, call a professionally qualified technician immediately or the gas supply company. Call the Fire Service if the former are not available.

If you can smell combustion products

1. - Switch the appliance off.
2. - Ventilate the room.
3. - Call a professionally qualified technician.

Explosive or highly flammable products

Do not store or use explosive or highly flammable materials such as paper, solvents, paints, etc...in the same room where the appliance is installed.

Installation, modifications

☞ The gas appliance must be installed, calibrated or modified by professionally qualified staff, in compliance with National and local Standards, as well as the instruction in this manual.

☞ Incorrect installation or poor maintenance can cause injury/damage to persons, animals or objects, for which the manufacturer cannot be deemed liable.

☞ The appliance exhaust must be connected to a burned gas evacuation pipe. Failure to comply with this regulation leads to serious risks for the safety of persons and animals.

☞ A domestic hot water temperature level exceeding 51°C can cause permanent injury/damage to persons, animals and objects. Children, the elderly and disabled must be protected against the potential risks of scalding, by introducing devices that limit the temperature of use of domestic hot water to utilities.

☞ The parts conducting the fumes must not be modified.

☞ Do not obstruct the ends of the intake/exhaust pipes.

☞ Do not leave parts of the packaging and any replaced parts within the reach of children.

☞ Seal the adjustment devices after every calibration.

☞ In agreement with the provisions for use, the user must keep the installation in good working order and guarantee reliable and safe operation of the appliance.

☞ We also highlight the convenience of an annual scheduled maintenance contract with a professionally qualified technician.

☞ The user must have maintenance performed on the appliance by a professionally qualified technician in agreement with national and local Standards and in compliance with that stated in this manual.

☞ Before performing any cleaning or maintenance operation, disconnect the appliance from the mains power supply and/or by acting on the cut-off devices.

☞ After having performed any cleaning or maintenance operation, make sure that all internal parts of the appliance are dry before re-connecting the electric power supply.

☞ This appliance is not intended for use by persons (including children) with reduced physical and sensory conditions or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

☞ This manual is an integral and essential part of the product and must be kept carefully by the user, for possible future consultation. If the appliance must be transferred or if you should move and leave the unit to another user, always ensure that this manual remains with the new user and/or installer.

☞ Any optional or kits added successfully must be original Cosmogas products.

☞ This appliance must be intended only for the use for which it has been expressly declared: production of domestic hot water for civilian use.

☞ Any contractual and extra contractual liability of the manufacturer is excluded for damage caused by installation errors or errors in use and however due to failure to comply with the instructions given by the manufacturer or by failure to comply with applicable national and/or local laws.

☞ For safety reasons and respect for the environment, the packaging elements must be disposed of in the relevant separate waste collection centres.

In case of breakdown

In the case of appliance breakdown and/or malfunctioning, deactivate it and do not attempt any repairs. Contact a professionally qualified technician only. If components must be replaced for repair to be successful, only use original spare parts. Failure to comply with the above can jeopardise the safety of the appliance.

Professionally qualified technician.

Professionally qualified technician means, a person with specific technical skill in the sector regarding heating plants and the production of hot water for sanitary and domestic uses, for civilian use, electric plants for the use of combustible gas. This staff must be authorised as envisioned by the law.

Technical drawings

All the drawings in this manual, relating to electrical, hydraulic or gas installation plants, must be deemed purely indicative. All of the auxiliary safety elements, such as the diameters of the electric, hydraulic and gas pipes, must always be checked by a professionally qualified technician to verify compliance with applicable Standards and Laws.

1.1 - National installation laws and regulations

- M.D. n°37 dated 22/01/2008 (former Law n°46 dated 05/03/90)
- Law n°10 dated 09/01/91

- Presidential Decree n°412 dated 26/08/93
- Presidential Decree n°551 dated 21/12/99
- Legislative Decree n° 192 dated 19/08/05
- Legislative Decree n° 311 dated 29.12.06

- UNI 7129 Standard
- UNI 7131 Standard
- UNI 11071 Standard
- IEC 64-8 Standard

2 - GENERAL INFORMATION

2.1 - Presentation

Congratulations! You have purchased one of the best products on the market. Each individual part is proudly designed, realised, tested and assembled within the COSMOGAS establishment, thus guaranteeing the best quality control. This product has been developed thanks to the constant research by COSMOGAS, considered the “top” regarding respect for the environment, as it lies within class 5 (the least polluting) envisioned by the EN 297 (and EN 483) Technical Standard and has high yield. Great importance has also been given to the end of the appliance’s life. All of its components can be easily separated into homogeneous elements and completely re-cycled.

2.2 - Overview of the models

AGUADENS XX

16	= Water heater with maximum heat input of 25.5 kW
22	= Water heater with maximum heat input of 34.8 kW
27	= Water heater with maximum heat input of 43.0 kW
37	= Water heater with maximum heat input of 60.0 kW
	Condensing, indoor, pre-mixed, ecological gas water heater.

2.3 - Manufacturer

COSMOGAS srl
Via L. da Vinci 16
47014 - Meldola (FC) Italia
Tel. 0543 498383
Fax. 0543 498393
www.cosmogas.com
info@cosmogas.com

2.4 - Key for the symbols used



ATTENTION !!!

Electric shock hazard. Failure to comply with these recommendations can jeopardise the good working order of the appliance or cause serious damage to persons, animals or objects.



ATTENTION !!!

General hazard. Failure to comply with these recommendations can jeopardise the good working order of the appliance or cause serious damage to persons, animals or objects.

☞ Important indication symbol.

2.5 - Maintenance

It is recommended to perform regular yearly maintenance of the appliance for the following reasons:

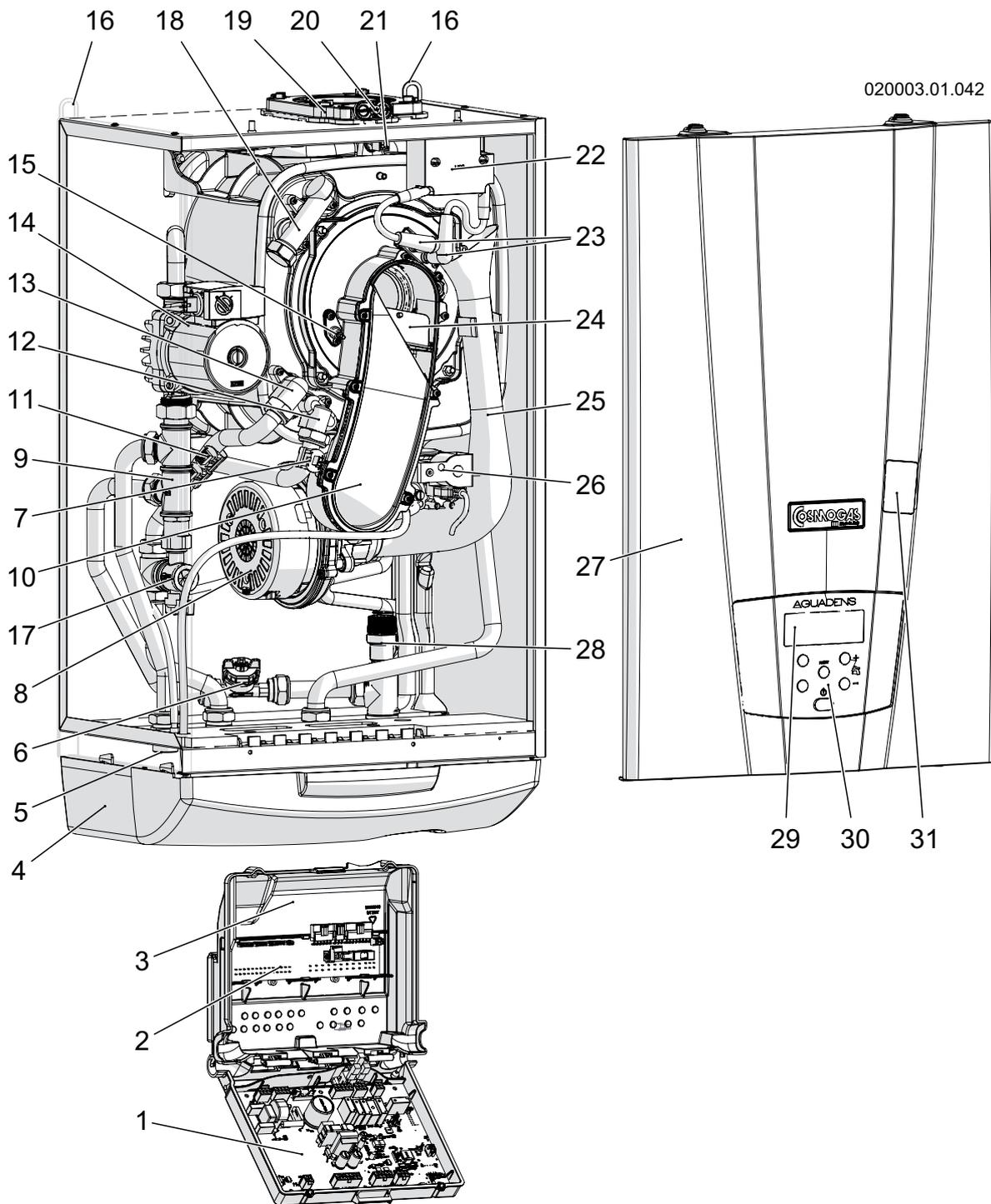
- to maintain a high yield and manage the domestic hot water plant economically (with low fuel consumption);
- to achieve a high level of safety;
- to maintain the level of environmental compatibility of the combustion high;

Offer your customer a scheduled maintenance contract.

2.6 - Warranty

see chapter 13.

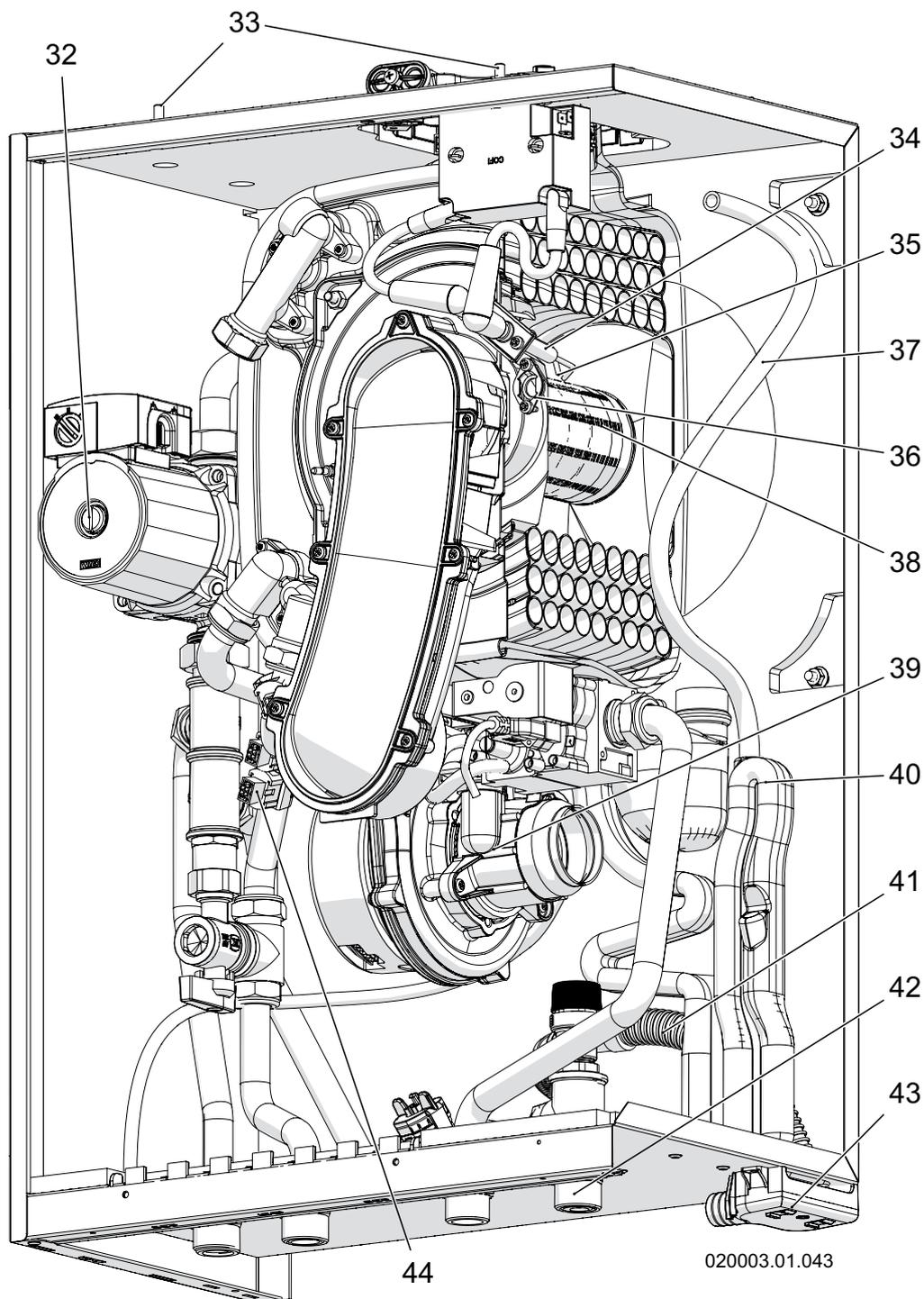
3 - MAIN COMPONENTS



- | | |
|---|---|
| 1 - Command and control board | 16 - Support attachments |
| 2 - Electric connections board | 17 - Recirculation interception valve |
| 3 - Electric control board box | 18 - Conveying fitting |
| 4 - Lower cover | 19 - Air intake and burned gas exhaust fittings |
| 5 - Recirculation fitting cap | 20 - Combustion analysis points |
| 6 - Water flow rate measuring device | 21 - Double fumes temperature sensor (1006 and 1014) |
| 7 - Cold water inlet temperature sensor (1007) | 22 - Spark generator |
| 8 - Fan | 23 - Ignition cables |
| 9 - Non-return valve | 24 - Fumes non-return valve |
| 10 - Air/gas manifold | 25 - Air inlet manifold |
| 11 - Double D.H.W. output sensor (1001 and 1005) | 26 - Gas valve |
| 12 - Cold water inlet fitting | 27 - Front casing |
| 13 - D.H.W. outlet fitting | 28 - Safety valve |
| 14 - Recirculation Pump | 29 - Display |
| 15 - Detection electrode | 30 - Control board |
| | 31 - Access to the gas valve adjusters |

Figure 3.1 - Water heater internal components

3 - MAIN COMPONENTS

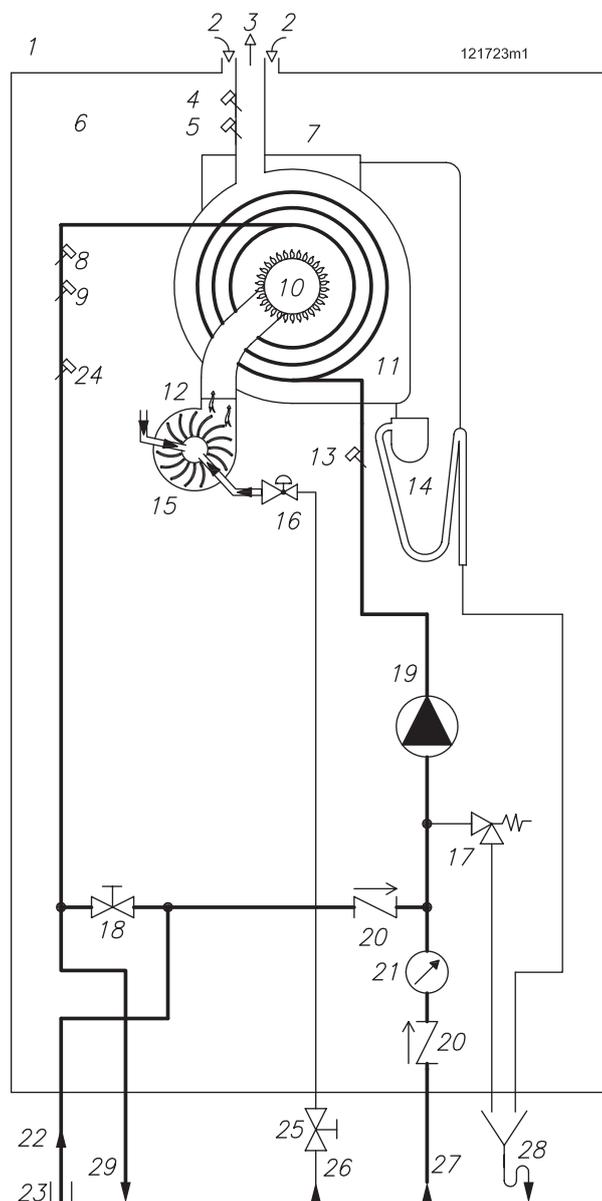


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- 32 - Pump release screw
- 33 - Front casing couplings
- 34 - Left ignition electrode
- 35 - Right ignition electrode
- 36 - Burner window
- 37 - Drain pipe for any water coming from the combustion agent air pipe
- 38 - Burner
- 39 - Air/gas mixing unit
- 40 - Condensate drain siphon
- 41 - Safety valve drain pipe
- 42 - Non-return valve
- 43 - Condensate collection tank
- 44 - Domestic hot water temperature sensor (1002)

Figure 3.1 - Water heater internal components

4 - OPERATION



Key to figure 4.1:

- 1 = Water heater
- 2 = Combustion agent air inlet
- 3 = Fumes outlet
- 4 = Fumes 1 temperature sensor (Par. 1006)
- 5 = Fumes 2 temperature safety sensor (Par. 1014)
- 6 = Sealed chamber
- 7 = Water collection pipe coming from the combustion agent inlet pipe
- 8 = D.H.W. outlet temperature 1 sensor (Par. 1001)
- 9 = D.H.W. outlet temperature safety sensor 2 (Par. 1005)
- 10 = Burner
- 11 = Titanium plated stainless steel VRC type heat exchanger
- 12 = Fan
- 13 = Cold water inlet temperature sensor (Par. 1007)
- 14 = Condensate collection siphon with sediment decanter
- 15 = Air/gas mixer
- 16 = Pneumatic gas valve
- 17 = Safety valve
- 18 = Recirculation interception valve
- 19 = Recirculation pump
- 20 = Non-return valve
- 21 = Water flow rate measuring device
- 22 = Recirculation return
- 23 = Recirculation closure cap
- 24 = Domestic hot water sensor (Par. 1002)
- 25 = Gas cock
- 26 = Gas inlet
- 27 = Domestic cold water inlet
- 28 = Safety valve condensate drain collector
- 29 = Domestic hot water outlet

Figure 4.1 - Hydraulic layout

AGUADENS

4 - OPERATION

4.1 - Operation and intended use of the appliance

This product is a condensing gas appliance, intended for the production of domestic hot water for civil use. Make the adaptation between the appliance and the plant considering the head losses, whose characteristic curves are indicated in chapter 4.2 and illustrated in figure 4.2.

The temperature of the domestic hot water is adjusted following the relevant procedure in chapter 7.5.

- ☞ This appliance must be connected to a domestic hot water distribution mains compatible with features, performance and powers of the same.
- ☞ Before installation the domestic hot water plant must be washed thoroughly in order to remove any residues or impurities, which could compromise the good working order of the appliance.

- ☞ This appliance is not envisioned for installation outdoors. It must not be exposed to temperatures below zero and temperatures above 50°C. Selected a place sheltered from atmospheric agents and freezing.
- ☞ This appliance must be installed in a location where any loss of water from the same, the connections between the pipes or from the safety valve drain, cannot cause damage to materials or objects below.
- ☞ Check figure 5.1 concerning the minimum safety distances for installation and future maintenance.

4.2 - Characteristic curves of the domestic hot water head losses

Each appliance offers certain resistance on the passage of the domestic hot water (see flow rate/pressure graphics in figure 4.2). The installer or design technician must take this into consideration in order to guarantee the correct flow rate of domestic hot water to the utility.

Key to figure 4.2

- 1 = Aguadens 16
- 2 = Aguadens 22 and Aguadens 27
- 3 = Aguadens 37

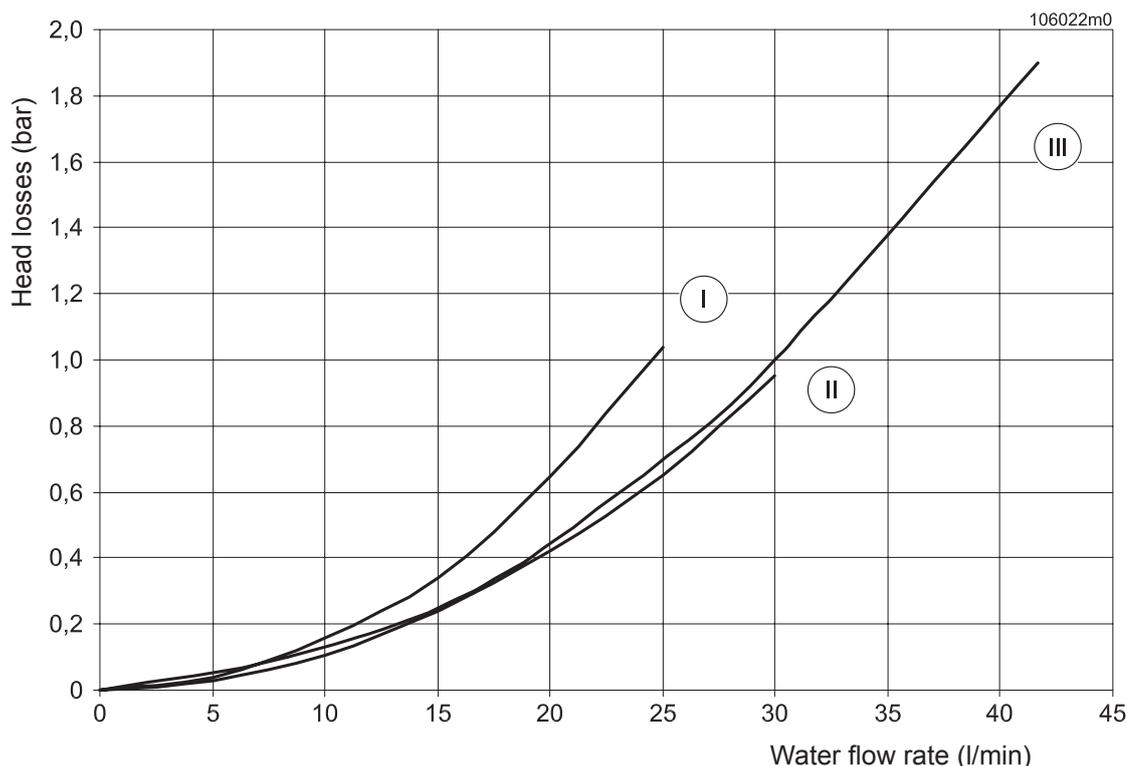


Figure 4.2 - Curve of the domestic water circuit losses

4.3 - Examples of installation

In figures 4.3, 4.4, 4.5 and 4.6 you can see some examples of installation.

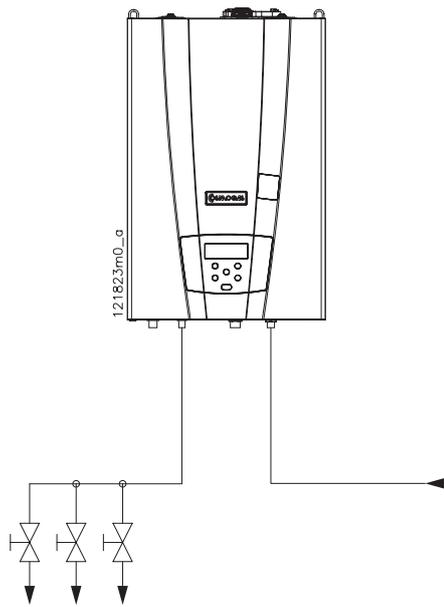


Figure 4.3 - Example of installation

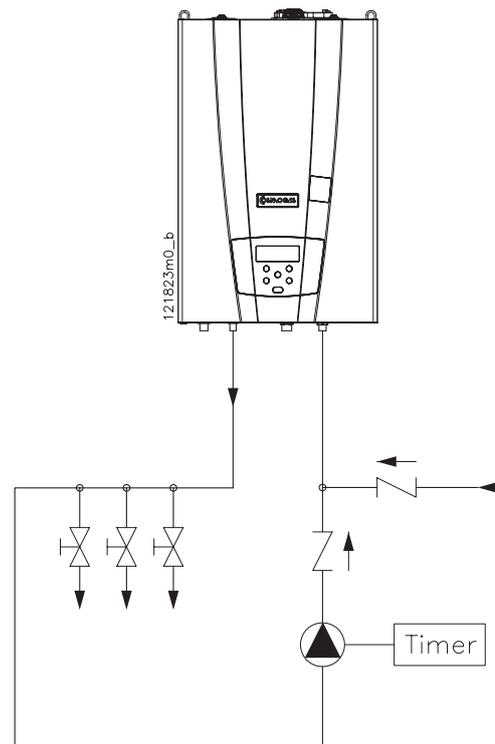


Figure 4.4 - Example of installation

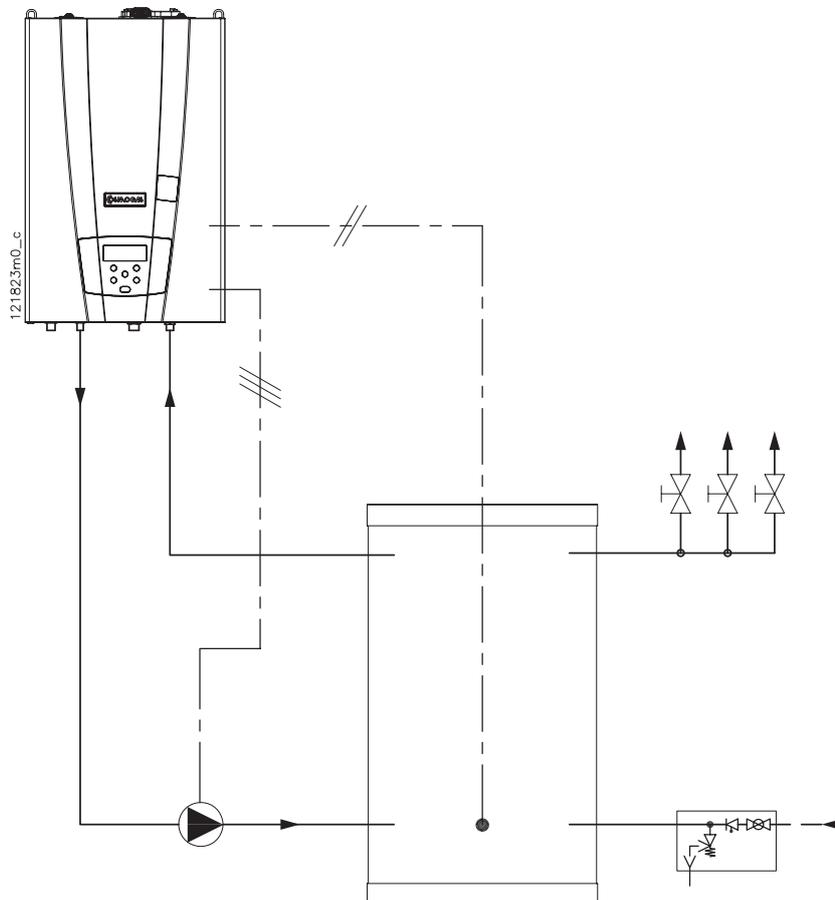


Figure 4.5 - Example of installation

4 - OPERATION

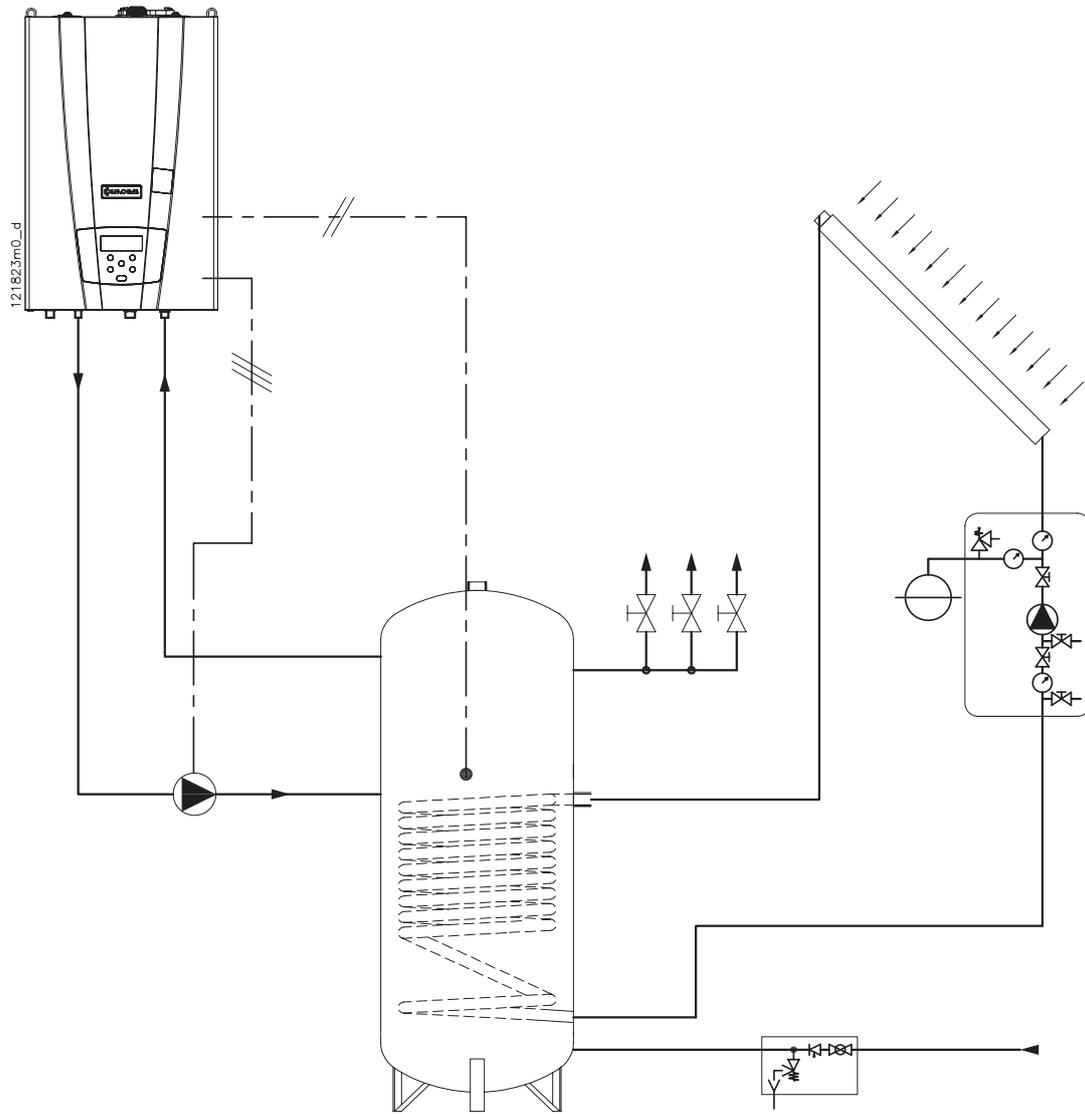


Figure 4.6 - Example of installation

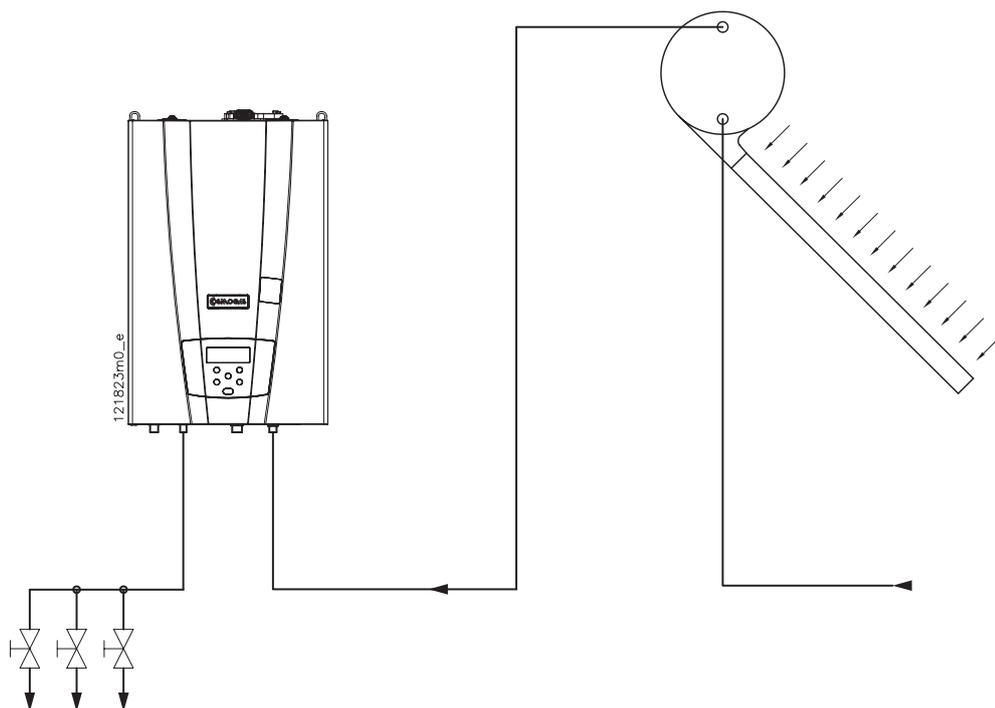


Figure 4.7 - Example of installation

5 - INSTALLATION

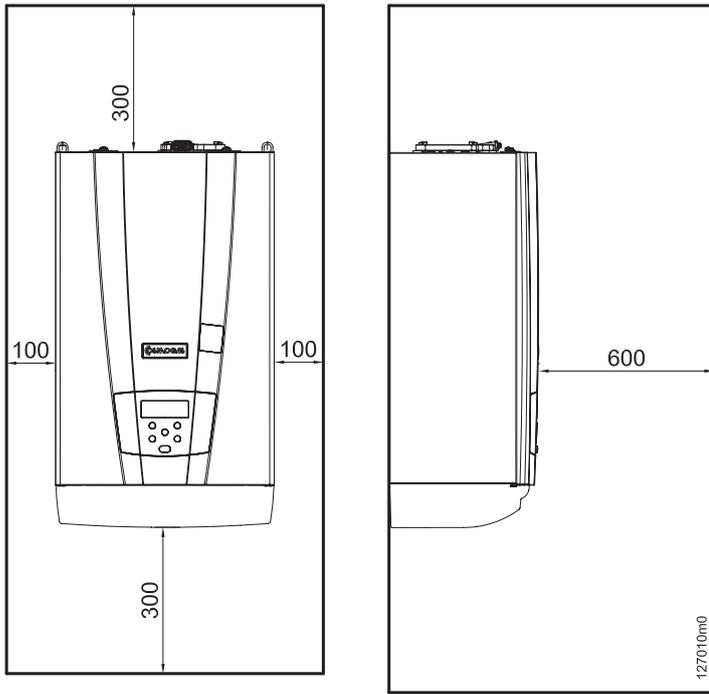


Figure 5.1 - Minimum safety distances

5.1 - Opening the packaging

The appliance is supplied in cardboard packaging. Open following the instructions given on the flaps of the packaging itself.

5.2 - Dimensions and minimum safety distances

It is necessary to leave free spaces around the appliance as illustrated in figure 5.1 both for installation and maintenance.

5.3 - Choosing the place of installation



ATTENTION !!! The appliance must be installed exclusively on a solid, vertical wall, which can support the weight.

The appliance must be installed within the home, or otherwise protected from atmospheric agents such as rain, wind, sun and especially freezing. Define the room and suitable position for installation, taking into account the following factors:

- connection of the fumes exhaust/air intake pipes;
- connection of the gas supply pipe;
- connection to the water supply;
- attachment of the domestic hot water plant;
- electric connection;
- attachment of the condensate drain, produced by the appliance and the of the safety valve drain;

5.4 - Mounting the appliance

Refer to figure 5.3:

- 1.- place the paper template, provided with the appliance, against the wall;
- 2.- check that the template is square to the environment;
- 3.- mark the holes for the plugs and hydraulic fittings on the wall;
- 4.- remove the paper template;
- 5.- make the holes "A" and introduce the wall plugs "B";
- 6.- make the appliance hydraulic and gas connections;
- 7.- hang the appliance on the plugs "C";
- 8.- make the hydraulic fittings.

5.5 - Domestic hot and cold water



ATTENTION !!! If water hardness exceeds 25°F, we recommend the installation of a polyphosphates softener (see chapter 5.10).



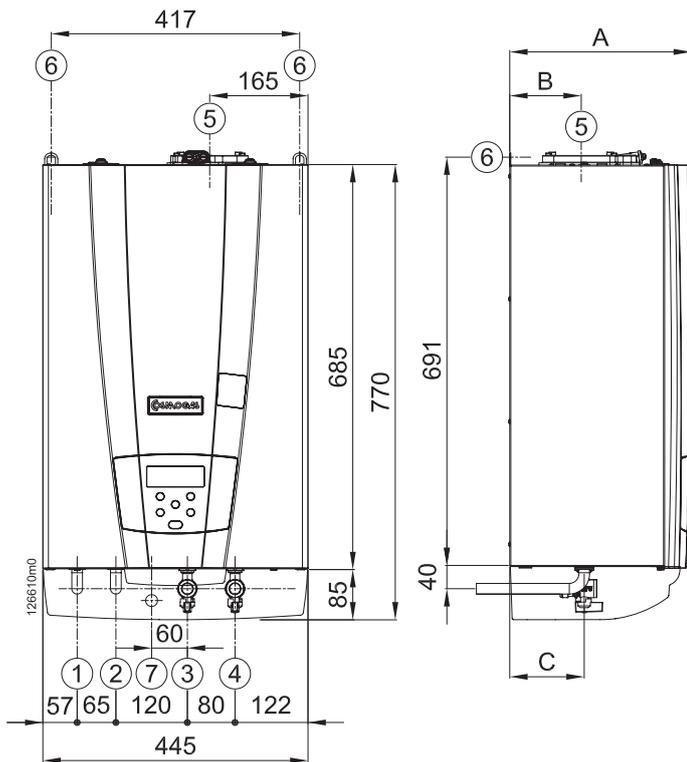
ATTENTION !!! Install a filter with mesh no wider than 0.5 mm² in the domestic cold water inlet.



ATTENTION !!! The domestic hot water circuit must be realised with materials resistant to a temperature of at least 95°C and pressure of 10 bar. Differently (e.g. plastic piping) the plant must be fitted with the relevant protection and safety devices.

In figure 5.2 it is possible to verify positioning of the domestic hot and cold water fittings.

Envision a closing cock upstream from the cold water inlet, useful for maintenance works.



- 1 - 3/4" recirculation
- 2 - 3/4" D.H.W. outlet
- 3 - 3/4" gas inlet
- 4 - 3/4" cold water inlet
- 5 - Fumes exhaust/Air intake
- 6 - Support attachments
- 7 - Ø20 condensate drain

A = 305 mm (MODELS 16-22-27) - 484 mm (MODEL 37)
 B = 120 mm (MODELS 16-22-27) - 175 mm (MODEL 37)
 C = 125 mm (MODELS 16-22-27) - 304 mm (MODEL 37)

Figure 5.2 - Dimensions and attachments centre to centre distances

5.6 - Gas



ATTENTION !!! It is prohibited to power the appliance with gases different to that envisioned.



ATTENTION !!! Check that the gas and supply pressure are those for which the appliance has been adjusted.

Two situations are possible:

- A - the gas and supply pressure correspond to the adjustment of the appliance. In this case, it can be connected;
- B - the gas and supply pressure do not correspond to the adjustment of the appliance. In this case, the appliance must be converted to the type of gas and supply pressure corresponding to those of the supply available.

The appliance is provided with the relevant gas conversion kit.

- ☞ Before installation it is advised to clean the inside of the gas supply pipe thoroughly;
- ☞ a cut-off cock must always be installed on the gas supply pipe;



ATTENTION !!! Before supplying gas to the appliance, perform the leak test, as envisioned by the Technical Standards in force.

- ☞ to prevent damage to the appliance gas control unit, the leak test at a pressure not exceeding 50 mbar;
- ☞ if the gas plant must be inspected at pressures over 50 mbar, operate on the cock positioned immediately upstream from the appliance, to isolate the same from the plant.

Figure 5.2 verifies the positioning of the appliance gas fitting. The sections of the pipes making up the gas supply plant must always guarantee a gas supply sufficient to cover the maximum requested.

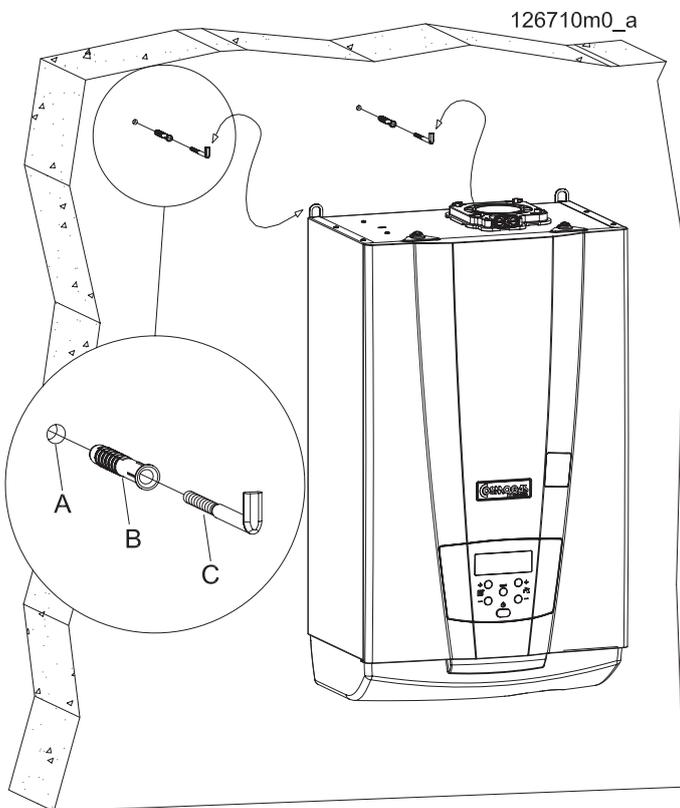


Figure 5.3 - Support plugs

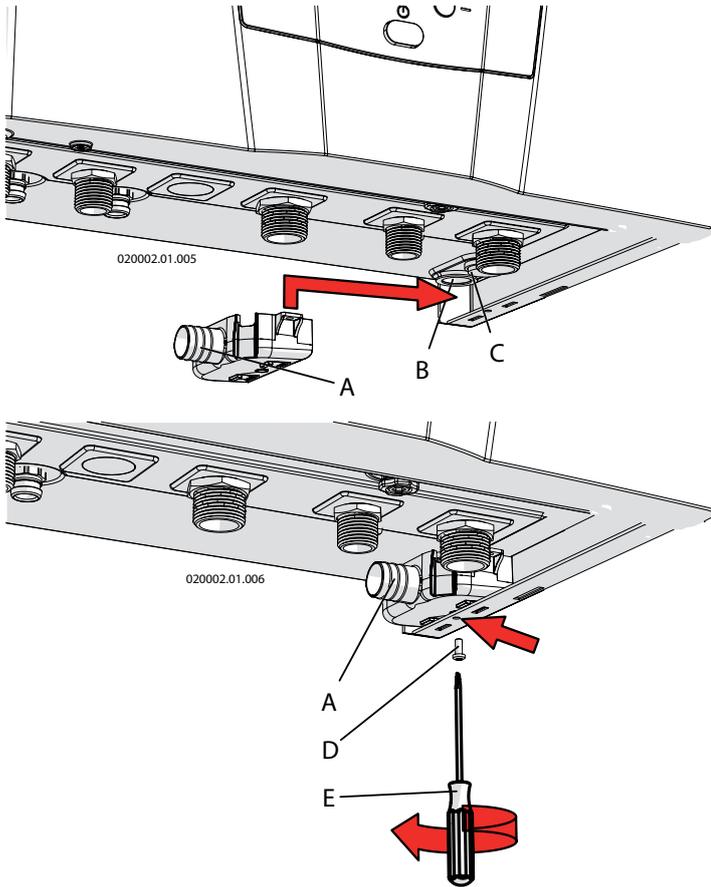


Figure 5.4 - Safety valve drain and condensate drain connection

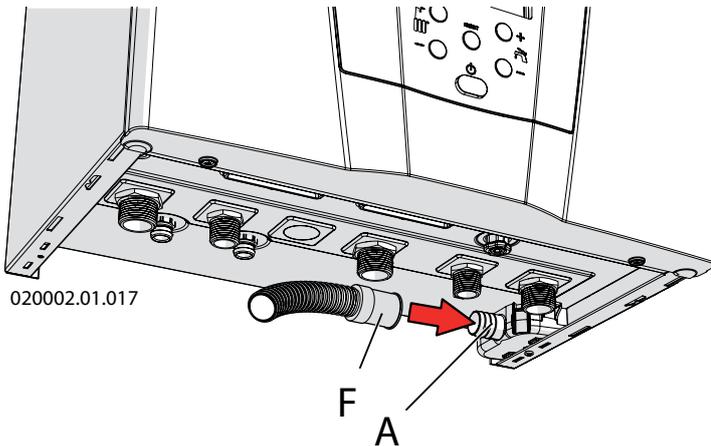


Figure 5.5 - Condensate drain pipe

5.7 - Condensate drain

There is a siphon inside the appliance for the evacuation of condensate (see figure 3.1 detail "40") and to prevent combustion products from escaping, whose end corresponds to the pipe "B" in figure 5.4. This termination must be conveyed into an anti-odour siphon (figure 5.8 detail "G") to prevent bad odours returning into the environment (the anti-odour siphon "G" is supplied on request). The tank "A" is mounted in the factory as indicated in figure 5.4, the exhaust pipe "F" is mounted in the factory as indicated in figure 5.5. In particular, the condensate disposal plant must:

- ☞ for room used for residential purposes and for office with more than 10 users, it can be connected to the domestic waste disposal plant by means of appropriate siphon with disjunction capable of preventing the pressurisation of the system (siphon prepared within appliance) and to prevent the return of bad odours from the sewer (detail "G" in figure 5.8). If the room used for office purposes has less than 10 users, before connection with the domestic waste drain, a condensate neutraliser is good practice (see chapter 9 for the value of acidity of the condensate and the quantities).
- ☞ be performed with a pipe with internal diameter equal to or greater than 13 mm;
- ☞ be installed in a way to prevent the liquid from freezing; therefore pay attention to any external passings. It is prohibited to drain into gutters or drainpipes;
- ☞ to slope continuously towards the drain point, avoid high points, which could pressurise the pipe;

5.8 - Safety valve

The appliance is protected against overpressures by a safety valve calibrated to 10 bar (see figure 3.1 detail "28"). The safety valve drain (detail "C" in figure 5.4), along with the condensate drain (detail "B" in figure 5.4) must be conveyed to a pipe "F" (see figure 5.5) with minimum internal diameter of 13 mm. The pipe "F" must be then taken to the anti-odour siphon (detail "G" figure 5.8). This drain with siphon is used to prevent overpressures if the valve is opened and makes it possible for the user to check the eventual intervention. The pipe "F" in figure 5.5 is supplied by standard along with the tank "A" in figure 5.4. The anti-odour siphon "G" in figure 5.8 is provided on request.

⚠ ATTENTION !!! If not connected to the drain, whenever the safety valve should intervene, it could cause damage to persons, animals or objects.

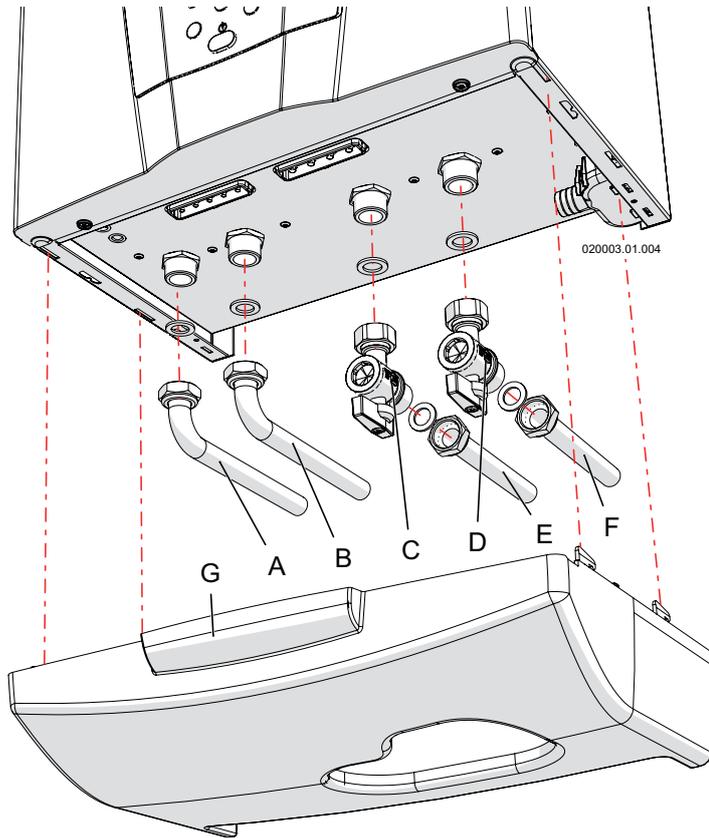


Figure 5.6 - Water and gas connections

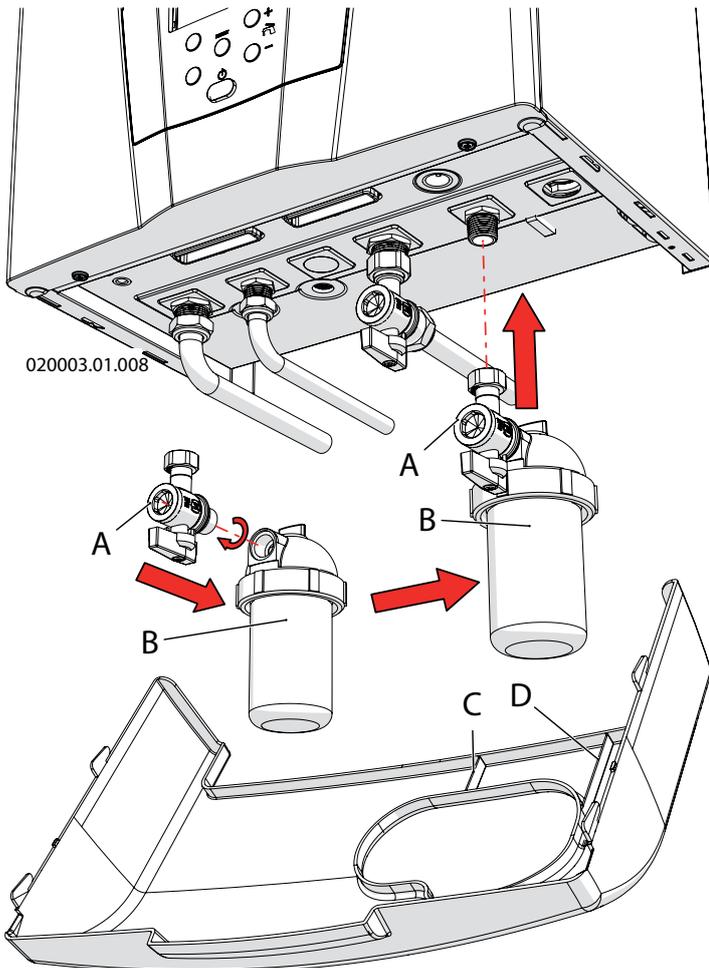


Figure 5.7 - Polyphosphates softener (on request)

5.9 - Hydraulic and gas connections and mounting of the lower cover

The appliance is supplied as per standard with the fittings illustrated in figure 5.6, where:

- A = Ø 18 recirculation
- B = domestic hot water Ø 18
- C = 3/4" gas inlet cock (EN 331 type-approved)
- D = 1/2" domestic cold water inlet cock
- E = gas Ø 18
- F = domestic cold water Ø 18

Once the hydraulic and gas connections have been made, proceed with assembly of the lower cover "G" as indicated in figure 5.6.

5.10 - Polyphosphates softener (on request)

If the appliance is installed in a geographical area where domestic water has hardness exceeding 25°F (250 mg/l), a polyphosphates softener must be installed on the cold water supply (see figure 5.7 detail "B"), in order to safeguard the appliance from any lime scale deposits.

Proceed as follows for installation (refer to figure 5.7):

- 1.- connect the softener "B" to the cock "A";
- 2.- mount the cock "A" to the appliance fitting;
- 3.- proceed with the installation of the cold water inlet pipe into the fitting behind the softener "B";
- 4.- before re-mounting the lower cover, it is necessary to trim (only in the rear part), the entire part between walls "C" and "D", from the outer edge to the central slot, to allow the softener "B" to be housed.

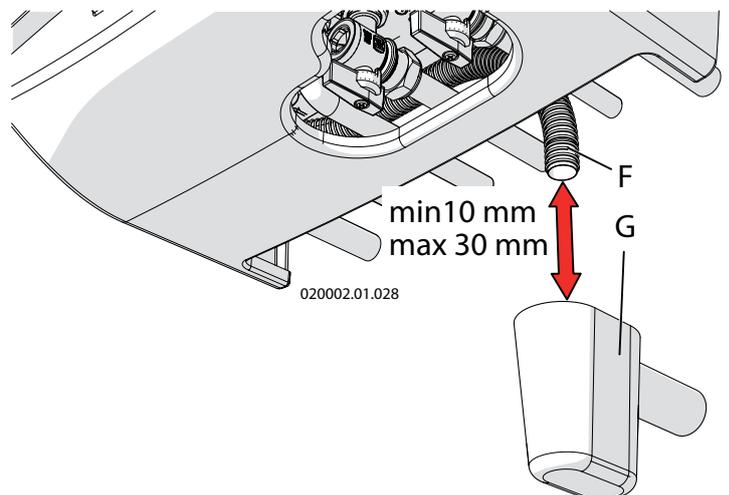


Figure 5.8 - Siphon funnel (on request)

5 - INSTALLATION

5.11 - Electric connections: generalities

 **ATTENTION !!!** The appliance is only electrically safe when it has been correctly connected to an efficient earth circuit, performed as envisioned by the current Safety Standards.

This fundamental safety requirement must be met. If in doubt, request a thorough control of the electric plant by a professionally qualified technician.

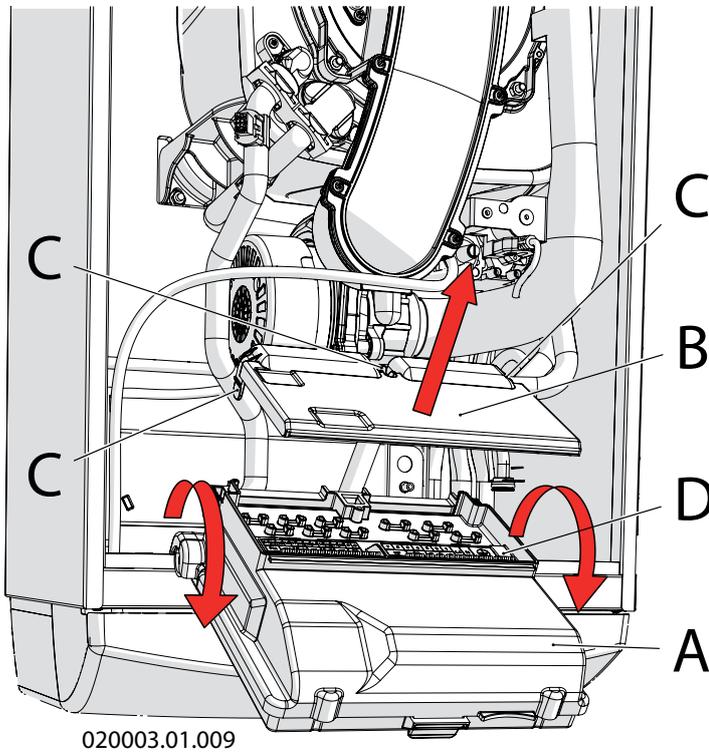
- ☞ Have a professionally qualified technician check that the electric plant is suitable for the electric power required by the appliance, indicated on the plate.
- ☞ The appliance must be connected to the mains electricity using a cable coupler. The use of adapters, multiple sockets, extensions, etc. is not allowed.
- ☞ The appliance must be connected to the mains electricity using a three-polar electric cable, with double isolation, minimum section of 1.5 mm² and resistant to a minimum temperature of 70°C (characteristic T).

☞ For connection to mains electricity, a bi-polar switch must be envisioned in the vicinity of the appliance with a contacts opening distance of at least 3mm, as envisioned by the current regulations on the subject.

☞ Respect the polarity between the neutral phase during connection of the appliance.

☞ Make sure that the water plant pipes are not used as earth points for the electric or telephone plant. This piping is not suitable for this purpose, moreover, serious corrosion damage would occur in a very short time, on the appliance, piping and radiators.

 **ATTENTION !!!** the appliance is not protected against the effects caused by lightning.



Key for figure 5.9

A = Commands board box;
 B = Electric connections board lid;
 C = Connections lid closing flaps;
 D = Electric connections board;

Key for electric contacts

PM = Not used
 CH = Not used
 BUS = Not used
 TA = Not used
 0-10 = Not used
 SE = Not used
 SB = Storage tank sensor (if present)
 MF = Multi-function output
 PE = Boiler pump (if present)
 DN = Not used
 (2 = Neutral; 3 = Line)
 L1 = Appliance power supply line
 N = Appliance power supply neutral
 EARTH SYMBOL = Earth contacts

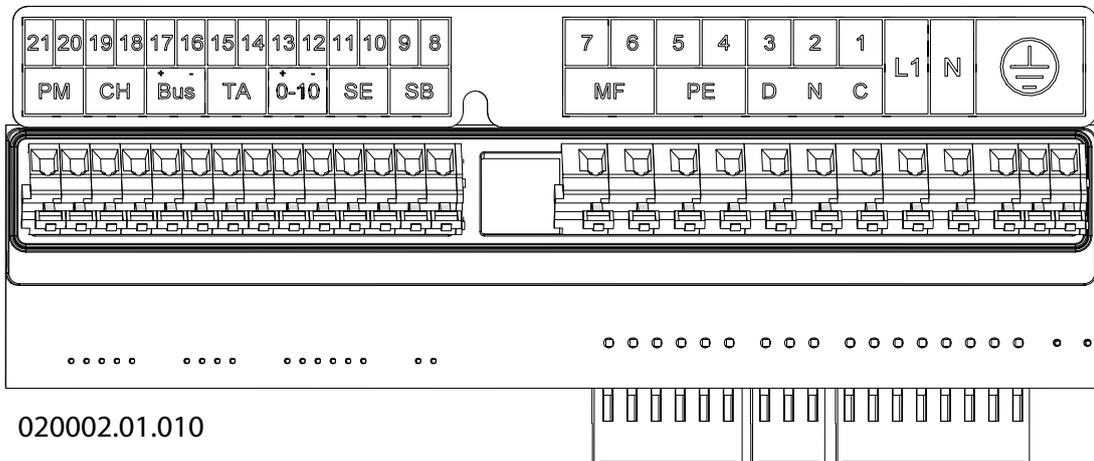


Figure 5.9 - Electric connections

5 - INSTALLATION

5.11.1 - Power supply cable connection

Proceed as follows to connect the power supply cable (refer to figure 5.9):

- 1.- use a three-polar cable with double isolation, with minimum section of 1.5 mm²
- 2.- remove the casing from the appliance following the relevant instructions in chapter 8.2;
- 3.- rotate the panel "A" towards the front of the appliance;
- 4.- operate on the flaps "C" and open the lid "B" as indicated by the arrow;
- 5.- lay the power supply cable through the fairlead in proximity of the contacts "L1", "N" and earth symbol;
- 6.- strip the cable, making sure to keep the earth cable (yellow green) 20 mm longer than the other two;
- 7.- connect the yellow-green cable to the earth terminals (see symbol)
- 8.- connect the brown cable (Phase) to the terminals L1
- 9.- connect the blue cable (Neutral) to the terminals N

5.12 - Water heater-storage tank connection

The hydraulic connection must be made as in figure 5.10. Proceed as follows for the electric connection (refer to the figure 5.9):

- 1.- disconnect the electric power supply from the appliance;
- 2.- disconnect and remove the temperature sensor (detail "44" in figure 3.1) from the domestic hot water outlet pipe;
- 3.- lay a bi-polar electric cable with minimum section of 1.5 mm², which goes from the appliance to the storage tank temperature sensor and connect it to the appliance at terminals "8" and "9" (SB);

- 4.- connect the other end of the cable to the storage tank temperature sensor;
- 5.- introduce the temperature sensor inside the storage tank sample point (see figure 5.10 detail "8").
- 6.- Connect the electric power of the storage tank pump (see figure 5.10 detail "7") to "PE" terminals of the water heater.

The AGUADENS appliances can be connected to a storage tank even following installation. In this case, the parameter 30 12 must be set at the value of 1.

The temperature of the water stored inside the storage tank can be selected by the user in a range between 40 and 70°C.



ATTENTION !!! A domestic hot water temperature level exceeding 51°C can cause permanent injury/damage to persons, animals and objects. Children, the elderly and disabled must be protected against the potential risks of scalding, by introducing devices that limit the temperature of use of domestic hot water to utilities.

5.12.1 - Anti- legionella

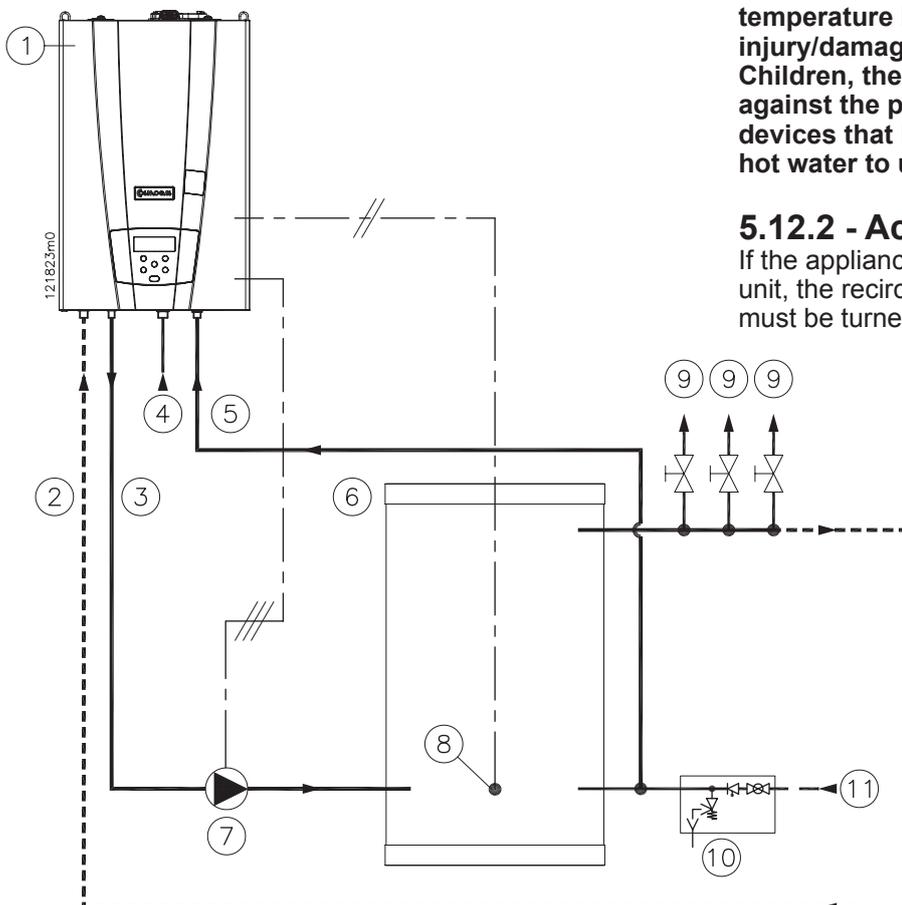
If the appliance is connected to a storage tank for the preparation of domestic hot water, a disinfection cycle is envisioned against the legionella bacterium. This cycle envisions taking the storage tank to a temperature of 60°C (temperature at which the legionella bacteria dies) at least every week. It is for this reason that the water (at certain times) can reach the utilities at a higher temperature than set with the relative command.



ATTENTION !!! A domestic hot water temperature level exceeding 51°C can cause permanent injury/damage to persons, animals and objects. Children, the elderly and disabled must be protected against the potential risks of scalding, by introducing devices that limit the temperature of use of domestic hot water to utilities.

5.12.2 - Activation of recirculation

If the appliance is envisioned with external recirculation unit, the recirculation cut-off valve (detail "17" of figure 3.1) must be turned to the closed position.

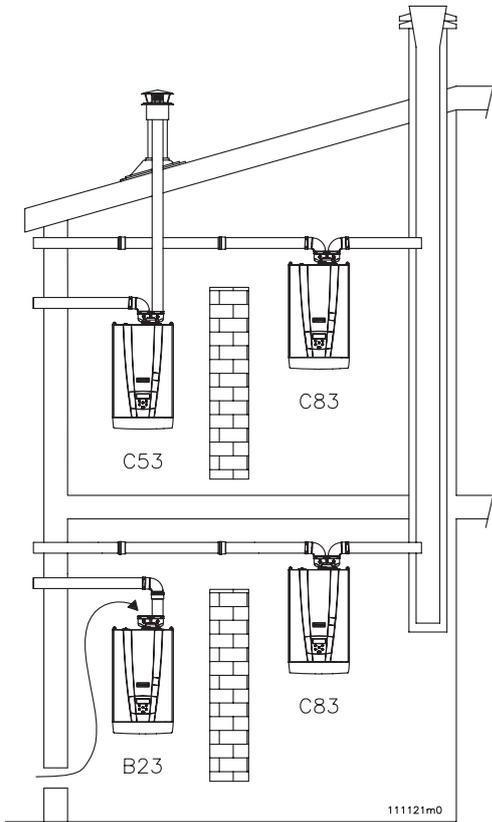


KEY

- 1 AGUADENS water heater
- 2 Recirculation (if activated) *
- 3 Domestic hot water outlet
- 4 Gas inlet
- 5 Cold water
- 6 Storage tank
- 7 Storage tank load pump
- 8 Storage tank sensor
- 9 Domestic utilities
- 10 Hydraulic safety unit (by the installer)
- 11 Cold water inlet

* The recirculation line is not mandatory.

Figure 5.10 - water connection to the storage tank



5.13 - Burned gas exhaust and combustion agent air intake pipe



ATTENTION !!! To connect the burned gas exhaust and combustion agent air intake, the relevant national and local regulations must be respected.



ATTENTION !!! The fumes of this appliance can reach 90°C in determined conditions. Therefore, use pipes in plastic that can resist high temperatures.



ATTENTION !!! This appliance is the “condensing” type. Use AISI 316 stainless steel materials to make the fumes exhaust. The polypropylene materials to prevent corrossions due to the acidity of the condensate.

Regarding this, remember that the appliances of this type must have exhaust and intake pipes supplied by the manufacturer of the appliance itself. Other types of pipes, if used, must however be type-approved for this intended use. The types of exhaust for which the appliance is approved are given in the features table at the end of the manual under “type” and on the features plate affixed to the appliance, also under “type”. The symbols used to define exhaust is reported below:

- B23, separated with intake in room and exhaust through wall or roof.



ATTENTION !!! If the appliance is installed with the B23 type exhaust, it will take in air for combustion from the surrounding environment. Therefore, all precautions must be taken regarding ventilation of the rooms, which are prescribed by the national and/or local Standards.

- C13, coaxial in vertical wall
- C33, coaxial at the roof
- C43, separated with exhaust in flue, combined with intake in common channel.



ATTENTION !!! The appliances installed in type C43 must only be connected to conventional flues.

- C53, separated with exhaust on roof and intake on wall or however, in two potentially different pressure points.
- C63, the appliance can be fitted to type-approved exhaust and intake pipes of other brands.



ATTENTION !!! With the C63 type exhaust, the condensate coming from the chimney cannot be conveyed into the appliance.

- C83, separated with wall intake or another point independent from the intakes of other appliances and flue exhaust.

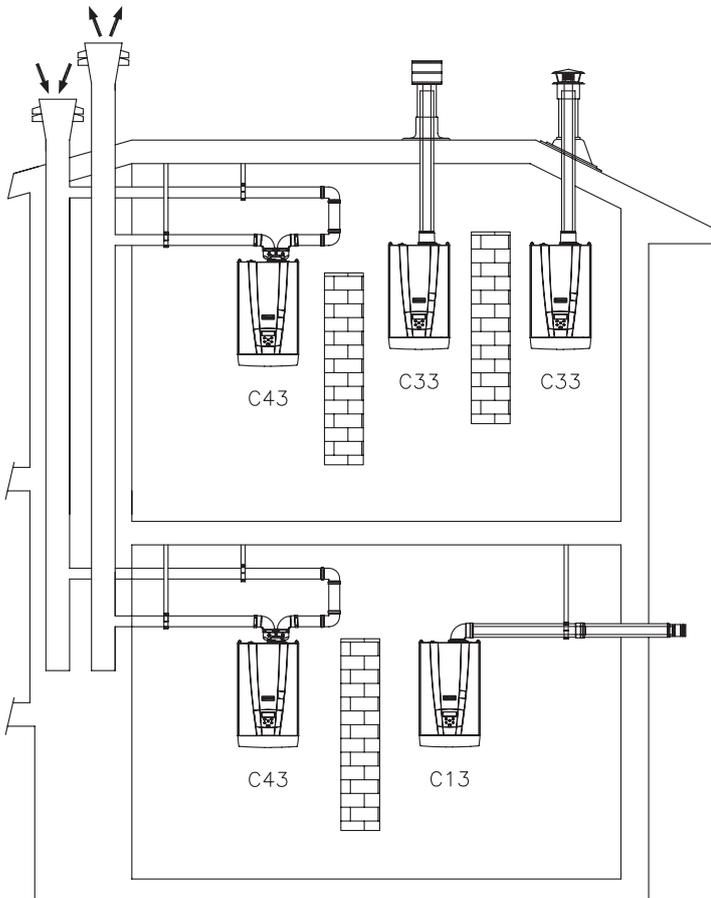


Figure 5.11 - Exhaust/intake systems

5 - INSTALLATION

During operation, especially in the winter, due to high yield, white smoke may escape from the appliance exhaust. This is solely a natural phenomenon and must not be worried about in any case, because it is the water vapour present in the fumes which in contact with the outside air condenses.

5.13.1 - Type of intake/exhaust B23

In the case of B23 type combustion agent air/fumes exhaust systems, it is indispensable that the rooms in which the appliances are installed have at least as much air as that required by combustion and ventilation of the room. It is therefore good practice to remember that the combustion of 1 m³ of gas requires 11 cm³ of air. The natural flow of air must take place directly through permanent openings made in the outside walls of the room to be ventilated; however away from sources of pollution, such as: vents of dubious origin, airborne industrial exhaust etc.

The ventilation openings must meet the following requirements:

- ☞ have sections with net passage of at least 6 cm² for every kW of heat input installed, with minimum of 100 cm²;
- ☞ be realised in a way that the opening inlets both inside and outside the wall cannot be blocked;
- ☞ be protected for example with grids, metal meshes, etc. The net section of the passage must not be reduced by these elements;
- ☞ be situated at a height more or less of the floor and such not to disturb the correct operation of the combustion products exhaust devices. Where this position is not possible, the section of the ventilation openings must be increased by at least 50%.

The flow of air can also be obtained from an adjacent room as long as:

- ☞ it has direct ventilation, in compliance with the previous points;
- ☞ only this gas appliance is installed in the room to be ventilated;
- ☞ the adjacent room is not a bedroom;
- ☞ the adjacent room is not a common part of the building;
- ☞ the adjacent room is not an environment with fire hazard, such as a hangars, garages, combustible materials warehouse, etc.;
- ☞ the adjacent room does not have a negative pressure with respect to the room to be ventilated due to reverse draught (which can be caused by the presence in the room of another appliance operating with any type of fuel, a fireplace and any other intake device for which an adequate air intake has not been envisioned);
- ☞ the flow of air from the adjacent room to that to be ventilated can take place freely through permanent openings with total net section not less than that indicated at the start of this chapter.

In rooms where gas appliances are installed, it may become necessary, as well as the input of combustion agent air, also to evacuate the stale air, with resulting release of an additional equal amount of clean air.

If the stale air is evacuated with the aid of a mechanical tool (electric fan) the following conditions must be respected:

- a) If there is a common exhaust pipe in the room, it must be capped;
- b) The ventilation opening of the room in which the gas appliance is installed must be increased depending on the maximum air flow rate required at the electric fan.
- c) The action of the electric fan must not affect the correct evacuation of the combustion products. To this end, that stated above must be verified by draft testing, running the fan or extractor hood at its maximum power and the gas appliance at the maximum and minimum power.

5.13.2 - "Split 80/80PP" System (polypropylene) (Type C43; C53; C83) AGUADENS 16-22-27

The appliance is supplied as per standard without fittings for the connection of the fumes exhaust/air intake. To connect it to a "80/80PP Split" system, the relevant kit must be requested and must be installed as in figure 5.12. Fitting "A" can rotate freely by 360°, guaranteeing optimum installation versatility.

☞ In the fumes exhaust side, it is mandatory to install AISI 316L stainless steel or polypropylene pipes, which are more resistant to the formation of condensate.

☞ Take particular care with the installation of pipes in the part that passes through the wall to the outside. The normal maintenance operations must always be possible, therefore install the pipes in a sheath so that they can slide out.

☞ The horizontal tracts must always have an inclination of at least 2% towards the condensate drain device.

☞ The appliance is already set-up to collect the condensate, which must be fitted to a drain pipe (see chapter 5.7).



ATTENTION !!! This condensate drain is designed to make all liquid produced flow from a single appliance. If several appliances are installed, each one must envision its own condensate drain.

The fumes exhaust/air intake system can be extended up to a maximum distance as indicated in chapter 9. Every 90° bend has a loss equivalent to 1 metre of linear pipe. Every 45° bend has a loss equivalent to 0.5 m of linear pipe.



ATTENTION !!! The fumes exhaust terminal must be appropriately protected against the effects of the wind (see also 7.11.1 error Loc 20).



ATTENTION !!! Mechanically secure the joints between the various component elements of the exhaust and intake pipe, through the use of fixing systems or equivalent systems. See figure 5.14



ATTENTION !!! The temperature of the exhaust pipe can reach 90°C during operations. If it must pass through a wall that is sensitive to these temperatures, insert a protective heat-isolation sheath.



ATTENTION !!! If the air intake and fumes exhaust terminals are positioned in the same wall, they must remain at a minimum distance of 1 metre.



ATTENTION !!! The exhaust and intake pipes must be appropriately sustained via rigid brackets positioned no more than 1 metre from each other. The brackets must be fixed to rigid walls that can support the weight of the pipe itself.

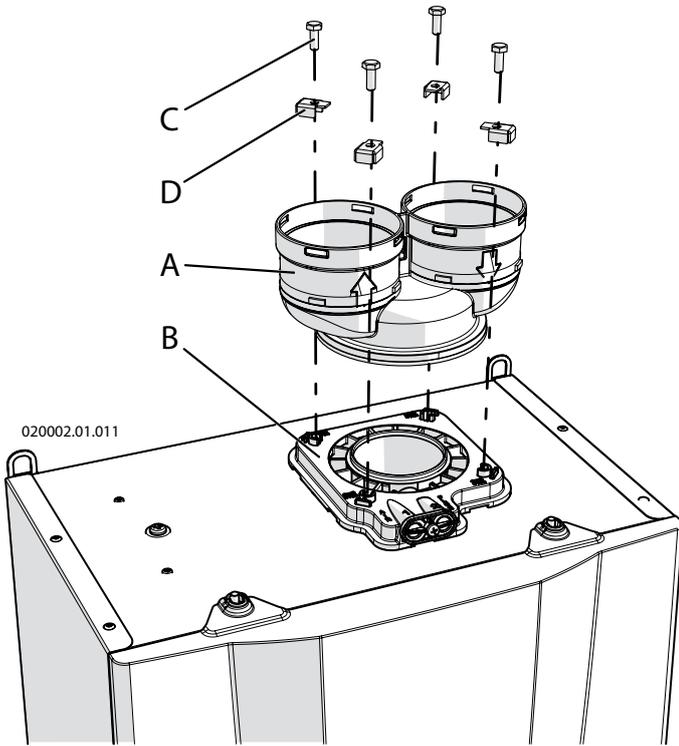


Figure 5.12 - Installation of the "80/80PP Split" System

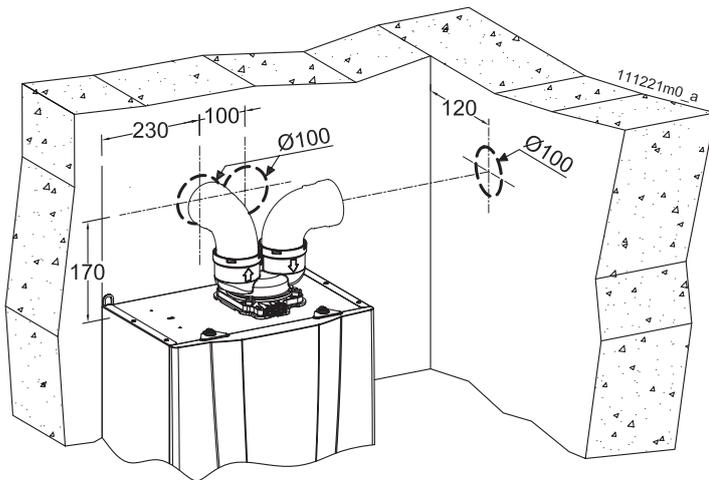


Figure 5.13 - Clearance

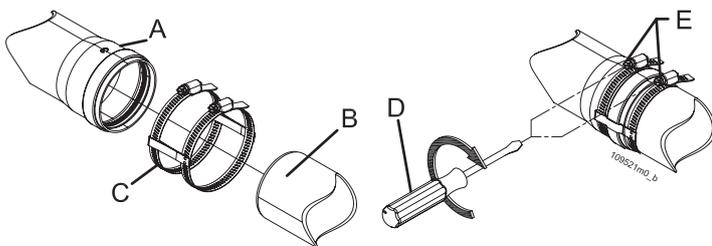


Figure 5.14 - Fixing the exhaust and intake pipes

5.13.3 - "Split 80/80PP" System (polypropylene) (Type C43; C53; C83) AGUADENS 37

The appliance is supplied as per standard without fittings for the connection of the fumes exhaust/air intake. To connect it to a "80/80PP Split" system, the relevant kit must be requested and must be installed as in figure 5.15. Fitting "A" can rotate freely by 360°, guaranteeing optimum installation versatility.

☞ In the fumes exhaust side, it is mandatory to install AISI 316L stainless steel or polypropylene pipes, which are more resistant to the formation of condensate.

☞ Take particular care with the installation of pipes in the part that passes through the wall to the outside. The normal maintenance operations must always be possible, therefore install the pipes in a sheath so that they can be slid out.

☞ The horizontal tracts must always have an inclination of at least 2% towards the condensate drain device.

☞ The appliance is already set-up to collect the condensate, which must be fitted to a drain pipe (see chapter 5.7).



ATTENTION !!! This condensate drain is designed to make all liquid produced flow from a single appliance. If several appliances are installed, each one must envision its own condensate drain.

The fumes exhaust/air intake system can be extended up to a maximum distance as indicated in chapter 9. Every 90° bend has a loss equivalent to 1 metre of linear pipe. Every 45° bend has a loss equivalent to 0.5 m of linear pipe.



ATTENTION !!! The fumes exhaust terminal must be appropriately protected against the effects of the wind (see also 7.11.1 error Loc 20).



ATTENTION !!! Mechanically secure the joints between the various component elements of the exhaust and intake pipe, through the use of fixing systems or equivalent systems. See figure 5.17



ATTENTION !!! The temperature of the exhaust pipe can reach 90°C during operations. If it must pass through a wall that is sensitive to these temperatures, insert a protective heat-isolation sheath.



ATTENTION !!! If the air intake and fumes exhaust terminals are positioned in the same wall, they must remain at a minimum distance of 1 metre.



ATTENTION !!! The exhaust and intake pipes must be appropriately sustained via rigid brackets positioned no more than 1 metre from each other. The brackets must be fixed to rigid walls that can support the weight of the pipe itself.

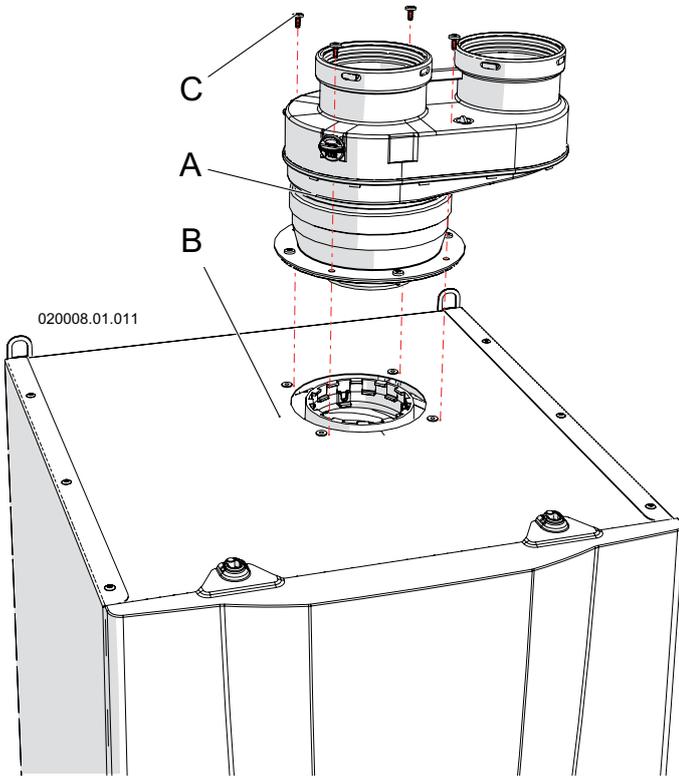


Figure 5.15 - Installation of the "80/80PP Split" System

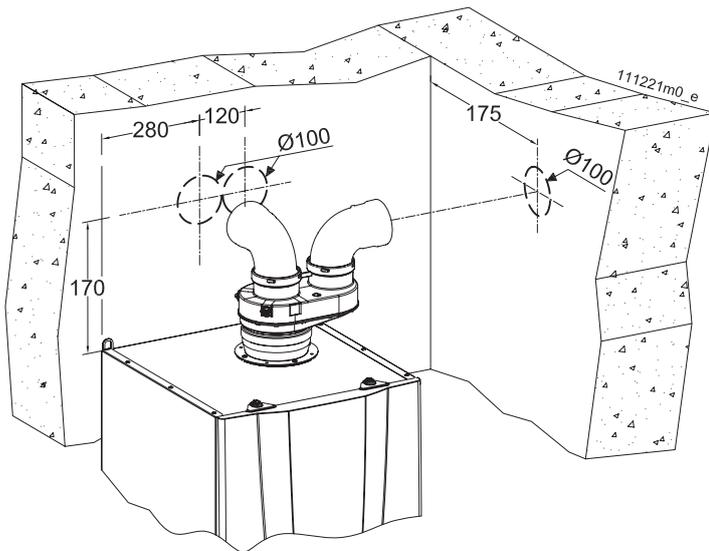


Figure 5.16 - Clearance

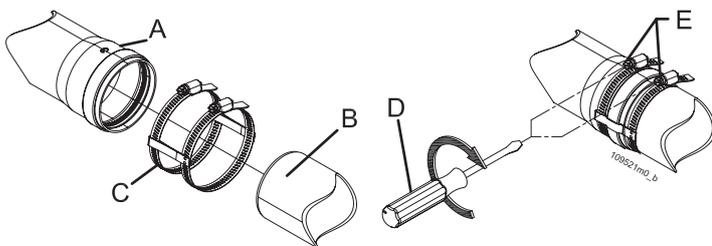
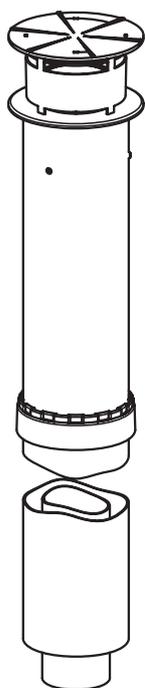


Figure 5.17 - Fixing the exhaust and intake pipes

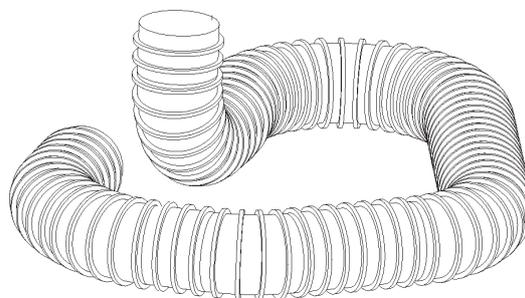
5.13.4 - "Split 80/80PP" System (Type C43; C53; C83): accessories available

To make the "80/80PP split" fumes exhaust/air intake system, we propose some of the most common accessories available; remember that a wide range can be consulted in the relevant catalogue: (the number after the code is used to recall the piece in the following drawings)

- 62617306 - N° 10 PP roof terminal
- 62617244 - N° 12 90° bend M/F PP
- 62617255 - N° 29 converts for pitched roofs from 15° up to 25°
- 62617236 - N° 11 extension M/F PP
- 62617249 - N° 18 anti-slip bands for extensions PP
- 62617240 - N° 14 flexible hose M.F. PP L=20m
- 62617241 - N° 16 spacer for flexible hose
- 62617238 - N° 17 telescopic joint PP
- 62617242 - N° 15 T-fitting PP
- 62617246 - N° 13 45° bend M/F PP



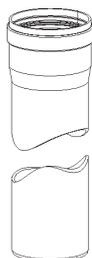
COD. 62617306



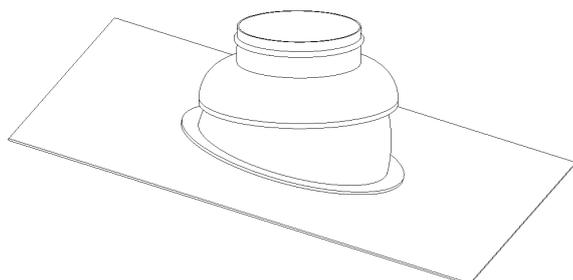
COD. 62617240



COD. 62617244



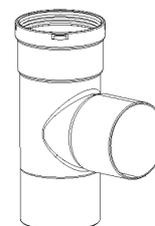
COD. 62617236



COD. 62617255



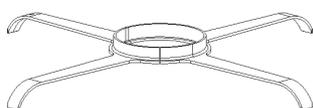
COD. 62617238



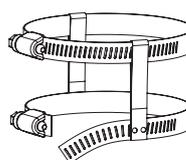
COD. 62617242



COD. 62617246



COD. 62617241



COD. 62617249

5.13.5 - "Split 80/80PP" System (Type C43; C53; C83): installation examples

In figure 5.18 two examples of installation are given:

- exhaust into chimney with collection of condensate inside the appliance itself.

The horizontal part of the fumes exhaust must slope towards the appliance.

The intake must slope towards the outside to prevent rain water entering.

- exhaust to the outside directly with the appliance pipes with condensate collection inside the appliance itself.

The intake must slope towards the outside to prevent rain water entering.

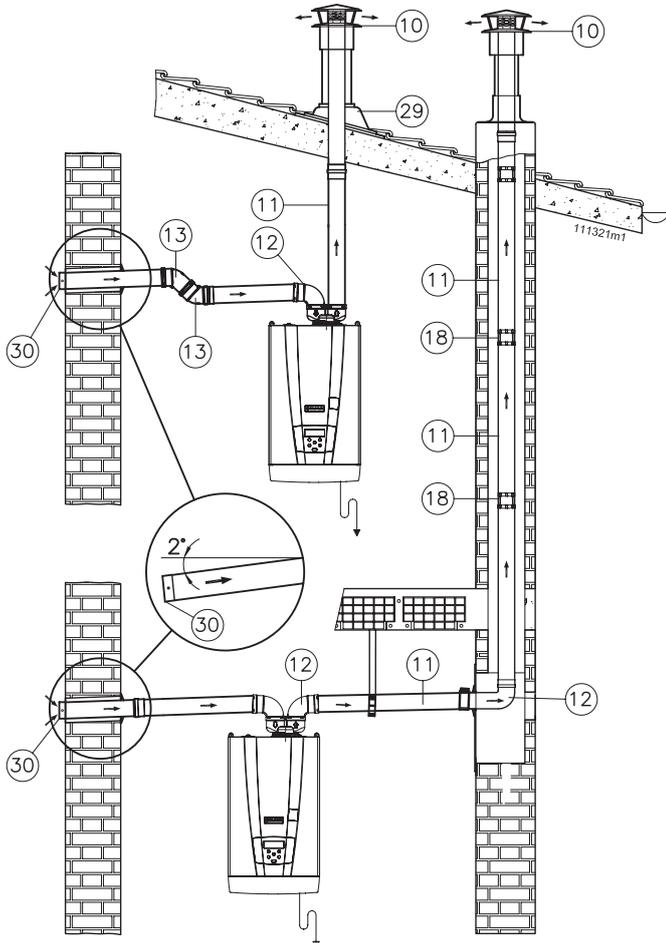


Figure 5.18 - Example of "80/80 PP System" installation

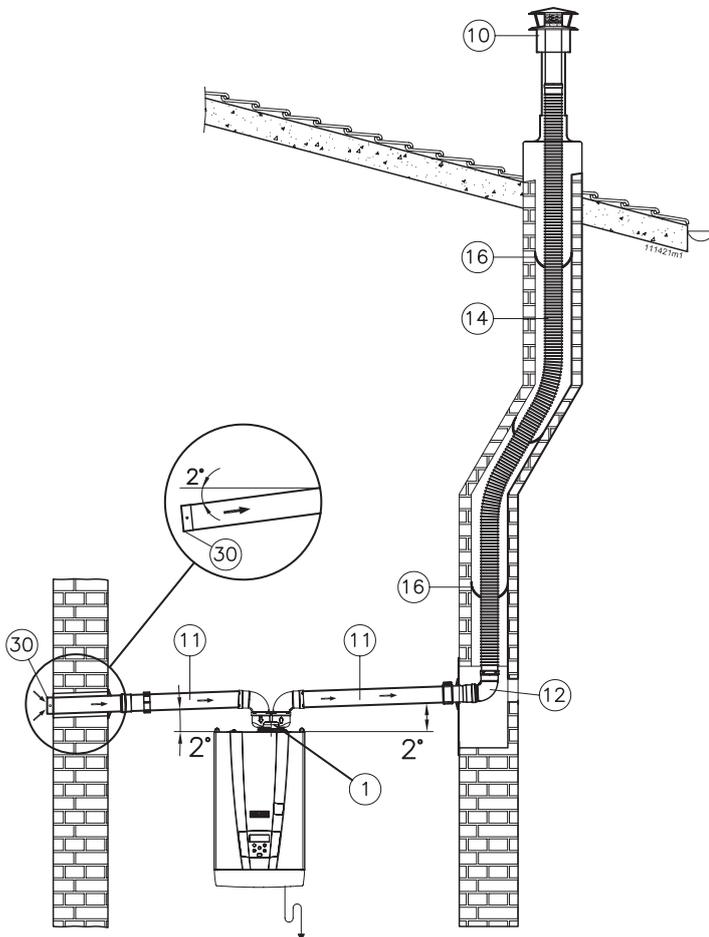


Figure 5.19 - Example of "80/80 PP System" installation

In figure 5.19 it is possible to see a separated type of fumes exhaust, where fumes exhaust was realised with flexible hose in polypropylene for piping of technical cells.

The condensate produced in the vertical pipe must all be conveyed into the appliance.

The intake must slope towards the outside to prevent rain water entering.

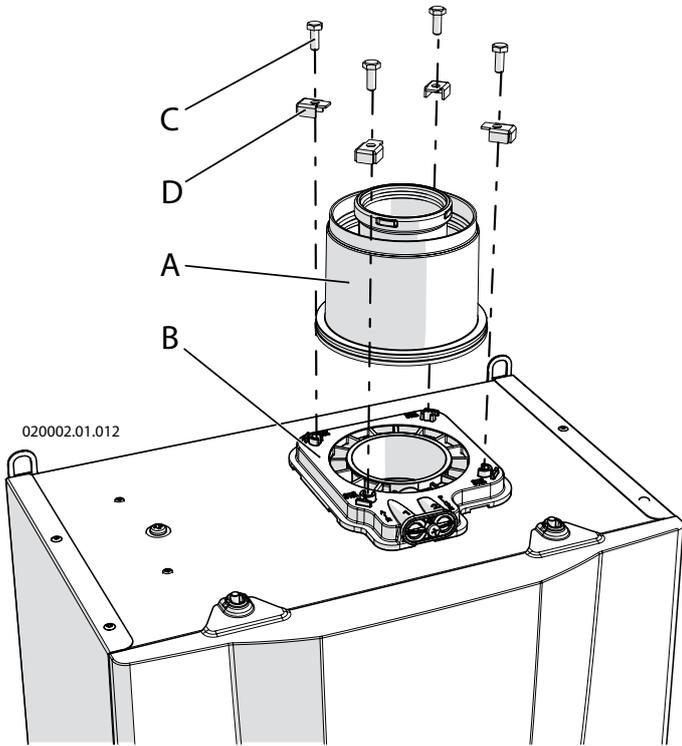


Figure 5.20 - Installation of vertical coaxial system

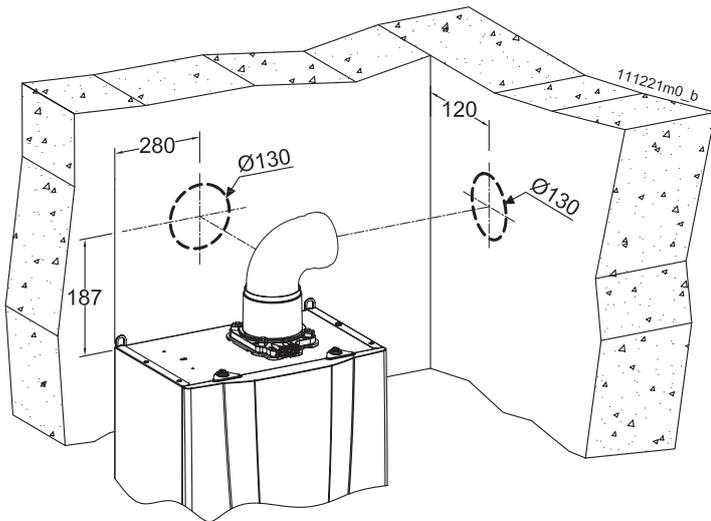


Figure 5.21 - Quotes and hole centre to centre distances for coaxial drain pre-installation

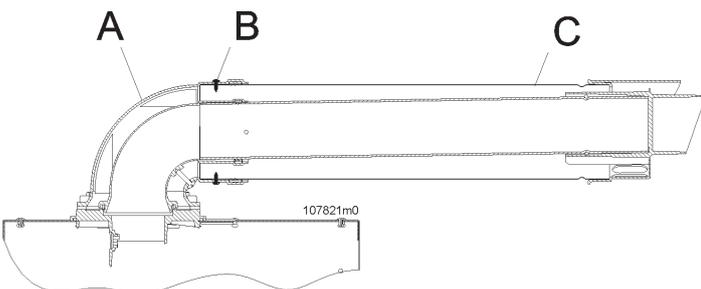


Figure 5.22 - Positioning the coaxial pipe

5.13.6 - "60/100PP vertical coaxial" System (polypropylene) (C13; C33 Type)

AGUADENS 16-22-27

The appliance is supplied as per standard without fittings for the connection of the fumes exhaust/air intake. To connect it to a vertical 60/100 system, the relevant kit must be requested and must be installed as in figure 5.20.



ATTENTION !!! Scrupulously follow the installation phases of the coaxial pipe as illustrated in figure 5.22. In particular:

- 1.- introduce the coaxial pipe "C" inside the bend "A";
- 2.- fix the external pipe using the stainless steel self-threading screws "B".



ATTENTION !!! The coaxial exhaust and intake pipes must be appropriately sustained via rigid brackets positioned no more than 1 metre from each other. The brackets must be fixed to rigid walls that can support the weight of the pipe itself.



ATTENTION !!! Once these operations have been performed, check that the exhaust/intake terminal is exposed to the outdoors with the tolerances given in figure 5.26

- ☞ Take particular care with the installation of pipes in the part that passes through the wall to the outside. The normal maintenance operations must always be possible, therefore install the pipes in a sheath so that they can slide out.
- ☞ The horizontal tracts must always have an inclination of at least 2% towards the appliance.
- ☞ The fumes exhaust/air intake pipe can be extended up to a maximum distance as indicated in the table in chapter 9 at the end of the manual. Every 90° bend has a loss equivalent to 1 metre of linear pipe. Every 45° bend has a loss equivalent to 0.5 m of linear pipe.

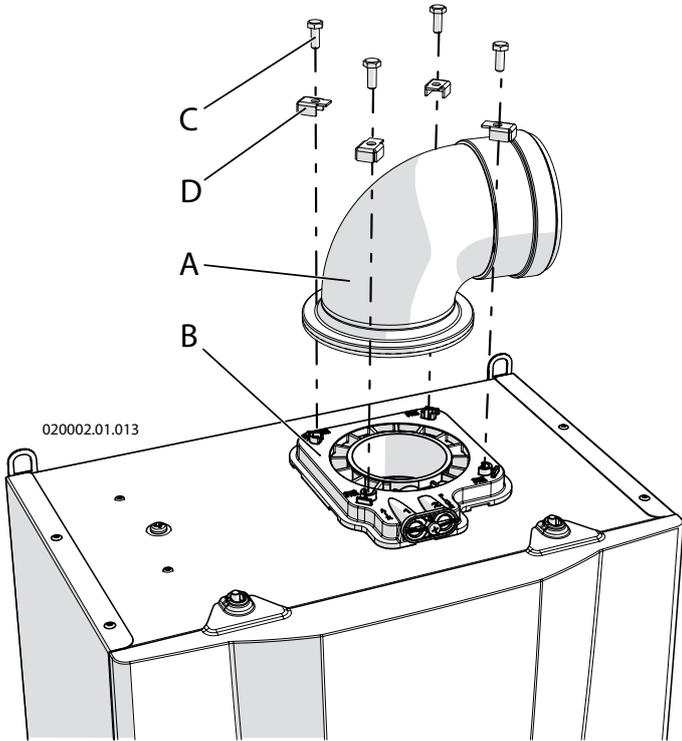


Figure 5.23 - Installation of horizontal coaxial system

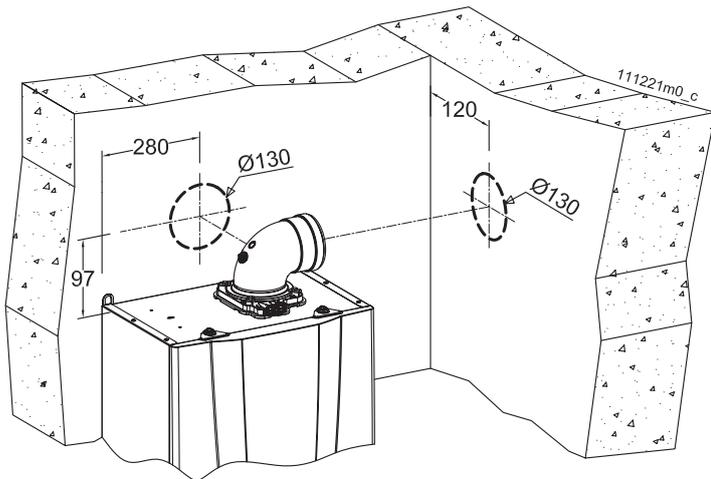


Figure 5.24 - Quotes and hole centre to centre distances for coaxial drain pre-installation

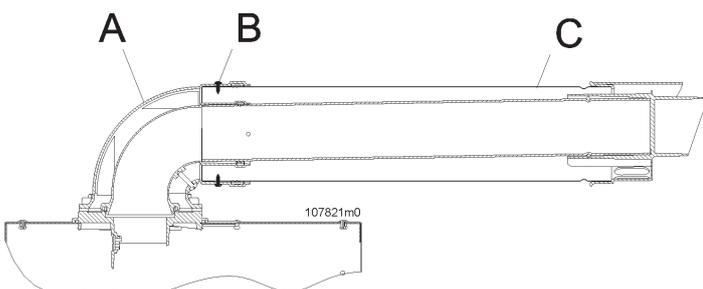


Figure 5.25 - Positioning the coaxial pipe

5.13.7 - "60/100PP horizontal coaxial" System (polypropylene) (C13; C33 Type) AGUADENS 16-22-27

The appliance is supplied as per standard without fittings for the connection of the fumes exhaust/air intake. To connect the appliance to a 60/100 coaxial system, request the relevant kit and install it as in figure 5.23.



ATTENTION !!! Scrupulously follow the installation phases of the coaxial pipe as illustrated in figure 5.25. In particular:

1. - introduce the coaxial pipe "C" inside the bend "A";
2. - fix the external pipe using the stainless steel self-threading screws "B".



ATTENTION !!! The coaxial exhaust and intake pipes must be appropriately sustained via rigid brackets positioned no more than 1 metre from each other. The brackets must be fixed to rigid walls that can support the weight of the pipe itself.

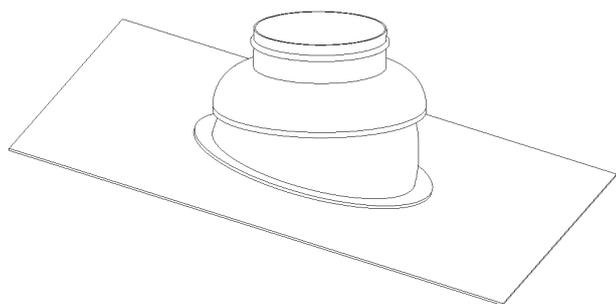


ATTENTION !!! Once these operations have been performed, check that the exhaust/intake terminal is exposed to the outdoors with the tolerances given in figure 5.26

☞ Take particular care with the installation of pipes in the part that passes through the wall to the outside. The normal maintenance operations must always be possible, therefore install the pipes in a sheath so that they can be slid out.

☞ The horizontal tracts must always have an inclination of at least 2% towards the appliance.

☞ The fumes exhaust/air intake pipe can be extended up to a maximum distance as indicated in the table in chapter 9 at the end of the manual. Every 90° bend has a loss equivalent to 1 metre of linear pipe. Every 45° bend has a loss equivalent to 0.5 m of linear pipe.



COD. 62617255

5.13.8 - "60/100PP Coaxial" System: accessories available

The following accessories are available on request to make the 60/100 coaxial fumes exhaust/air intake system:
(the number after the code is used to recall the piece in the following drawings)

62617255 - N° 2 converts for pitched roofs from 5° to 25°
extension L = 1000 mm

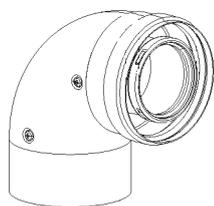
62617234 - N° 1 90° coaxial bend M/F PP

62617252 - N° 6 45° coaxial bend M/F PP

62617231 - N° 7 Coaxial extension L 1m PP

62617304 - N° 3 coaxial PP roof terminal

62617232 - N° 5 coaxial PP wall terminal



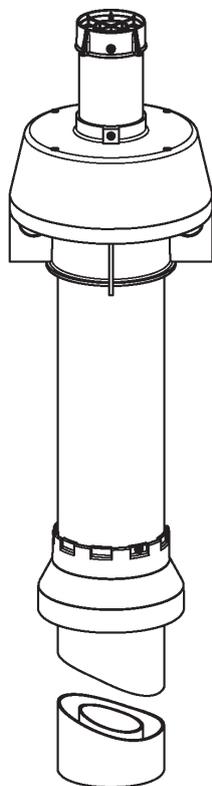
COD. 62617234



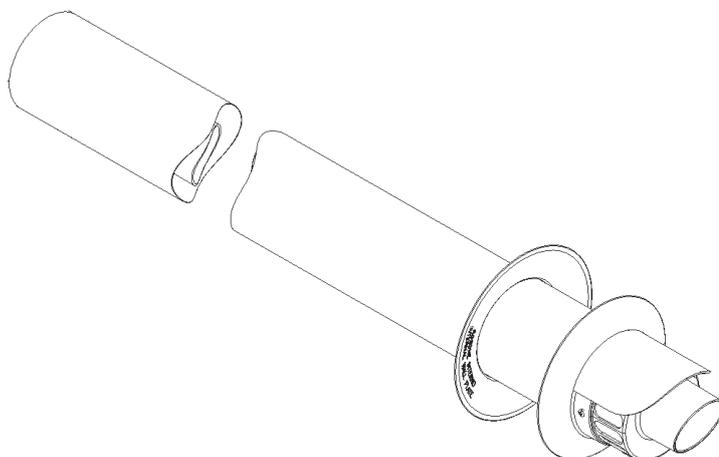
COD. 62617252



COD. 62617231



COD. 62617304



COD. 62617232

5.13.9 - "60/100PP Coaxial" System: installation examples

When a coaxial exhaust is made (see figure 5.26), both vertical and horizontal, the exhaust pipe slope upwards in a way to make the condensate flow into the appliance.



ATTENTION !!! The horizontal terminal must be protected against the accidental return of rain water. To do this, gables must be installed (or projections or balconies or relevant protections) with the minimum dimensions given in figure 5.26

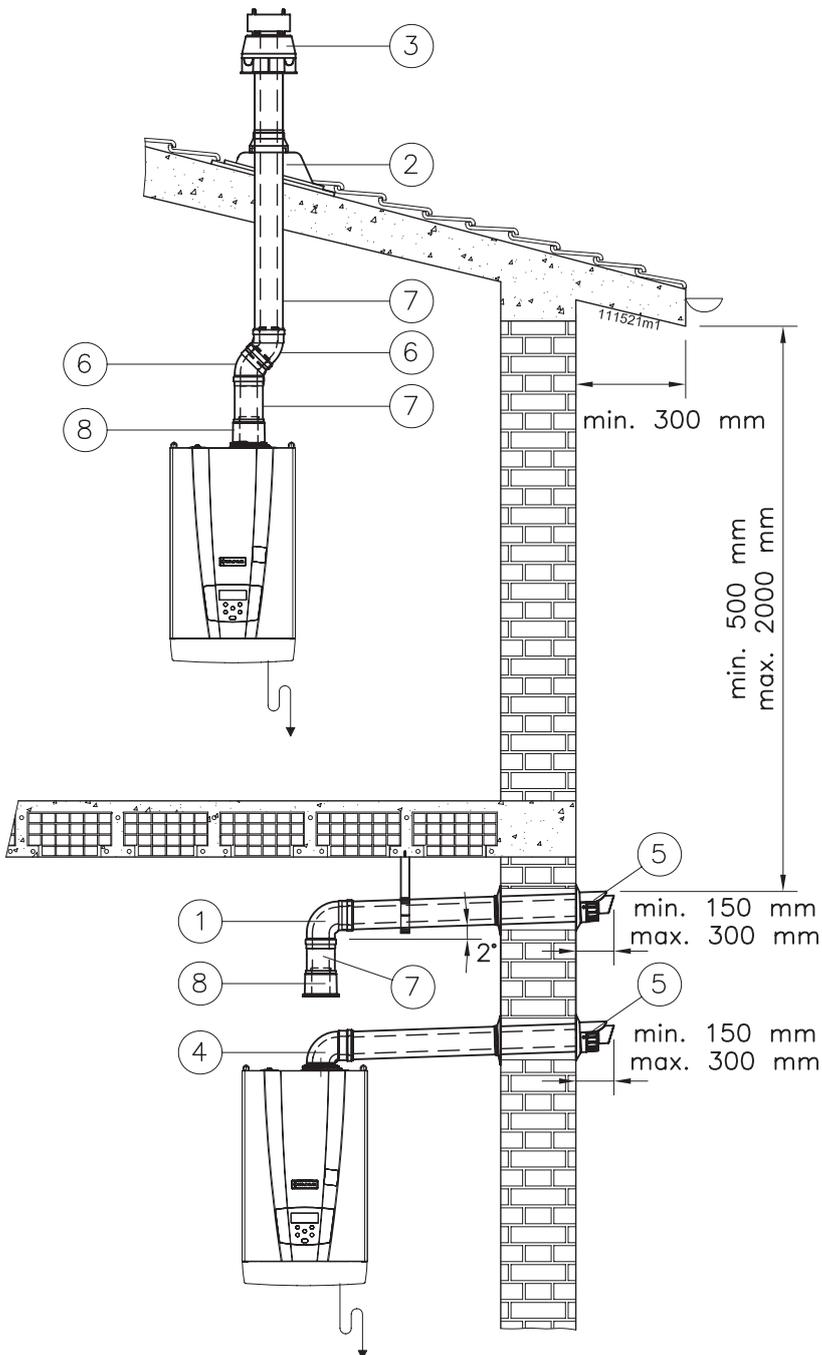


Figure 5.26 - Examples of coaxial pipe installation

5.13.10 - "80/125PP vertical coaxial" System (polypropylene) (C13; C33)

AGUADENS 37

The appliance is supplied as per standard without fittings for the connection of the fumes exhaust/air intake. To connect it to a vertical 80/125 system, the relevant kit must be requested and must be installed as in figure 5.27.



ATTENTION !!! Scrupulously follow the installation phases of the coaxial pipe as illustrated in figure 5.29. In particular:

- 1.- introduce the coaxial pipe "C" inside the bend "A";
- 2.- fix the external pipe using the stainless steel self-threading screws "B".



ATTENTION !!! The coaxial exhaust and intake pipes must be appropriately sustained by rigid brackets positioned no more than 1 metre from each other. The brackets must be fixed to rigid walls that can support the weight of the pipe itself.



ATTENTION !!! Once these operations have been performed, check that the exhaust/intake terminal is exposed to the outdoors with the tolerances given in figure 5.30

☞ Take particular care with the installation of pipes in the part that passes through the wall to the outside. Normal maintenance operations must always be possible, therefore install the pipes in a sheath so that they can slide out.

☞ The horizontal tracts must always have an inclination of at least 2% towards the appliance.

☞ The fumes exhaust/air intake pipe can be extended up to a maximum distance as indicated in the table in chapter 9 at the end of the manual. Every 90° bend has a loss equivalent to 1 metre of linear pipe. Every 45° bend has a loss equivalent to 0.5 m of linear pipe.

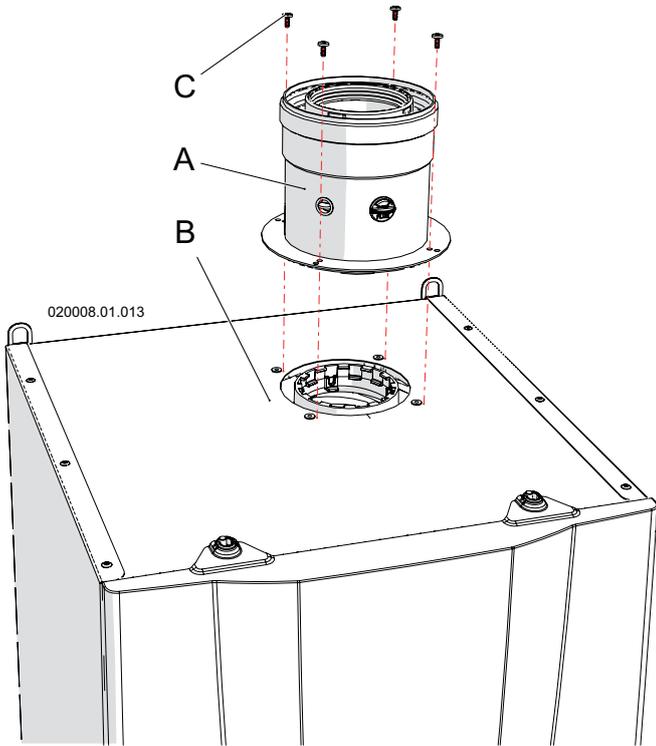


Figure 5.27 - Installation of vertical coaxial system

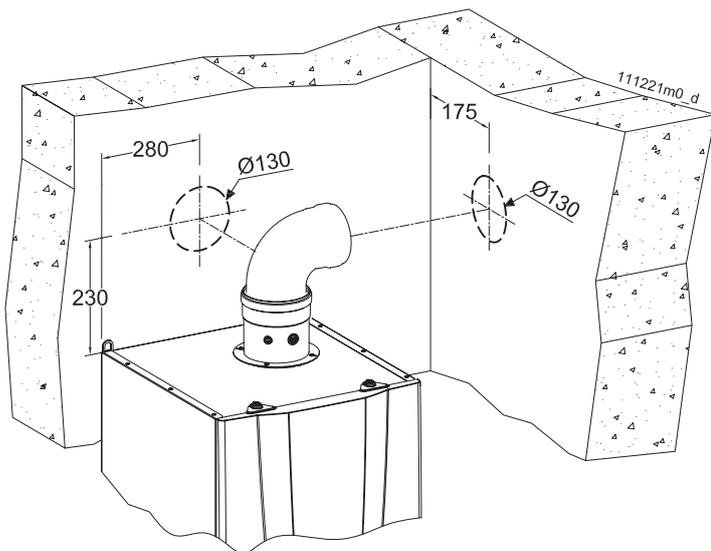


Figure 5.28 - Quotes and hole centre to centre distances for coaxial drain pre-installation

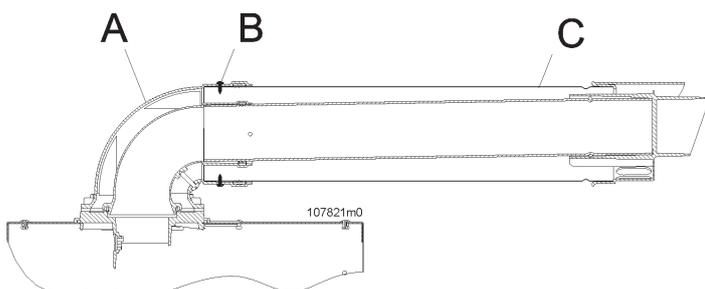
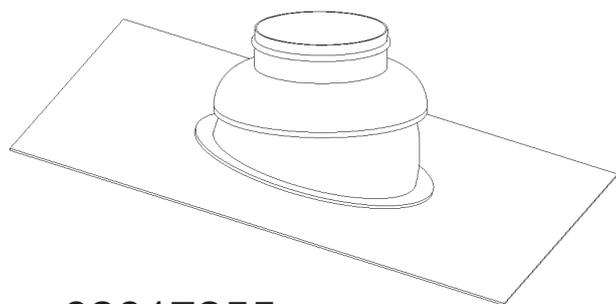


Figure 5.29 - Positioning the coaxial pipe



62617255

5.13.11 - "80/125PP Coaxial" System: accessories available

The following accessories are available on request to make the 80/125 coaxial fumes exhaust/air intake system:
(the number after the code is used to recall the piece in the following drawings)

62617255 - N° 2 converts for pitched roofs from 5° to 25°
extension L = 1000 mm

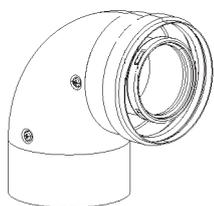
62617321 - N° 1 90° coaxial bend M/F PP

62617322 - N° 6 45° coaxial bend M/F PP

62617323 - N° 7 Coaxial extension L 1m PP

62617325 - N° 3 coaxial PP roof terminal

62617324 - N° 5 coaxial PP wall terminal



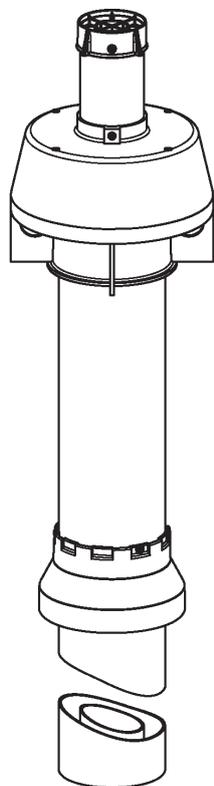
62617321



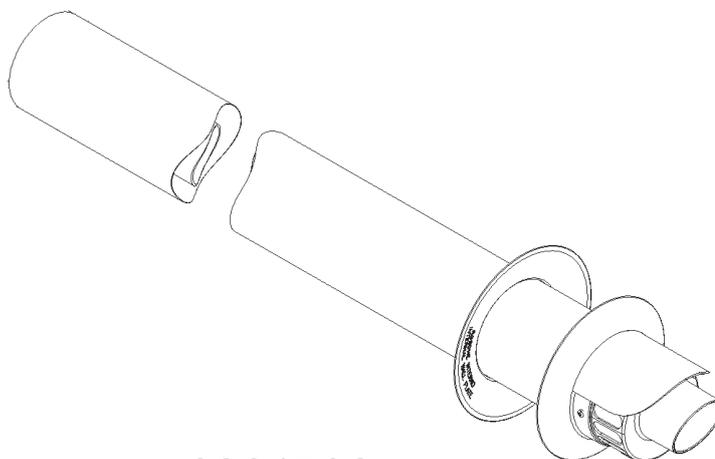
62617322



62617323



62617325



62617324

5.13.12 - "80/125PP Coaxial" System: installation examples

When a coaxial exhaust is made (see figure 5.30), both vertical and horizontal, the exhaust pipe slope upwards in a way to make the condensate flow into the appliance.



ATTENTION !!! The horizontal terminal must be protected against the accidental return of rain water. To do this, gables must be installed (or projections or balconies or relevant protections) with the minimum dimensions given in figure 5.30

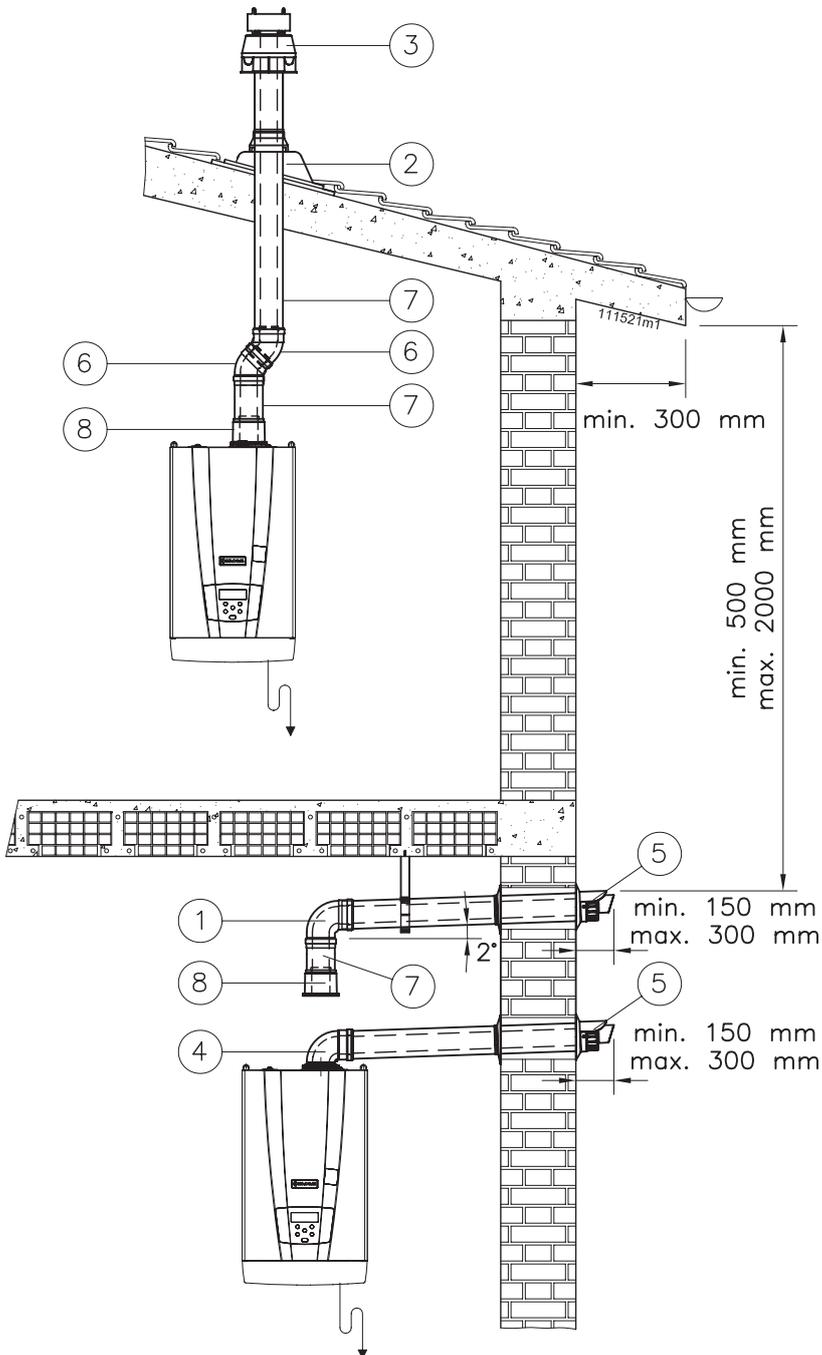


Figure 5.30 - Examples of coaxial pipe installation

6 - OPERATING

6.1 - Operating

Before starting the appliance up, it si necessary to carry out the following.

6.1.1 - User instructions

Instruct the user regarding correct use of the appliance and the plant in general. In particular:

- ☞ Give the installation and use manual and all documentation contained in the packaging to the user.
- ☞ Instruct the user concerning the special measures for the exhaust of burned gases, informing them that they must not be modified.
- ☞ Inform the user regarding the correct adjustment of the temperatures, control units/room thermostats and radiators for energy saving.

6.1.2 - Filling the condensate drain siphon

The siphon found inside the appliance (see figure 3.1 detail "40"), must be filled with water to create the water head able to prevent the fumes escaping from pipe "F" in figure 5.8. Proceed as follows to do this:

(refer to figure 6.1)

- 1.- loosen the screw "E";
- 2.- remove the lid "D" and the gaskets "C";
- 3.- introduce a rubber hose into the opening "B" (do not confuse with "A") and the other end of the hose into the funnel;

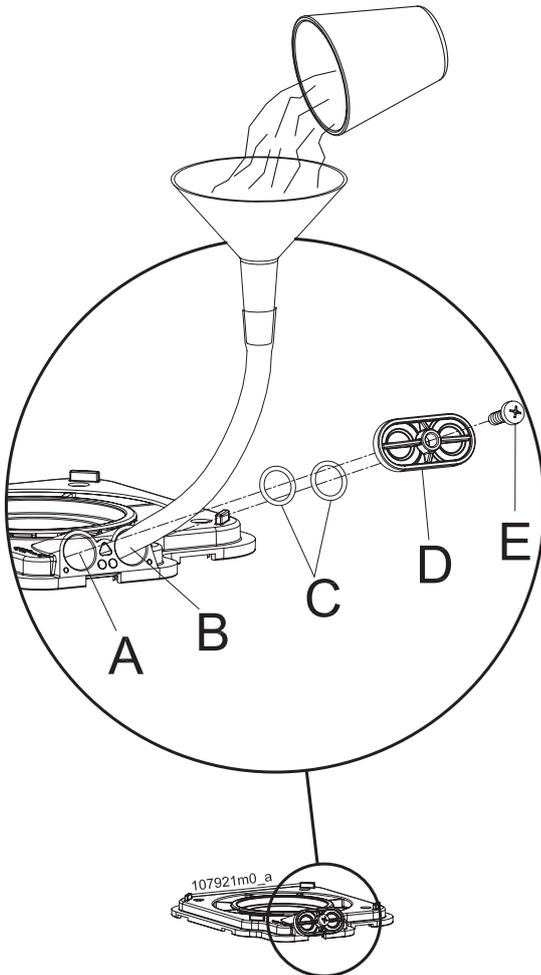


Figure 6.1 - Filling the condensate drain siphon

4.- use the funnel to slowly pour about 200 cm³ (a glass) of water;

5.- re-mount everything in reverse order.



ATTENTION !!! If the appliance remains off for more than 3 months, the siphon must be filled again as explained above.

6.2 - General recommendations regarding the supply of gas

For commissioning of the appliance, have a professionally qualified technician perform the following checks:

- ☞ That the appliance is powered by the type of fuel for which it is set-up.
- ☞ That the gas supply pressure (with appliance operating and at a standstill) is within the maximum and minimum values indicated in the table in chapter 9 at the end of the manual.
- ☞ That the supply plant has all safety and control parts envisioned by the current national and local Standards.
- ☞ That the fumes discharge terminal and the combustion agent air intake terminal are free from any obstruction.
- ☞ That the fumes exhaust and combustion agent air intake terminal are positioned outside the building.
- ☞ That the condensate drain connection is connected.



ATTENTION !!! If you smell gas:

- A - Do not switch on any electric device, telephone included or any object that can cause sparks;**
- B - Immediately open doors and windows causing a current of air that quickly cleans the gas from the room;**
- C - From another room, or from a neighbour's, immediately call a professionally qualified technician or the gas supply company. Call the Fire Service if the former are not available.**

6.3 - Type of gas for which the appliance is regulated.

There is a label on the front of the appliance certifying the gas supply type and pressure for which it is adjusted.

The appliance may have the following 2 types of wording:

2H-G20-20mbar NATURAL GAS

means that the appliance is adjusted to operate with H type gas of the second family (natural gas) at a supply pressure of 20 mbar.

3P-G31-37mbar LP GAS

means that the appliance is adjusted to operate with type P gas (Propane, also called LP Gas) of the third family, at a supply pressure of 37 mbar.

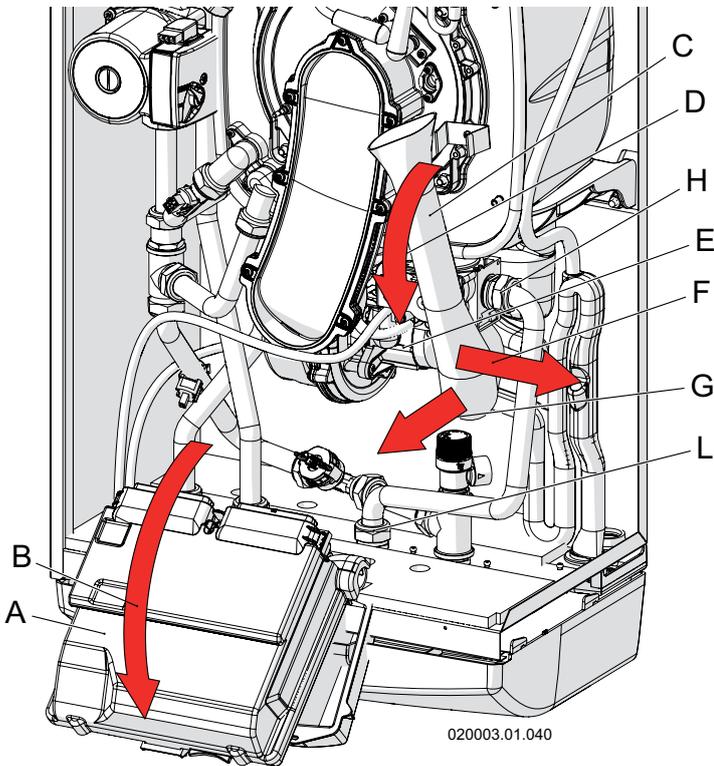


Figure 6.2 - Removing the air manifold

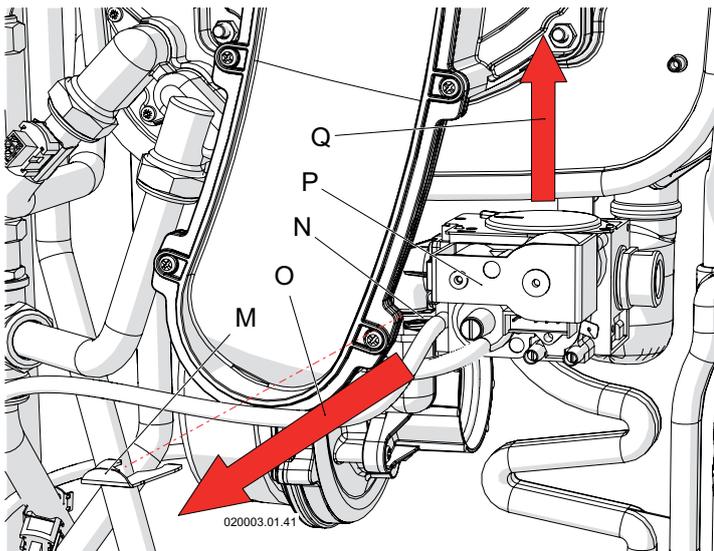


Figure 6.3 - Removing the gas valve

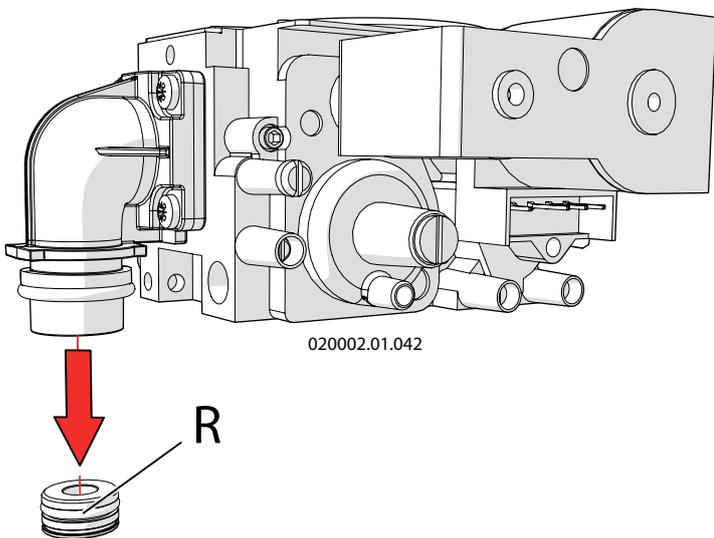


Figure 6.4 - Replacing the gas nozzle

6.4 - Conversion of the appliance from one type of gas to another



ATTENTION !!! Read these instructions carefully before changing the gas:

- The gas appliance must be installed, calibrated or modified by specialised staff in compliance with legal terms;
- Check and be certain that the type of gas which is powering the appliance is compatible with the adjustment kit in your possession;
- Do not power the appliance with gases different from those envisioned.

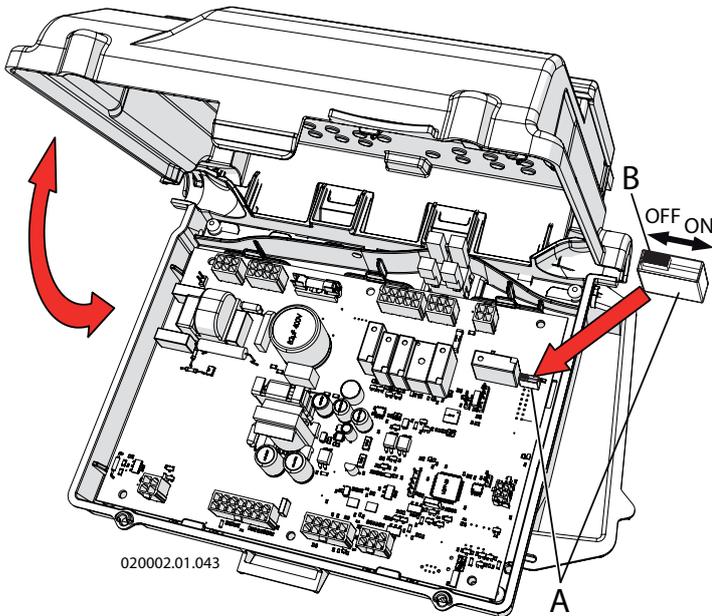
Follow the instructions given below to change the gas:

- 1 - disconnect the electric power supply upstream from the appliance;
- 2 - open the appliance casing as reported in chapter 8.2;
- 3 - access the control and command board as reported in chapter 8.2;
- 4 - move the microswitch "B" from left to right to the "ON" position (see figure 6.5);
- 5 - apply electric power to the appliance;
- 6 - the parameter **3001** will appear on the appliance's visual display, followed by its value;
- 7 - using the  + and  - keys, access the parameter **3002**;
- 8 - press the RESET key to make the **3002** parameter flash;
- 9 - using the  + and  - keys, set the value of the parameter **3002** to the new corresponding value according to the table in figure 6.7.
- 10 - press the RESET key to confirm the modification.
- 11 - remove voltage from the appliance, re-position the microswitch "B" from right to left in "OFF" position (see figure 6.5).
- 12 - close the gas supply;
- 13 - remove the air manifold making sure to turn it externally and then slide it out of the fan inlet (see figure 6.2, detail "C");
- 15 - remove the gas inlet pipe via the two fittings (see figure 6.2, details "H" and "L");
- 16 - remove the clamping spring "M" from the seat "N" releasing the valve "P" (See figure 6.3);
- 17 - slide the gas valve "P" out upwards;
- 18 - replace the gas nozzle "R" (see figure 6.4) with an appropriate one according to that stated in figure 6.7 under "Diameter of the gas nozzle";
- 19 - remount the gas valve (see figure 6.3, detail "P"), making sure to reposition the spring "M".
- 20 - remove the gas supply pipe via the two fittings (see figure 6.2, details "H" and "L");
- 21 - re-mount the air manifold (see figure 6.2, detail "C");
- 22 - open the gas cock;
- 23 - check for any gas leaks using the relevant means of control.



ATTENTION !!! Perform the gas leak test according to that established by the current Standard and only using soapy water. The use of naked flames is prohibited.

6 - OPERATING



B – Microswitch

Figure 6.5 - Positioning the microswitch



ATTENTION !!! If you smell gas:

- A** - Do not switch on any electric device, telephone included or any object that can cause sparks;
- B** - Immediately open doors and windows causing a current of air that quickly cleans the gas from the room;
- C** - From another room, or from a neighbour's, immediately call a professionally qualified technician or the gas supply company. Call the Fire Service if the former are not available.

- 24.- check the supply gas pressure, following the procedure in chapter 6.6;
- 25.- open the CO₂ adjustment screw completely (see figure 6.14 detail "A");
- 26.- control and adjust the CO₂, following the procedure in chapter 6.8;
- 27.- instead of the label that identified the old state of adjustment, apply the sticker onto the front casing of the appliance (see figure 6.6), certifying the appliance's new state of adjustment, as follows: apply label "B" if the appliance has been converted from NATURAL GAS to LP GAS; apply label "A" if the appliance has been converted from LP GAS to NATURAL GAS.

A	IT - FR - ES - PT - GB - IE
Apparecchio regolato per gas: Appareil réglé pour gaz: Aparato regulado por gas: Aparelho regulado por gas: Appliance set for gas type:	
2H-G20-20mbar 2E+-G20/G25-20/25mbar	
GAS METANO GAZ NATUREL GAS NATURAL GAS NATURAL NATURAL GAS	
B	IT-FR-ES-PT-GB-IE-DE-BE-NL
Apparecchio regolato per gas: Appareil réglé pour gaz: Aparato regulado por gas: Aparelho regulado por gas: Appliance set for gas type: Apparat reguliert für gas:	
3B/P-G30/G31-30mbar 3P-G31-37mbar	
GAS GPL GAZ GPL GAS GLP GAS GLP LP GAS	
C	FR-DE-BE
Appareil réglé pour gaz: Apparat reguliert für gas: Appliance set for gas type:	
2Es-G20-20mbar 2E-G20-20mbar 2E(s)B-G20-20mbar	
GAS NATUREL (LACQ) ERDGAS E	
D	FR-DE-NL
Appareil réglé pour gaz: Apparat reguliert für gas: Appliance set for gas type:	
2EI-G25-25mbar 2L-G25-25mbar 2LL-G25-20mbar	
GAS NATUREL (GRONINQUE) ERDGAS LL NATURAL GAS	

62408090m5

Figure 6.6 - Labels certifying the new status of adjustment of the appliance

Model	Type of gas	Setting parameter 3002	Gas supply minimum pressure (mbar)	Gas supply maximum pressure (mbar)	Gas nozzle diameter (mm)	CO ₂ Maximum power (%)	CO ₂ Minimum power (%)	O ₂ Maximum power (%)	O ₂ Minimum power (%)
16	NAT	50	15	27	4,9	9,0 ± 0,3	8,5 ± 0,2	4,8 ± 0,2	5,5 ± 0,2
	LPG	51	25	45	3,7	10,5 ± 0,3	10,0 ± 0,2	4,8 ± 0,2	5,6 ± 0,2
22	NAT	52	15	27	6,7	9,0 ± 0,3	8,5 ± 0,2	4,8 ± 0,2	5,5 ± 0,2
	LPG	53	25	45	5,2	10,5 ± 0,3	10,0 ± 0,2	4,8 ± 0,2	5,6 ± 0,2
27	NAT	54	15	27	8,0	8,7 ± 0,3	8,3 ± 0,2	4,7 ± 0,2	5,4 ± 0,2
	LPG	55	25	45	6,0	10,1 ± 0,3	9,9 ± 0,2	4,7 ± 0,2	5,5 ± 0,2
37	NAT	54	15	27	10,0	8,7 ± 0,3	8,3 ± 0,2	4,7 ± 0,2	5,4 ± 0,2
	LPG	55	25	45	6,5	10,1 ± 0,3	10,8 ± 0,2	4,7 ± 0,2	5,8 ± 0,2

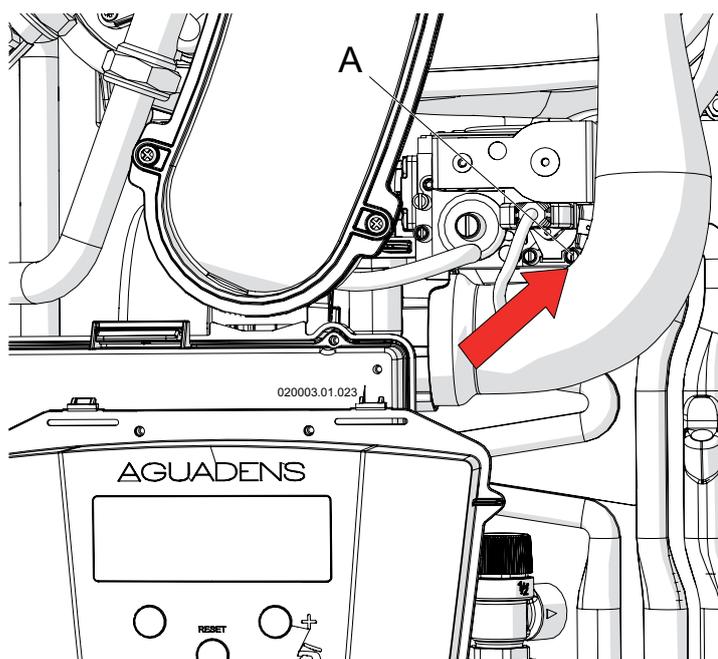
Figure 6.7 - Correspondence table for the parameter **3002** and the operating values

6.5 - Ignition

- 1.- open the gas cock;
- 2.- power the appliance electrically;
3. - adjust the temperature desired for the domestic hot water

service using the  + and  keys. The icon  , present on the display will inform regarding the operating state of the domestic hot water service:

- a) fixed  icon: domestic hot water inactive (no-one is withdrawing domestic hot water, or in the case of a storage tank, the delivery temperature is reached)
- b) flashing  icon: domestic hot water is being withdrawn.



A - Gas inlet pressure point.

Figure 6.8 - Gas valve

6.6 - Controlling the supply gas pressure and any adjustment

The gas supply pressure must correspond to that stated in the table in chapter 9 at the end of the manual.

For its verification, proceed as follows:

- 1.- close the gas cock;
- 2.- access the components inside the appliance, following the procedure in chapter 8.2;
- 3.- loosen the pressure point "A" (see figure 6.8);
- 4.- connect to a manometer with resolution of at least 0.1 mbar (1 mmH₂O);
- 5.- open the gas cock;
- 6.- check that the pressure does not exceed the value given in the table in chapter 9 under "gas supply maximum pressure";
- 7.- open the domestic hot water cock to maximum;
- 8.- wait for the temperature of the water heater to stabilise;
- 9.- check that the pressure does not drop to a value lower than the "gas supply minimum pressure" given in the table in chapter 9. If the supply pressure does not respect the values described, operate upstream from the appliance in order to take it back within the minimum and maximum field;
- 10.- close the domestic hot water cock;
- 11.- close the pressure point "A" in figure 6.8;
- 12.- check for any gas leaks from the point with relevant control methods.



ATTENTION !!! Perform the leak test using a soap and water only. The use of naked flames is prohibited.

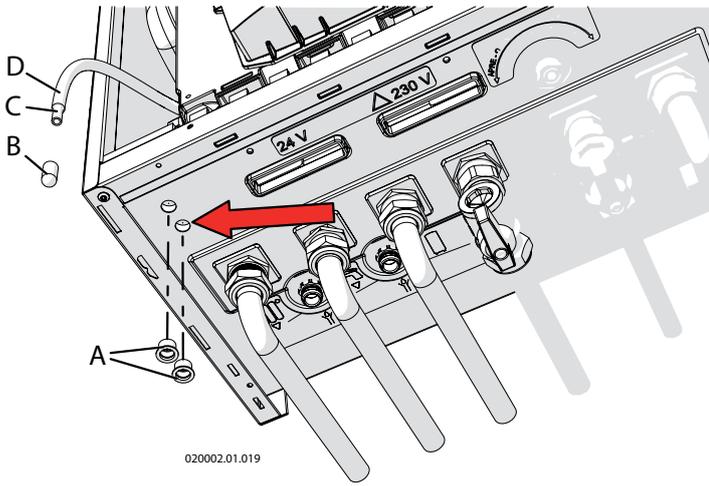


Figure 6.9 - Combustion agent air pressure point

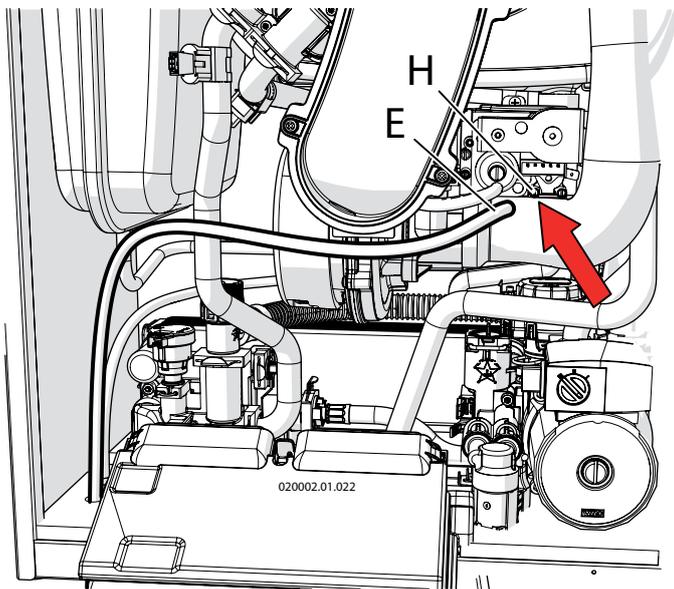


Figure 6.10 - Combustion agent air pressure point

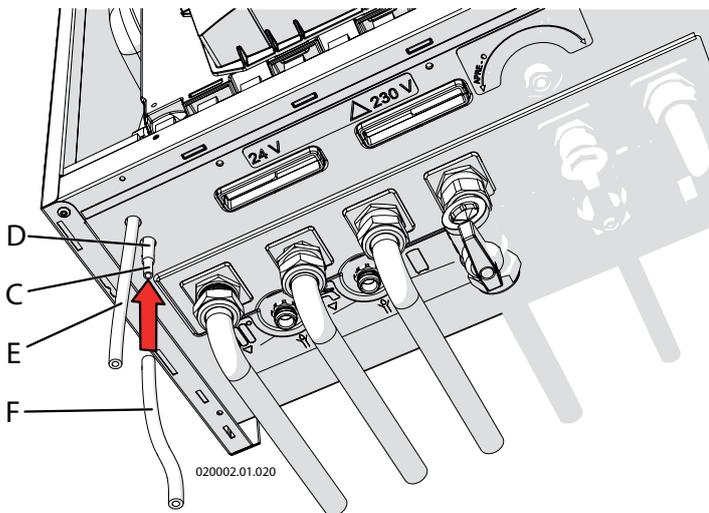


Figure 6.11 - Controlling combustion agent air pressure

6.7 - Controlling the combustion agent air pressure

As the appliance has an air/gas ratio fixed in the factory, the gas pressure at the burner is controlled indirectly by measuring the pressure of the combustion agent air inside the appliance and must correspond to that stated in the table in chapter 9, under "Combustion agent air pressure".

Proceed as follows for the check (refer to the Figures from 6.9 to 6.12):

- 1.- use a differential manometer with precision of at least 0.1 mbar (1 mmH₂O);
- 2.- close the gas cock;
- 3.- open the appliance casing following chapter 8.2;
- 4.- remove the caps "A" (see figure 6.9);
- 5.- take the flexible hose "D", which is found inside the appliance and remove the cap "B" (see figure 6.9);
- 6.- insert the pipe "D" inside the hole indicated by the arrow in figure 6.9;
- 7.- loosen the pressure point "H" in figure 6.10;
- 8.- take a silicone pipe with external diameter of 10 mm and internal diameter of 7mm (detail "E" in figure 6.10) and introduce it into pressure point "H";
- 9.- insert pipe "E" into the hose as indicated in figure 6.11;
- 10.- connect the manometer to the two pipes "E" and "F" as illustrated in figure 6.12, making sure to connect the pipe "E" to the negative pressure point and tube "F" to the positive pressure point;
- 11.- **close the casing "B" in figure 8.1. It is indispensable to have a reliable measurement;**
- 12.- switch the appliance on;
- 13.- press the  and RESET keys simultaneously for more than 5 seconds to enter the "installer" menu confirmed by the icon  appearing on the display.
- 14.- using the  and  keys, access the parameter **20 10**;
- 15.- press the RESET key to enter the parameter and use the  and  keys, to modify the value to **F Air**;
- 16.- press the RESET key to confirm the modification. Now just the fan will operate at maximum speed for 10 minutes.
- 17.- compare the pressure value read on the manometer with that given in the table in chapter 9, "Combustion agent air pressure". If the pressure is at a lower value, check that there are no obstructions in the combustion agent air/fumes exhaust or that the air intake/fumes exhaust system is not longer than envisioned in chapter 9 under "Max. length of fumes pipe";
- 18.- Once the control has ended, press the RESET key again to enter parameter **20 10** and via the  and  keys, change the value to **OFF**;
- 19.- press the RESET key to confirm the modification;
- 20.- hold the RESET key down for 5 seconds to exit the "installer" menu.

At the end of the control, remove the tube "E", close the holes indicated by the arrow using the previously-removed caps "A", close the pipe "D" using cap "B" and close the pressure point "H" again as in figures 6.9 and 6.10.

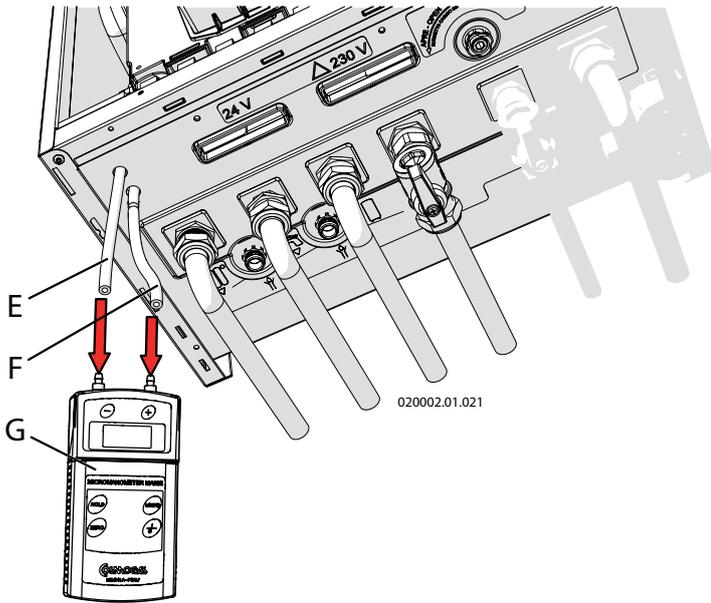


Figure 6.12 - Controlling combustion agent air pressure

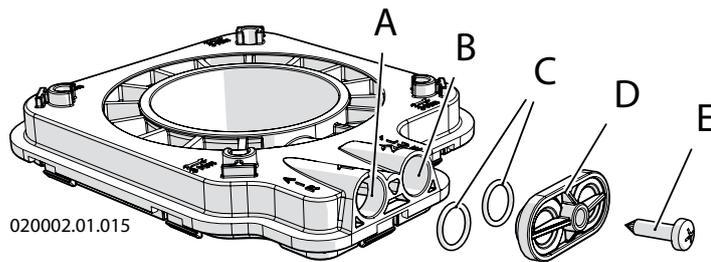
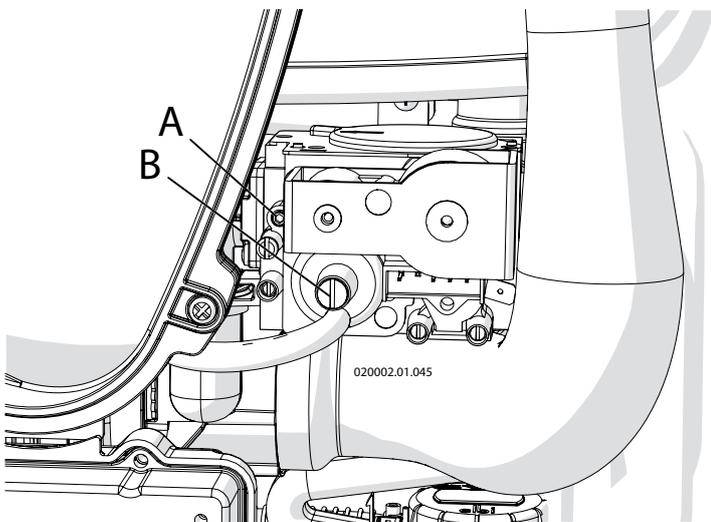


Figure 6.13 - Combustion analysis points



A - CO2 regulation screw

Figure 6.14 - Gas valve

6.8 - Controlling the level of CO2 and any adjustment

The appliance in normal operating mode and for altitudes within 1000 m, has a CO₂ (carbon dioxide) level in the fumes, which can be detected in the table in chapter 9. A value different to those reported can cause malfunctions. Combustion analysis must be performed to check and eventually adjust this value. Proceed as follows:

- 1.- check a combustion analyser to the appropriate point on the fumes exhaust fitting "B" in figure 6.13;
- 2.- open the domestic hot water cock to maximum;
- 3.- wait for the CO₂ measurement to stabilise;
- 4.- compare the value measured with that given in the table in figure 6.7, "CO₂ maximum power". If the value measured is offset from the value read, it must be taken back within the value given in the table in figure 6.7. proceeding as follows:
 - a) turn screw "A" clockwise as in figure 6.14 to decrease the level of CO₂;
 - b) turn screw "A" anti-clockwise as in figure 6.14 to increase the level of CO₂;
- 5.- once the check has been completed, seal the screw "A" in figure 6.14 with red pain or similar system;
- 6.- press the RESET key again to enter the parameter **20 10** and use the  + and  - keys, to modify the value to **L 0 L**;
- 7.- press the RESET key to confirm the modification. Now the burner will operate at minimum power for 10 minutes.
- 8.- wait for the CO₂ measurement to stabilise;
- 9.- the value of CO₂ at minimum power must correspond;
- 10.- once the check has been completed, seal the screw "B" in figure 6.14 with red pain or similar system;
- 11.- press the RESET key again to enter the parameter **20 10** and use the  + and  - keys, to modify the value to **OFF**;
- 12.- press the RESET key to confirm the modification.
- 13.- hold the RESET key down for 5 seconds to exit the "installer" menu.
- 14.- close the previously-opened domestic hot water cock.

6.9 - Adjusting the domestic hot water flow rate

The appliance is fitted with a domestic hot water maximum flow rate adjuster. However, if the appliance is installed in a geographical area where the temperature of the cold water is very low, the flow rate of domestic hot water that passes inside the appliance may have to be reduced. It is therefore good practice to perform this adjustment:

- 1.- switch the appliance on;
- 2.- using the  + and  keys, adjust the temperature of the domestic hot water to 48 - 50°C;
- 3.- open the hot water cock completely. In the case of a single lever mixer, the position must be completely on "HOT";
- 4.- wait 3 minutes for the temperature to stabilise;
- 5 - if the water temperatures too cold, the flow rate must be reduced via the selector "A" in figure 6.15, until the desired temperature is reached.

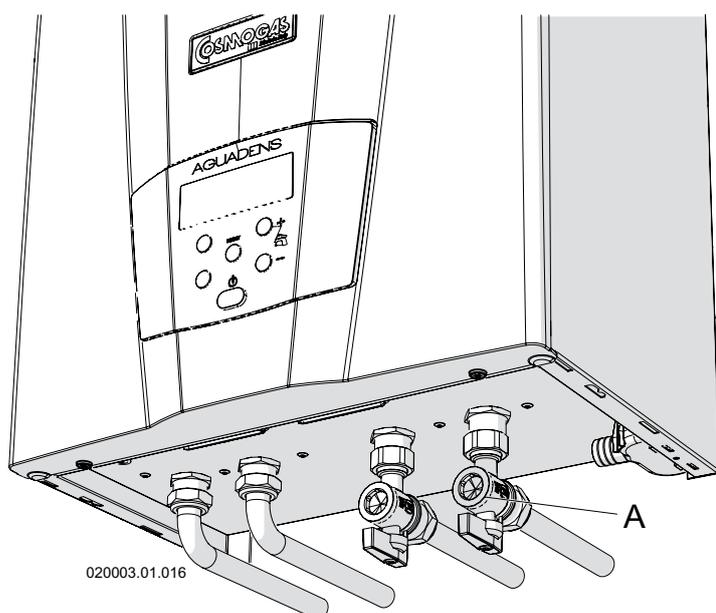


Figure 6.15 - domestic hot water flow rate selector

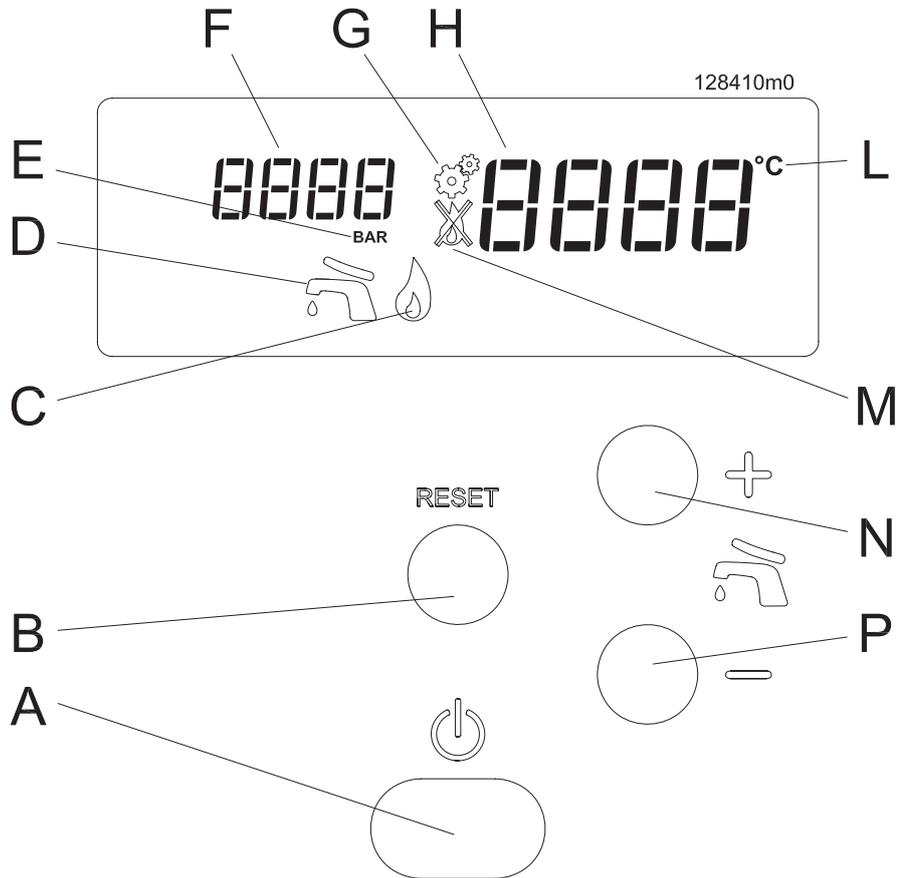


Figure 7.1 - Control board
Key for figure 7.1

- A - On/off switch
- B - Reset Key
- C - Burner status (the burner is on when this icon is present)
- D - State of the domestic water service:
 Icon off = domestic water off
 Icon on = domestic water active but not operating
 Icon flashing = domestic water active and operating
- E - Unit of measurement of the pressure displayed
- F - Heating plant pressure or indicator of the various parameters inside the various menus
- G - Icon for entry into the "Installer" menu
- H - Domestic hot water temperature or indicator of the values assumed by the various parameters
- L - Unit of measurement of the temperature displayed
- M - Appliance blocked (see chapters 7.11.1 and 7.11.2 for the diagnostics)
- N - Key for switching on and increasing the temperature of the domestic hot water or for scrolling and changing the value of the parameters
- P - Key for reducing the temperature of the domestic hot water (below minimum, the domestic hot water is switched OFF) or for scrolling and changing the value of the parameters

7.1 - Controlling cock opening

- The gas cock must be open;
- Any valves positioned on hot and cold water, must be open.

7.2 - Generalities

During operation the display shows the appliance operating state as well as other information as indicated in chapter 7.11 (Diagnostics). Other parameters can be consulted through the "User menu" (see chapter 7.9), which are useful for understanding operation of the appliance and to control the latest blocks or errors occurring.

After 5 minutes of normal operation, the display switches off completely to save energy. Just press any key to switch it back on.

In the case of any anomaly, the display switches back on automatically. This function can be modified by following chapter 7.8 (Energy saving).

7.3 - Ignition procedure

- 1.- open the gas cock;
- 2.- power the appliance electrically;
- 3.- adjust the temperature of the domestic hot water as per chapter 7.5.

The command and control equipment will switch the burner on. If ignition does not take place within 20 seconds, (the appliance automatically re-attempts ignition 3 times), it blocks and the visual display will show **Loc 1**.

Press the RESET key to restore the normal operating conditions.

The appliance will automatically attempt a new ignition.



ATTENTION !!! If shutdown due to blocking is repeated frequently, contact a qualified technician to reset the normal operating conditions.

7.4 - "User menu"

Entry into the "User menu" is highlighted by the visual display "F", in figure 7.1, which indicates parameters that can assume

values from **100 1** to **1999**. To enter the "User menu":

- 1.- hold the RESET key down for 2 seconds until the visual display "F" shows **100 1**;
- 2.- press the  and  keys to scroll the parameters situated inside the user menu;
- 3.- hold down the RESET key for more than 2 seconds to exit the "User menu";

If no key is pressed for more than 60 seconds, the menu is exited automatically.

The parameters in chapter 7.9 can be queried in this menu.

7.5 - Adjustment of the instant domestic hot water

The temperature of the domestic hot water is adjusted by

operating on the  and  keys. On pressing one of the two keys, the visual display "H" in figure 7.1 will start to flash and show the temperature that is being set. The range of adjustment for the temperature of the domestic hot water goes from 40°C to 60°C or from 40°C to 70°C if there is a storage tank present.

By holding the  key down also below 40°C, **OFF** will appear to indicate switch-off of the domestic hot water service, also highlighted by switch-off of the icon "D" in figure 7.1.

7.6 - Timing of the various functions

To safeguard the lifespan of the appliance, improve the comfort generated and increase energy saving, timings have been introduced during operation.

These timings are:

- Pump post-circulation: every time the domestic hot water service ends, the pump continues to operate for 2 minutes;
- Pumps anti-block: every 24 hours the recirculation pump and the storage tank loading additional pump (if present) are forced;
- Anti-legionella; if the appliance is connected to a storage tank for preparation of the DHW., every seven days the latter is forced to a temperature of 60°C to disinfect against the legionella bacteria. This function activates also due hours after the appliance has been powered electrically.

7.7 - Pumps anti-block

The pump switches on once every 24 hours for 15 seconds during the summer period in order to prevent any deposits that may block it.

The storage tank loading pump (if present) is activated at the same time for the same reason.

7.8 - Energy Saving

To reduce the consumption of display energy, it will switch off automatically after 5 minutes from the last operation performed. This function can be deactivated or the time

modified via parameter **2 100** present in the "Installer menu"

(see chapter 7.10). If the parameter is set at **OFF**, the display will remain on constantly.

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7.9 - “User menu” Parameters

To access the “User menu” follow that reported in chapter 7.4.

The following parameters can be queried in this menu:

Parameter	Description of the parameter	M.U.
1001	Domestic hot water outlet temperature 1	°C
1002	Domestic hot water outlet temperature (or storage tank temperature, if present)	°C
1003	No function	/
1004	No function	/
1005	Domestic hot water outlet temperature 2 (safety sensor)	°C
1006	Fumes temperature	°C
1007	Cold water inlet temperature	°C
1008	Ionisation current	uA
1009	Status of the pump inside the appliance	ON/OFF
1010	No function	/
1011	No function	/
1012	No function	/
1013	No function	/
1014	Fumes temperature 2 (safety sensor)	°C
1040	Current rotation speed of the fan	rpm
1041	Fan rotation speed on ignition	rpm
1042	Fan rotation speed in minimum power mode	rpm
1043	Fan rotation speed in maximum power mode	rpm
1051	Latest block condition recorded (Loc) (see chapter 7.11.1)	/
1052	Latest error condition recorded (Err) (see chapter 7.11.2)	/
1053	Number of times the burner has lost the flame	n°
1055	Number of failed burner ignitions	n°
1056	No function	/
1057	Number of hours worked in domestic hot water mode	h x 10
1058	Number of burner working days	days
1059	Interval of time between the last two blocking errors (Err)	/ : value in minutes; ^h : value in hours; / : value in days; ^w : value in weeks;
1060	Interval of time between the last two blocks (Loc)	
1061	Current rotation speed of the domestic hot water turbine	rpm
1062	Current domestic hot water flow rate	l/min

7.10 - "Installer menu"



ATTENTION !!! The modification of these parameters could cause the appliance, and therefore the plant, to malfunction. For this reason only a technician that has the awareness and in-depth knowledge of the appliances can modify them.

The appliance command and control board makes this parameter menu available to the technician for the analysis of operation and adaptation of the appliance to the plant. Proceed as follows to enter the "Installer menu":

1.- hold the RESET and  keys down simultaneously for 5 seconds until the **2001** parameter is displayed.

The symbol  appears on the display to indicate the entry into the "Installer menu".

2.- the  + and  - keys can be used inside the menu to scroll the parameters;

3.- once the parameter of interest has been displayed, it can be modified as follows:

a.- press the RESET key to access the parameter (the visual display "H" in figure 7.1 will start to flash);

b.- modify the value of the parameter using the  + and  - keys;

c.- press the RESET key to confirm the data modified and go back to the list of parameters;

4.- To exit the "Installer menu", hold down the RESET key for 5 seconds until the symbol  disappears from the display.

If no key is pressed for more than 5 minutes, the menu is exited automatically. Any data variation that is not confirmed with the RESET key will be lost.



ATTENTION !!! Any variation to the parameters must be noted in the "Customised values" column present in the following table in order to facilitate the eventual replacement of the command and control board.

The following parameters can be changed or queried in this menu:

Parameter	Description of the parameter	M.U.	Setting range	Factory value	Customised values
2001	No function	/	/	/	/
2002	No function	/	/	/	/
2003	No function	/	/	/	/
2004	No function	/	/	/	/
2005	No function	/	/	/	/
2010	Forcing of fan and burner	/	OFF = No forcing FAN = Forcing of fan only to max speed LOu = Forcing of burner to minimum power Ign = Forcing of burner to ignition power HlgH = Forcing of burner to maximum power rEg = Forcing of burner to maximum power	OFF	
2011	Forcing the pump	/	On = Pump on OFF = Pump off	OFF	
2012	No function	/	/	/	/
2013	No function	/	/	/	/
2014	Icons test on the display. By pressing the REST key, all of the icons on the display light up. By pressing the RESET key again to display goes back to normal operation	/	/	/	
2020	No function	/	/	/	/
2021	No function	/	/	/	/
2022	No function	/	/	/	/
2023	No function	/	/	/	/
2024	No function	/	/	/	/
2027	No function	/	/	/	/

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2040	No function	/	/	/	/
2041	No function	/	/	/	/
2042	No function	/	/	/	/
2043	No function	/	/	/	/
2060	Domestic hot water minimum power level	%	Da 1 a 50	1	
2061	Domestic hot water maximum power level	%	Da 1 a 100	100	
2062	Post-circulation in domestic hot water mode	sec	Da 10 a 900	120	
2063	Maximum time for loading storage tank	min	Da 0 a 60	60	/
2064	Number of flow meter revs. for every litre of water	rpm/lt	Da 0 a 5	3,2	
2066	Delay in the detection of the instantaneous domestic hot water	sec	Da 1 a 10	3	
2067	Storage tank loading procedure	/	0 = the storage tank is charged for the time set in parameter 2063; 1 = OFF, the domestic hot water does not have priority over heating; 2 = ON, the domestic hot water always has priority over heating;	2	
2080	Periodic maintenance meter (after RESET, the meter automatically goes back to ON)	/	ON = Periodic maintenance meter active; OFF = Periodic maintenance meter off; RESE = Meter reset	OFF	
2081	Periodic maintenance meter: maintenance request time	days	From 0 to 1000	1000	
2100	Energy saving display	min	OFF = display always on From 1 to 30 = delay to switch-off in minutes.	5	

7.11 - Diagnostics

During normal operation of the appliance, the visual display in figure 7.1 continuously shows the state of work of the appliance, via the following indications:

Parameter	Description of the parameter	Display on visual display "H" in figure 7.1
<i>AFro</i>	Anti-freeze function active	Appliance temperature (°C)
<i>AtEE</i>	Appliance not in block but in attention mode	Attention code (see chapter 7.11.3 for decoding)
	Fixed on = Domestic hot water service on but not active On flashing = Domestic hot water service on and active	Domestic hot water temperature (°C)
<i>Loc</i>	Appliance blocked. To reset, press RESET . If the block occurs frequently, contact a professionally qualified technician	Block code (see chapter 7.11.1 for decode)
<i>Err</i>	Appliance in error mode. Functioning can only be restored by solving the cause of the anomaly. Contact a professionally qualified technician	Error code (see chapter 7.11.2 for decode)
<i>ALe9</i>	Anti-legionella function running (see chapter 5.12.1). It will end on reaching the water temperature of 60°C inside the storage tank.	Storage tank temperature (°C)
<i>SEr</i>	Maintenance request for the appliance	Appliance temperature (°C)

7.11.1 - Diagnostics: blocks "Loc"

Block	Description of block	Checks	Solutions
Loc 0	Internal memory error E2prom at command board		Replace the command and control board.
Loc 1	1 No flame detection after three successive ignition attempts.	Control: Supply gas pressure (see chapter 6.6), sparks on the ignition electrodes (see chapter 8.5); correct combustion agent air pressure (see chapter 6.7); 220Vac electric power supply to the gas valve; electric resistance of the two gas valve coils of 0.88 Kohm and 6.59 Kohm If the burner switches on and switches off at the end of the ignition attempt, check: that the ionisation current is at a value over 4 (follow the procedure in chapter 8.13)	the supply pressure is not correct, operate upstream from the appliance to restore it; if the pressure of the combustion agent air is not correct, operate on the air intake/fumes exhaust circuit to eliminate any obstructions. If the current at the gas valve is not 230Vac, the command and control board must be replaced. If the electric resistance of the gas valve is not 0.88 Kohm and 6.59 Kohm, the valve must be replaced. If the ionisation current is not over 4, the CO2 must be checked (follow chapter 6.8) and restore its correct value, check the ionisation electrode and replace it if necessary. Check the integrity of the ionisation current electric circuit cables.
Loc 2	Gas valve command relay broken		Replace the command and control board.
Loc 3	Internal safety relay failure at command board		Replace the command and control board.
Loc 4	Appliance in error mode for more than 20 hours	Control the last error displayed in the board.	Operate according to the last error displayed.
Loc 5	Fan out of speed for more than 60 seconds	Control it is powered at 300 Vdc.	If the fan is powered, it must be replaced, differently replace the board.
Loc 6	Software error inside the command board		Replace the command and control board.
Loc 7	Content of the memory E2prom inside the command board, not updated		Replace the command and control board.
Loc 8	Parameters inside the E2prom memory, incorrect		Replace the command and control board.
Loc 9	Software error inside the command board		Replace the command and control board.
Loc 10	Software error inside the command board		Replace the command and control board.
Loc 11	Not applicable		
Loc 12	Not applicable		
Loc 13	The appliance has reached 95°C	Control that the pump functions.	Restore water circulation or replace the command and control board.
Loc 14	Fumes maximum temperature. To unblock the error, contact a qualified after-sales centre, which must move switch "B" in fig. 6.5 and press the RESET key. Therefore, put the switch back in the original position.	Check the pump operates correctly; Measure the appliance yield; it must correspond to that declared in the technical features.	If the pump does not operate, it must be replaced. If the yield does not correspond to the data at the end of the manual, probably the primary heat exchanger is dirty from the fumes side or the water side. Clean and check yield again.
Loc 15	Software error inside the command board		Replace the command and control board.
Loc 16	Software error inside the command board		Replace the command and control board.
Loc 17	Software error inside the command board		Replace the command and control board.

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Loc 18	Flame present 10 seconds after gas valve is closed		Replace the gas valve or the command and control board.
Loc 19	Flame present before ignition		Replace the gas valve or the command and control board.
Loc 20	Flame lost three times	Control: that the ionisation current is at a value over 4 (follow the procedure in chapter 8.13) Control: that the fumes exhaust is suitably protected from obstructions caused by gusts of wind	If the ionisation current is not over 4, the CO2 must be checked (follow chapter 6.8) and restore the correct value. Check the ionisation electrode and replace it if necessary. Check the integrity of the ionisation current electric circuit cables. If the fumes exhaust is placed in a vertical wall it must be protected with a wind-proof grid. If the fumes exhaust is positioned on the roof, make sure that it is not in an area of reflux and that any windproof chimney pot is really efficient.
Loc 21	Not applicable		
Loc 22	Not applicable		
Loc 23	The D.H.W. outlet sensors measure the different temperatures for more than 60 seconds.	Check that the electrical resistance of the two sensors match the graphics in chapter 8.15;	If one of the two or both sensors do not have correct values, they must be replaced;
Loc 24	The fumes sensors measure the different temperatures for more than 60 seconds.	Check that the electrical resistance of the two fumes sensors match the graphics in chapter 8.15	If one of the two sensors does not match the double fumes sensor must be replaced
Loc 25	Non applicable		
Loc 26	Non applicable		
Loc 27	Software error inside the command board		Replace the command and control board.
Loc 28	Software error inside the command board		Replace the command and control board.

7.11.2 - Diagnostics: errors "E"

Error	Error Description	Checks	Solution
Err 30	Software error inside the command board		Replace the command and control board.
Err 31	Software error inside the command board		Replace the command and control board.
Err 32	Software error inside the command board		Replace the command and control board.
Err 33	Software error inside the command board		Replace the command and control board.
Err 34	Software error inside the command board		Replace the command and control board.
Err 35	The supply temperature exceeds 110°C with the gas valve closed	Check that the electrical resistance of the two supply sensors match the graphics in chapter 8.15. Check that the gas valve closes the gas correctly when the burner switches off.	If one of the two sensors does not match, the double supply sensor must be replaced. The gas valve must be replaced if it does not close correctly.
Err 36	Software error inside the command board		Replace the command and control board.
Err 37	Software error inside the command board		Replace the command and control board.
Err 38	Software error inside the command board		Replace the command and control board.
Err 39	Software error inside the command board		Replace the command and control board.
Err 40	Software error inside the command board		Replace the command and control board.
Err 41	Software error inside the command board		Replace the command and control board.
Err 42	Software error inside the command board		Replace the command and control board.
Err 43	Software error inside the command board		Replace the command and control board.
Err 44	Flame detected in a moment when it should not be present		Replace the gas valve.
Err 45	Not applicable		
Err 46	Not applicable		
Err 47	Not applicable		
Err 48	Software error inside the command board		Replace the command and control board.
Err 49	Cold water inlet sensor circuit(1007) open	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.
Err 50	Domestic hot water inlet sensor 1 circuit (1001) open	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.
Err 51	Domestic hot water inlet sensor 2 circuit (1005) open	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.
Err 52	Domestic hot water inlet sensor 2 circuit (1002) open	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.

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Err 53	Fumes 1 sensor circuit (1006) open	Check that the electrical resistance of the fumes sensor 1006 matches the graphics in chapter 8.22 Check that the wires between the board and the double fumes sensor are connected correctly	If the sensor does not match, the double fumes sensor must be replaced. If the wires are not connected correctly, the connections must be restored.
Err 54	Fumes 2 sensor circuit (1014) open	Check that the electrical resistance of the fumes sensor 1014 matches the graphics in chapter 8.15 Check that the wires between the board and the double fumes sensor are connected correctly	If the sensor does not match, the double fumes sensor must be replaced. If the wires are not connected correctly, the connections must be restored.
Err 55	Not applicable		
Err 56	Cold water inlet sensor circuit(1007) in short circuit condition	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.
Err 57	Domestic hot water inlet sensor 1 circuit (1001) in short circuit condition	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.
Err 58	Domestic hot water inlet sensor 2 circuit (1005) in short circuit condition	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.
Err 59	Domestic hot water inlet sensor 2 circuit (1002) in short circuit condition	Check that the electric resistance of the sensor matches the graphics in chapter 8.15. Check the electric cables for connection between the sensor and the command board.	If the electric resistance does not match, replace it. The electric circuit must be repaired if it is damaged. Without either of the two previous cases, replace the command and control board.
Err 60	Fumes 1 sensor circuit (1006) in short circuit condition	Check that the electrical resistance of the fumes sensor 1006 matches the graphics in chapter 8.15 Check that the wires between the board and the double fumes sensor are connected correctly	If the sensor does not match, the double fumes sensor must be replaced If the wires are not connected correctly, the connections must be restored
Err 61	Fumes 2 sensor circuit (1014) in short circuit condition	Check that the electrical resistance of the fumes sensor 1014 matches the graphics in chapter 8.15 Check that the wires between the board and the double fumes sensor are connected correctly	If the sensor does not match, the double fumes sensor must be replaced If the wires are not connected correctly, the connections must be restored
Err 62	Not applicable		
Err 63	RESET key pressed too many times in a very brief period		

7.11.3 - Diagnostics: alarms “AttE”

Alarm	Description of the alarm	Checks	Solutions
AttE 65	Not applicable		

8.1 - General recommendations

It is recommended to perform regular yearly maintenance of the appliance for the following reasons:

- to maintain high yield and therefore save fuel;
- to maintain a high level of safety;
- to maintain the level of environmental compatibility of the combustion high;

In order to maintain maintenance frequency, the parameter

2080 is present in the installer menu (see chapter 7.10), which is used to activate the maintenance call

(Service) along with parameter **2081** which is used to set the operating days and which must pass between one intervention and the next. The control system identifies the operating days, verifying the burner activity time.

Proceed as follows to activate the call service:

1.- access the Installer menu (see chapter 7.10) and set

parameter **2080** on **On**;

2.- access parameter **2081** and set the appliance operating days which must pass between one call and the next.

The call will be completed with **Ser** on the display. To

remove the wording **Ser** and renew the call period, operate as follows:

1.- access the "Installer menu";

2.- access the parameter **2080**, set it on **RESE** and press the RESET key.

3.- exit the Installer menu by pressing the RESET key for 5 seconds.

The call time is now renewed and **Ser** appears on the display.



ATTENTION !!! Appliance maintenance must only be performed by a professionally qualified technician.



ATTENTION !!! Before every maintenance operation, disconnect the appliance from the electric power supply, using the relevant switch in the vicinity.



ATTENTION !!! Close the gas cock before any maintenance operation

8.2 - Removing the casing and access to internal components

Proceed as follows to remove the casing (refer to figure 8.1):

- 1.- pull the lower cover "A" towards the front for approx. 10mm
- 2.- push the lower cover "A" downwards;
- 3.- loosen the screws "H";
- 4.- pull the lower part of the front-piece "B" towards the front and then slide it out upwards until it is released from the guides "C";

To access the command and control board:

- 1.- turn the command board "D" towards the front;
- 2.- open the commands board "D" by operating on closure "G";

To access the electric connections board:

- 1.- turn the command board "D" towards the front;
- 2.- slide lid "E" out by operating on the "F" closing flaps;

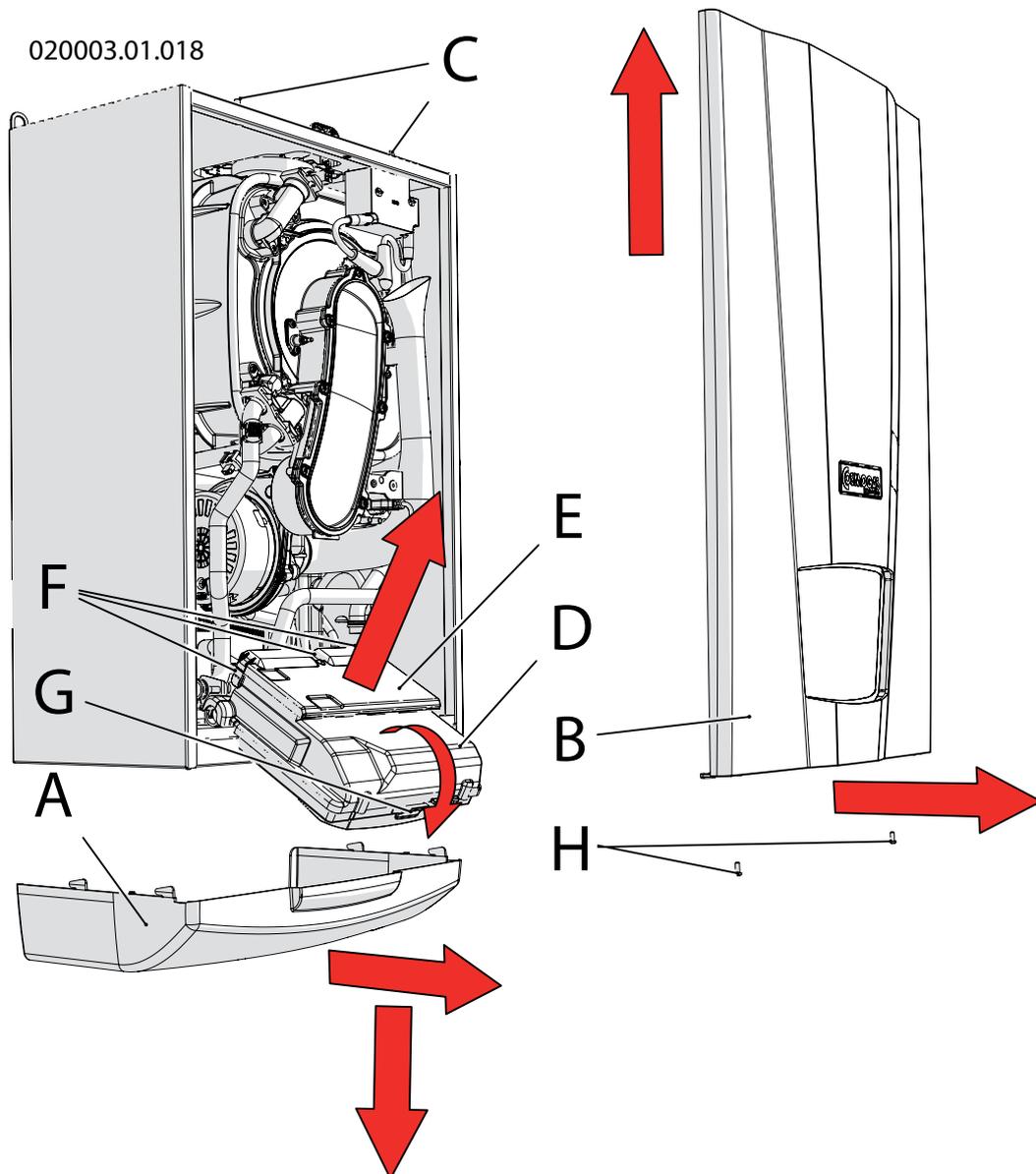


Figure 8.1 - removing the casing and opening of command board

8 - MAINTENANCE

8.3 - Removing the burner fan unit

Proceed as follows to remove the burner fan unit (refer to figure 8.2 when not differently specified):

- 1.- access the internal components following chapter 8.2;
- 2.- remove the air manifold (detail "C" in figure 6.2) rotating it towards the outside of the appliance and then pulling it towards the right (see figure 6.2);
- 3.- unscrew nut "C" from the valve "D";
- 4.- disconnect the cables "B" and the detection cable from the ignition and detection electrodes (details "15", "34" and "35" of figure 3.1);
- 5.- unscrew the four nuts "E";
- 6.- extract the group "F" as per figure;

8.4 - Cleaning the burner and the fumes side primary heat exchanger

To correctly clean the burner and body of the heat exchanger (fumes side), proceed as follows (refer to figure 8.2 when not differently specified):

- 1.- access the internal components following chapter 8.2;
- 2.- remove the burner unit following chapter 8.3;
- 3.- pass a cylindrical brush with plastic bristles inside the combustion chamber
- 4.- use a suction device to remove the unburned residues present inside the combustion chamber;
- 5.- use the same suction device on the surfaces of the burner and around the electrodes;
- 6.- re-mount the components in reverse order;
- 7.- open the gas cock;
- 8.- restore the electric power supply.
- 9.- check that there are no gas leaks between the joints removed;



ATTENTION!!! Perform the leak test using a soap and water only. The use of naked flames is prohibited.

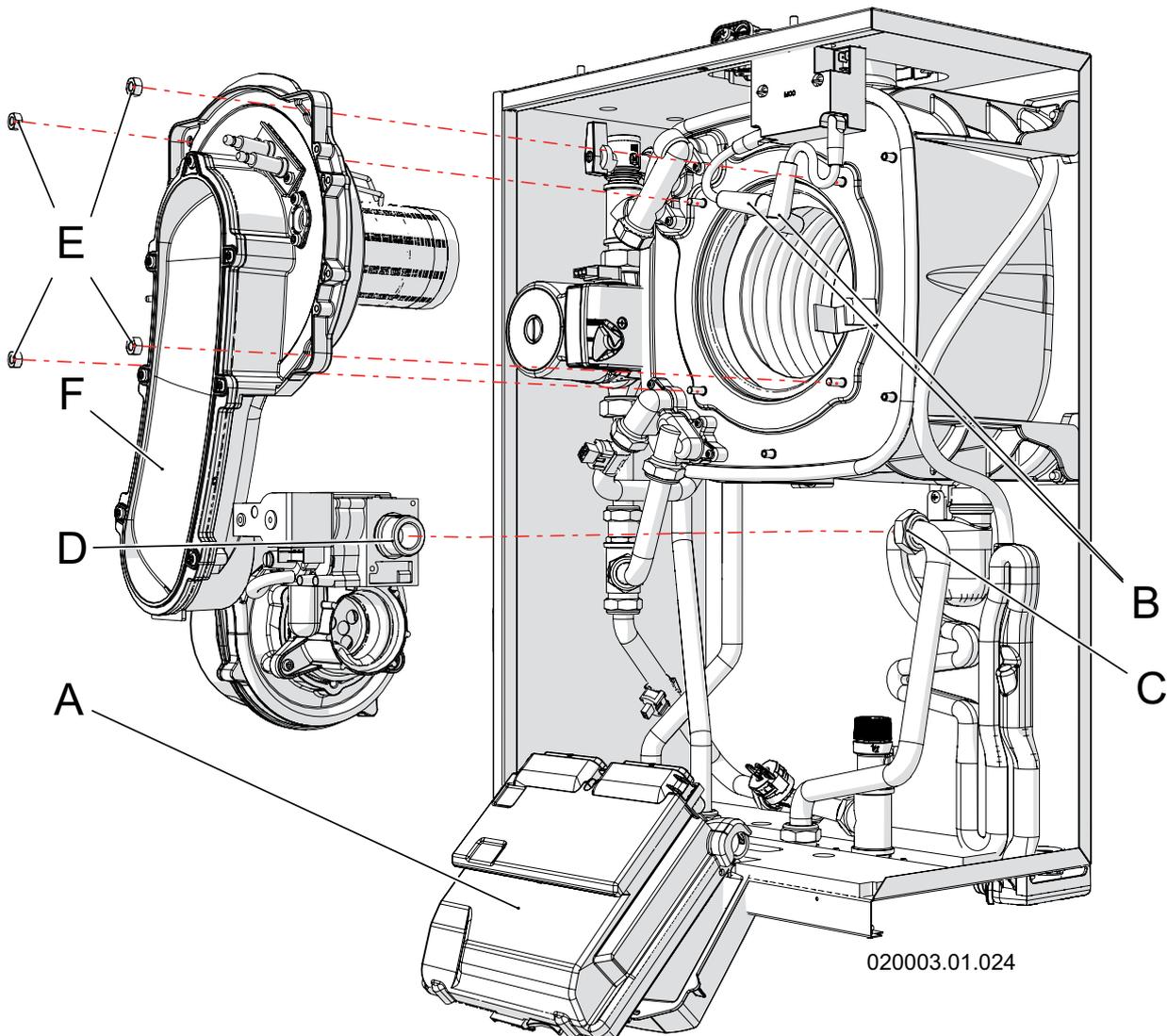


Figure 8.2 - Removing the burner fan unit

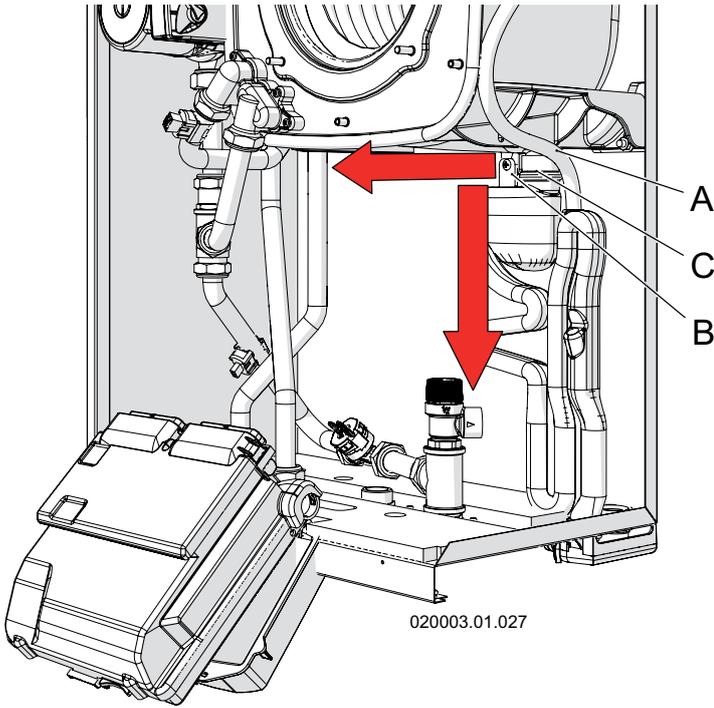


Figure 8.3 - Removal of the condensate collection siphon

8.5 - Cleaning the condensate conveyer siphon

- For correct cleaning of the collection siphon and the conveying of the condensate produced by combustion, operate as follows (refer to the figures 8.3, 8.4 and 8.5):
- 1.- with the appliance on, open a domestic hot water cock to maximum in a way that the burner is at maximum power and the level of liquid present inside the siphon tank "D" lowers (see figure 8.4);
 - 2.- access the internal components following chapter 8.2;
 - 3 - remove the burner fan unit following chapter 8.3;
 - 4 - cover the electric plant with a cloth to protect it from any residues of water inside the siphon to be removed.
 - 5.- slide the support "C" outwards from the holding support;
 - 6.- slide the tank "D" downwards, paying attention to the fact that it is full of condensate water and this could escape;
 - 7.- extract the siphon outwards (see figure 8.6) paying attention to disconnect the collection pipes of the water coming from the upper part of the appliance and from the air vent valve.
 - 8.- clean the decanting tank "D";
 - 9.- re-mount everything in reverse order, paying attention to the gasket "E", which is put back in the relevant seat and that terminal "G" is introduced correctly in the seat "H";
 - 10.- restore the level of liquid inside the siphon following the procedure in chapter 6.1.2.

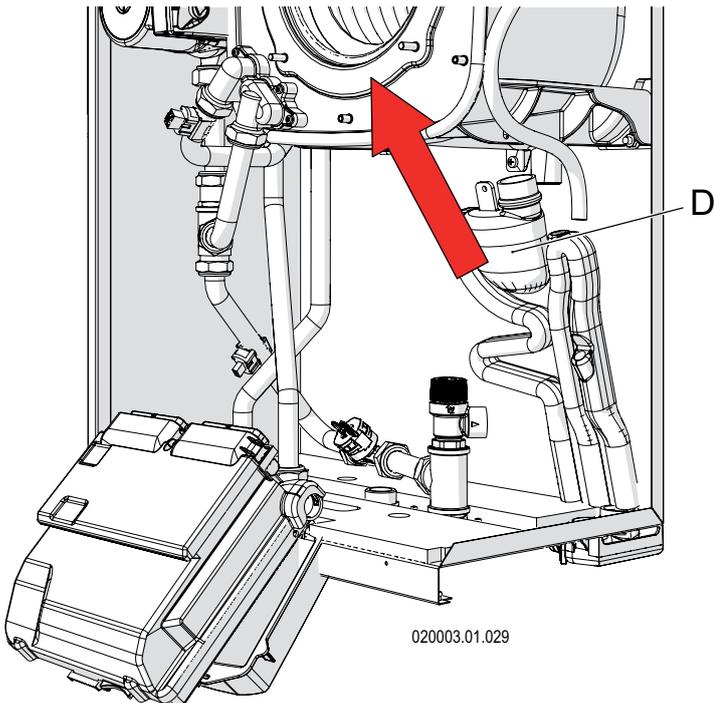


Figure 8.4 - Removing condensate collection siphon

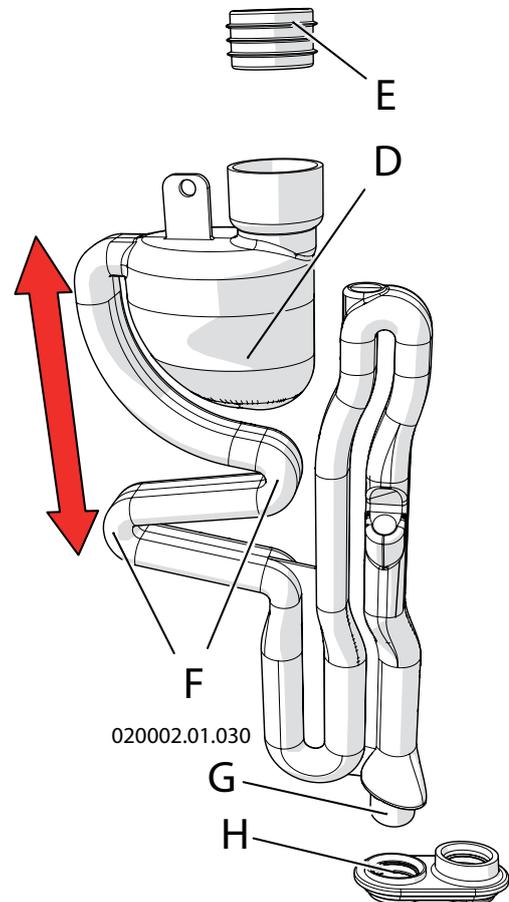


Figure 8.5 - Condensate collection siphon

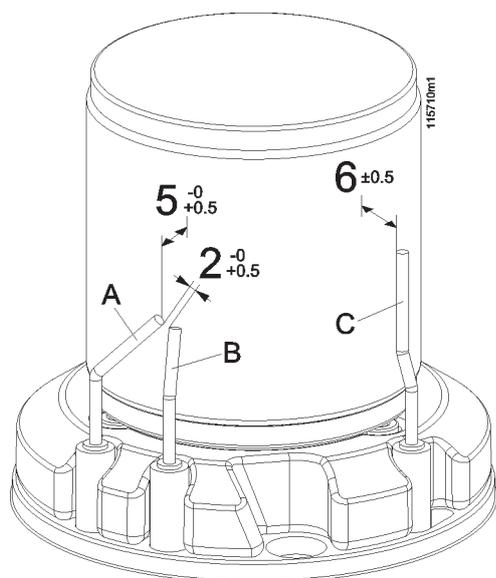
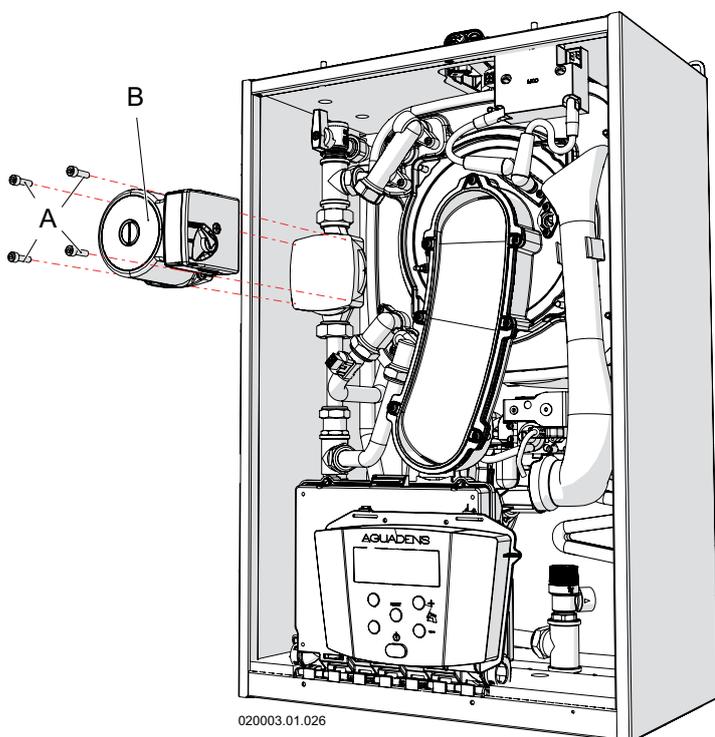


Figure 8.6 - positioning the electrodes on the burner

8.6 - Correct positioning of the ignition and ionising electrodes

For good working order of the appliance, it is indispensable that the electrodes are positioned correctly (refer to figure 8.6):

- the distance between the ignition electrodes "A" and "B", must be between 2.0 and 2.5 mm;
- the distance between the ignition electrodes from the burner surface must be between 5 and 5.5 mm;
- the distance of the ionisation electrode "C" from the surface of the burner must be between 5.5 and 6.5 mm.



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Figure 8.7 - Replacing the pump motor

8.7 - Replacing the pump motor

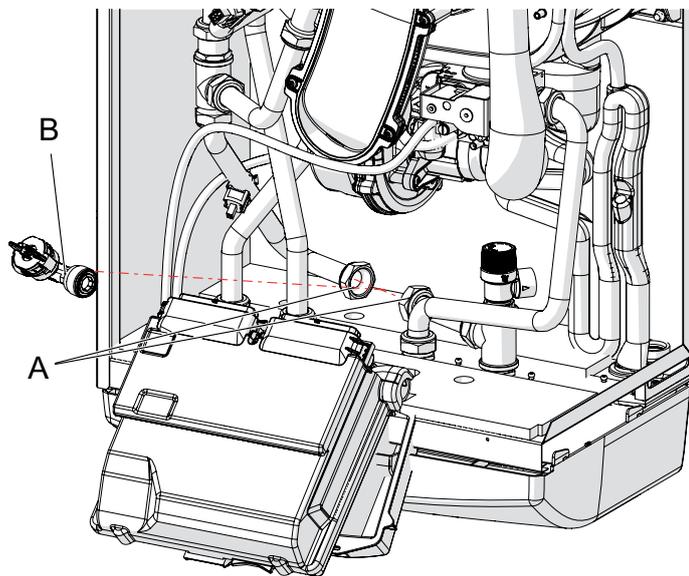
Operate as follows if the pump must be replaced (refer to figure 8.7):

- 1.- empty the domestic hot water circuit, following the procedure in chapter 8.10;
- 2.- disconnect the electric power supply upstream from the appliance;
- 3.- access the components inside the appliance, following chapter 8.2;
- 4.- disconnect the electric cables from the pump body.
- 5.- loosen the screws "A";
- 6.- extract the pump "B" outwards and replace it.

8.8 - Removing the domestic hot water flow meter

Proceed as follows, making reference to figure 8.8:

- 1.- empty the domestic hot water circuit, following the procedure in chapter 8.10;
- 2.- disconnect the electric power supply upstream from the appliance;
- 3.- access the components inside the appliance, following chapter 8.2;
- 4.- disconnect the cables from the flow meter (detail "B" in figure 8.8);
- 5.- unscrew the small disks "A", paying attention that the residual water from the pipes does not reach the control board;
- 6.- slide the flow meter "B" upwards and replace it.



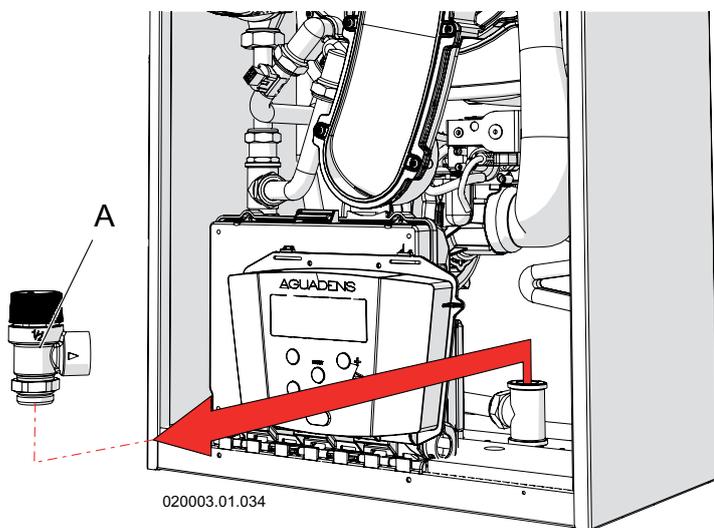
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Figure 8.8 - Removing the flow meter

8.9 - Removing the safety valve

The safety valve (detail "A" in figure 8.9) protects the appliance from over pressures. If it has to be replaced, proceed as follows (refer to figure 8.9):

- 1.- empty the domestic hot water circuit, following the procedure in chapter 8.10;
- 2.- access the components inside the appliance, following chapter 8.2;
- 3.- disconnect the drain pipe from the valve to be replaced "A";
- 4.- unscrew the lower fixing disk of valve "A";
- 5.- extract the safety valve "A" upwards;



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Figure 8.9 - Removing the safety valve

8 - MAINTENANCE

8.10 - Emptying the appliance on the domestic hot water side

To empty the appliance from the domestic hot water side, proceed as follows:

- 1.- close the main cold water supply cock in the house;
- 2.- open all hot and cold water taps around the home;
- 3.- make sure that at least one of these is at a height below the level of the appliance.

8.11 - Fan

Switch-on of the fan only can be generated, accessing the parameter **20 10** situated inside the "Installer menu" (see chapter 7.10) and set it on **FAN**. To go back to normal operating conditions, set parameter **20 10** again to **OFF**.

8.12 - Minimum and maximum power

Appliance operation can be forced to its own minimum, maximum, adjusted or ignition power. Proceed as follows:

- 1.- access parameter **20 10** found in the "installer menu" (see chapter 7.10);
- 2.- set the parameter **20 10** at the following value:
 - a) **LOW** to force the appliance to minimum power;
 - b) **IGN** to force the appliance to ignition power;
 - a) **HIGH** to force the appliance to maximum power;
 - a) **REG** to force the appliance to maximum power.
- 4.- to end forcing, take the parameter **20 10** to the **OFF** value and press the RESET key.

8.13 - Checking the ionisation current

In any operating status, also during verifications of minimum and maximum power stated in chapter 8.12, the ionisation current value can be consulted on parameter **1008** present in the "User menu" (chapter 7.9). This value must be between 1.5 and 3 uA (microampere) at minimum power and between 5 and 8 uA at maximum power.

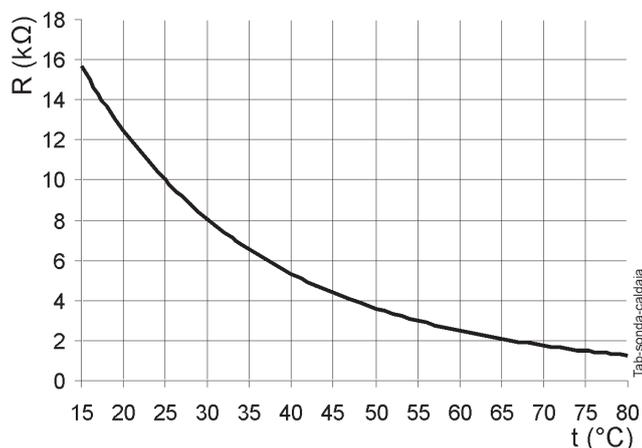


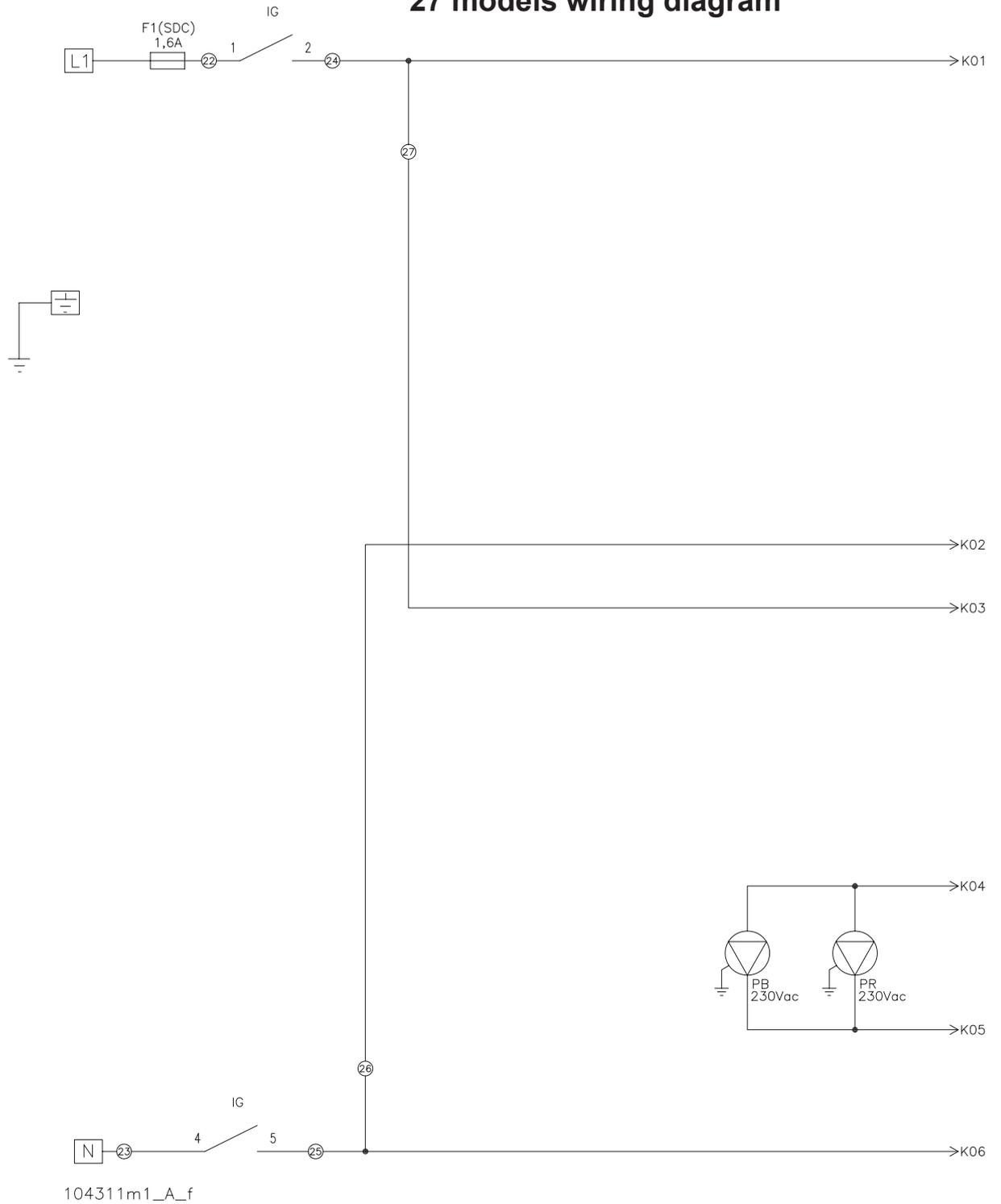
Figure 8.10 - Water sensors curve

8.14 - Water temperature measurement sensors

The temperature sensors are positioned on the appliances' exchanger body. The electric resistance existing between the two contacts of the sensor, must correspond with that stated in figure 8.10.

The temperature sensors are: **1001**, **1002**, **1003**, **1005**, **1006**, **1007** and **1014**, the positioning of which can be verified in figure 3.1.

8.15 - AGUADENS 16, 22 and 27 models wiring diagram



104311m1_A_f

→ K1 K1 →

104111m0_esempio

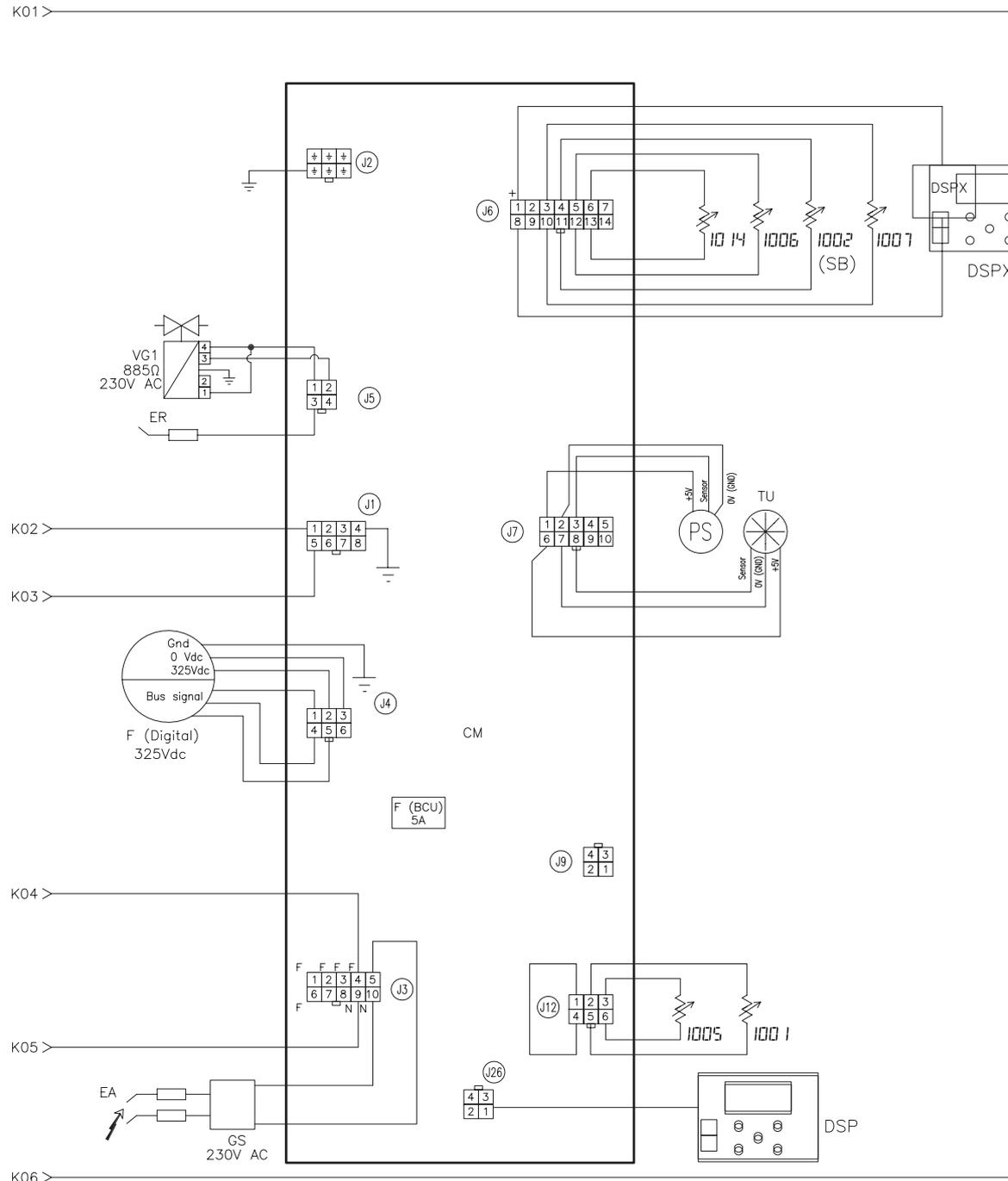


ATTENTION !!! To consult the wiring diagram correctly, references K are given followed by a number (see example above) to identify the correct follow-on of the cables in the next page.

- 1001 - D.H.W. outlet temperature sensor 1
- 1002 - D.H.W. outlet temperature sensor
- 1002 (SB) - Storage tank sensor (on request)
- 1005 - D.H.W. outlet temperature safety sensor 2
- 1006 - Fumes sensor 1
- 1007 - Cold water inlet sensor
- 1014 - Fumes safety sensor 2
- CM - Appliance control unit and flame control
- DSP - Display
- DSPX - Remote control (on request)
- EA - Ignition electrode
- ER - Detection electrode

Figure 8.11 - Operational wiring diagram

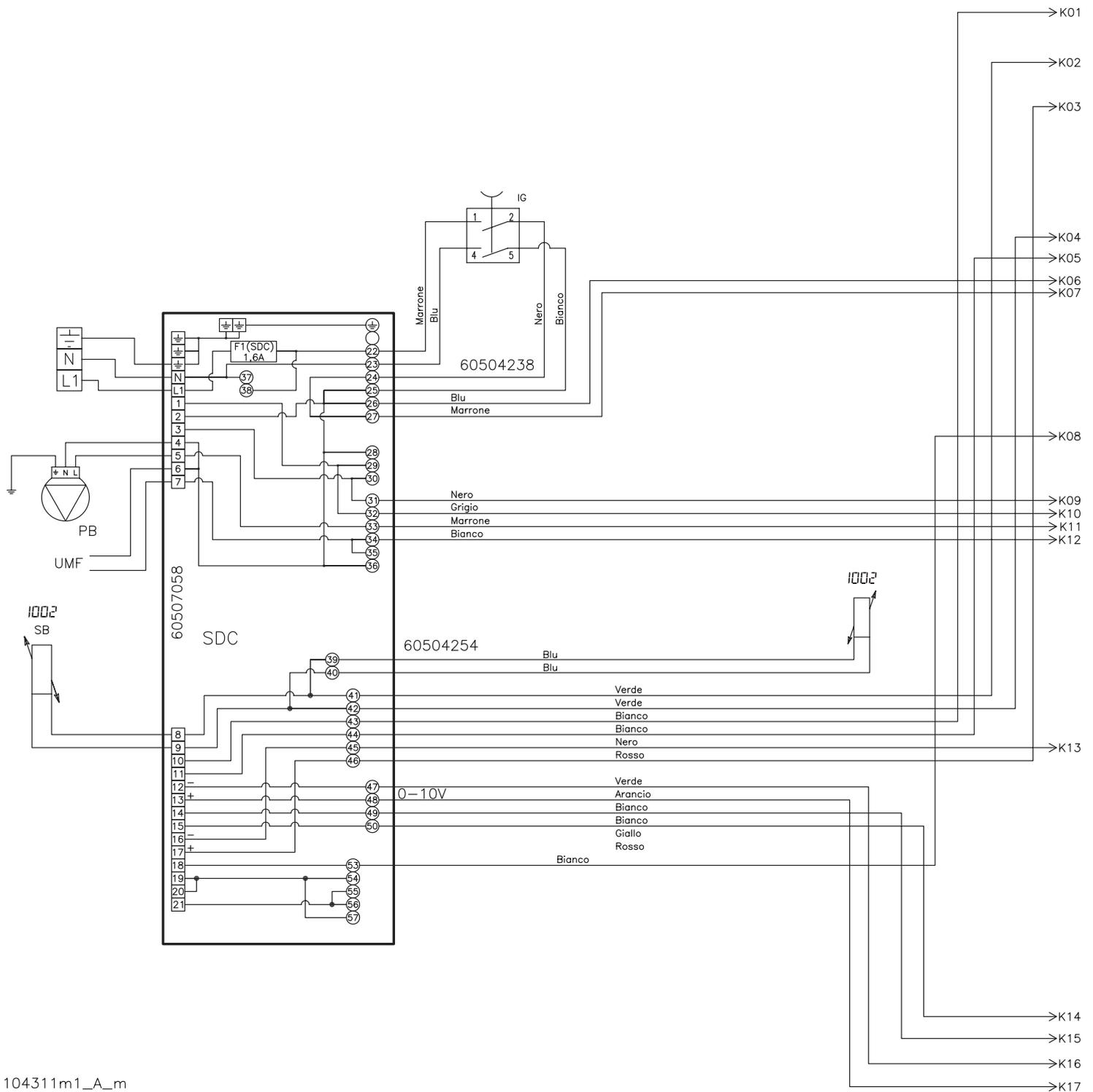
8 - MAINTENANCE



- F (Digital) - Digital fan
- F (BCU) - 5A fuse
- F1 (SDC) - 1.6A power supply fuse
- PB - Storage tank load aux. pump (on request)
- PR - Recirculation Pump
- GS - Spark generator
- IG - Master switch
- J1 - 8 pin Molex connector
- J12- 6 pin Molex connector
- J2- 6 pin Molex connector
- J26- 4 pin Molex connector
- J3 - 10 pin Molex connector
- J4 - 6 pin Stelvio connector

- J5 - 4 pin Molex connector
- J6 - 14 pin Molex connector
- J7- 10 pin Molex connector
- J9- 4 pin Molex connector
- PB - Storage tank pump (on request)
- PS - Pressure sensor (present only in mod. 27)
- SDC- Connection board
- TU - Domestic hot water flow meter
- VG1- Gas Valve

8.16 - AGUADENS 16, 22 and 27 models multi-wire wiring diagram

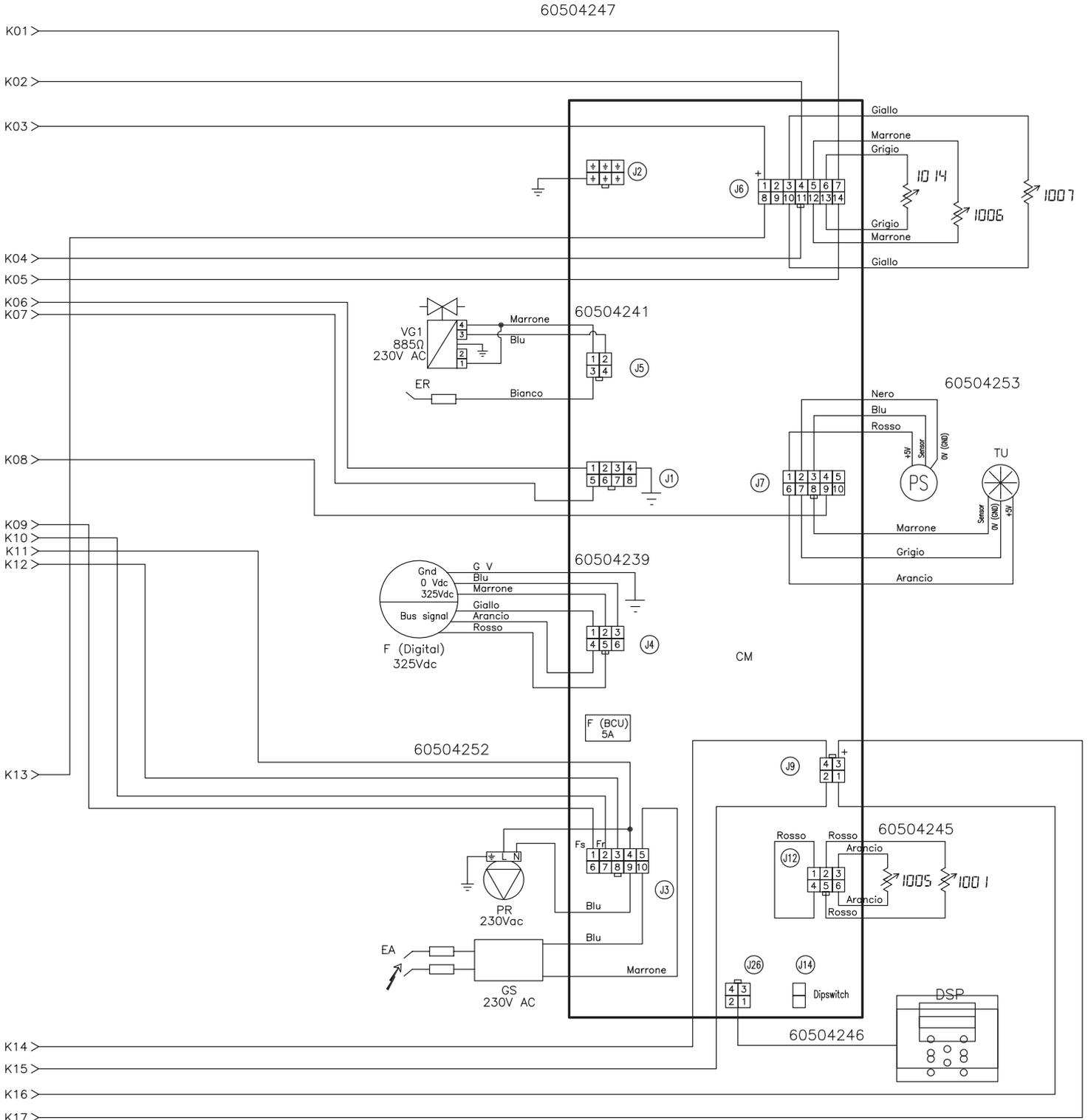


104311m1_A_m

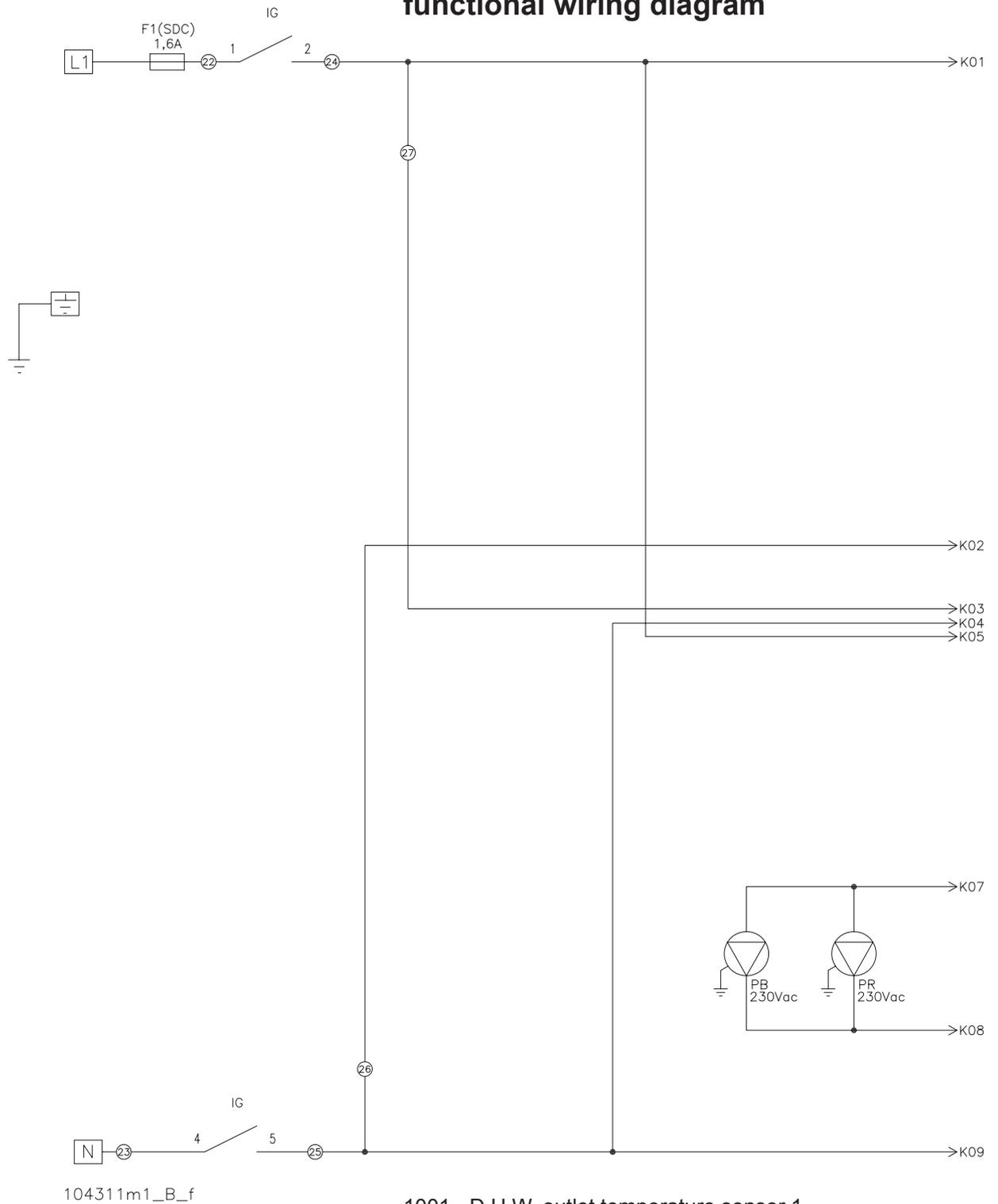
Key - see key figure 8.11

Figure 8.12 - Multi-wire wiring diagram

8 - MAINTENANCE



8.17 - AGUADENS 37 model
functional wiring diagram



104311m1_B_f

→ K1 K1 →

104111m0_esempio

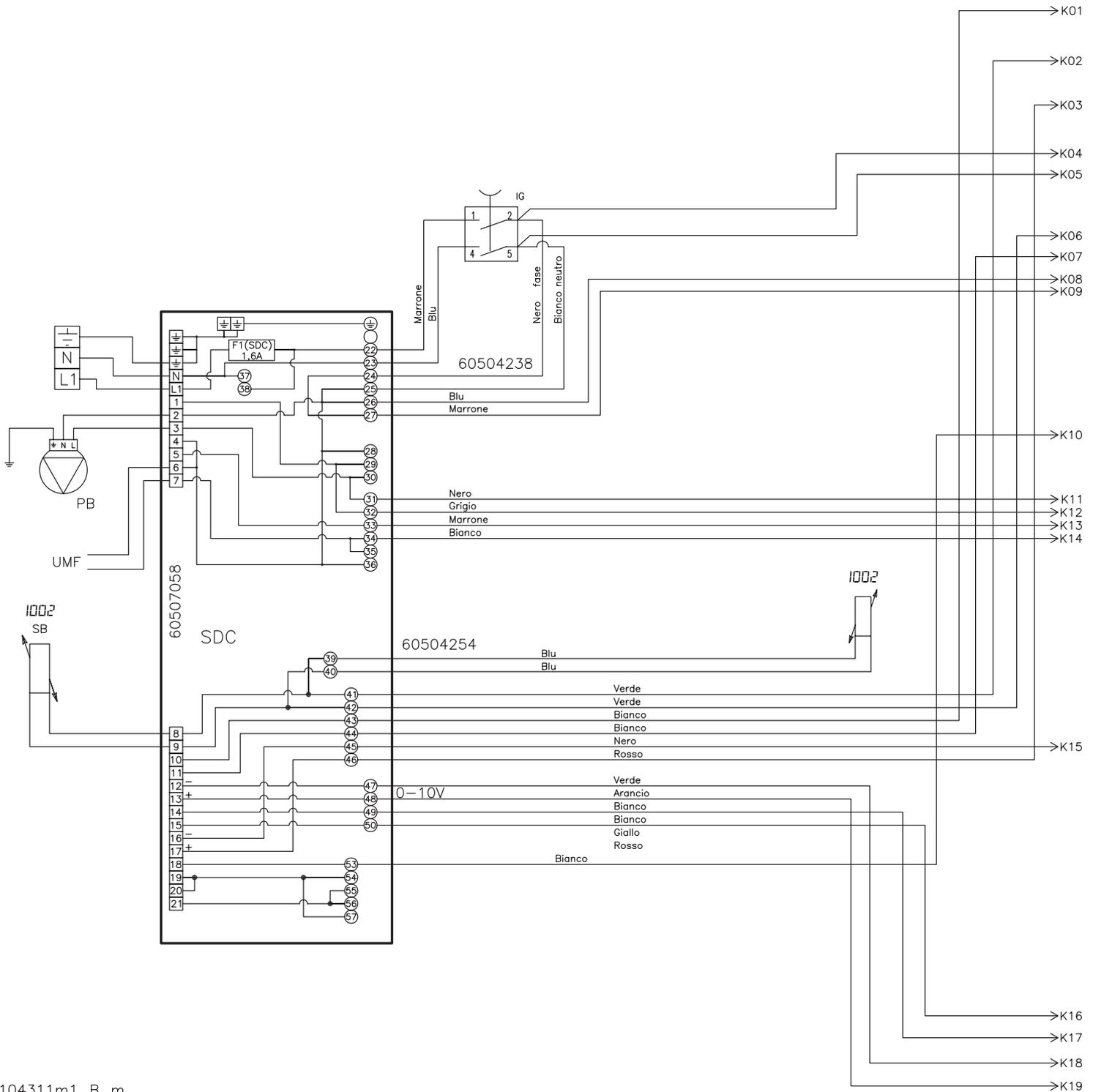


ATTENTION !!! To consult the wiring diagram correctly, references K are given followed by a number (see example above) to identify the correct follow-on of the cables in the next page.

- 1001 - D.H.W. outlet temperature sensor 1
- 1002 - D.H.W. outlet temperature sensor
- 1002 (SB) - Storage tank sensor (on request)
- 1005 - D.H.W. outlet temperature safety sensor 2
- 1006 - Fumes sensor 1
- 1007 - Cold water inlet sensor
- 1014 - Fumes safety sensor 2
- CM - Appliance control unit and flame control
- DSP - Display
- DSPX - Remote control (on request)
- EA - Ignition electrode
- ER - Detection electrode

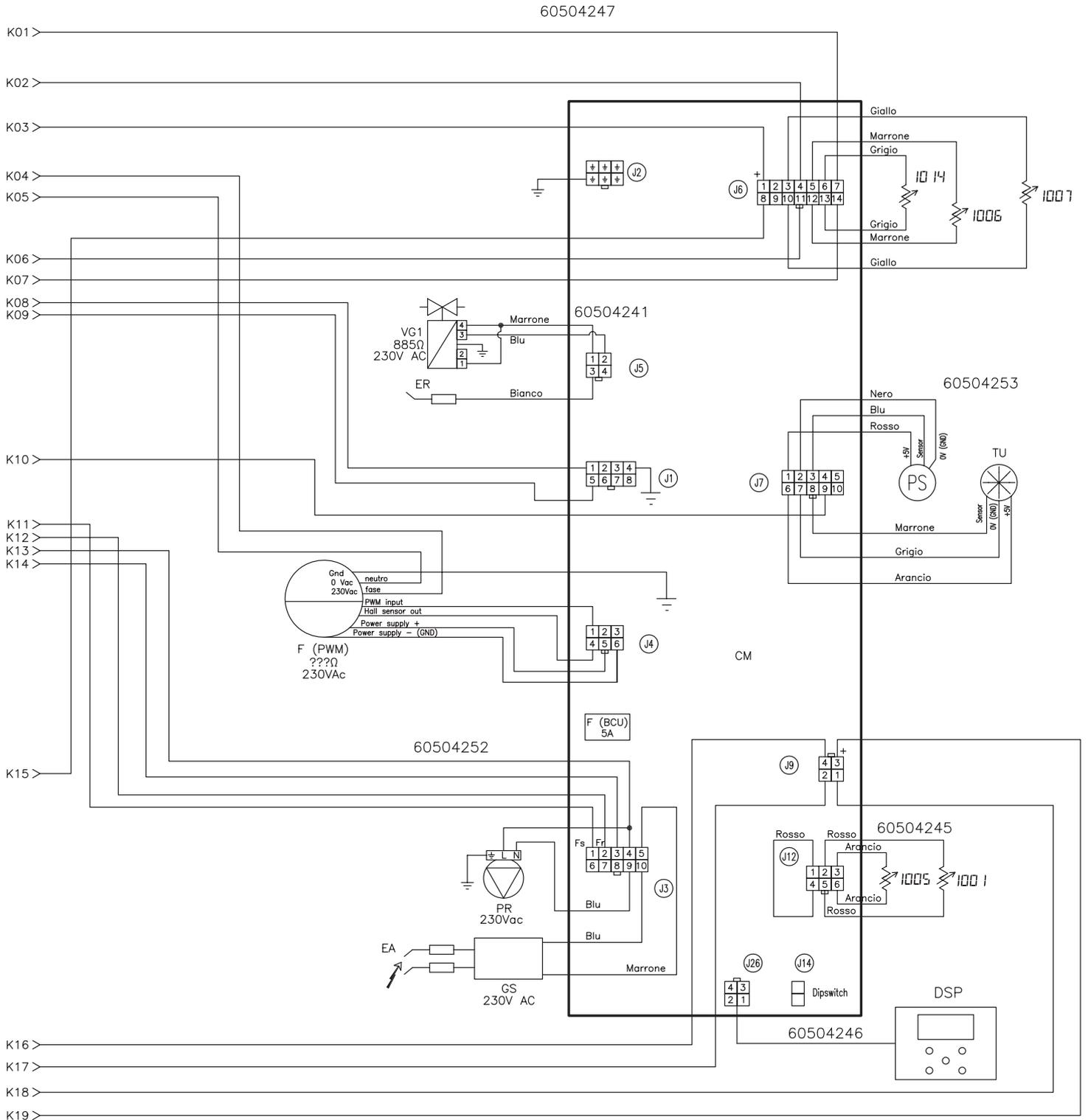
Figure 8.13 - Operational wiring diagram

8.18 - AGUADENS 37 model
multi-wire wiring diagram



Key - see key figure 8.13

Figure 8.14 - Multi-wire wiring diagram



9 - TECHNICAL DATA

DATI TECNICI		UM	AGUADENS 16	AGUADENS 22
Type (Type of fumes exhaust/air intake)			B23;C13;C33;C43;C53;C63;C83	
Category			I12H3P	I12H3P
CE type certificate (PIN)			0694CN6126	0694CN6126
Max. heat input		kW	25,5	34,8
Min. heat input		kW	3,2	4,4
Max. useful heat output		kW	27,5	37,6
Efficiency at max heat output		%	108	108
Min. heat output		kW	3,97	4,35
Efficiency at min heat output		%	109	109
Gas flow rate	Nat gas	m ³ /h	2,70	3,68
	LP gas	Kg/h	1,98	2,70
Gas supply pressure	Nat gas	mbar	20	20
	LP gas	mbar	37	37
Gas supply minimum pressure	Nat gas	mbar	15	15
	LP gas	mbar	25	25
Gas supply maximum pressure	Nat gas	mbar	27	27
	LP gas	mbar	45	45
Combustion agent air pressure	Nat gas	mbar	13,2	12,3
	LP gas	mbar	13,8	11,2
Instantaneous D.H.W. adjustment range		°C	40-60	40-60
D.H.W. with storage tank adjustment range		°C	40-70	40-70
Domestic circuit maximum pressure		bar	7	7
Rated power supply voltage		V	230	230
Rated power supply frequency		Hz	50	50
Absorbed electric power		W	120	120
Electric protection rating			IPX4D	IPX4D
Fumes pipe diameter (split)		mm	80 o 60	80 o 60
Fumes pipe max. length (split) (80)		m	40	25
Fumes pipe max. length (split) (60)		m	15	10
Fumes pipe diameter (coaxial)		mm	60/100	60/100
Fumes pipe max. length (coaxial)		m	10	10
Equivalent length of a bend		m	45° bend = 0.5m, 90° bend =1m	
Weighted CO (0% O2 with natural gas)		ppm	8	15
Weighted NOx (0% O2 with natural gas) (class 5 EN 483 and 297)		ppm	13	17
CO2 (%) at minimum/maximum power	Nat gas	%	8,5/9,0	8,5/9,0
	LP gas	%	10/10,5	10/10,5
Fumes maximum temperature at appliance outlet		°C	75	75
Mass flow of the fumes		kg/h	25,4	42,3
Head available at exhaust		Pa	60	60
Fumes maximum temperature for overheating		°C	90	90
Max. negative pressure allowed in the fumes exhaust/intake system		Pa	60	60
Condensate maximum flow rate		l/h	1,9	3,2
Condensate average acidity		PH	4	4
Operating environment temperature		°C	0 ; +50	0 ; +50
Weight of the appliance		kg	36	36

9 - TECHNICAL DATA

DATI TECNICI		UM	AGUADENS 27	AGUADENS 37
Type (Type of fumes exhaust/air intake)			B23;C13;C33;C43;C53;C63;C83	
Category			I12H3P	I12H3P
CE type certificate (PIN)			0694CN6126	0694CN6126
Max. heat input		kW	43,0	57,8
Min. heat input		kW	8,5	12,0
Max. useful heat output		kW	46,4	61,9
Efficiency at max heat output		%	107	107
Min. heat output		kW	9,2	13,0
Efficiency at min heat output		%	108	108
Gas flow rate	Nat gas	m ³ /h	4,50	6,10
	LP gas	Kg/h	3,30	4,50
Gas supply pressure	Nat gas	mbar	20	20
	LP gas	mbar	37	37
Gas supply minimum pressure	Nat gas	mbar	15	15
	LP gas	mbar	25	25
Gas supply maximum pressure	Nat gas	mbar	27	27
	LP gas	mbar	45	45
Combustion agent air pressure	Nat gas	mbar	-	-
	LP gas	mbar	-	-
Instantaneous D.H.W. adjustment range		°C	40-60	40-60
D.H.W. with storage tank adjustment range		°C	40-70	40-70
Domestic circuit maximum pressure		bar	7	7
Rated power supply voltage		V	230	230
Rated power supply frequency		Hz	50	50
Absorbed electric power		W	140	140
Electric protection rating			IPX4D	IPX4D
Fumes pipe diameter (split)		mm	80	80
Fumes pipe max. length (split) (80)		m	10	8
Fumes pipe max. length (split) (60)		m	/	/
Fumes pipe diameter (coaxial)		mm	80/125	80/125
Fumes pipe max. length (coaxial)		m	10	10
Equivalent length of a bend		m	45° bend = 0.5m, 90° bend =1m	
Weighted CO (0% O2 with natural gas)		ppm	25	25
Weighted NOx (0% O2 with natural gas) (class 5 EN 483 and 297)		ppm	30	30
CO2 (%) at minimum/maximum power	Nat gas	%	8,5/9,0	8,5/9,0
	LP gas	%	10/10,5	10/10,5
Fumes maximum temperature at appliance outlet		°C	75	75
Mass flow of the fumes		kg/h	58,9	99,0
Head available at exhaust		Pa	60	60
Fumes maximum temperature for overheating		°C	90	90
Max. negative pressure allowed in the fumes exhaust/intake system		Pa	60	60
Condensate maximum flow rate		l/h	4,4	7,2
Condensate average acidity		PH	4	4
Operating environment temperature		°C	0 ; +50	0 ; +50
Weight of the appliance		kg	37	40

10 - COMMAND MENU DIAGRAM

Key for figure 10.1

Symbol	Description
	Press and release the RESET key
	Hold the reset key down for a time in seconds, indicated by the number (2)
	Hold the reset key down for a time in seconds, indicated by the number (5)
	Hold down the RESET and  key simultaneously for a time in seconds, indicated by the number
	Press and release the  key
	Press and release the  key

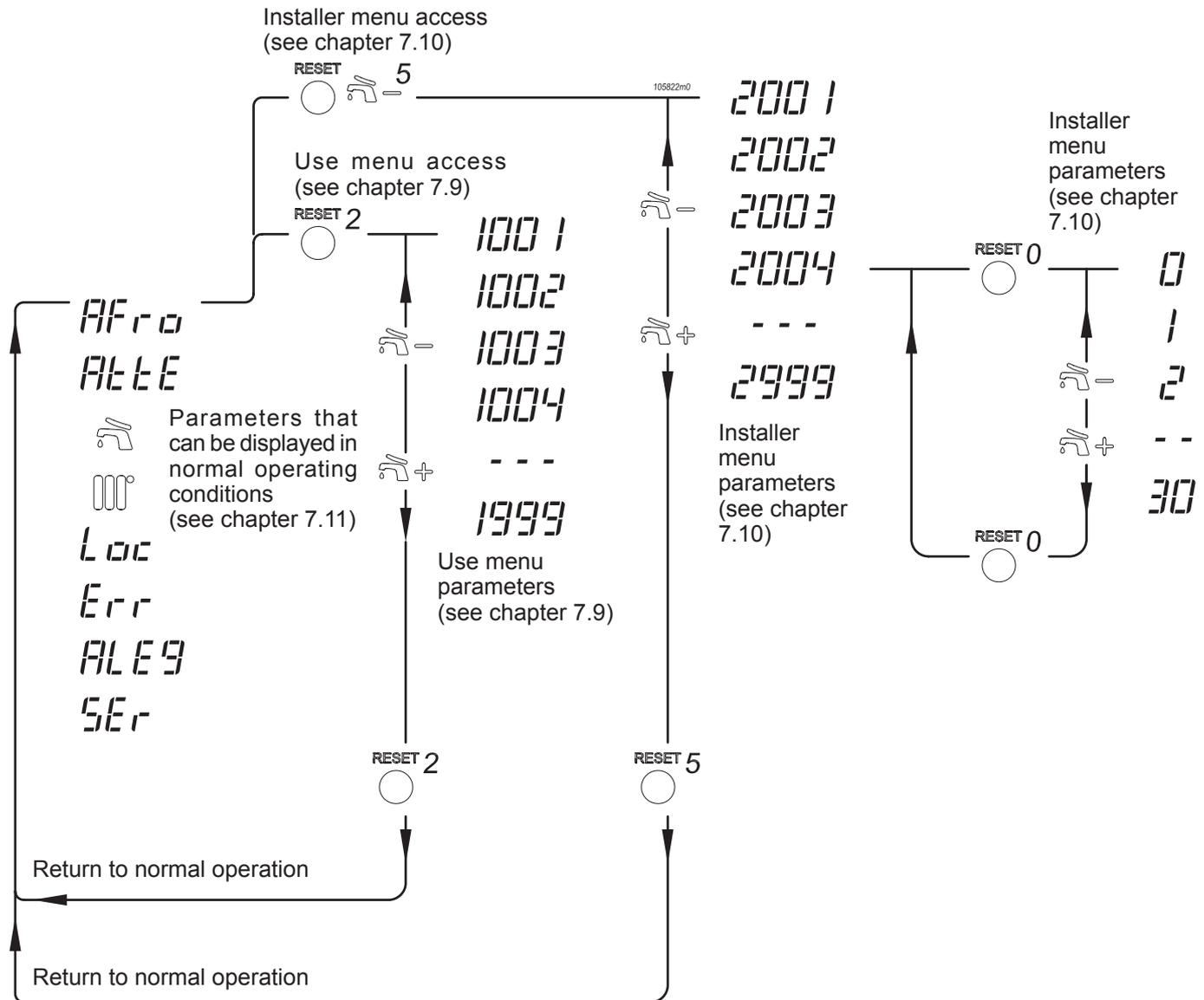


Figure 10.1 - Command menu diagram

11 - MENU FORCED BY INTERNAL ELECTRIC BRIDGE



ATTENTION !!!

The modification of these parameters could cause the appliance, and therefore the plant, to malfunction. For this reason only a technician that has the awareness and in-depth knowledge of the appliances can modify them.

To access this menu, move the microswitch as stated in figure 6.5 detail "B".

Parameter	Description of the parameter	M.U.	Setting range	Factory value	Customised value
3002	Selection type		From 50 to 55	See figure 6.7	
3012	Domestic hot water operating mode	/	0 = DO NOT USE ; 1 = Storage tank with temperature sensor; 2 = Storage tank with thermostat; 3 = DO NOT USE ; 4 = DO NOT USE ; 5 = Instantaneous with turbine;	5	
3013	No function	/	/	/	
3014	Instantaneous domestic hot water pre-heat	/	OFF = No pre-heat ON = With pre-heat OFF	OFF	
3015	No function	/	/	/	/
3016	No function	/	/	/	/
3020	Domestic hot water flow rate sensor	/	0 = B; 1 = DN 8; 2 = DN 10; 3 = DN 20;	0	
3021	2nd Fumes sensor (1014)	/	0 = Disabled; 1 = Enabled; 2 = Enabled with fumes exhaust anti-closure pressure switch;	1	
3022	No function	/	/	/	

The undersigned **COSMOGAS S.r.L.**, with Registered Office in via L. Da Vinci n° 16 - 47014 Meldola (FC) ITALY,

DECLARES

under its own responsibility that the project:

WARRANTY N°
GAS APPLIANCE MODEL
DATE OF MANUFACTURE

subject of this declaration, is in compliance with the model described in the Type examination certificate **CE**, whose reference is given in the table in chapter 9 under “CE type certificate (PIN)” and meeting that required by the Directives: Gas Appliances, (**2009/142/CE** former **90/396/CEE**), Low Voltage, (**2006/95/CE**), Electromagnetic Compatibility, (**2004/108/CEE**).

(the warranty number corresponds to the serial number)

This declaration is issued for that established by the above-mentioned Directives.

Meldola (FC) ITALY, (Date of manufacture).



13 - WARRANTY

13.1 - General warranty conditions

All **COSMOGAS** products are guaranteed against material flaws and manufacturing defects for **24** months from the date of commissioning, **COSMOGAS** also extends the warranty to :

SHELL AND TUBE HEAT EXCHANGER BODIES, CRR and CRV guaranteed up to 5 years;

PRE-MIXED BURNERS guaranteed up to 10 years;

ATMOSPHERIC BURNERS guaranteed up to 15 years.

This warranty extension will only be valid if **COSMOGAS** has received the warranty card, filled-in completely, which will certify the date of commissioning. Within the above-mentioned term **COSMOGAS** commits to repairing or replacing the faulty construction parts and which will be acknowledged as such with exclusion of normal deterioration due to operations.

The extension of the warranty exclusively covers the cost of the spare part. All other accessory costs are excluded, such as: labour, transfer costs and expenses for transporting material.

The warranty does not extend to the recasting of the damage, of any nature, that has happened to persons or property. The faulty material replaced under warranty is the property of **COSMOGAS** and must be returned to our establishment, without further damage, within **30** days from replacement.

All **COSMOGAS** products are encumbered by the title retention agreement, until the appliance sold have been paid in full.

13.2 - Instructions for filling-in the warranty card

1. - Have your installer put his stamp on the warranty certificate.
2. - Always request the intervention of our authorised technician for commissioning and to validate the warranty;

To validate the warranty, the technician must control:

1. - Gas pressure at the burner (or combustion agent air pressure for pre-mixed and condensing appliances);
2. - Water leaks;
3. - Gas leaks;

The list of authorised technicians is found attached to the instruction manual or can be found in the Yellow Pages under "Gas water heater".

- The technician will take the warranty certificate and deliver it to **COSMOGAS**.

13.3 - Limits of the warranty

The warranty is not valid:

- if the appliance is installed by **non**-qualified staff;
- if the appliance is installed in a way that is not in compliance with the **COSMOGAS** instructions and/or that established by the current national and/local regulations;
- whenever the plant is not run/services in compliance with the instructions and/or the current national and local regulations.
- whenever the product has damage caused by changes in voltage;
- whenever the product has damaged caused by the use of excessively hard water, or which is too acid or too oxygenated;
- whenever the product has failures caused by heat shocks, abnormalities of chimneys and/or exhaust and intake pipes;
- whenever the product has anomalies not depending on **COSMOGAS**;
- whenever the appliances have been tampered with for adaptation, repairs or replacement with non-original spare parts;
- whenever repairs are performed by unauthorised staff.
- Whenever the warranty certificate is not sent to **COSMOGAS** within **15 days** from the date 1° commissioning.

COSMOGAS does not assume any responsibility for any accident that may occur or be caused by the user, precluding any compensation that does not concern appliance parts recognised as defective manufacturing.

Any dispute is the jurisdiction of the Forlì Law Court, ITALY.

WARRANTY CERTIFICATE FOR "COSMOGAS" APPLIANCES

Validity of the warranty 24 months

TO BE FILLED-IN BY THE INSTALLER

The appliance has been installed by qualified staff in possession of the legal requirements envisioned, in compliance with the instructions contained in this manual, in the installation and maintenance manual and the current national and/or regulations.

Date _____

INSTALLER (Stamp)
Firma _____

Osservazioni _____

TO BE FILLED-IN BY THE AFTER-SALES CENTRE

The appliance has been subjected to the test to validate the warranty by qualified staff and in possession of the legal requirements envisioned, in compliance with the instructions contained in this manual, in the installation and maintenance manual and the current national and/or regulations, which result:

POSITIVE NEGATIVE

AFTER-SALES CENTRE (Stamp)

Date _____

Observations _____

Signature of the After-sales Centre

User's Signature



COSMOGAS s.r.l.
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