

MAXIMUM USER'S

Instruction booklet and
warning
Installer
User
Maintenance Technician

IE

1.046309ENG



VICTRIX HYBRID



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Dear Customer,

Our compliments for having chosen a top-quality Immergas product, able to ensure well-being and safety for a long period of time. As an Immergas customer you can also count on a Qualified Authorised After-Sales Technical Assistance Centre, prepared and updated to guarantee constant efficiency of your boiler. Read the following pages carefully: you will be able to draw useful tips on the correct use of the device, compliance of which will confirm your satisfaction with the Immergas product.

For assistance and routine maintenance, contact Authorised Technical Service Centres: they have original spare parts and are specifically trained directly by the manufacturer.

GENERAL RECOMMENDATIONS

This book contains important information for the:

Installer (section 1); For the installation of the AUDAX.DK4 outdoor unit see the relevant instruction manual;

User (section 2);

Maintenance Technician (section 3).

- The user must carefully read the instructions in the specific section (section 2).
- The user must limit operations on the appliance only to those explicitly allowed in the specific section.
- The appliance must be installed by qualified and professionally trained personnel.
- The instruction booklet is an integral and essential part of the product and must be given to the new user in the case of transfer or succession of ownership.
- It must be stored with care and consulted carefully, as all of the warnings provide important safety indications for installation, use and maintenance stages.
- In compliance with the legislation in force, the systems must be designed by qualified professionals, within the dimensional limits established by the Law. Installation and maintenance must be performed in compliance with the regulations in force, according to the manufacturer's instructions and by professionally qualified staff, meaning staff with specific technical skills in the plant sector, as provided for by Law.
- Improper installation or assembly of the Immergas device and/or components, accessories, kits and devices can cause unexpected problems for people, animals and objects. Read the instructions provided with the product carefully to ensure proper installation.
- This instructions manual provides technical information for installing Immergas products. As for the other issues related to the installation of products (e.g. safety at the workplace, environmental protection, accident prevention), it is necessary to comply with the provisions of the standards in force and the principles of good practice.
- All Immergas products are protected with suitable transport packaging.
- The material must be stored in a dry place protected from the weather.
- Damaged products must not be installed.
- Maintenance must be carried out by skilled technical staff. For example, the Authorised Immergas Service Centre that represents a guarantee of qualifications and professionalism.
- The device must only be destined for the use for which it has been expressly declared. Any other use will be considered improper and therefore potentially dangerous.
- If errors occur during installation, operation and maintenance, due to non-compliance with technical laws in force, standards or instructions contained in this booklet (or however supplied by the manufacturer), the manufacturer is excluded from any contractual and extra-contractual liability for any damages and the device warranty is invalidated.



The company **IMMERGAS S.p.A.**, with registered office in via Cisa Ligure 95 42041 Brescello (RE), declares that the design, manufacturing and after-sales assistance processes comply with the requirements of standard **UNI EN ISO 9001:2015**.

For further details on the product CE marking, request a copy of the Declaration of Conformity from the manufacturer, specifying the appliance model and the language of the country.

The manufacturer declines all liability due to printing or transcription errors, reserving the right to make any modifications to its technical and commercial documents without forewarning.

SAFETY SYMBOLS USED.



GENERIC HAZARD

Strictly follow all of the indications next to the pictogram. Failure to follow the indications can generate hazard situations resulting in possible harm to the health of the operator and user in general.



ELECTRICAL HAZARD

Strictly follow all of the indications next to the pictogram. The symbol indicates the appliance's electrical components or, in this manual, identifies actions that can cause an electrical hazard.



MOVING PARTS

The symbol indicates the appliance's moving components that can cause hazards.



HOT SURFACES

The symbol indicates the appliance's very hot components that can cause burns.



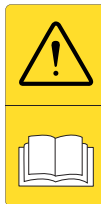
SHARP SURFACES

The symbol indicates the appliance's components or parts that can cause cuts if touched.



EARTH TERMINAL CONNECTION

The symbol identifies the appliance's earth terminal connection point.



READ AND UNDERSTAND THE INSTRUCTIONS

Read and understand the appliance's instructions before performing any operation, carefully following the indications provided.



INFORMATION

Indicates useful tips or additional information.



The user must not dispose of the appliance at the end of its service life as municipal waste, but send it to appropriate collection centres.

PERSONAL PROTECTIVE EQUIPMENT.



SAFETY GLOVES



SAFETY GOGGLES



SAFETY FOOTWEAR

1 INSTALLATION.

1.1 DESCRIPTION OF THE PRODUCT.

Victrix Hybrid is a hybrid heat pump consisting of:

- Victrix 24 HY Hybrid Indoor Unit;
- Outdoor Unit Audax.DK4.
- control panel (supplied in the accessories group of the indoor unit)

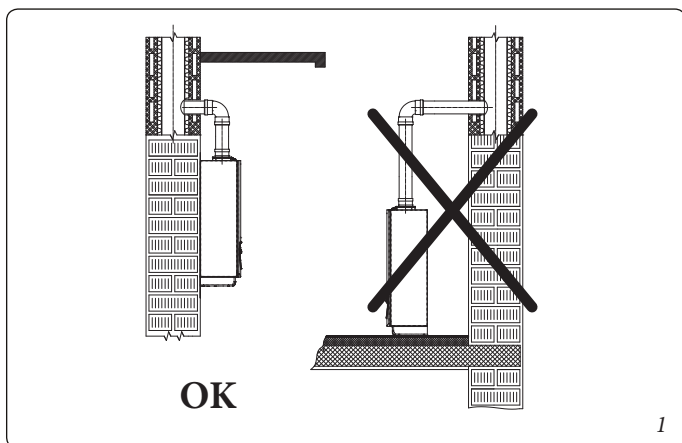
The Victrix Hybrid heat pump was designed only for heating and production of domestic hot water for domestic use and similar purposes.

In order to operate properly, the Victrix 24 HY indoor unit must be paired with an Audax DK4 outdoor unit; as such, all the provisions regarding the safety and use of the control panel, indoor and outdoor units must be respected.

1.2 INDOOR UNIT INSTALLATION RECOMMENDATIONS.

ATTENTION:

operators who install and service the appliance must wear the personal protective equipment required by applicable law.



The Victrix 24HY indoor unit was designed only for wall-mounted installation.



The place of installation of the indoor unit and relative Immergas accessories must have suitable features (technical and structural), such as to allow for (always in safe, efficient and comfortable conditions):



- installation (according to the provisions of technical legislation and technical regulations);
- maintenance operations (including scheduled, periodic, routine, special);
- removal (to outdoors in the place for loading and transporting the appliances and components) as well as the eventual replacement of those with appliances and/or equivalent components.

The wall surface must be smooth, without any protrusions or recesses enabling access to the rear part. They are not designed to be installed on plinths or floors (Fig. 1).

By varying the type of installation the classification of the boiler also varies, precisely:

- **Type B₂₃ or B₅₃** if installed using the relevant terminal for air intake directly from the room in which the indoor unit has been installed.
- **Type C** if installed using concentric pipes or other types of pipes envisioned for the sealed chamber indoor units for intake of air and expulsion of flue gas.

Note: the classification of the indoor unit is provided in the depictions of the various installation solutions shown on the following pages.

Only professionally enabled companies are authorised to install Immergas gas appliances.

Installation must be carried out according to regulation standards, current legislation and in compliance with local technical regulations and the required technical procedure

ATTENTION:

It is forbidden to install appliances removed from other systems. The manufacturer declines all liability in the event of damage caused by appliances removed from other systems or for any non-conformities with such equipment.



ATTENTION:

check the environmental operating conditions of all parts relevant to installation, referring to the values shown in the technical data table in this booklet.



ATTENTION:

Installation of the Victrix 24HY indoor unit when powered by LPG must comply with the rules regarding gases with a greater density than air (remember, as an example, that it is prohibited to install plants powered with the above-mentioned gas in rooms where the floor is at a lower quota than the country level).



Before installing the indoor unit, ensure that it is delivered in perfect condition; if in doubt, contact the supplier immediately. Packing materials (staples, nails, plastic bags, polystyrene foam, etc.) constitute a hazard and must be kept out of the reach of children.



If the appliance is installed inside or between cabinets, ensure sufficient space for routine servicing; for minimum installation distances, refer to Fig. 7.

It is just as important that the intake grids and exhaust terminals are not obstructed.



It is recommended to check that no flue gas recirculation is found in the air sample points (0.5% maximum permitted CO₂).



Keep all flammable objects away from the appliance (paper, rags, plastic, polystyrene, etc.).

The minimum distance for exhaust pipes from flammable materials must be at least 25 cm.

Do not place household appliances underneath the boiler as they could be damaged if the safety valve intervenes, if the drain trap is blocked, or if there are leaks from the hydraulic connections; otherwise, the manufacturer cannot be held responsible for any damage caused to the household appliances.

For the aforementioned reasons, we recommend not placing furnishings, furniture, etc. under the boiler.

In the event of malfunctions, faults or incorrect operation, turn the appliance off immediately and contact an authorised company (e.g. the Immergas Technical Assistance Centre, which has specifically trained staff and original spare parts). Do not attempt to modify or repair the appliance alone.

Any modification to the appliance that is not explicitly indicated in this section of the booklet is forbidden.

Installation Standards:



- this indoor unit can be installed outdoors in a partially protected area. A partially protected area is one in which the boiler is not exposed to the direct action of the weather (rain, snow, hail, etc.). *This type of installation is only possible when permitted by the laws in force in the appliance's country of destination.*

- Installation of gas appliances, flue exhaust pipes and combustion air intake pipes is forbidden in places with a fire risk (for example: garages, closed parking stalls), and in potentially dangerous places.

- Installation is prohibited on the vertical projection of the cooking surface.



- Installation is forbidden in places/rooms that constitute public areas of apartment buildings, internal stairways or other escape routes (e.g. floor landings, entrance halls, etc.).

- Installation is also forbidden in places/rooms that constitute public areas of apartment buildings such as cellars, entrance halls, attics, lofts, etc., unless otherwise provided for by local regulations in force.

- These boilers are not suitable for installation on walls made of combustible material.

N.B.: installing the wall recessed frame kit must guarantee the boiler stable, efficient support. The recessed frame kit ensures appropriate support only if installed correctly (according to the rules of good practice), following the instructions on its instructions leaflet.



The recessed frame for the boiler is not a supporting structure and must not replace the wall removed. It is necessary to position the boiler inside the wall. For safety reasons against any leaks it is necessary to plaster the boiler housing in the brick wall.

N.B.: wall mounting of the indoor unit must guarantee stable and efficient support for the generator. The plugs (standard supply) are only to be used to fix the boiler to the wall; they only ensure adequate support if inserted correctly (according to technical standards) in walls made of solid or semi-hollow brick or block. In the case of walls made from hollow brick or block, partitions with limited static properties, or in any case walls other than those indicated, a static test must be carried out to ensure adequate support.



These indoor units are used to heat water to below boiling temperature in atmospheric pressure. They must be connected to a central heating system and domestic hot water circuit suited to their performance and capacity.



Risk of damage due to corrosion caused by unsuitable combustion air and environment.

Spray, solvents, chlorine-based detergents, paints, glue, ammonium compounds, powders and similar cause product and flue duct corrosion.



- Check that combustion air power supply is free from chlorine, sulphur, powders, etc.
- Make sure that no chemical substances are stored in the place of installation.
- If you want to install the product in beauty salons, paint workshops, carpenter's shop, cleaning companies or similar, choose a separate installation area that ensures combustion air supply that is free from chemical substances.
- Make sure the combustion air is not fed from chimneys that were used with gas boilers or other heating devices. In fact, these may cause an accumulation of soot in the chimney.

Risk of material damage after using sprays and liquids to search for leaks

Leak sprays and liquids clog the reference hole P1 (Fig. 52) of the gas valve, damaging it irreparably.

During installation and maintenance, do not use spray or liquids in the upper area of the gas valve (side referring to the electric connections)



“Anti-legionella” heat treatment of the storage tank (activated by the specific function present on the predisposed thermoregulation systems): during this stage, the temperature of the water inside the storage tank exceeds 60°C with a relative risk of burns. Keep this domestic hot water treatment under control (and inform the users) to prevent unforeseeable damage to people, animals, things. If required install a thermostatic valve on the domestic hot water outlet to prevent scalding.



Filling the condensate drain trap.

On first lighting of the boiler, flue gas may come out from the condensate drain; after a few minutes' operation, check that this no longer occurs. This means that the drain trap is filled with condensate to the correct level preventing the passage of flue gas.



ATTENTION:

- **Type B open chamber indoor units must not be installed in places where commercial, artisan or industrial activities take place, which use products that may develop volatile vapours or substances (e.g. acid vapours, glues, paints, solvents, combustibles, etc.), as well as dusts (e.g. dust deriving from the working of wood, coal fines, cement, etc.), which may be harmful for the components of the indoor unit and jeopardise operation.**
- **Unless otherwise provided for by local regulations in force, configurations B₂₃ and B₅₃: the boilers must not be installed in bedrooms, bathrooms or bedsits. They must neither be installed in rooms containing solid fuel heat generators nor in rooms communicating with said rooms.**
- **The installation rooms must be permanently ventilated, in compliance with the local regulations in force (at least 6 cm² for every kW of installed heat input, except in the event of any increases needed for electro-mechanical vacuum cleaners or other devices that could put the installation room under vacuum).**
- **Installation of appliances in B₂₃ and B₅₃ configuration is recommended in non-residential premises and which are permanently ventilated.**



ATTENTION:

failure to comply with the above implies personal responsibility and invalidates the warranty.



1.3 VICTRIX HYBRID INSTALLATION.

Victrix Hybrid must be installed as per the hydraulic diagram (Fig. 2).

Basic requirements.

ATTENTION:

The minimum water content required within the system is 20 litres; otherwise, it will be necessary to install an inertial storage tank (optional).

For proper system operation, make sure that the minimum flow rate in operating conditions never drops below 500 l/h.

ATTENTION:

When the circulation within each room central heating loop is controlled by remotely operated valves, it is important to guarantee the minimum water content (20 litres), even if all the valves are closed.

When the circulation within each or certain room central heating loops is controlled by remotely operated valves, it is important to guarantee the minimum flow rate, even if all the valves are closed. It is necessary to have a loop that is always open on the system (bypass or non-intercepted zone), to allow some functions such as, for example, the antifreeze function.

ATTENTION:

Make sure that the expansion vessel present in the indoor unit is sufficient for the hydraulic circuit; otherwise use the optional vessel.

ATTENTION:

If you are using one or more booster pumps it is essential to install a hydraulic separator (not supplied by Immergas) downstream of the indoor unit. The minimum required 20l must be guaranteed between the indoor unit and the hydraulic separator.

ATTENTION:

It is recommended to connect the flow from heat pump (MHT) of the outdoor unit to the system return (R) of the indoor unit.

ATTENTION:

With Victrix Hybrid, in case of connection to the storage tank unit, the return present on the storage tank unit (RU) must be connected to the return of the Outdoor unit (RHT).

The storage tank unit return connection, present in the indoor unit, is not used and must be closed.

ATTENTION:

If installing a kit or servicing the Victrix Hybrid, always empty the system's circuit first so as not to compromise the appliance's electrical safety of the same (see Par. 2.16).

Only for Audax.DK4.

ATTENTION:

the appliance operates with R32 refrigerant gas.

This gas is ODOURLESS.

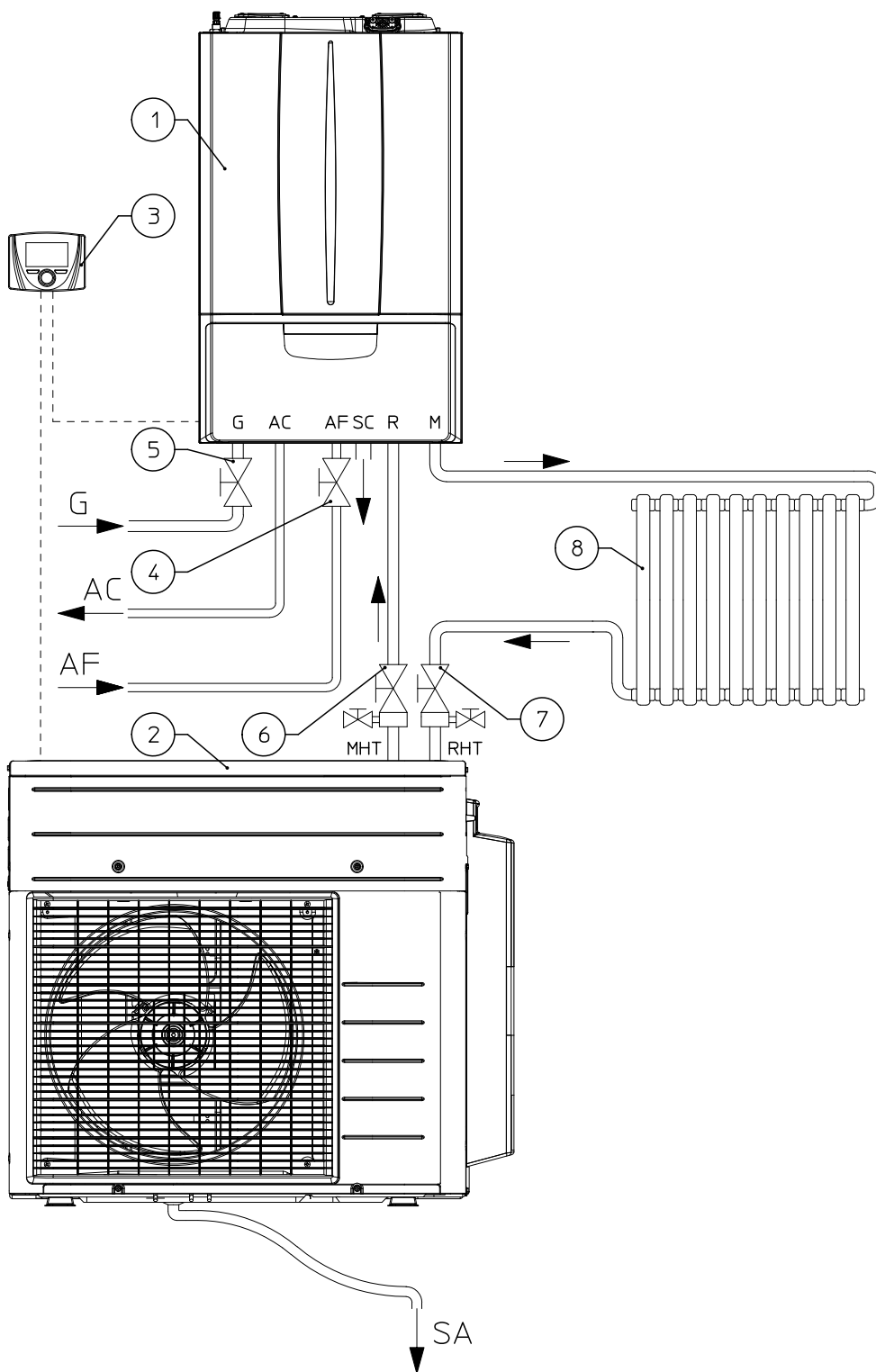
Pay the utmost attention

Strictly follow the instruction handbook of the Audax DK4 outdoor unit before installation and any type of operation on the chiller line.

ATTENTION:

R32 refrigerant gas belongs to the low flammability refrigerant category: class A2L according to standard ISO 817. It guarantees high performance with low environmental impact. The new gas reduces the potential environmental impact by one third compared to R410A, having less effect on global warming (GWP 675).

Victrix Hybrid hydraulic diagram.

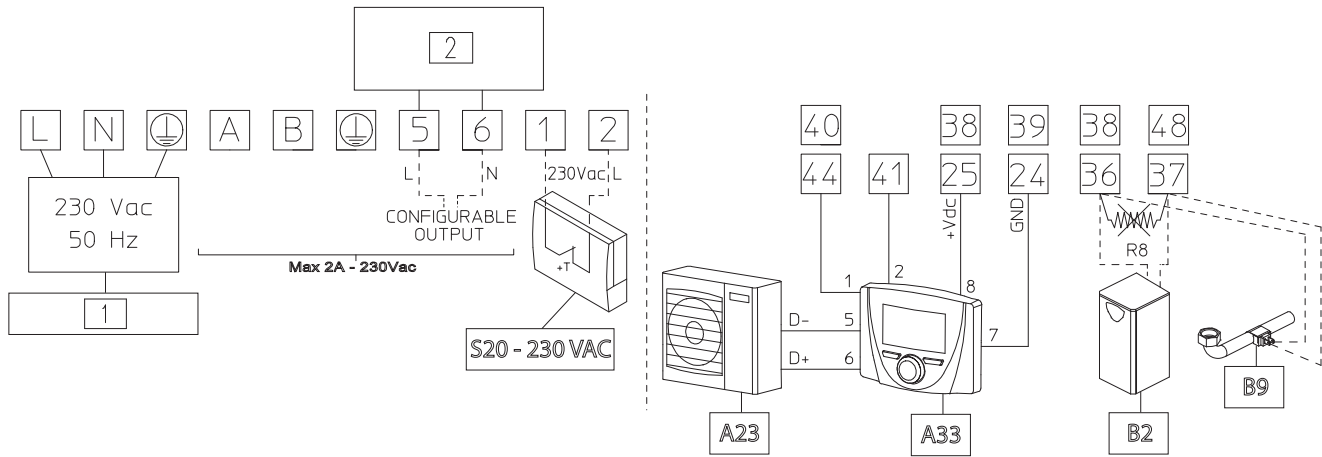


Key:

- 1 - Victrix 24HY Hybrid Indoor Unit
- 2 - Audax.DK4 Outdoor Unit
- 3 - Control panel
- 4 - Domestic hot water inlet shut-off cock
- 5 - Gas interception cock
- 6 - Heat pump flow interception cock with vent
- 7 - Heat pump return interception cock with vent
- 8 - System

- G - Gas supply
- AC - Domestic hot water outlet
- AF - DHW (Domestic hot water) water inlet
- SC - Condensate drain
- M - System flow
- R - System return
- MHT - Flow from heat pump
- RHT - Return to heat pump
- SA - Outdoor unit water drain

Victrix Hybrid Electrical connection diagram.



Key:

- A23 - Outdoor Unit Audax.DK4
- A33 - Victrix Hybrid control panel
- B2 - Boiler probe (optional)
- B9 - DHW inlet probe (optional - not available for this model)
- S20-230VAC - Room thermostat (optional)

- 1 - Power supply
- 2 - Configurable relay

For the correct connection of the power supply cable refer to Parag 1.11 of this manual.

A 230VAC (optional) room thermostat can be connected on terminals 1 and 2 of the terminal block present in the indoor unit. Consult Par 1.15. for connection.

To connect the Audax.DK4 outdoor unit to the control panel, connect the communication cables from terminals “D+ - D-” of the outdoor unit to terminals “5 - 6” of the control panel. Consult the relative instructions manual to access the electrical connections of the outdoor unit.

To connect the communication BUS of the Victrix 24HY outdoor unit to the control panel, connect the communication cables from terminals “44 - 41” of the indoor unit to terminals “1 - 2” of the control panel. To access the connection compartment, consult Par. 1.11.

For low voltage power supply of the control panel, connect the communication cables from terminals ”24-25” present on the terminal block of the indoor unit to terminals “7-8” of the control panel. To access the connection compartment, consult Par. 1.11.

To connect the optional storage tank probe connect the cables to terminals “38-48” present on the terminal block of the outdoor unit. To access the connection compartment, consult Par. 1.11.

Victrix Hybrid antifreeze protection.

Freezing may damage the system. To prevent freezing of the hydraulic components, Victrix Hybrid is equipped with special antifreeze protection functions, which include the activation of the pump and burner of the indoor unit in case of low temperatures.



These functions allow to protect the unit up to the minimum temperatures indicated below:

- **Outdoor unit: Minimum temperature -15°C.**
- **Indoor unit: Minimum temperature -5°C.**

ATTENTION:
if the boiler is installed in places where the temperature falls below 0°C the domestic hot water and central heating attachment pipes must be insulated.



Furthermore, if the control panel is used for room temperature control (and a room thermostat is not installed) there is also a room antifreeze function (see Par. 3.22).



If the indoor unit must be installed in a place where the minimum temperature may drop below -5°C, up to -15°C, follow the instructions below to prevent freezing:



- Protect the central heating circuit from freezing by introducing an anti-freeze liquid into this circuit, as indicated in the related paragraph. This will also protect the outdoor unit and the whole central heating system.
- Protect the domestic hot water circuit of the indoor unit against freezing by using an accessory that is supplied on request (antifreeze kit) comprising an electric resistance, the relevant wiring and a control thermostat (carefully read and follow the installation instructions contained in the accessory kit pack).

If the outdoor unit is installed in an area with temperatures >5°C and high relative humidity for at least three consecutive days, the optional anti-freeze resistance kit must be installed to prevent the floor from freezing with condensate drain.

Freeze protection of the outdoor and indoor units by means of the antifreeze function (including -15°C protection of the DHW circuit with resistance kit) is ensured only if:



- the indoor unit is correctly connected to gas the power supply circuit
- the units and control panel are correctly connected to the electrical power supply circuit and connected to one another;
- the units and control panel are constantly supplied with power;
- the indoor unit is not in “off” or “stand-by” mode
- the indoor and outdoor units are not malfunctioning (Par. 2.13);
- the antifreeze unit and/or kit essential components are not faulty.

The warranty does not cover damage due to interruption of the electrical power supply and failure to comply with that stated on the following paragraph “-Antifreeze protection of the system by adding antifreeze liquid”.

If the previous conditions are not followed (for example in case of an interruption of the electrical power supply), these antifreeze functions are not able to guarantee the protection of the outdoor and indoor unit against freezing.



Therefore, the circuit must be protected from freezing, by performing one of the following actions:

- Protect the central heating circuit from freezing by introducing an anti-freeze liquid as indicated in the related paragraph.
- Install the antifreeze protection valves, that drain the water from the system before it freezes. The antifreeze protection valve that protects the outdoor unit is provided as standard. Necessity to install protection valves on the system to be evaluated. For further details, refer to the relative section in the manual for the installation of the outdoor unit.

Antifreeze protection of the system by adding antifreeze liquid.

Protect the central heating circuit from freezing by inserting a good-quality antifreeze liquid into this circuit, which is specially suited for central heating systems and which is manufacturer guaranteed not to cause damage to the heat exchanger or other components of the units.



The antifreeze liquid must not be harmful to one's health.

The materials used for the central heating circuit of Immergas units resist ethylene and glycol based antifreeze liquids (if the mixtures are prepared perfectly). Adding glycol lowers the freezing point of water.

The required concentration depends on the lowest expected external temperature and if bursting or freezing risks on the system must be prevented. More glycol is required to prevent the system from freezing. Add glycol according to the indications of the table below.

An aqueous solution must be made with potential pollution class of water 2 (EN 1717:2002).

For life and possible disposal, follow the supplier's instructions.

INFORMATION

- Protection from risk of bursting: glycol prevents the pipes from bursting, but it does NOT prevent freezing of the liquid they contain.



- Protection from risk of freezing : glycol prevents freezing of the liquid contained inside the pipes.

Lowest expected external temperature	Prevention from risk of bursting	Prevention from risk of freezing
-5°C	10%	15%
-10°C	15%	25%
-15°C	20%	35%
-20°C	25%	—
-25°C	30%	—

NOTE

- The required concentration may vary according to the type of glycol. ALWAYS compare the requirements of the table above with the specifications provided by the glycol manufacturer. If necessary, comply with the requirements provided by the glycol manufacturer.



- The concentration of additional glycol must NEVER exceed 35%.

- If the liquid in the system should freeze, the pump will NOT be able to start. Remember that the risk of freezing of the liquid in the system is present if even if the bursting risk of the system is prevented.

ATTENTION:



The presence of glycol may trigger corrosion of the system, since glycol without inhibitors becomes acid under the influence of oxygen. The process is accelerated by the presence of copper and high temperatures. Non-inhibited acid glycol affects metallic surfaces and creates galvanic corrosion cells that cause serious damage to the system.

Therefore, it is important that:

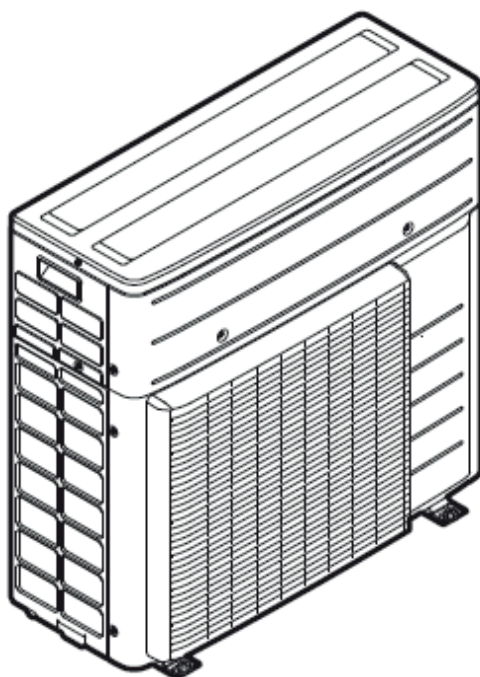
- a proper water treatment is performed by a specialised technician,
- a glycol with corrosion inhibitors able to contrast the acids formed by glycol oxidation is selected,
- car glycol is not used, since its corrosion inhibitor has a limited duration and contains silicates which may obstruct or clog the system,
- galvanised pipes are NOT used in systems with glycol, since their presence may cause some components in the inhibitor to be corroded by glycol.

If the hydraulic circuit contains glycol, the corresponding function must be enabled (see Par 3.6).

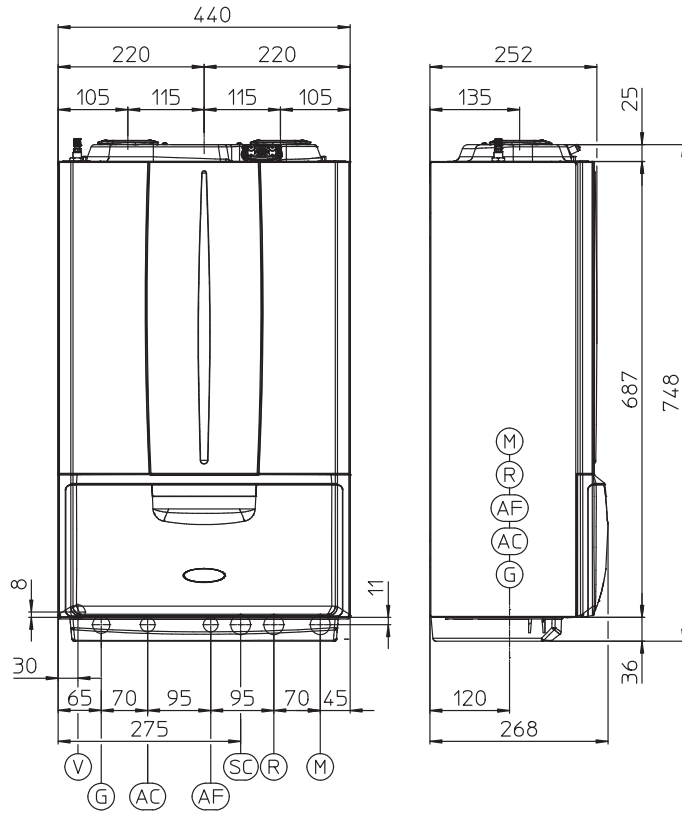


1.4 OUTDOOR UNIT INSTALLATION.

For the installation of the outdoor unit use the instructions manual for Audax.DK4.



1.5 INDOOR UNIT MAIN DIMENSIONS.



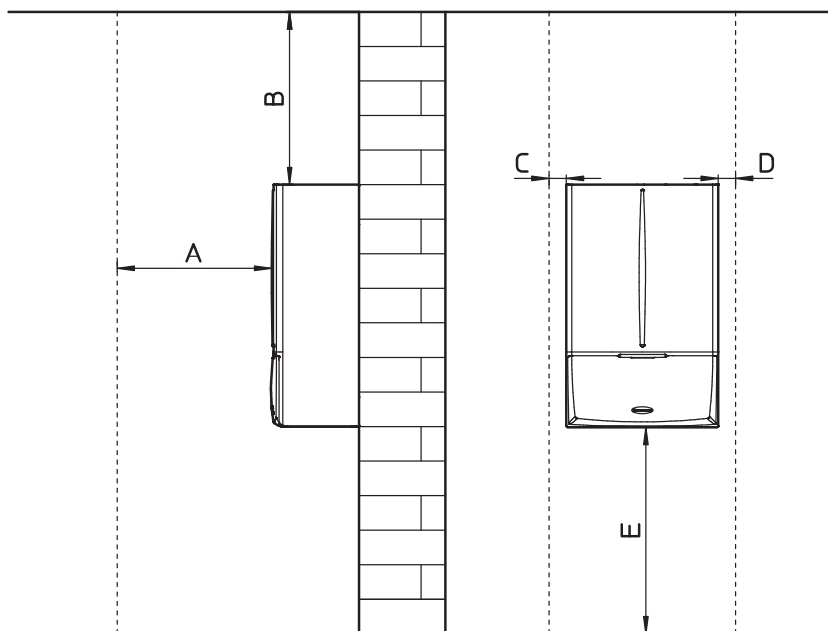
Key:

- V - Electrical connection
- G - Gas supply
- AC - Domestic hot water outlet
- AF - Domestic hot water inlet
- SC - Condensate drain (minimum internal diameter \varnothing 13 mm)
- M - System flow
- R - System return

Height (mm)	Width (mm)	Depth (mm)	Profondità (mm)
748	440	268	
CONNECTIONS			
GAS	DOMESTIC HOT WATER		SYSTEM
G	AC	AF	R M
3/4"	1/2"	1/2"	3/4" 3/4"

5

1.6 MINIMUM INDOOR UNIT INSTALLATION DISTANCES



Key:

- A - 450 mm
- B - 350 mm
- C - 30 mm
- D - 30 mm
- E - 350 mm

6

INSTALLATORE

UTENTE

MANUTENTORE

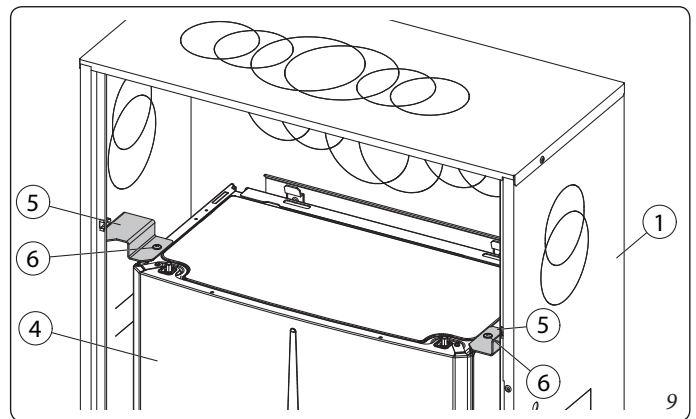
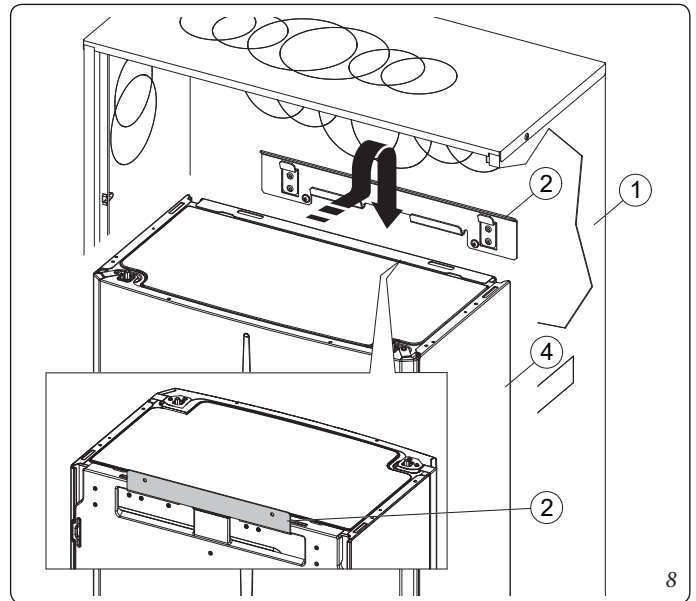
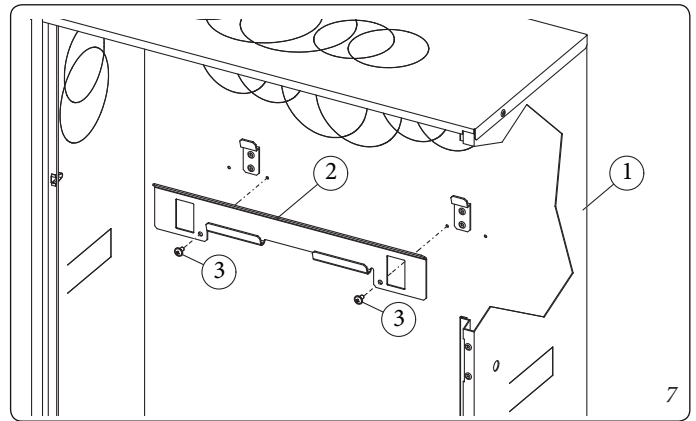
1.7 INSTALLATION OF THE OUTDOOR UNIT IN THE RECESSED FRAME (OPTIONAL).

The indoor unit is designed to be installed in the Immergas recessed frame (supplied as optional) only coupled with the enlarged door kit.

To install proceed as follows:

- Install the bracket (2) inside the recessed frame fixing it with the screws (3) in the pre-drilled holes (Fig. 7).
- Hang the boiler (4) to the bracket (2) (Fig. 8).
- Block the boiler (4) by mounting the brackets (5) and fixing them with their screws (6) (Fig. 9).

The brackets (5) used to centre the boiler on the frame and hold it in place stop against the frame (1) so do not require fixing to the frame itself.



1.8 INDOOR UNIT CONNECTION UNIT.

The connection unit is supplied as standard.

Perform the hydraulic and gas system connection of the device in compliance with the instructions in (Fig. 10 according to the type of installation to be made.

1.9 INDOOR UNIT GAS CONNECTION.

Our indoor units are designed to operate with methane gas (G20) and LPG. Supply pipes must be the same as or larger than the fitting.

ATTENTION:

Before connecting the gas line, carefully clean inside all the fuel feed system pipes to remove any residue that could impair the efficiency of the indoor unit. Also make sure the gas corresponds to that for which the indoor unit is prepared (see data nameplate). If different, it must be converted for operation with the other types of gas (see converting appliance for other gas types). It is also important to check the dynamic pressure of the mains (methane or LPG) used to supply the indoor unit, which must comply with EN 437 and its attachment, as insufficient levels may reduce generator output and cause discomfort to the user.



According to local regulations in force, make sure that a gas cock is installed upstream of each connection between the appliance and the gas system. This cock, if supplied by the appliance's manufacturer, can be directly connected to the appliance (i.e. downstream from the pipes connecting the system to the appliance), according to the manufacturer's instructions.



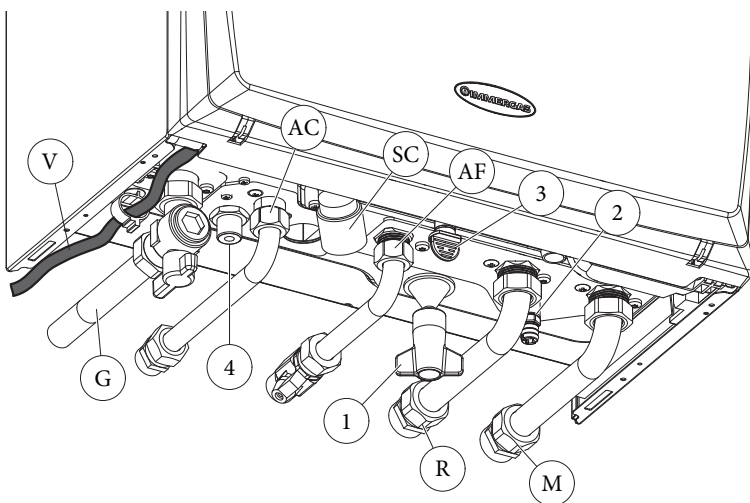
The Immergas connection unit, supplied as an optional kit, also includes the gas cock, whose installation instructions are provided in the kit.

In any case, make sure the gas cock is connected properly.

The gas supply pipe must be suitably dimensioned according to current regulations in order to guarantee correct gas flow rate to the burner even in conditions of maximum generator output and to guarantee appliance efficiency (technical specifications). The coupling system must conform to standards in force (EN 1775).

ATTENTION:

The indoor unit was designed to operate with combustible gas free of impurities; otherwise it is advisable to fit special filters upstream of the indoor unit to restore the purity of the fuel.



Key:

- V - Electrical connection
- G - Gas supply
- AC - Domestic hot water outlet
- AF - Domestic hot water inlet
- SC - Condensate drain (minimum internal diameter Ø 13 mm)
- M - System flow
- R - System return

- 1 - System filling valve
- 2 - System draining valve
- 3 - 3 bar safety valve drain fitting signal
- 4 - Air vent valve drain

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Storage tanks (in case of supply from LPG depot).

- New LPG storage tanks may contain residual inert gases (nitrogen) that degrade the mixture delivered to the appliance causing functioning anomalies.
- Due to the composition of the LPG mixture, layering of the mixture components may occur during the period of storage in the tanks. This can cause a variation in the calorific value of the mixture delivered to the appliance, with subsequent change in its performance.

1.10 HYDRAULIC CONNECTION.

In order not to void the product warranty, before making unit connections, carefully clean the heating system (pipes, radiators, etc.) with special pickling or de-scaling products to remove any deposits that could jeopardise proper unit operation.



A treatment of the heating and water system water is required, in compliance with the technical standards in force, in order to protect the system and the appliance from deposits (e.g. scale), slurry or other hazardous deposits.

Indoor Unit hydraulic connection.

Water connections must be made in a rational way using the couplings on the indoor unit template. The safety valve outlet of the indoor unit must be connected to a draining funnel. Otherwise, the manufacturer of the indoor unit declines any responsibility in case of flooding if the drain valve cuts in.

ATTENTION:

the manufacturer declines all liability in the event of damage caused by the installation of an automatic filling system.



In order to meet the system requirements established by EN 1717 in terms of pollution of drinking water, we recommend installing the anti-backflow kit to be used upstream of the cold water inlet connection of the boiler. We also recommend using a category 2 3 heat transfer fluid (ex: water + glycol) in the boiler's primary circuit (CH circuit), as defined in standard EN 1717.

To preserve the duration of the indoor unit efficiency features, in the presence of water whose features can lead to the deposit of lime scale, installation of the "polyphosphate dispenser" kit is recommended.



3 bar safety valve.

Discharge of the safety valve has been conveyed to the condensate drain trap outlet. Consequently, in the event of valve intervention, the discharged liquid will end up in the sewer system through the drain pipe of the condensate drain trap.

In any case the lower part of the appliance is fitted with a drain fitting (Ref. 3 Fig. 10) with the relative closure cap to check for the presence of liquid in the discharge circuit and to check the intervention of the 3 bar safety valve.

Condensate drain.

To drain the condensate produced by the appliance, it is necessary to connect to the drainage system by means of acid condensate resistant pipes, with an internal Ø of at least 13 mm. The system connecting the appliance to the drainage system must be carried out in such a way as to prevent occlusion and freezing of the liquid contained in it. Before appliance ignition, ensure that the condensate can be correctly removed. After first ignition, check that the drain trap is filled with condensate (Para. 1.31). Also, comply with national and local regulations on discharging waste waters.

In the event condensate is not discharged into the wastewater drainage system, a condensate neutraliser must be installed to ensure compliance with the parameters established by the legislation in force.

ATTENTION:

If you are using one or more booster pumps it is essential to install a hydraulic separator (not supplied by Immergas) downstream of the indoor unit.



Outdoor unit hydraulic connection.

For the hydraulic connection of the Audax.DK4 outdoor unit, refer to the related instructions booklet

1.11 ELECTRICAL POWER SUPPLY CONNECTION.

System electrical connection.

The Victrix 24HY indoor unit must be coupled with an Audax.DK4 outdoor unit. They must both be connected to the control panel as indicated in the control panel. The Audax.DK4 outdoor unit is supplied with 230 Vac with lines separated from the indoor unit with an IPX5D protection rating. Electrical safety of the Victrix Hybrid heat pump is reached only when all the units are correctly connected to an efficient earthing system as specified by current safety standards.

ATTENTION:

The manufacturer declines any responsibility for damage or physical injury caused by failure to connect the indoor unit to an efficient earthing system or failure to comply with the reference standards.



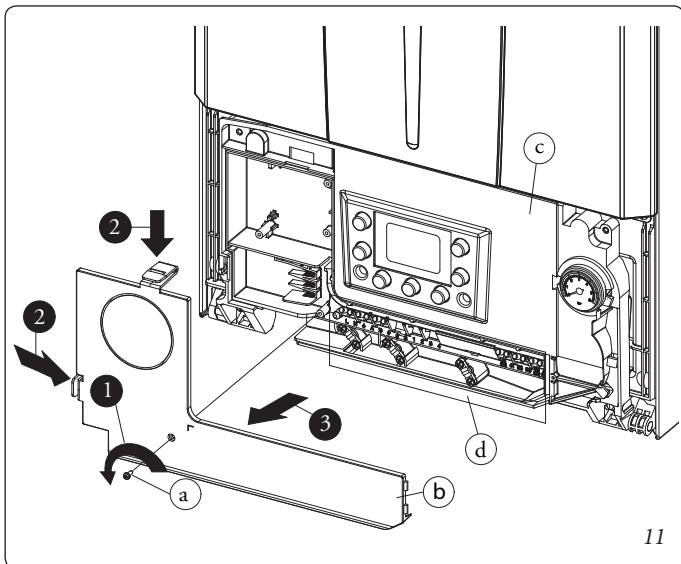
Indoor Unit electrical connection.

• Open the control panel connections compartment (Fig. 11).

To carry out electrical connections, all you have to do is open the connections compartment as follows:


- Disassemble the cover (Fig. 67).
- Disassemble the cover (b)
 - 1) Loosen the screw (a).
 - 2) Press the two hooks on the connections compartment cover.
 - 3) Remove the cover (b) from the control panel (c).
- At this point, it is possible to access the terminal board (d).

Also ensure that the electrical installation corresponds to maximum absorbed power specifications as shown on the boiler data nameplate. The boilers are supplied complete with a "X" type power cable without plug.



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ATTENTION:

The power supply cable must be connected to a 230V \pm 10% / 50Hz mains supply respecting L-N polarity and earth connection;  this network must also have a multi-pole circuit breaker with class III overvoltage category in compliance with installation regulations.



To protect from possible dispersions of DC voltage, it is necessary to provide a type A differential safety device.

If the power cable is damaged, contact a qualified company (e.g. the Authorised After-Sales Centre) for its replacement to avoid a hazard.

The power cable must be laid as shown (Fig. 10).

If the network fuse on the integrated P.C.B. needs replacing, this must also be done by qualified personnel: use a 3.15 A F (fast) 250 V fuse (size 5 x 20).

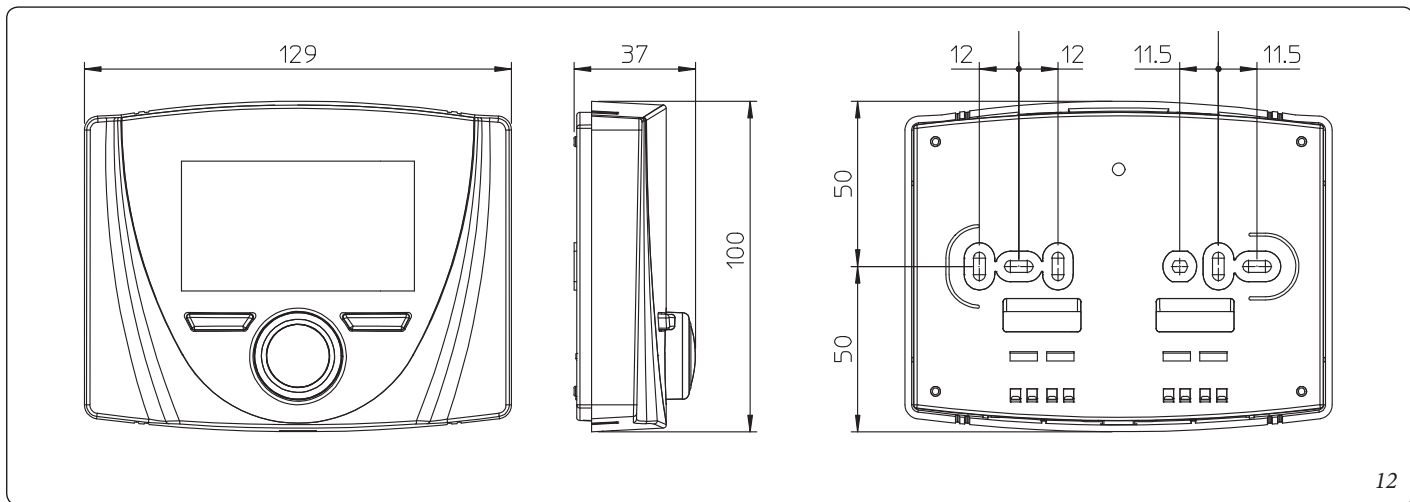
For the main power supply to the appliance, never use adapters, multiple sockets or extension leads.

Make the various electrical connections according to your needs.

Outdoor unit electrical connection.

For the electrical connection of the Audax.DK4 outdoor unit, refer to the related instructions booklet.

1.12 CONTROL PANEL MAIN DIMENSIONS.



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1.13 CONTROL PANEL INSTALLATION OPERATIONS.

- 1) Separate the fixing template from the body of the remote panel using a screwdriver as a lever in the relative recess (Fig. 13). Install the remote panel away from heat sources and in a suitable position to detect the room temperature correctly.
- 2) Install the remote panel using the openings on its rear part directly onto the wall or on a recess box using the relative supplied screws.
- 3) Connect the remote panel to the electronic management clamps, as indicated in the wiring diagram.

The connection is made using wires with a minimum section of 0.50 mm² and maximum section of 1.5 mm² and with a maximum length of 50 metres.

For correct installation, prepare a dedicated line to connect the control panel according to the Standards in force regarding electrical systems. If this is not possible, interference due to other electric cables could cause malfunctioning of the control panel itself.

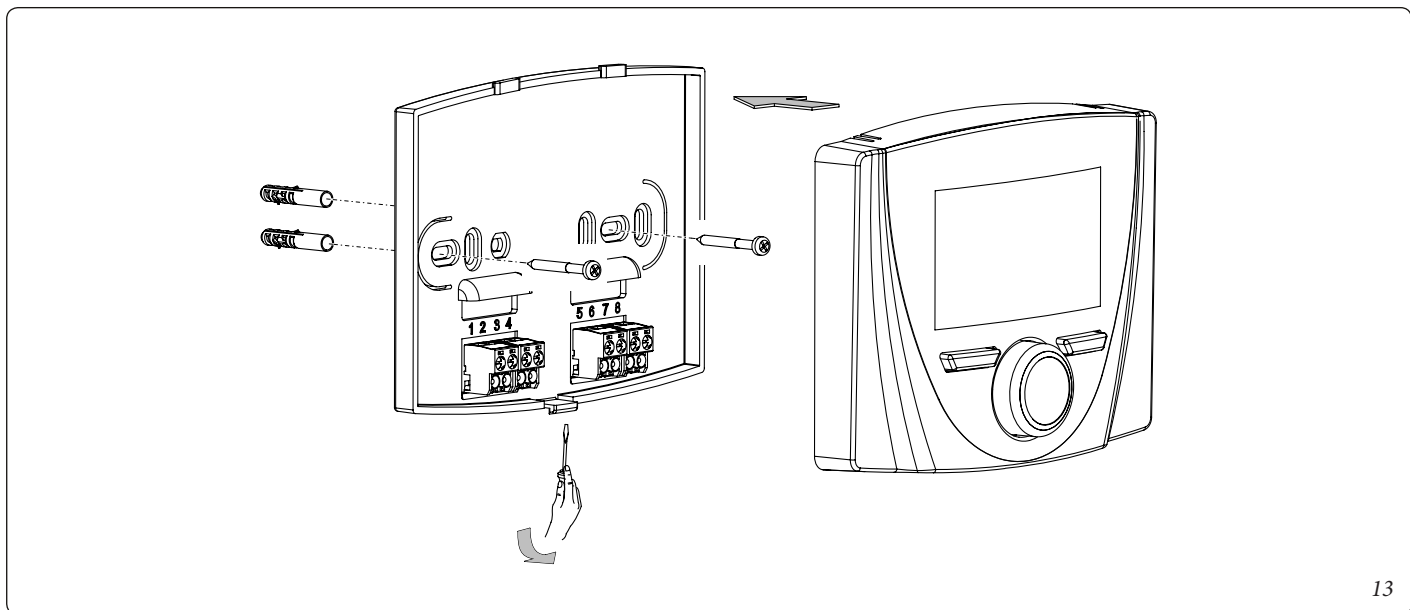


- 4) Fix the body of the remote control to the mount template, engaging it with pressure.
- 5) After the Victrix Hybrid devices have been powered, wait about 30 seconds before regulation so that communication between control panel and the Victrix Hybrid devices has established.

1.14 EXTERNAL TEMPERATURE PROBE.

In the outdoor unit there is an external probe as standard. This may be used by the control panel to manage temperature control.

Optional external probes may not be connected to the indoor or outdoor units.



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1.15 ROOM CHRONO-THERMOSTATS (OPTIONAL).

The indoor unit is prepared for the application of room chrono-thermostats, which are available as optional kits (Fig. 14).

ATTENTION:
the control panel must be installed even when using a room chrono-thermostat



The room chrono-thermostat is used when the room probe of the control panel is deactivated.



It must be connected to terminals 1 and 2 as shown on the wiring diagram. Make sure that the On/Off contact of the thermostat is of the “clean” type.

The connections must be made on the terminal board inside the indoor unit control panel. To disassemble the cover to access the control panel, refer to Par. 1.11.

ATTENTION:
the outlet of terminals 1 and 2 of the remote panel is at 230V / 50Hz



All Immergas chrono-thermostats are connected with 2 wires only. Carefully read the user and assembly instructions contained in the accessory kit.

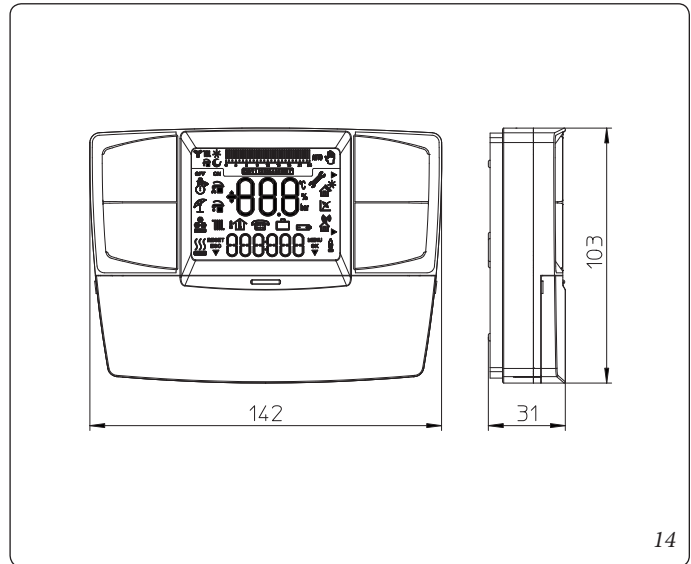
ATTENTION:
Disconnect power to the Victrix Hybrid appliances before any electrical connection.



The Immergas chrono-thermostat allows:

- set two room temperature values: one for day (comfort temperature) and one for night (reduced temperature);
- set a weekly programme with four daily switch on and switch off times;
- select the required operating mode from the various possible alternatives:
 - manual mode (with adjustable temperature).
 - automatic mode (with set programme).
 - forced automatic mode (momentarily changing the temperature of the automatic programme).

The Immergas chrono-thermostat is powered by two 1.5V LR 6 type alkaline batteries;



1.16 230 VAC CONFIGURABLE OUTLET.

A configurable relay is available on the P.C.B. of the indoor unit, its outlet is available on terminals 5 and 6 (to disassemble the cover to access the connections compartment of the control panel refer to Par. 1.11.) The configurations that can be set for parameter “P3” are listed in the P.C.B. programming paragraph.

1.17 IMMERGAS FLUE SYSTEMS.

Immergas supplies various solutions separately from the indoor units regarding the installation of air intake terminals and flue exhaust, which are fundamental for indoor unit operation.

ATTENTION:

the indoor unit must be installed exclusively with an original Immergas “Green Range” inspectionable air intake system and flue gas extraction system made of plastic, with the exception of the C6 configuration, as required by the regulations in force.



This flue can be identified by an identification mark and special distinctive marking bearing the note "only for condensation boilers".

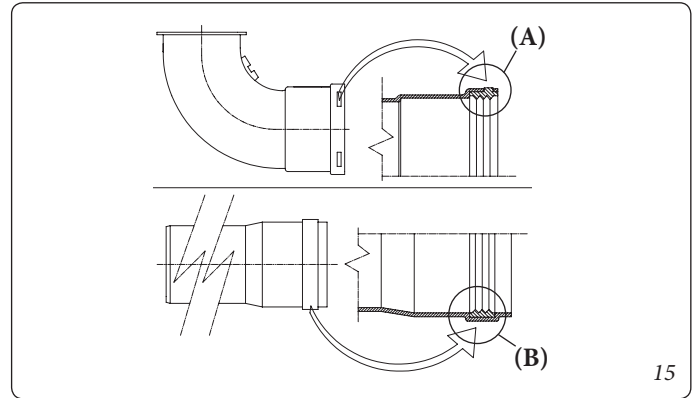
The plastic pipes cannot be installed outdoors, for tracts longer than 40 cm, without suitable protection from UV rays and other atmospheric agents.

• **Resistance factors and equivalent lengths.**

Each flue extraction system component is designed with a Resistance Factor based on preliminary tests and specified in the table below. The Resistance Factor for individual components is independent from the type of indoor unit on which it is installed and has a dimensionless size. It is however, conditioned by the temperature of the fluids that pass through the pipe and therefore, varies according to applications for air intake or flue exhaust. Each single component has a resistance corresponding to a certain length in metres of pipe of the same diameter; the so-called equivalent length, can be obtained from the ratio between the relative Resistance Factors.

All boilers have an experimentally obtainable maximum Resistance Factor equal to 100.

The maximum Resistance Factor allowed corresponds to the resistance encountered with the maximum allowed pipe length for each type of Terminal Kit. This information allows calculations to be made to verify the possibility of setting up various flue configurations.



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• **Positioning the gaskets (black) for “green range” flue systems.** Position the gasket correctly (for bends and extensions) (Fig. 15):

- gasket (A) with notches, to use for bends;
- gasket (B) without notches, to use for extensions.

N.B.: if necessary, to ease the push-fitting, spread the elements with commonly-used talc.

• **Extension pipes and concentric elbows push-fittings.**

To install push-fitting extensions with other elements of the flue extraction elements assembly, proceed as follows: Install the concentric pipe or elbow with the male side (smooth) on the female side (with lip seal) to the end stop on the previously installed element in order to ensure sealing efficiency of the coupling.

N.B.: if the exhaust terminal and/or extension concentric pipe needs shortening, consider that the internal duct must always protrude by 5 mm with respect to the external duct.

N.B.: for safety purposes, do not obstruct the boiler intake/exhaust terminal, even temporarily.




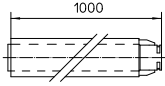
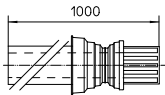


The various parts of the flue system must be checked to ensure that they have been laid in such a way as to prevent the coupled parts from detaching, in particular, the flue exhaust duct in the Ø80 separator kit configuration. Should the aforesaid condition not be adequately guaranteed, it will be necessary to use the special clamp ring nut clip kit.



N.B.: when installing horizontal pipes, a minimum inclination of 3% towards the boiler must be maintained, and a section clip with pin must be installed every 3 metres.

• **Installation inside the recessed frame.** In this mode, install the flue according to your needs using the appropriate pre-sections in the frame to exit from its clearances.




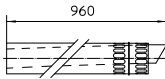

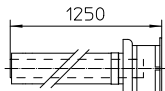

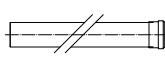
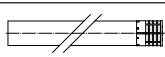






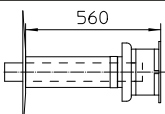
1.18 TABLES OF RESISTANCE FACTORS AND EQUIVALENT LENGTHS OF “GREEN RANGE” FLUE SYSTEM COMPONENTS.

TYPE OF DUCT		Resistance Factor (R)	Equivalent length in metres of concentric pipe Ø 80/125
Concentric pipe 80/125 Ø m 1		2,1	1
90° concentric bend 80/125 Ø		3,0	1,4
Concentric bend 45° Ø 80/125		2,1	1
Terminal complete with concentric horizontal intake-exhaust Ø 80/125		2,8	1,3
Terminal complete with concentric vertical intake-exhaust Ø 80/125		3,6	1,7
90° concentric bend Ø 80/125 with inspection		3,4	1,6
Stub pipe with inspection Ø 80/125		3,4	1,6

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TYPE OF DUCT		Resistance Factor (R)	Equivalent length in metres of concentric pipe Ø 60/100	Equivalent length in metres of a Ø 80 pipe	Equivalent length in metres of a Ø 60 pipe	Equivalent length in metres of concentric pipe Ø 80/125
Concentric pipe Ø 60/100 m 1		Intake and Exhaust 6.4	m 1	Intake m 7.3	Exhaust m 1.9	m 3,0
				Exhaust m 5.3		
90° concentric bend Ø 60/100		Intake and Exhaust 8.2	m 1,3	Intake m 9.4	Exhaust m 2.5	m 3,9
				Exhaust m 6.8		
Concentric bend 45° Ø 60/100		Intake and Exhaust 6.4	m 1	Intake m 7.3	Exhaust m 1.9	m 3,0
				Exhaust m 5.3		
Terminal complete with concentric horizontal intake-exhaust Ø 60/100		Intake and Exhaust 15	m 2,3	Intake m 17.2	Exhaust m 4.5	m 7,1
				Exhaust m 12.5		
Concentric horizontal intake-exhaust terminal Ø 60/100		Intake and Exhaust 10	m 1,5	Intake m 11.5	Exhaust m 3.0	m 4,7
				Exhaust m 8.3		
Terminal complete with concentric vertical intake-exhaust Ø 60/100		Intake and Exhaust 16.3	m 2,5	Intake m 18.7	Exhaust m 4.9	m 7,7
				Exhaust m 13.6		
Concentric vertical intake-exhaust terminal Ø 60/100		Intake and Exhaust 9	m 1,4	Intake m 10.3	Exhaust m 2.7	m 4,3
				Exhaust m 7.5		
Pipe Ø 80 m 1		Intake 0.87 Exhaust 1.2	m 0,1 m 0,2	Intake m 1.0	Exhaust m 0.4	m 0,4
				Exhaust m 1.0		m 0,5
Complete intake terminal Ø 80 m 1		Intake 3	m 0,5	Intake m 3.4	Exhaust m 0.9	m 1,4
Intake terminal Ø 80 Exhaust terminal Ø 80		Intake 2.2 Exhaust 1.9	m 0,35 m 0,3	Intake m 2.5	Exhaust m 0.6	m 1
				Exhaust m 1.6		m 0,9
Bend 90° Ø 80		Intake 1.9 Exhaust 2.6	m 0,3 m 0,4	Intake m 2.2	Exhaust m 0.8	m 0,9
				Exhaust m 2.1		m 1,2
Bend 45° Ø 80		Intake 1.2 Exhaust 1.6	m 0,2 m 0,25	Intake m 1.4	Exhaust m 0.5	m 0,5
				Exhaust m 1.3		0,7
Pipe Ø 60 m 1 for ducting		Exhaust 3.3	m 0,5	Intake 3.8	Exhaust m 1.0	m 1,5
				Exhaust 2.7		
Bend 90° Ø 60 for ducting		Exhaust 3.5	m 0,55	Intake 4.0	Exhaust m 1.1	m 1,6
				Exhaust 2.9		
Reduction Ø 80/60		Intake and Exhaust 2.6	m 0,4	Intake m 3.0	Exhaust m 0.8	m 1,2
				Exhaust m 2.1		
Terminal complete with exhaust vertical Ø 60 for ducting		Exhaust 12.2	m 1,9	Intake m 14	Exhaust m 3.7	m 5,8
				Exhaust m 10.1		

1.19 OUTDOOR INSTALLATION IN PARTIALLY PROTECTED AREA.

A partially protected area is one in which the indoor unit is not exposed to the direct action of the weather (rain, snow, hail, etc.).



If the indoor unit is installed in a place where the ambient temperature drops below -5°C , use the optional antifreeze kit, checking the ambient operating temperature range shown in the technical data table in this instruction booklet.



Configuration type B, open chamber and fan assisted. (B_{23} or B_{53}).

Using the special coverage kit one can achieve direct air intake (Fig. 16) and flue gas exhaust in a single chimney or directly outside. In this configuration it is possible to install the indoor unit in a partially protected place. In this configuration the indoor unit is classified as type B.

With this configuration:

- air intake takes place directly from the environment in which the indoor unit is installed (external);
- the flue gas exhaust must be connected to its own single chimney (B_{23}) or ducted directly outside via a vertical terminal for direct exhaust (B_{53}) or via an Immergas ducting system (B_{53}).

The technical regulations in force must be respected.

Cover kit assembly (Fig. 18).

Remove the two plugs and the gaskets present from the two lateral holes with respect to the central one. Now cover the left intake hole using the relevant plate, fixing it onto the right side using the 2 previously-removed screws. Install the $\varnothing 80$ outlet flange on the central hole of the boiler, taking care to insert the gasket supplied with the kit and tighten by means of the screws provided. Install the upper cover, fixing it using the 4 screws present in the kit, positioning the relevant gaskets. Engage the 90° $\varnothing 80$ bend with the male end (smooth) in the female end (with lip seal) of the $\varnothing 80$ flange unit to the end stop. Introduce the gasket, making it run along the bend. Fix it using the metal sheet plate and tighten by means of the clips present in the kit, making sure to block the 4 gasket flaps. Fit the male end (smooth) of the exhaust pipe into the female end of the 90° $\varnothing 80$ bend, making sure that the relevant wall sealing plate is already fitted; this will ensure hold and joining of the elements making up the kit.

Max. length of exhaust duct.

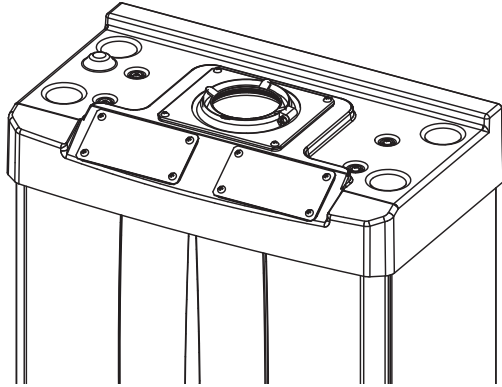
The flue pipe (both vertical or horizontal) can be extended to a max. length of 30 linear metres.

Coupling of extension pipes.

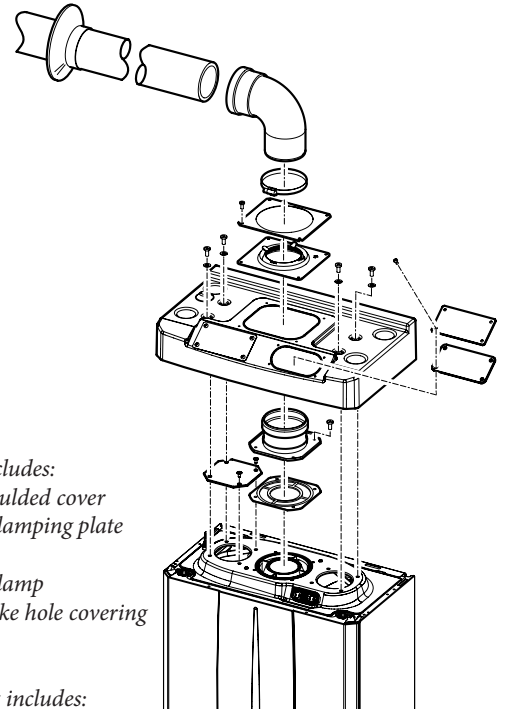
To install push-fitting extensions with other elements of the flue, proceed as follows: Couple the pipe or elbow with the male side (smooth) in the female side (with lip seal) to the end stop on the previously installed element. This will ensure sealing efficiency of the coupling.

Configuration without cover kit in a partially protected location (type C boiler).

By leaving the side plugs fitted it is possible to install the appliance externally without the cover kit. Installation takes place using the $\varnothing 60/100$ and $\varnothing 80/125$ concentric intake/ exhaust kits. Refer to the paragraph on indoor installation. In this configuration the upper cover kit guarantees additional protection for the boiler. It is recommended but not compulsory. The $\varnothing 80/80$ separating device cannot be used in this configuration (coupled with the cover kit).



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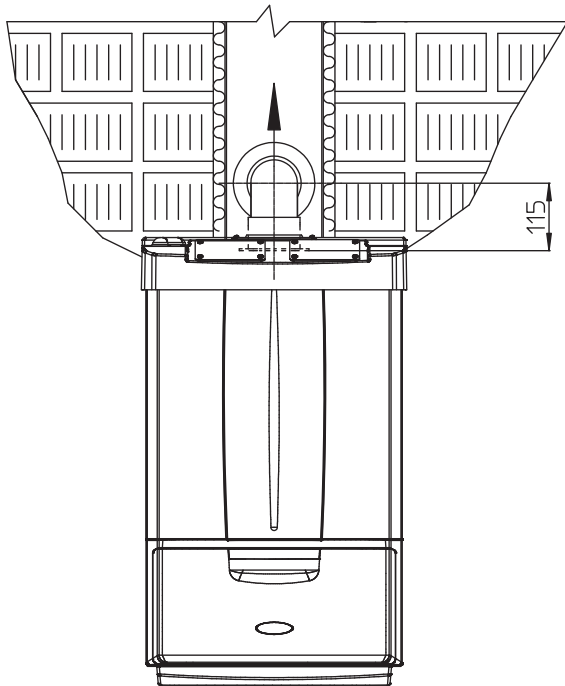
The cover kit includes:

- N° 1 Heat moulded cover
- N°1 Gasket clamping plate
- N°1 Gasket
- N°1 Gasket clamp
- N°1 N°1 Intake hole covering plate

The terminal kit includes:

- N° 1 Gasket
- N° 1 Exhaust flange Ø 80
- N° 1 Bend 90° 80 Ø
- N° 1 Exhaust pipe Ø 80
- N° 1 Wall sealing plate

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1.20 INTERNAL INSTALLATION USING A RECESSED FRAME WITH DIRECT AIR INTAKE.

• Configuration type B, open chamber and fan assisted.

Using a kit separator one can achieve direct air intake (Fig. 20) and flue gas exhaust in a single chimney or directly outside. In this configuration the indoor unit is classified as type B₂₃.

With this configuration:

- air intake takes place directly from the environment in which the indoor unit is installed (the recessed frame is ventilated), and only functions in permanently ventilated rooms;
- the flue gas exhaust must be connected to its own individual chimney or channelled directly into the external atmosphere.

The technical regulations in force must be respected.

Separator kit installation (Fig. 19):

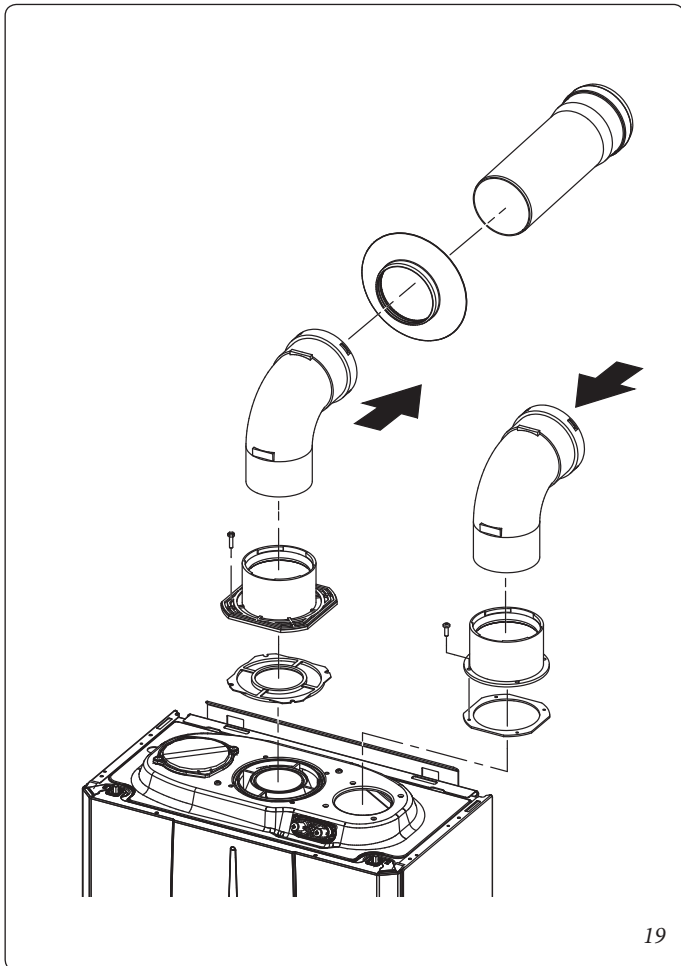
Install the discharge flange on the central hole of the indoor unit, positioning the relative gasket with the circular projections downwards in contact with the indoor unit flange and tighten using the hex screws with flat tip contained in the kit. Remove the flat flange present in the lateral hole with respect to the central one (according to needs) and replace it with the intake flange, positioning its gasket already present in the indoor unit and tighten using the supplied self-threading screws. Fit the male side (smooth) to the bends in the female side of the flanges.

The intake bend must face the rear side of the indoor unit.

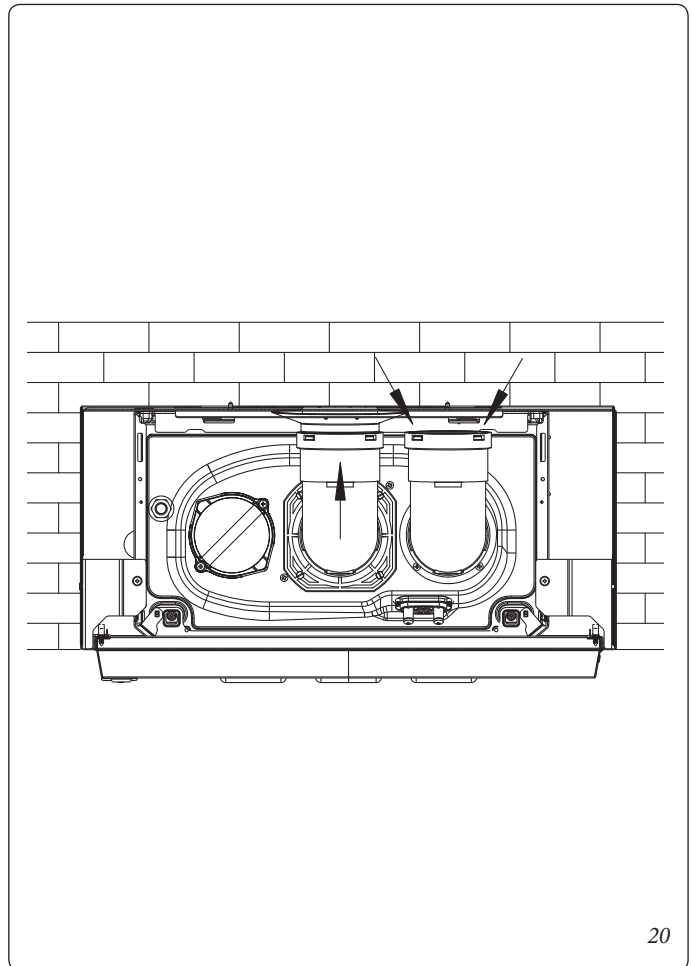
Fit the exhaust pipe with the male side (smooth) to the female side of the bend up to the end stop, making sure that the internal wall sealing plate has been fitted and connecting the required flue according to personal requirements.

Max. length of exhaust duct.

The flue pipe (both vertical or horizontal) can be extended to a max. length of 36 linear metres.



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1.21 CONCENTRIC HORIZONTAL KIT INSTALLATION.

• Type C configuration, sealed chamber and fan assisted.

The position of the terminal (in terms of distances from openings, overlooking buildings, floor, etc.) must be in compliance with the regulations in force.

This terminal is connected directly to the outside of the building for air intake and flue gas exhaust. The horizontal kit can be installed with the rear, right side, left side or front outlet. For installation with frontal outlet, one must use the fixing plate and a concentric bend coupling in order to ensure sufficient space to carry out the tests required by law upon commissioning.

• External grid.

Both the Ø 60/100 and Ø 80/125 intake/exhaust terminal, if properly installed, is pleasant to look at on the outside of the building. Make sure that the external silicone wall sealing plate is properly inserted in the wall.

ATTENTION:

for correct functioning of the system the terminal with grid must be installed correctly ensuring that, the "high" indication present on the terminal is respected on installation.



Horizontal intake-exhaust kit Ø 60/100. Kit Assembly. (Fig. 21).

Install the curve with flange (2) on the central hole of the indoor unit, positioning gasket (1) with the circular projections downwards in contact with the indoor unit flange, and tighten using the screws contained in the kit. Fit the Ø 60/100 (3) concentric terminal pipe with the male side (smooth) to the female side of the bend (2) up to the end stop; making sure that the internal and external wall sealing plate have been fitted, this will ensure sealing and joining of the elements making up the kit.

• Extensions for Ø 60/100 horizontal kit (Fig. 22).

The kit with this configuration can be extended up to a max. horizontal length of 12.9 m including the terminal with grid and excluding the concentric bend leaving the indoor unit. This configuration corresponds to a resistance factor of 100. In this case the special extensions must be requested.

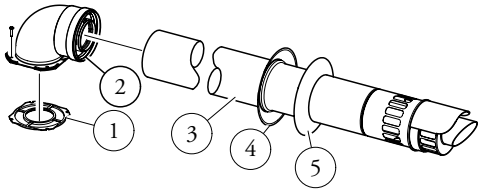
Immergas also provides a Ø 60/100 simplified terminal, which in combination with its extension kits allows you to reach a maximum extension of 11.9 metres.

Horizontal intake-exhaust kit Ø 80/125 Kit Assembly. (Fig. 23):

to install the kit Ø 80/125 one must use the flanged adapter kit in order to install the flue system Ø 80/125. Install the flanged adaptor (2) on the central hole of the boiler, positioning gasket (1) with the circular projections downwards in contact with the boiler flange, and tighten using the screws contained in the kit. Engage the bend (3) with the male side (smooth) to the end stop on the adapter (1). Fit the Ø 80/125 (5) concentric terminal pipe with the male side (smooth) to the female side of the bend (4) (with lip seals) up to the end stop; making sure that the internal (6) and external wall sealing plate (7) have been fitted, this will ensure sealing and joining of the elements making up the kit.

• Extensions for Ø 80/125 horizontal kit (Fig. 24).

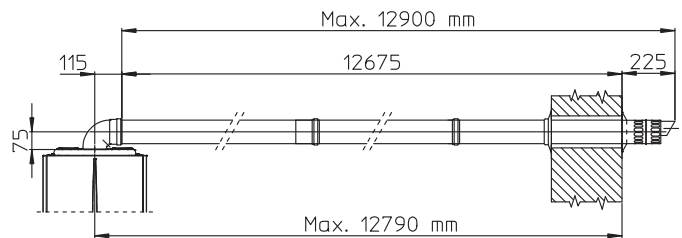
The kit with this configuration can be extended up to a max. length of 32 m, including the terminal with grid and excluding the concentric bend leaving the indoor unit. If additional components are assembled, the length equivalent to the maximum allowed must be subtracted. In this case the special extensions must be requested.

C₁₃

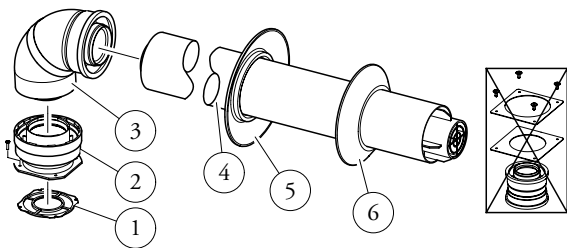
The kit includes:

- N° 1- Gasket (1)
- N° 1- Concentric bend Ø 60/100 (2)
- N° 1- Int./exhaust concentric terminal Ø 60/100 (3)
- N° 1- Internal wall sealing plate (4)
- N° 1- External wall sealing plate (5)

21

C₁₃

22

C₁₃

The adaptor kit includes:

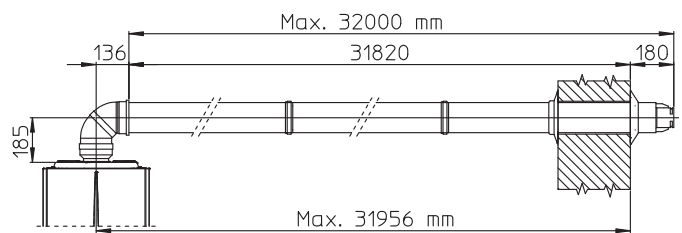
- N° 1- Gasket (1)
- N° 1- Adapter Ø 80/125 (2)

The Kit Ø 80/125 includes:

- N° 1- Concentric bend Ø 80/125 at 87° (3)
- N° 1- Concentric intake-exhaust terminal Ø 80/125 (4)
- N° 1- Internal wall sealing plate (5)
- N° 1- External wall sealing plate (6)

The remaining kit components must not be used

23

C₁₃

24

INSTALLATORE

UTENTE

MANUTENTORE

1.22 CONCENTRIC VERTICAL KIT INSTALLATION.

• Type C configuration, sealed chamber and fan assisted.

Concentric vertical intake and exhaust kit. This vertical terminal is connected directly to the outside of the building for air intake and flue gas exhaust.

N.B.: the vertical kit with aluminium tile enables installation on terraces and roofs with a maximum slope of 45% (approx 25°) and the height between the terminal cap and half-shell (374 mm for Ø 60/100 and 260 mm for Ø 80/125) must always be observed.

Vertical kit with aluminium tile Ø 60/100.

Kit assembly (Fig. 25):

Install the concentric flange (2) on the central hole of the indoor unit, positioning gasket (1) with the circular projections downwards in contact with the indoor unit flange, and tighten using the screws contained in the kit.

Installation of the fake aluminium tile: replace the tiles with the aluminium sheet (4), shaping it to ensure that rainwater runs off. Position the fixed half-shell (6) on the aluminium tile and insert the intake-exhaust pipe (5). Fit the Ø 60/100 concentric terminal pipe with the male side (5) (smooth) into the flange (2) up to the end stop; making sure that the wall sealing plate has been fitted (3), this will ensure sealing and joining of the elements making up the kit.

• Extensions for vertical kit Ø 60/100 (Fig. 26).

The kit with this configuration can be extended to a max. straight vertical length of 14.4 m, including the terminal. This configuration corresponds to a resistance factor of 100. In this case specific extensions must be requested.

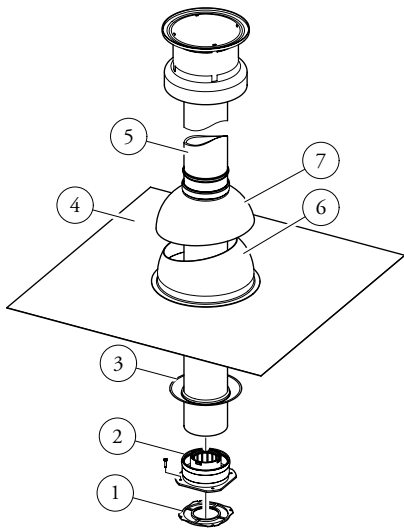
Vertical kit with aluminium tile Ø 80/125.

Kit assembly (Fig. 27):

to install the kit Ø 80/125 one must use the flanged adapter kit in order to install the flue system Ø 80/125. Install the flanged adaptor (2) on the central hole of the indoor unit, positioning gasket (1) with the circular projections downwards in contact with the indoor unit flange, and tighten using the screws contained in the kit. Installation of the fake aluminium tile: replace the tiles with the aluminium sheet (4), shaping it to ensure that rainwater runs off. Position the fixed half-shell (5) on the aluminium tile and insert the intake-exhaust pipe (7). Fit the Ø 80/125 concentric terminal pipe with the male side (smooth) to the female side of the adapter (1) (with lip gaskets) up to the end stop; making sure that the wall sealing plate (3) has been fitted, this will ensure sealing and joining of the elements making up the kit.

• Extensions for vertical kit Ø 80/125 (Fig. 28).

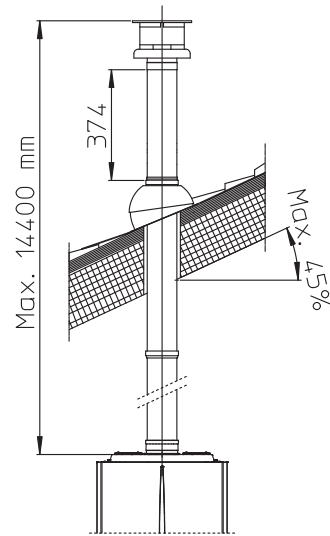
The kit with this configuration can be extended up to a max. length of 32 m including the terminal. If additional components are assembled, the length equivalent to the maximum allowed must be subtracted. In this case specific extensions must be requested.

C₃₃

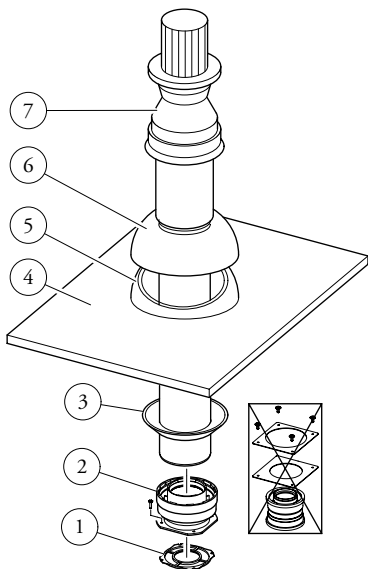
The Kit includes:

- N° 1- Gasket (1)
- N° 1- Female concentric flange (2)
- N° 1- Wall sealing plate (3)
- N° 1- Aluminium tile (4)
- N° 1- Int./exhaust concentric pipe Ø 60/100 (5)
- N° 1- Fixed half-shell (6)
- N° 1- Mobile half-shell (7)

25

C₃₃

26

C₃₃

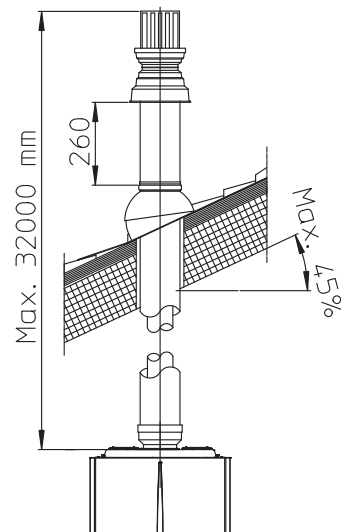
The adaptor kit includes:

- N° 1- Gasket (1)
- N° 1- Adapter
Ø 80/125 (2)

The Kit Ø 80/125 includes:

- N° 1- Wall sealing plate (3)
 - N° 1- Aluminium tile (4)
 - N° 1- Fixed half-shell (5)
 - N° 1- Mobile half-shell (6)
 - N° 1- Concentric intake-exhaust terminal Ø 80/125 (7)
- The remaining kit components must not be used

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C₃₃

28

INSTALLATORE

UTENTE

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1.23 SEPARATOR KIT INSTALLATION.

Type C configuration, sealed chamber and fan assisted.

- **Separator kit Ø 80/80.**

This kit allows air to come in from outside the building and the exhaust to exit from the chimney, flue or intubated duct through divided flue exhaust and air intake pipes. Combustion products are expelled from pipe (S) (in plastic, so as to resist acid condensate). Air is taken in through duct (A) for combustion (this is also in plastic). The intake pipe (A) can be installed either on the right or left hand side of the central exhaust pipe (S). Both ducts can be routed in any direction.

- **Kit assembly (Fig. 29).**

Install the flange (4) on the central hole of the indoor unit, positioning gasket (1) with the circular projections downwards in contact with the indoor unit flange, and tighten using the hex screws with flat tip contained in the kit. Remove the flat flange present in the lateral hole with respect to the central one (according to needs) and replace it with the flange (3), positioning the gasket (2) already present in the boiler and tighten using the supplied self-threading screws. Fit the male side (smooth) to the bends (5) in the female side of the flanges (3 and 4). Fit the intake terminal (6) with the male side (smooth) in the female side of the bend (5) up to the end stop, ensuring that the internal and external wall sealing plates are fitted. Fit the exhaust pipe (9) with the male end (smooth) to the female end of the bend (5) up to the end stop; making sure that the internal wall sealing plate has been fitted, this will ensure sealing and joining of the elements making up the kit.

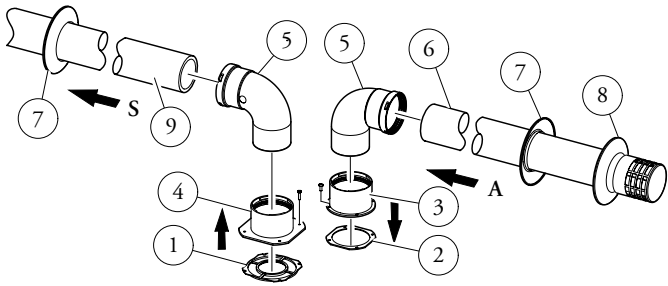
- **Installation clearances (Fig. 30).**

The minimum installation clearance measurements of the Ø 80/80 separator terminal kit have been stated in some limit conditions.

- **Extensions for separator kit Ø 80/80.**

The maximum vertical straight length (without bends) that can be used for Ø 80 intake and exhaust pipes is 41 metres, regardless from whether they are used for intake or exhaust. The maximum horizontal straight length (with bend in suction and in exhaust) that can be used for Ø 80 intake and exhaust pipes is 36 metres, regardless from whether they are used for intake or exhaust. Please note the type of installation C₄₃ must be done with a natural draught flue.

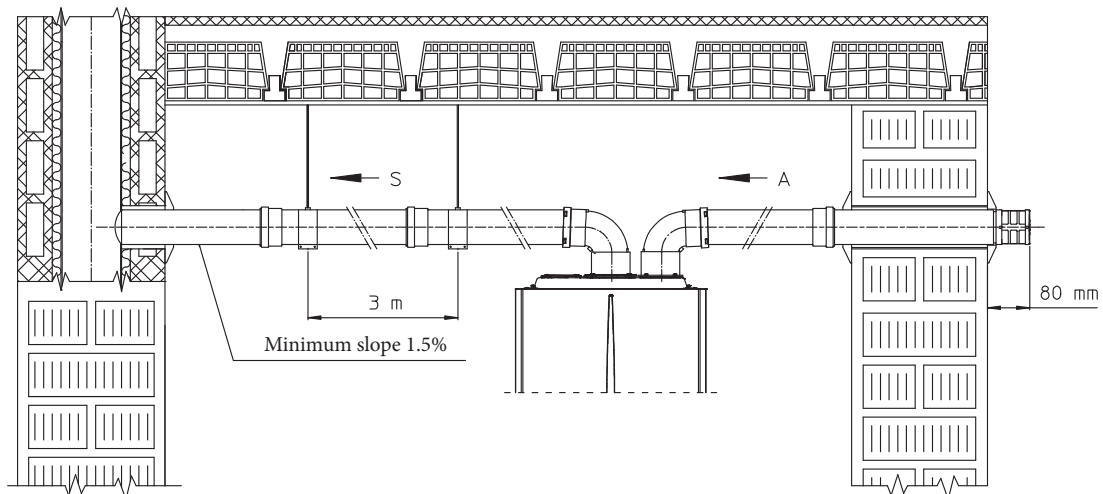
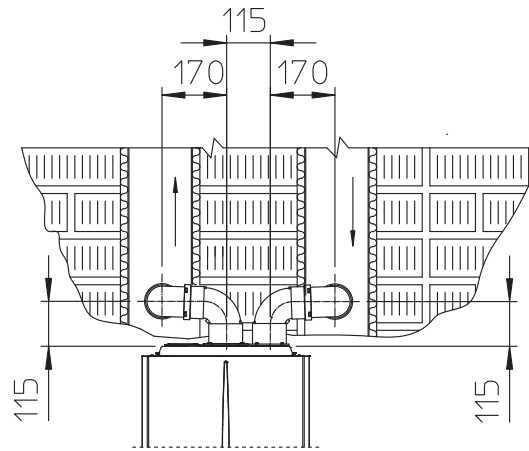
N.B.: to favour the removal of possible condensate forming in the exhaust pipe, tilt the pipes towards the boiler with a minimum slope of 1.5% (Fig. 31).



The kit includes:

- N° 1 - Exhaust gasket (1)
- N° 1 - Flange gasket (2)
- N° 1 - Female intake flange (3)
- N° 1 - Female exhaust flange (4)
- N° 2 - Bend 90° Ø 80 (5)
- N° 1 - Intake terminal Ø 80 (6)
- N° 2 - Internal wall sealing plates (7)
- N° 1 - External wall sealing plate (8)
- N° 1 - Exhaust pipe Ø 80 (9)

* to complete C₅₃ configuration, also provide for a "green range" roof discharge terminal.
The configuration on walls opposite the building is not allowed.



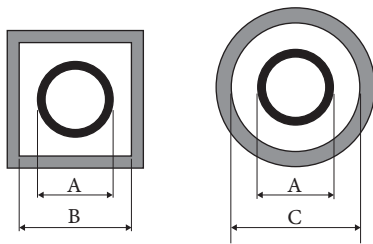
1.24 ADAPTOR C9 KIT INSTALLATION.

This kit allows an Immergas boiler to be installed in "C₉₃" configuration, with combustion air intake directly from the shaft where the flue gas exhaust is, obtained by means of a ducting system.

System composition.

The system must be combined with the following components (sold separately) to be functional and complete:

- kit C₉₃ Ø 100 or Ø125 version;
- rigid ducting Ø 60 and Ø 80 and flexible Ø 50 and Ø 80 kit;
- flue exhaust kit Ø 60/100 or Ø 80/125 configured according to the installation and type of indoor unit.



Ducting Ø 60 Rigid and Ø 50 Flexible (A) mm	SHAFT (B) mm	SHAFT (C) mm
66	106	126
Ducting Ø 80 Rigid (A) mm	SHAFT (B) mm	SHAFT (C) mm
86	126	146
Ducting Ø 80 Flexible (A) mm	SHAFT (B) mm	SHAFT (C) mm
90	130	150

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Kit Assembly.

- Mount the components of kit "C9" on the door (A) of the ducting system (Fig. 33).
- (Version Ø 125 only) mount the flanged adaptor (11) interposing the concentric gasket (10) on the boiler, fitting it with the screws (12).
- Mount the ducting system as described in the relative instructions sheet.
- Calculate the distances between the boiler drain and the bend of the ducting system.
- Prepare the boiler flue system, making sure that the internal pipe of the concentric kit is fitted up to the end stop in the ducting system curve (Quota "X" Fig. 34), whereas the external pipe must reach the end stop of the adaptor (1).

N.B.: to encourage the removal of possible condensate forming in the exhaust pipe, tilt the pipes towards the boiler with a minimum slope of 1.5%.

- Mount the cover (A) complete with adaptor (1) and caps (6) on the wall and assemble the flue system to the ducting system.

N.B.: (version Ø 125 only) before assembly check the gaskets are in the right position. In the event component lubrication (already carried out by the manufacturer) is not sufficient, remove the residual lubricant using a dry cloth, then to ease fitting coat the parts with common or industrial talc.

Once all components have been assembled properly, the exhaust fumes will be expelled via the ducting system; the combustion air for normal boiler operation will be aspirated directly by the shaft (Fig. 34).

Kit composition:

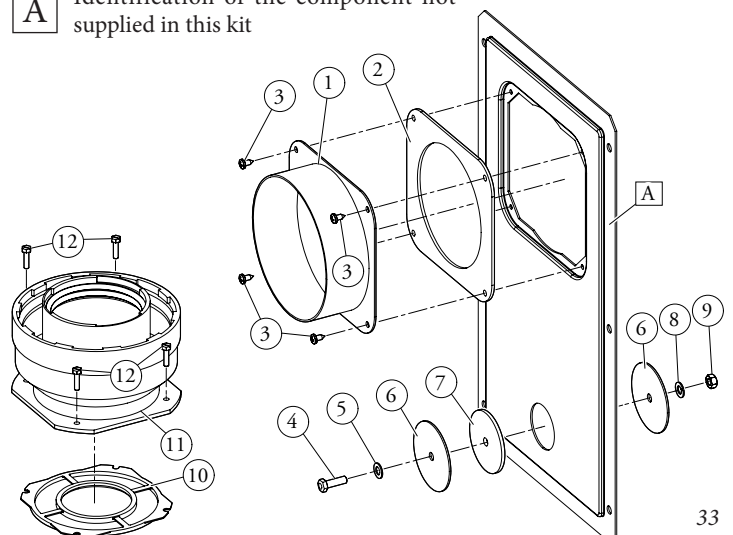
Ref.	Qty	Description
1	1	Door adaptor Ø 100 or Ø 125
2	1	Door gasket made of neoprene
3	4	Screws 4.2 x 9 AF
4	1	Hex headed screw M6 x 20
5	1	Flat nylon washer M6
6	2	Door hole closure metal-sheet plate plug
7	1	Plug gasket made of neoprene
8	1	Toothed washer M6
9	1	Nut M6
10	1 (kit 80/125)	Concentric gasket Ø 60-100
11	1 (kit 80/125)	Flanged adaptor Ø 80-125
12	4 (kit 80/125)	Hex headed screws M4 x 16 slotted
-	1 (kit 80/125)	Bag of lubricating talc

Supplied separately:

Ref.	Qty	Description
A	1	Ducting kit door

Installation drawings key:

- ① Unique identification of the component in the kit
- A Identification of the component not supplied in this kit



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Technical data.

- The dimensions of the shafts must ensure a minimum gap between the outer wall of the smoke duct and the inner wall of the shaft: 30 mm for circular section shafts and 20 mm in the event of a square section shaft (Fig. 32).
- Maximum 2 changes of direction are allowed on the vertical section of the flue system with a maximum clearance angle of 30° with respect to the vertical.
- The maximum vertical extension using a Ø 60 ducting system is 13 m, the maximum extension includes 1 bend Ø 60/10 at 90°, 1 m of horizontal pipe 60/100, 1 90° ducted bend Ø 60 and the roof terminal for ducting.

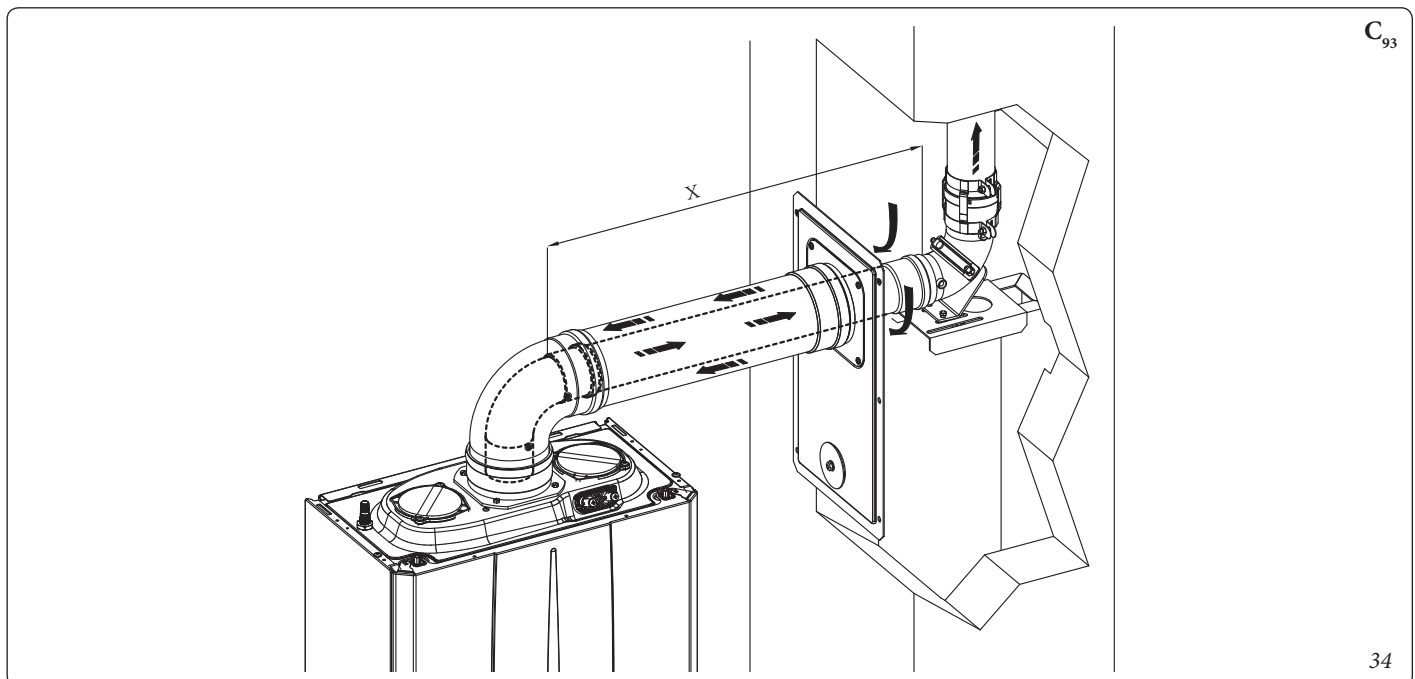
To determine the C_{93} flue system in configurations other than that described (Fig. 34) one must consider that 1 metre of ducted pipe according to the indications described has a resistance factor equal to 4.9.

- The maximum vertical extension using a Ø 80 ducting system is 28 m, the maximum extension includes 1 adapter 60/100 to 80/125, 1 87° bend Ø 80/125, 1 m of horizontal pipe 80/125, 1 90° ducted bend Ø 80 and the roof terminal for ducting.

To determine the C_{93} flue system in configurations other than that described (Fig. 34) one must consider the following head losses:

- 1 m of concentric pipe Ø 80/125 = 1 m of ducted pipe;
- 1 87° bend = 1.4 m of ducted pipe;

Consequently one must subtract the equivalent length of the part added to the 28 m available.



1.25 DUCTING OF FLUES OR TECHNICAL SLOTS.

Ducting is an operation through which by inserting one or more relevant pipes, one achieves a system for the evacuation of the combustion products of a gas appliance, consisting in the combination of an existing or new ducting pipe with a chimney, flue or technical slot (also in new buildings) (Fig. 35). Ducting requires ducts declared to be suitable for the purpose by the manufacturer, following the installation and user instructions, provided by the manufacturer and the requirements of the regulations in force.

Immergas ducting system.

The Ø 60 rigid, Ø50 and Ø 80 flexible and Ø80 rigid “Green Range” ducting systems must only be used for domestic use and with Immergas condensing boilers.

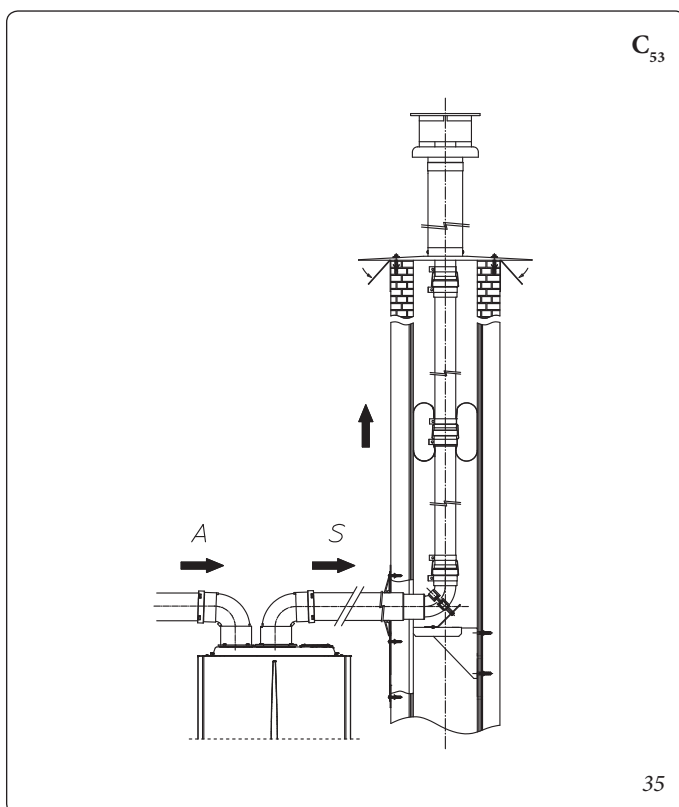
In any case, ducting operations must respect the provisions contained in the standard and in current technical regulations; in particular, the declaration of conformity must be compiled at the end of work and on commissioning of the ducted system. The instructions in the project or technical report must likewise be followed, in cases provided for by the standard and current technical regulations. To guarantee reliability and operation over time of the ducting system, make sure:

- it is used in average atmospheric and environmental conditions, according to current regulations (absence of combustion prod-

ucts, dusts or gases that can alter the normal thermophysical or chemical conditions; existence of temperatures coming within the standard range of daily variation, etc.).

- Installation and maintenance must be performed according to the indications supplied by the manufacturer included with the “green range” ducting system chosen and in compliance with the regulations in force.
- The maximum length specified by the manufacturer must be respected; in this regard:
 - The max. possible length of the Ø 60 flexible ducting vertical section is equal to 22 m. This length is obtained considering the complete Ø 80 exhaust terminal, 1m of Ø 80 pipe in exhaust, two 90° Ø 80 bends at boiler outlet.
 - The max. possible length of the Ø 80 flexible ducting vertical section is equal to 18 m. This length is obtained considering the Ø80 complete exhaust terminal, 1m of Ø 80 pipe in exhaust, two 90° Ø 80 bends at boiler outlet for connecting to the ducting system and two direction changes of the flexible hose inside the chimney/technical slot.
 - The max. possible length of the Ø 80 flexible ducting vertical section is equal to 30 m. This length is obtained considering the complete Ø 80 exhaust terminal, 1m of Ø 80 pipe in exhaust, two 90° Ø 80 bends at boiler outlet.

You can also install an additional Ø50 flexible ducting system the specifications of which are found on the relevant instructions sheet inside the kit.



1.26 CONFIGURATION TYPE B, OPEN CHAMBER AND FAN ASSISTED FOR INDOORS.

The appliance can be installed inside buildings in B₂₃ or B₅₃ mode; in this case, all technical rules and national and local regulations in force, must be complied with.

For installation the cover kit must be used, referred to in (Par. 1.19).

1.27 FLUE EXHAUST TO FLUE/CHIMNEY.

Flue exhaust does not necessarily have to be connected to a branched type traditional flue for type B appliances with natural draught (CCR). The flue exhaust, for boiler clots installed in C configuration, can be connected to a special LAS type multiple flue. For B₂₃ configurations, exhaust is only allowed into individual chimney or directly into the external atmosphere via a relevant terminal, unless otherwise provided by local regulations. The multiple flues and the combined flues must also only be connected to type C appliances of the same type (condensation), having nominal heat inputs that do not differ by more than 30% less with respect to the maximum that can be attached and powered by the same fuel. The thermo-fluid dynamic features (flue flow rate, % of carbon dioxide, % humidity etc.) of the appliances attached to the same multiple flues or combined flues, must not differ by more than 10% with respect to the average boiler attached. Multiple and combined flues must be specially designed according to the calculation method and requirements of the standards (such as EN 13384), by professionally qualified technical staff. Chimney or flue sections for connection of the flue exhaust pipe must comply with requisites of technical standards in force. It is possible to replace a type C conventional device with one provided with condensation only, if the derogation conditions established by the regulations in force have been verified.

1.28 FLUES, CHIMNEYS AND CHIMNEY CAPS.

The flues, chimneys and chimney caps for the evacuation of combustion products must be in compliance with applicable standards. Chimneys and roof-installed exhaust terminals must comply with the outlet height and with the distance from technical volumes set forth by the technical standards in force.

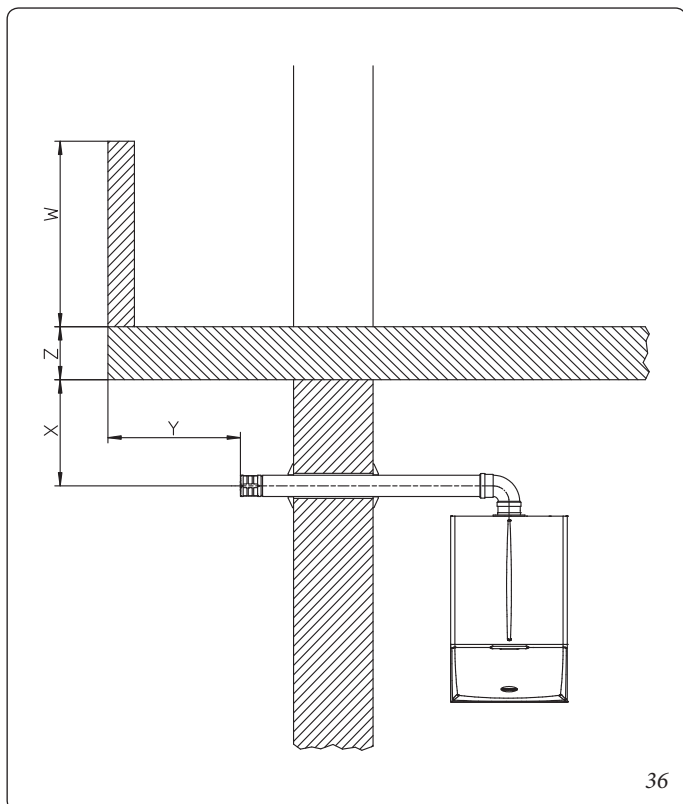
Positioning the wall flue exhaust terminals.

The wall flue exhaust terminals must:

- be installed on external perimeter walls of the building (Fig. 36);
- be positioned according to the minimum distances specified in current technical standards.

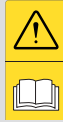
Combustion products exhaust of natural draught or fan assisted appliances in open-top closed environments.

In spaces closed on all sides with open tops (ventilation pits, courtyards etc.), direct combustion product exhaust is allowed for natural draught or fan assisted gas appliances with a heat input range from 4 to 35 kW, provided the conditions as per the current technical standards are respected.



1.29 WATER TREATMENT SYSTEM FILLING.

As already mentioned in the previous paragraphs, a treatment of the thermal and domestic system water is required, in compliance with the local standards in force.

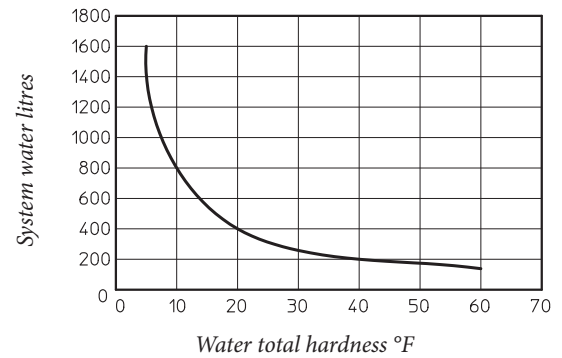


The parameters that influence the duration and proper operation of the heat exchanger are the water's PH, total hardness, conductivity, and oxygen, together with the system's processing residues (any welding residues), any oil present and corrosion products that can, in turn, cause damage to the heat exchanger.

In order to prevent this from happening, you are recommended to:

- Before installation on new systems as well as old ones, clean the system with clean water to eliminate solid residues contained therein
- Clean the system with a chemical treatment:
 - Clean the new system with a suitable cleaning device (for example Sentinel X300, Fernox Cleaner F3 or Jenaqua 300) combined with thorough washing.
 - Clean the old system with a suitable cleaning device (for example Sentinel X400 or X800, Fernox Cleaner F3 or Jenaqua 400) combined with thorough washing.
- Check the maximum total hardness and quantity of filling water referring to the graphics (Fig. 37); if the contents and hardness of the water are below the indicated curve, no specific treatment is required; otherwise, to limit the content of calcium carbonate, you must provide for water-filling treatment.
- Should you be required to provide for water treatment, this should be carried out by completely desalinating the filling water. As opposed to the complete softening process, desalinating the water completely not only removes hardening agents (Ca, Mg), but also eliminates all other minerals to reduce water-filling conductivity up to 10 microsiemens/cm. Given its low conductivity, desalinated water does not only prevent the formation of lime scale, but also serves as protection against corrosion.
- Insert a suitable inhibitor / passivator (for example Sentinel X100, Fernox Protector F1, or Jenaqua 100); if required, also insert appropriate antifreeze (such as for example Sentinel X500, Fernox Alphi 11 or Jenaqua 500).
- Check electrical conduction of the water, which should be higher than 2000 $\mu\text{s}/\text{cm}$ in the case of treated water and lower than 600 $\mu\text{s}/\text{cm}$ in the case of non-treated water.
- To prevent corrosion, the water system's PH should be between 7.5 and 9.5.
- Check the maximum content of chlorides, which should be less than 250 mg/l.

N.B.: for quantities and methods of use of water-treatment products, refer to the instructions provided by their manufacturer.



N.B.: the graph refers to the entire life cycle of the system. Therefore, also consider scheduled and unscheduled maintenance, which involves emptying and filling the said system.

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1.30 SYSTEM FILLING.

Once the Victrix Hybrid is connected, proceed with system filling via the filling cock (Part. 24 Fig. 41). Filling is performed at low speed to ensure release of air bubbles in the water via the boiler and central heating system vents.

The boiler has a built-in automatic vent valve on the pump. Check if the cap is loose. Then open the radiator vent valves.

Close radiator vent valves when only water escapes from them. Close the filling valve when the boiler pressure gauge indicates approx. 1.2 bar.

N.B.: during these operations, enable the automatic vent functions on the boiler.

1.31 FILLING THE CONDENSATE DRAIN TRAP.

On first lighting of the boiler, flue gas may come out the condensate drain; after a few minutes' operation check that this no longer occurs. This means that the drain trap is filled with condensate to the correct level preventing the passage of flue gas.

1.32 GAS SYSTEM START-UP.

To start up the system, refer to the technical standards in force.

In particular, for new gas systems:

- open windows and doors;
- avoid presence of sparks or naked flames;
- bleed all air from pipelines;
- ensure the internal system is properly sealed according to the specifications set forth by technical regulations in force

1.33 COMMISSIONING OF THE COMBUSTION UNIT (IGNITION).

For Victrix Hybrid heat pump commissioning (the operations listed below must only be performed by qualified personnel and in the presence of staff only):

- check that the internal system is properly sealed according to the regulations in force;
- ensure that the type of gas used corresponds to the boiler settings;
- check connection to a 230V-50Hz power mains, correct L-N polarity and earthing connection;
- Check that there are external factors that may cause the formation of fuel pockets;
- switch the boiler on and ensure correct ignition;
- make sure that the gas flow rate and relevant pressure values comply with those given in the manual (Par. 4.2);
- ensure that the safety device is engaged in the event of gas supply failure and check activation time;
- Check the intervention of the main switch located upstream from the indoor unit and in the unit;
- check the intervention of the main switch located upstream from the boiler and in the boiler;
- check that the intake and/or exhaust terminals (if fitted) are not blocked.
- Carry out the flue test.

The system must not be started up even if only one of the checks should be negative.

1.34 KITS AVAILABLE ON REQUEST.

- System shut-off valves kit. The indoor unit is designed for installation of system interception cocks to be placed on flow and return pipes of the connection assembly. This kit is particularly useful for maintenance as it allows the indoor unit to be drained separately without having to empty the entire system.
- Polyphosphate dispenser kit (only for indoor installation). The polyphosphate dispenser reduces the formation of lime-scale and preserves the original heat exchange and domestic hot water production conditions. The indoor unit is prepared for application of the polyphosphate dispenser kit.
- Cover Kit. If installed outdoors in a partially protected place with direct air intake, it is compulsory to mount the appropriate top protective cover for the correct functioning of the indoor unit and to protect it from adverse weather conditions.
- Cycloidal filter kit (on request). The magnetic cycloidal filter is able to detect the ferrous residues present in the system's water. Thanks to the two cocks in the kit, it facilitates maintenance by cleaning the filter without having to empty the circuit.

The above-mentioned kits are supplied complete with instructions for assembly and use.

1.35 CIRCULATION PUMP AND LOAD LOSSES.

Victrix Hybrid is supplied with a variable speed circulator.

In the central heating mode, the following operating modes are available and can be selected from the control panel.

NOTE.: the ΔT can be controlled compatibly with the characteristics of the central heating system and of the indoor unit.

- **ΔT Constant ($A3 = 5 \div 25 K$):** the pump speed varies to maintain the ΔT constant between the system flow and return according to set value K. Two values can be set for ΔT (Par. 3.6): one for the operation of the outdoor unit and one for when the integration with the indoor unit is active.
- **Fixed:** by setting the parameters at the same value, the pump operates at constant speed. For the hybrid heat pump to work properly, it is not allowed to drop below the minimum value indicated above.

In domestic hot water mode, the circulator pump always runs at full speed.

Pump LED.

The LED flashes green when the pump is powered and the pwm control signal is connected.

The LED lights up steady green when the pump is powered and the signal cable disconnected. In these conditions the pump works at maximum and without control.



If the pump detects an alarm, the LED switches from green to red; this can mean one of the following failures:

- low supply voltage;
- rotor seized;
- electrical error.

To see in detail the meaning of the red LED, please refer to the relevant paragraph 3.7 "Possible problems and their causes".

The LED, in addition to being green or red, can also remain off.

It is normal for the LED to be off when the pump is not powered, whereas with the pump powered, the LED must be lit: if switched off, it means there is a fault.



Pump release. If, after a prolonged period of inactivity, the circulation pump is blocked, turn the motor shaft using a screwdriver. Take great care during this operation to avoid damage to the motor.

By-pass Regulation (Part. 21 Fig. 39).

ATTENTION:

The indoor unit comes out of the factory with the by-pass closed.

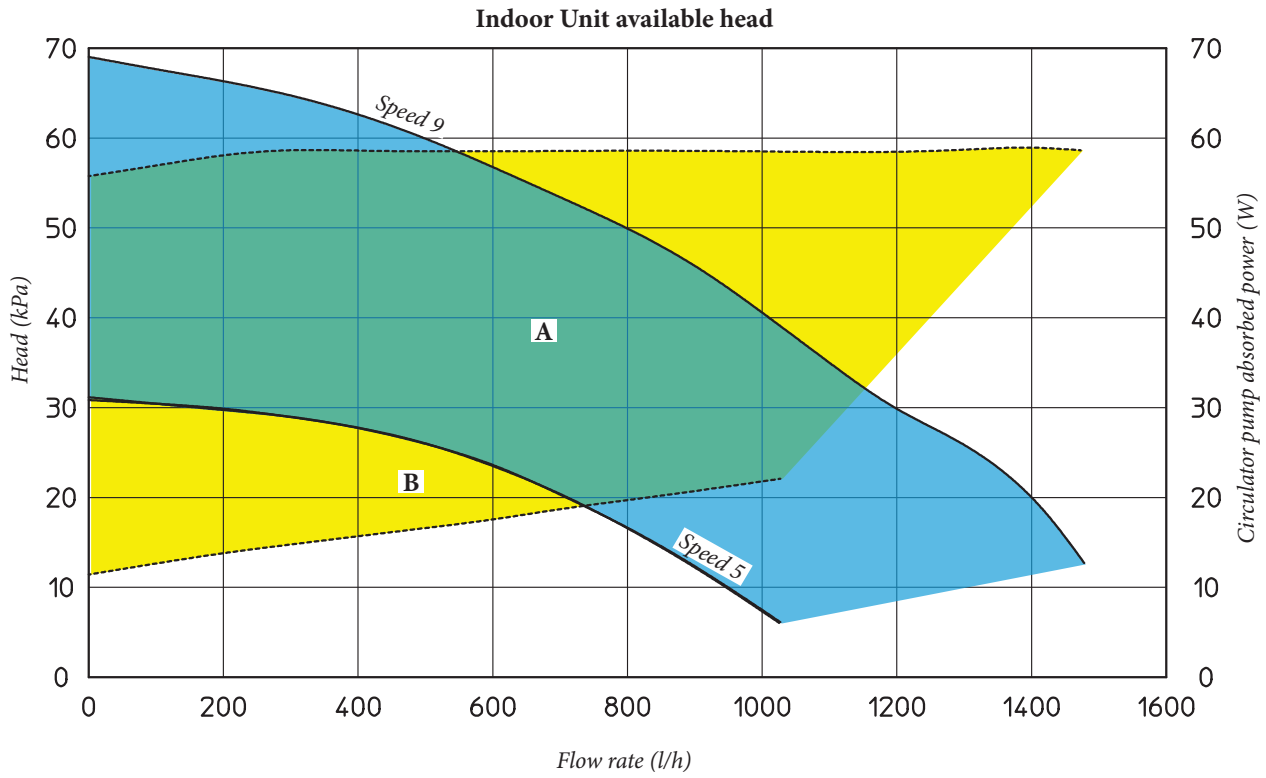


For a correct operation of the system, the by-pass must be kept closed.

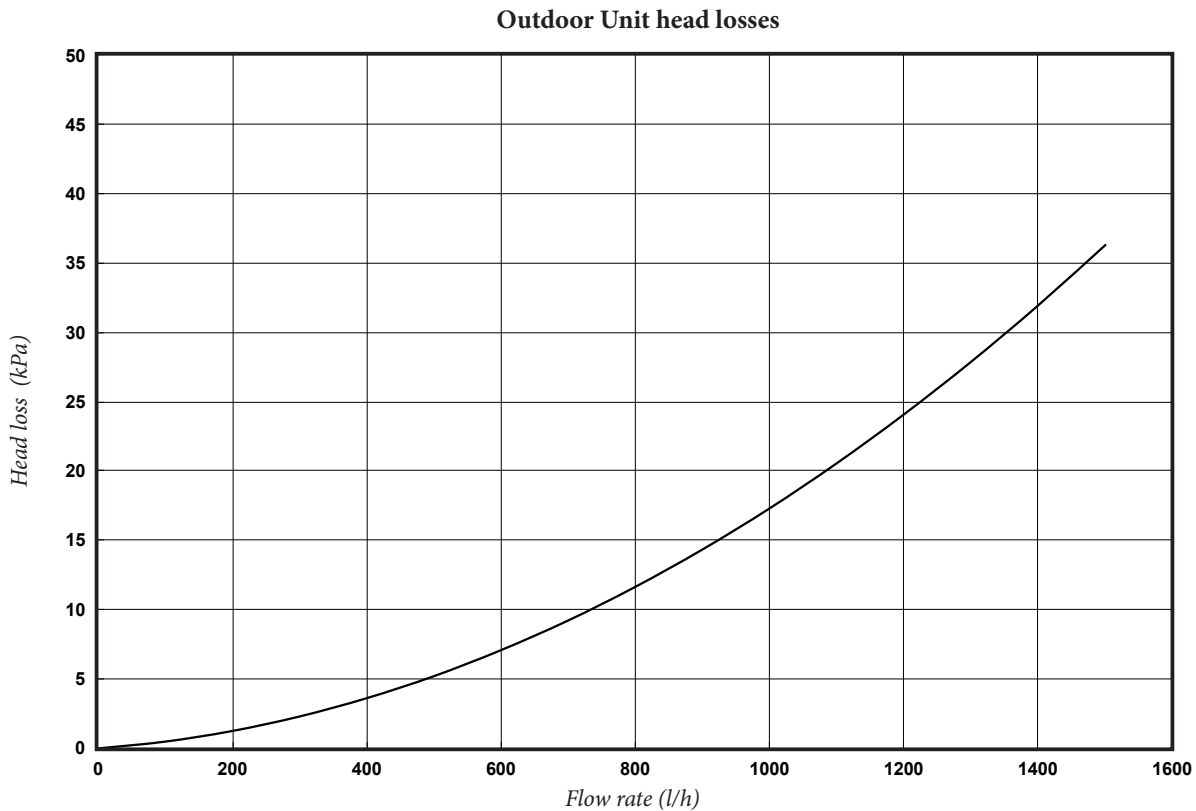
Pump release. If, after a prolonged period of inactivity, the circulation pump is blocked, turn the motor shaft using a screwdriver. Take great care during this operation to avoid damage to the motor.

Total head available to the system.

To obtain the available head for the system, subtract the head losses of the outdoor unit from the available head of the indoor unit.



A = Head available with by-pass closed
 B = Power absorbed by the pump with by-pass open (dotted area)

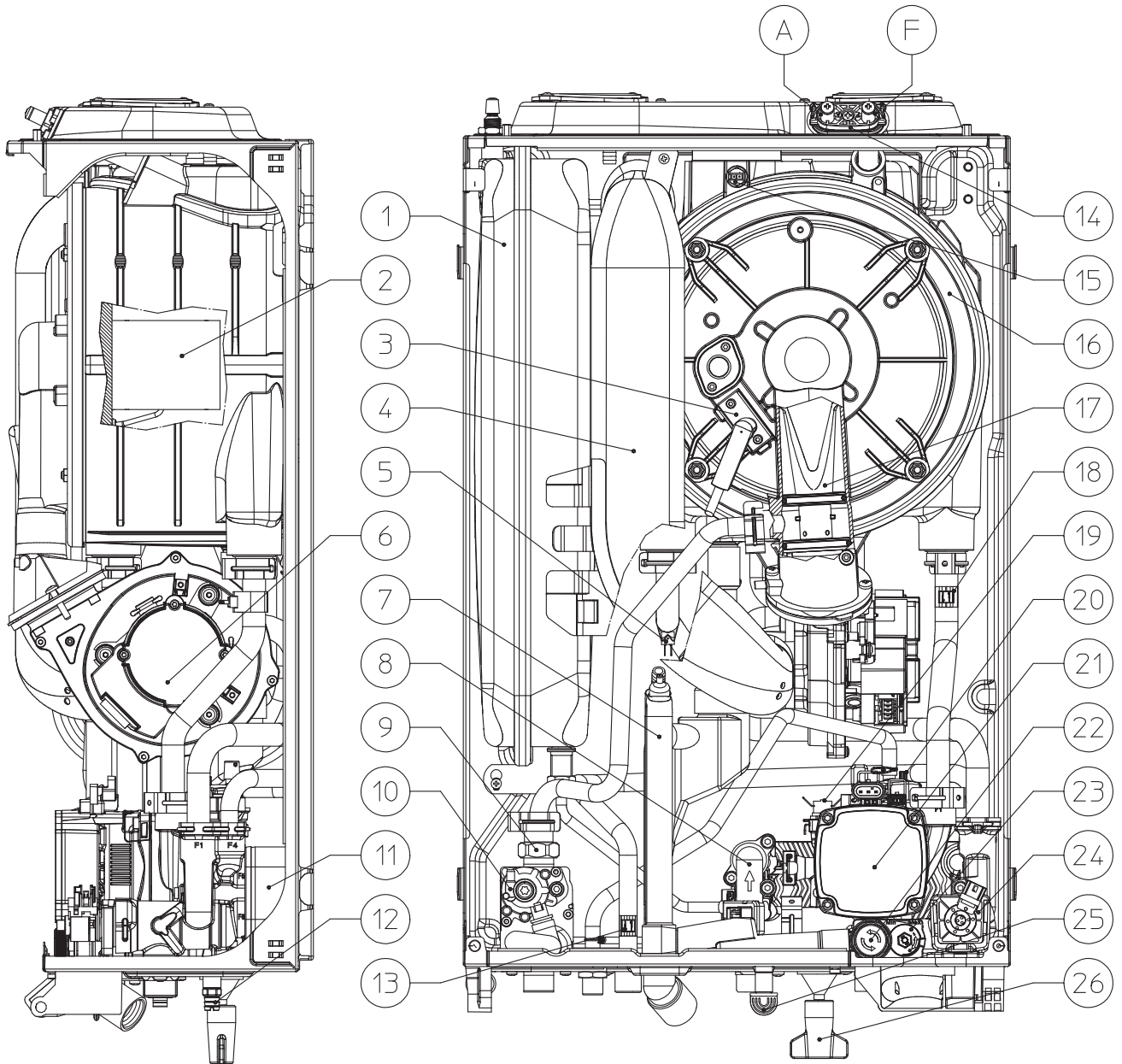


1.36 INDOOR UNIT MAIN COMPONENTS.

INSTALLATORE

UTENTE

MANUTENTORE




Key:


- | | |
|----------------------------------|---|
| 1 - System expansion vessel | 13 - DHW probe |
| 2 - Burner | 14 - Sample points (air A) - (flue gases F) |
| 3 - Ignition/detection electrode | 15 - Flue probe |
| 4 - Air intake pipe | 16 - Condensation module |
| 5 - Flow probe | 17 - Venturi |
| 6 - Fan | 18 - Return probe |
| 7 - Condensate drain trap | 19 - System pressure switch |
| 8 - D.H.W. flow switch | 20 - Air vent valve |
| 9 - Gas nozzle | 21 - Boiler pump |
| 10 - Gas valve | 22 - 3 bar safety valve |
| 11 - DHW heat exchanger | 23 - Bypass |
| 12 - System draining valve | 24 - 3-way valve (motorised) |
| | 25 - Valve drain fitting signal |
| | 26 - System filling valve |

2 INSTRUCTIONS FOR USE AND MAINTENANCE.

2.1 GENERAL WARNINGS.

ATTENTION:

- Never expose the wall-mounted boiler to direct vapours from a cooking surface. 
- Victrix Hybrid device can be used by children at least 8 years old as well as by persons with reduced physical, sensory or mental capabilities, or lack of experience or required knowledge, provided that they are under surveillance, or after they have been instructed relating to the safe use and have understood the potential dangers. Children must not play with Victrix Hybrid. Cleaning and maintenance destined to be performed by the user can not be carried out by unsupervised children. Cleaning and maintenance destined to be performed by the user can not be carried out by unsupervised children.
- For safety purposes, check that the air intake/flue exhaust terminals (if fitted) are not blocked.
- If temporary shutdown of the boiler is required, proceed as follows:
 - a) drain the heating system if antifreeze is not used;
 - b) shut-off all electrical, water and gas supplies.
- In the case of work or maintenance to structures located in the vicinity of ducting or devices for flue extraction and relative accessories, switch off the Victrix Hybrid and on completion of operations ensure that a qualified technician checks efficiency of the ducting or other devices.
- Never clean the Victrix Hybrid or connected parts with easily flammable substances.
- Never leave containers or flammable substances in the same environment as the Victrix Hybrid.


- Do not open or tamper with Victrix Hybrid devices. 
- Do not take apart or tamper with the intake and exhaust pipes.
- Only use the user interface devices listed in this section of the booklet.
- Do not climb on or use the Victrix Hybrid as a support surface.


ATTENTION:

The use of components involving use of electrical power requires some fundamental rules to be observed such as:

- do not touch the Victrix Hybrid appliances with wet or moist parts of the body; do not touch it when barefoot;
- never pull electrical cables;
- do not expose the indoor unit to atmospheric agents (rain, sun, etc.);
- the indoor unit power cable must not be replaced by the user;
- in the event of damage to the indoor unit cable, switch off the Victrix Hybrid and contact exclusively qualified staff for replacement;
- if the Victrix Hybrid is not to be used for a certain period, disconnect the main power switch: In this case, refer to the instructions on antifreeze protection for Victrix Hybrid (Par.1.3).

ATTENTION:

water at a temperature of more than 50 °C can cause serious burns. Always check the water temperature before any use. 

The temperatures indicated by the display have a tolerance of +/- 3°C due to environmental conditions that cannot be blamed on the boiler. 

ATTENTION:

if you smell gas in the building:



- close the gas meter interception device or the main interception device;
- if possible, close the gas interception cock on the product;
- if possible, open doors and windows wide and create an air current;
- do not use open flames (e.g. lighters, matches);
- do not smoke;
- do not use electrical switches, plugs, door bells, telephones or intercom devices in the building;
- call an authorised company (for example contact the Authorised Technical Service Centre).

ATTENTION:

if you smell burning or see smoke coming out of one of the Victrix Hybrid appliances, switch off the Victrix Hybrid, disconnect power, close the main gas cock, open the windows and call an authorised company (e.g. Authorised Technical Assistance Centre).

**ATTENTION:**

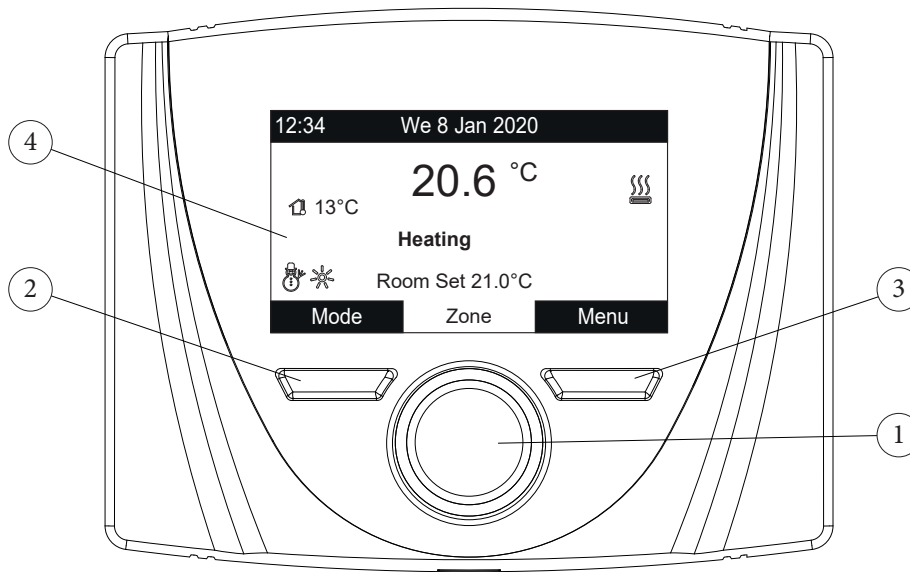
At the end of its service life, the appliance must not be disposed of like normal household waste nor abandoned in the environment, but must be removed by a professionally authorised company as required by current legislation. Contact the manufacturer for disposal instructions.

**2.2 CLEANING AND MAINTENANCE.**

To preserve the hybrid heat pump's integrity and keep the safety features, performance and reliability, which distinguish the Victrix Hybrid, unchanged over time, you must execute maintenance operations on a yearly basis in compliance with what is stated in the relative point at "annual check and maintenance of the Victrix Hybrid". Annual maintenance is essential to validate the conventional warranty of Immergas.



2.3 CONTROL PANEL.



Key:

- 1 - Main parameters switch with button to confirm and save data
- 2 - Left context button
- 3 - Right context button
- 4 - Display

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2.4 OPERATION OVERVIEW.

Once the device has been powered, it goes into the status prior to switch-off. Press the “Modo” (Mode) button to cyclically select the desired mode amongst those available.

The current operating mode in use is displayed by the relative icon at the bottom left corner (Fig. 41).

Also, depending on the system's configuration, the main screen displays various information regarding the system, amongst which:

Status	Description
nn	External temperature value (with external probe active)
	Room heating request in progress
	Comfort temperature operation
	Economy temperature operation
	Operation in manual mode
	External probe enabled
	Anomaly present

The temperature detected by the temperature is indicated at the centre of the display on the control panel.

The lower part of the display shows the parameter that can be changed (it varies according to the configuration). It is possible to change the value by turning the main switch or using the “Set Point Zone” menu and pressing it to confirm the parameter change.

The values that can be found according to the configuration, are:

Parameter	Configuration (see Par 3.6)
Set room Defines the room zone temperature	Room control interface = P. Rem.
Set flow Defines the system's flow temperature to the zone	Room control interface = T.A. External probe enabling = No
Flow offset Changes the operation curve of the external probe	Room control interface = T.A. External probe enabling = Yes

State	Description	DHW (Domestic hot water)	Central heating
	Stand-by	Disabled	Disabled
	Summer	Enabled	Disabled
	Winter	Enabled	Enabled

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2.5 COMFORT / ECONOMY / MANUAL OPERATION.

Once the calendar is set and the relative association of days is executed, the system operates automatically by switching from “comfort” to “economy” according to what has been set.

- **Comfort** (☼). During periods in comfort mode, a relative icon appears next to the operation mode.
- **Economy** (☾). During periods in economy mode, a relative icon appears next to the operation mode.
- **Manuale** (☞). If the control panel was set to manage the room temperature of the zone, if required, it is possible to change the value manually for a determined range.

By using the control panel to manage room temperature, it is possible to turn the main switch to change the room temperature, and press it to confirm the change. The change is displayed by the symbol “☞”. This change remains active until the next time range is changed from the active calendar.

2.6 OPERATION WITH EXTERNAL PROBE (AUDAX. DK4).

As standard, the system’s flow temperature for room central heating is managed by the external probe depending on the external temperature measured. The operation curve can be changed only by means of the control panel. Operation with external probe can be deactivated as indicated in Par. 3.6.

2.7 CLOCK AND PROGRAMS.

From this menu, it is possible to set the system’s date and time as well as the time slots for operation in comfort and economy mode

- **Date and time.** On first electric supply voltage from the remote panel, or in the event of a voltage drop, you must set the date and time. Proceed as follows.
 - Press the “Menu” button (Ref.3 Fig. 40), select item “Time Program” from the main switch (Ref.1 Fig. 40), then press “Setting date and hour”.
 - Once you have accessed the menu, adjust the various items highlighted by turning the main switch. Set the value and save it by pressing the main switch. Each time it is saved, it moves to the next item.
 - After programming, press “Confirm”.

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SETTING DATE AND HOUR

	DAY	MONTH	YEAR
Date:	24	Jan	2020
	HOUR	MINUTE	
Hour:	15	56	

Cancel
Confirm

- **Time slots.** The remote panel enables you to set 4 calendars with 4 time operating slots in system comfort mode. The system will operate in economy mode during out-of-range time of these 4 time slots.

After setting these 4 calendars it is possible to associate them to the various days of the week and DHW function according to one's needs.

- Press the “Menu” button, select item “Time Program” from the main switch (Ref.1 Fig. 40), then press “Time slots”.
- Once you have accessed the menu, adjust the various items highlighted by turning the main switch. Set the value and save it by pressing the main switch. Each time it is saved, it moves to the next item.
- After programming, press “Confirm”.

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Time Program

Calendar: 1

0	2	4	6	8	10	12	14	16	18	20	22	24
[1] 06:15 - 08:30				[3] 17:45 - 23:00								
[2] 11:30 - 13:45				[4] 24:00 - 24:00								

Esc
Back

- **Area Program and DHW program.** Time ranges (Calendars from 1 to 4) are assigned to Zone and DHW in these menus. You can assign the calendar to a single day or to a group of days. (single day, Monday - Friday, Saturday - Sunday, Monday - Saturday, Monday - Sunday).

Therefore each day may be personalised with 4 different operating programs.

For convenient selection, the bottom part displays the graphics of the relevant calendar being selected (Fig. 44).

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Program Zone

Day/s: Monday - Sunday

Calendar: 1

0	2	4	6	8	10	12	14	16	18	20	22	24
---	---	---	---	---	----	----	----	----	----	----	----	----

Esc
Back

- **Holiday program** (☞). If required, it is possible to pause system operation for an established period. Access the “Time and Program” menu, select “Holiday Program” and set the period in which you wish to pause system operation. During this time, the previously set calendars will not be taken into consideration. The antifreeze function is still ensured during the holiday period.

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Holiday Program

	DAY	MONTH	YEAR
Start:	02	08	2014
Stop:	23	08	2014

Enable holiday: Yes

Cancel
Confirm

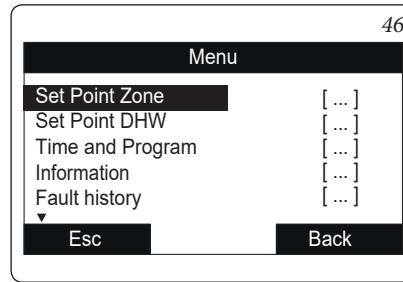
2.8 SETTINGS MENU.

Press the “Menu” button to access a list of variables that enable you to customise use of the system.

To browse the menus, which can be accessed by pressing the relative “RH” or “LH” context buttons, scroll through the sub-menus displayed by turning the main switch. Press the said selector to select the one highlighted.

By pressing repeatedly, you can scroll down the menu levels and go back to a previous level by pressing the “Back” context button. To exit the menu completely, press the “Esc” button, which will take you back to the initial page of normal operation.

To confirm the parameter change, press the main switch.



Hereunder is a list of available menus

MAIN MENU	
Menu item	Description
Set Point Zone	Defines the operating parameters to manage the zone
Set Point DHW	Defines the operation parameters in domestic circuit mode
Time and Program	Defines the date/time and time operating slots
Information	Display system operating data
Historical alarm code	Displays the list of the last 10 anomalies
Service	Password protected menu dedicated to a qualified technician
Language	Defines the remote panel operation language

Set Point Zone Menu				
Menu item	Description	Range	Default	Customised value
Set comfort heat	Room temperature in central heating zone Comfort mode	15 ÷ 35 °C	20	
Set economy heat	Room temperature in central heating zone Economy mode	5 ÷ 25 °C	17	
Flow set with room th.	Flow temperature in heating mode with room thermostat	20 ÷ 80 °C	40	
Flow set heat max	Maximum flow temperature with room probe active	20 ÷ 80 °C	50	
Offset flow heat	(used only with operation with external probe)	- 15 ÷ + 15°C	0	

Set Point DHW Menu				
Menu item	Description	Range	Default	Customised value
Set comfort	DHW temperature in Comfort phase	30 ÷ 60 °C	50	
Set economy	DHW storage temperature in Economy phase	30 ÷ 45 °C	30	
Disinfection	Not used on this model	-	-	

Time and Program Menu				
Menu item	Description	Range	Default	Customised value
Date and time	Current date and time setting			
Time slots	Defines the time range for operation in Comfort and Economy mode			
	Calendar 1 Slot 1 ON	0-24, 0-45	00:00	
Program Zone	Time zone scheduling			
	Zone : Monday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone : Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone : Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone: Thursday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone : Friday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone : Saturday	CAL1, CAL2, CAL3,CAL4	CAL1	
	Zone : Sunday	CAL1, CAL2, CAL3,CAL4	CAL1	
DHW Program	DHW operation time programming			
	DHW (Domestic hot water) - Monday	CAL1, CAL2, CAL3,CAL4	CAL1	
	DHW (Domestic hot water) - Tuesday	CAL1, CAL2, CAL3,CAL4	CAL1	
	DHW (Domestic hot water)- Wednesday	CAL1, CAL2, CAL3,CAL4	CAL1	
	DHW (Domestic hot water) - Thursday	CAL1, CAL2, CAL3,CAL4	CAL1	
	DHW - Friday	CAL1, CAL2, CAL3,CAL4	CAL1	
	DHW (Domestic hot water) - Saturday	CAL1, CAL2, CAL3,CAL4	CAL1	
	DHW (Domestic hot water) - Sunday	CAL1, CAL2, CAL3,CAL4	CAL1	
Holiday Program	Defines the period during which the system disables both hot water heating and room central heating and/or cooling functions. At the end of the set days, the previously active functions will be reset.		Deactivate	

Information Menu	
Menu item	Description
O.U. flow temperature	Outdoor unit flow temperature
O.U. return temperature	Outdoor unit return temperature
I.U. flow temperature	Indoor unit flow temperature
External temperature	External temperature detected by the outdoor unit
Calculated plant setpoint	Required flow temperature
DHW temperature	Temperature of the water in the DHW accumulation (not used in this version)
I.U. board SW version	Indoor unit board software revision
O.U. board SW version	Outdoor unit board software revision
O.U. gateway SW ver.	Outdoor unit gateway board software revision
O.U. inverter SW ver.	Outdoor unit inverter software revision
Display Firmware ver.	Display software revision installed on the control panel
Operating mode	Mode: Off / Heating / DHW / Antifreeze / Room Antifreeze / Defrosting

Historical alarm code Menu	
Description	
Displays the history log of the last 10 anomalies, see Par. 2.13	

Service Menu				
Menu item	Description	Range	Default	Customised value
Password protected menu dedicated to a qualified technician				

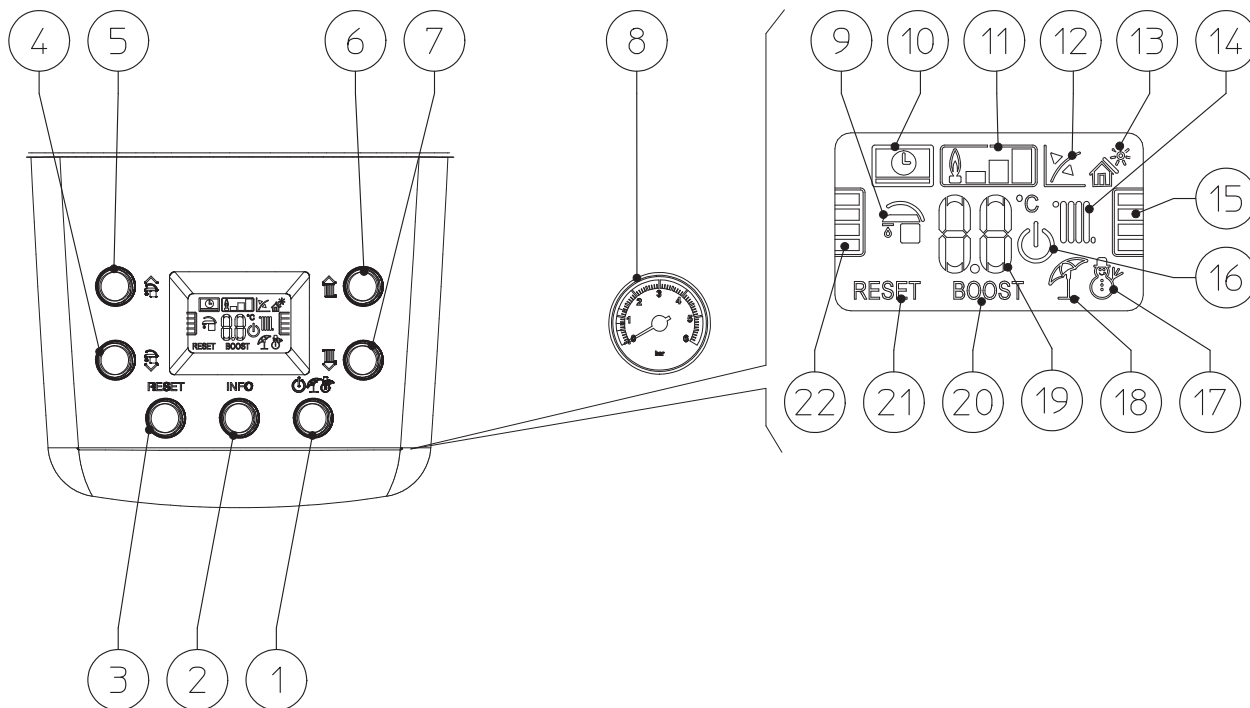
Language Menu				
Menu item	Description	Range	Default	Customised value
Language	Defines the remote panel operation language		ITA	

INSTALLATORE

UTENTE

MANUTENTORE

2.9 INDOOR UNIT CONTROL PANEL.



Key:

- 1 - Off/Stand-by/Summer/Winter button
- 2 - Information buttons
- 3 - Reset Button
- 4 - (*) Button to reduce the domestic hot water temperature (Not used on this model)
- 5 - (*) Button to increase the domestic hot water temperature (Not used on this model)
- 6 - Button to increase the system water flow temperature (Not used on this model)
- 7 - Button to decrease the system water flow temperature (Not used on this model)
- 8 - Indoor unit pressure gauge
- 9 - DHW production phase function active
- 10 - Indoor unit connected to control panel
- 11 - Flame presence symbol and relative output scale
- 12 - Not used on this model
- 13 - Solar function active
- 14 - Central heating room mode function active
- 15 - Central heating temperature level indicator
- 16 - Indoor unit in Stand-by mode
- 17 - Operation in winter mode
- 18 - Operation in summer mode
- 19 - Temperature indicator, boiler info and error codes
- 20 - Not used on this model
- 21 - Blocked indoor unit, it needs to be unblocked by pressing the "RESET" button
- 22 - D.H.W. temperature level indicator

2.10 USE OF THE INDOOR UNIT.

Before ignition make sure the heating system is filled with water and that the manometer (8) indicates a pressure of 1 ÷ 1.2 bar.

- Open the gas cock upstream from the indoor unit.

The indoor unit operates automatically according to the settings on the control panel. With no demand for heat (central heating or domestic hot water production) the indoor unit goes to “standby” function, equivalent to the indoor unit being powered without presence of flame. Each time the burner ignites, the relative flame present symbol is displayed (11) with relative output scale.

- **Solar function** (☀️). This function is activated automatically if the indoor unit detects a probe on the DHW inlet (optional) or if the “Solar ignition delay” parameter is more than 0 seconds.

During a withdrawal, if the inlet water is hot enough or if there is “Solar ignition delay” time, the system does not switch on, the D.H.W. withdrawal symbol (🚰) appears on the display along with the flashing solar function symbol (☀️*).

When the water supplied by the solar system is at a temperature lower than what is set, and if the “Solar ignition delay” time has elapsed, the indoor unit switches on. At this point, the solar function symbol remains permanently on.

- **“Off” mode.** By holding the “🔌🔧” button down for 8 seconds, the display switches-off and the indoor unit is off completely. The safety functions are not guaranteed in this mode.

ATTENTION:

in “Stand-by” and “Off” mode, the indoor unit is to be considered still live.



In “Off” mode, a lit “dot” is displayed in the centre of the display.

- **Display functioning.** The display lights up while the control panel is being used; after a set inactivity period, the brightness drops until only the active symbols are displayed. The lighting mode can be varied via parameter “t8” in the P.C.B. programming menu.

2.11 INDOOR UNIT INFORMATION MENU.

By pressing the button “INFO” the “Information menu” is activated for at least 1 second, displaying some system operating parameters.

To scroll through the various parameters, press the buttons “DHW regulation” “☰☷”.

With the menu active on the indicator (19) the parameter via the letter “d” plus the number of the parameter that is being displayed will alternately show


To view the parameter value, select it by pressing the button “🔌🔧”.

Press “RESET” or wait 15 minutes to go back to the previous screen or exit the menu.

Id Parameter	Description
d 0.0	Not used
d 0.1	Displays the flame signal (uA)
d 0.2	Displays the primary exchanger output instant heating flow temperature
d 0.3	Displays the instant output temperature from the DHW exchanger
d 0.4	Displays the values set for central heating set
d 0.5	Displays the values set for DHW set
d 0.6	Not used
d 0.7	Displays the temperature of the inlet DHW (with optional DHW inlet probe present)
d 0.8	Displays the system return water temperature
d 0.9	Displays the list of the last eight anomalies. (to scroll the list press the “central heating temperature regulation” buttons (6 and 7))
d 1.0	Anomaly list reset. Once “d 1.0” is displayed, press the Reset button for at least 3 seconds; deletion is confirmed via the “88” symbols flashing for two seconds
d 1.1	Not used
d 1.2	Displays the pump operating speed
d 1.3	Not used
d 1.4	Displays the pump flow rate (lh/100)
d 1.5	Displays the fan operating speed (rpm/100)
d 1.6	Displays the temperature read on the flue probe
d 1.7	Displays the calculated flow temperature
d 1.8	At the end of the screed heater function, displays for how many hours the flow temperature remained at “Top set”
d 1.9	Toggles between the safety software version and the functional software version
d 2.0	Not used
d 2.1	Not used
d 2.2	Not used

2.12 FAULTS AND MALFUNCTIONS SIGNALS FROM THE CONTROL PANEL.

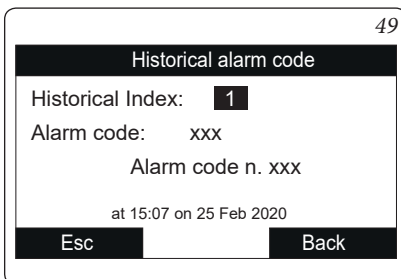
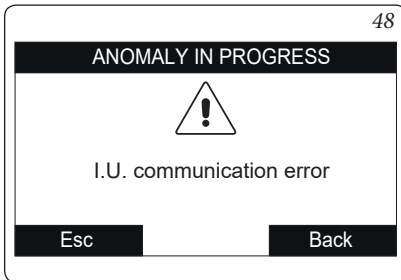
The system signals any anomalies by displaying the attention screen with the relative anomaly code (Fig. 48).

Press the “Esc” button to go back to the main screen and the anomaly is displayed with the  symbol.

You must access the “Historical alarm code” menu to display the anomalies log where the last 10 system anomalies are displayed in time order (Fig. 49). Turn the main switch to scroll through the list.

From the “Historical alarm code” menu, it is also possible to reset the list by selecting “Reset anomalies”.

Errors relating to the indoor unit are also signalled on its panel.



List of Indoor Unit Anomalies.

Error Code	Anomaly signalled	Cause	IU Status / Solution
01	No ignition block	In the event of request of room central heating or domestic hot water production, the system does not switch on within the preset time. Upon Victrix Hybrid commissioning or after extended downtime, it may be necessary to eliminate the block.	Press the Reset button (1)
02	Safety thermostat block (over-temperature)	During normal operation, if a fault causes excessive overheating internally, the boiler goes into overheating block.	Press the Reset button (1)
03	Flue safety thermostat block	During normal operation, if a fault causes excessive flue gas overheating, the boiler blocks	Press the Reset button (1)
04	Contacts resistance block	The P.C.B. detects a fault on the gas valve supply. Check its connection. (The anomaly is detected and displayed only in the event of a request).	Press the Reset button (1)
05	Flow probe anomaly	The board detects an anomaly on the flow NTC probe.	The boiler does not start (1)
06	Domestic hot water probe anomaly	The board detects an anomaly on the domestic hot water NTC probe. In this case the antifreeze function is also inhibited	In this case the system continues to produce domestic hot water but not with optimal performance (1)
08	Maximum N° of resets	Number of allowed resets that have already performed.	Attention: the fault may be reset up to 5 times consecutively, after which the function is inhibited for at least one hour. One attempt is gained every hour for a maximum of 5 attempts. By switching the appliance on and off again, the 5 attempts are re-acquired.
10	Insufficient system pressure	Sufficient water pressure inside the central heating circuit to guarantee the correct operation of the system is not detected.	Check on the indoor unit pressure gauge that the system pressure is between 1-1.2 bar and restore the correct pressure if necessary.
15	Configuration error	If the board detects an anomaly or incongruity on the electric wiring of the system and it will not start.	If normal conditions are restored, the system restarts without having to be reset. Check that the system is configured correctly (1)
16	Fan anomaly	This occurs if the fan has a mechanical or electrical fault.	Press the Reset button (1)
20	Parasite flame block	This occurs in the event of a leak on the detection circuit or anomaly in the flame control unit.	Press the Reset button (1)
23	Return probe anomaly	The board detects an anomaly on the return NTC probe	The system does not start (1)
24	Push button control panel anomaly	The board detects an anomaly on the pushbutton panel.	If normal conditions are restored, the system restarts without having to be reset (1).
27	Insufficient circulation	This occurs if there is overheating in the system due to insufficient water circulating in the primary circuit; the causes can be: - low system circulation; check that no shut-off devices are closed on the heating circuit and that the system is free of air (deaerated); - circulating pump blocked; free the circulating pump.	Press the Reset button (1)
29	Flue probe anomaly	The board detects an anomaly on the flue gas probe	The system does not start (1)
31	Loss of remote control communication.	This occurs if an incompatible remote control is connected, or if communication between the boiler and the remote control is lost	Disconnect and reconnect the power to the boiler. If the Remote Control is still not detected on re-starting, the boiler will switch to local operating mode, i.e. using the controls on the control panel. In this case the "Central Heating" (1) function cannot be activated.
37	Low power supply voltage	This occurs when the power supply voltage is lower than the allowed limits for the correct boiler operation.	If normal conditions are restored the boiler restarts without having to be reset (1)
38	Loss of flame signal	This occurs when the system is ignited correctly and the burner flame switches off unexpectedly; a new attempt at ignition is performed and if normal conditions are restored, the system does not have to be reset .	If normal conditions are restored, the system restarts without having to be reset (1) (2)

(1) If the block or anomaly persists, contact an authorised company (e.g. Authorised After-Sales Centre).

(2) The anomaly can only be verified in the list of errors in the "Information" menu

Error Code	Anomaly signalled	Cause	IU Status / Solution
43	Block due to loss of flame signal	This occurs if the "Flame signal loss" error occurs many times in a row within a preset period (38).	Press the Reset button, before restarting, the system will run a post-ventilation cycle. (1)
45	High ΔT	The system detects a sudden, unexpected increase in the ΔT between the flow probe and the system return probe.	The power of the burner is limited to prevent damage to the condensation module and once the right ΔT is restored, the system resumes regular operation. Make sure there is water circulating in the system, that the pump is configured according to system requirements and that the return probe works properly. (1) (2)
47	Burner power limitation	Should flue high temperature be detected, the system reduces power supplied so as not to damage it.	(1)
60	Anomaly pump blocked	The pump is stopped due to one of the following causes: Impeller blocked, electrical fault.	Try to unblock the pump as described in the relative section. If normal conditions are restored, the system restarts without having to be reset (1)
61	Air in circulator pump	Air is detected inside the pump; the pump cannot work.	Vent the pump and the central heating circuit. If normal conditions are restored, the system restarts without having to be reset (1)
70	Return/flow probe exchange	In case of an incorrect system wiring connection the error is detected	The system does not start (1)
75	Return and/or flow probe malfunction	Possible failure of one or both system return and flow probes	The system does not start (1)
76	Return and/or flow probes temperature drift	A malfunction of one or both system return and flow probes is detected	The system does not start (1)
<p>(1) If the block or anomaly persists, contact an authorised company (e.g. Authorised After-Sales Centre).</p> <p>(2) The anomaly can only be verified in the list of errors in the "Information" menu</p>			

List of Outdoor Unit Anomalies.

Error Code	Anomaly signalled	Cause	Boiler status / Solution
1006	Return probe anomaly	Inlet water temperature sensor anomaly	(1)
1008	Storage tank probe flow	Outlet water temperature sensor anomaly	(1)
1015	Abnormal flow temperature increase (during DHW heating)	Abnormal flow water temperature increase in the outdoor unit during the DHW heating phase	(1)
1016	Abnormal flow temperature increase	Abnormal flow water temperature increase in the outdoor unit	(1)
1019	System water overtemperature	Water circuit overheating	(1)
1020	Power supply voltage anomaly	Anomaly on the supply voltage of the outdoor unit (power supply displacement)	(1)
1021	High pressure anomaly	Outdoor unit evaporator/condenser anomaly (evaporator temperature below 0°C or condenser temperature greater equal to 59.5 °C)	(1)
1022	Overtemperature	Outdoor unit sensors overtemperature anomaly	(1)
1024	Overtemperature DHW accumulation	High temperature on the DHW storage tank	(1)
1026	DHW accumulation heating	DHW heating time greater than 6 hours	(1)
1032	Liquid probe anomaly	Liquid phase temperature sensor anomaly	(1)
1036	Board anomaly check	EEPROM control board anomaly	(1)
1039	High pressure switch fault	High pressure switch intervention	(1)
1040	High pressure switch fault	The pressure sensor has detected a value close to the intervention of the pressure switch for 16 times in 300 minutes	(1)
1043	Overload compressor	Compressor inverter overtemperature detected	(1)
1044	Compressor start anomaly	Compressor motor rotation anomaly	(1)
1045	Fan anomaly	Fan stopped on start up	(1)
1046	Fan anomaly	Fan rotation anomaly	(1)
1050	Compressor overcurrent anomaly	Compressor power supply voltage too high	(1)
1053	Summer/winter switch fault	Summer/winter switch fault	(1)
1054	DHW accumulation temperature anomaly	Abnormal domestic hot water temperature increase	(1)
1057	Power supply voltage compressor	Compressor power supply voltage out of range before ignition	(1)
1060	High pressure switch error	High pressure switch fault	(1)
1064	Compressor start anomaly	The compressor does not start up properly	(1)
1065	Compressor anomaly	Compressor power supply BUS not coherent	(1)
1066	Storage tank probe external temperature	Outdoor air temperature sensor anomaly	(1)
1072	High discharge temperature	Compressor discharge temperature too high	(1)
1077	High external coil temperature	High temperature on external coil	(1)
1078	High pressure on external coil	Temperature too high on external coil	(1)

(1) If the block or anomaly persists, contact an authorised company (e.g. Authorised After-Sales Centre).

(2) The anomaly can only be verified in the list of errors in the “Information” menu

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Error Code	Anomaly signalled	Cause	Boiler status / Solution
1079	Pressure sensor anomaly	Detected cooling gas pressure out of range	(1)
1080	Coolant pressure probe anomaly	Coolant pressure probe anomaly	(1)
1081	Discharge probe anomaly	Compressor discharge temperature sensor anomaly	(1)
1083	External coil probe anomaly	Outdoor coil temperature sensor anomaly	(1)
1103	High inverter temperature	Inverter board temperature too high	(1)
1104	Inverter temperature increased abnormally	Temperature on cooling fins too high	(1)
1105	Inverter overcurrent	Overcurrent detected on the inverter	(1)
1118	Storage tank probe Inverter	Inverter temperature sensor anomaly	(1)
1119	Coolant missing	Lack of coolant in outdoor unit	(1)
1123	Power supply voltage anomaly	Power supply tension anomaly	(1)
1125	Internal communication error	Internal communication error	(1)
1126	Internal communication error	Internal communication error	(1)
1128	Communication error with outdoor unit boards	Inverter communication error - hydronic board	(1)
1135	Internal communication error	Internal communication error	(1)
<p>(1) If the block or anomaly persists, contact an authorised company (e.g. Authorised After-Sales Centre). (2) The anomaly can only be verified in the list of errors in the "Information" menu</p>			

2.13 SWITCHING OFF.

Switch off the indoor unit by setting the “stand-by” mode from the control panel, disengage the external omnipolar switches of the indoor and outdoor units and close the gas tap upstream of the indoor unit.

2.14 RESTORE CENTRAL HEATING SYSTEM PRESSURE.

Periodically check the system water pressure. The boiler pressure gauge should read a value of between 1 and 1.2 bar.

If pressure falls below 1 bar (with the circuit cold), restore normal pressure via the cock located at the bottom of the boiler (Part. 1 Fig. 9).

N.B.: close the cock after the operation.

If pressure values reach around 3 bar the safety valve may be activated.

In this case, remove water from a radiator air vent valve until a pressure of 1 bar is achieved, or ask for assistance from professionally qualified personnel.

In the event of frequent pressure drops, contact qualified staff for assistance to eliminate the possible system leakage.

2.15 DRAINING THE SYSTEM.

To drain the indoor unit, use the special draining valve (Det. 2 Fig. 9)

Before draining, ensure that the filling cock is closed.

ATTENTION:

if glycol was input in the system's circuit, make sure it is discharged into the waste water system, pursuant to regulation EN 1717.



2.16 EMPTYING THE D.H.W. CIRCUIT.

To do this, always close the domestic cold water inlet upstream of the indoor unit.

Open any domestic hot water tap to discharge the pressure from the circuit.

2.18 ANTIFREEZE PROTECTION.

The hybrid heat pump is fitted with an antifreeze function which is active on different levels. The first level consists in igniting the circulator according to the temperatures detected on the outdoor unit.

ATTENTION:

This function has priority on the production of Domestic Hot Water, therefore it is possible that in case of prolonged DHW withdrawals and installation in very cold areas, the production of Domestic Hot Water may be interrupted.



A second level entails the ignition of the indoor unit and this is determined according to the temperatures detected by the indoor or outdoor units. All information relative to the anti-freeze protection is stated in Par. 1.3.

In order to guarantee the integrity of the Victrix Hybrid and the domestic hot water heating system in zones where the temperature drops below zero, we recommend the central heating system is protected using anti-freeze liquid and installation of the Immergas Antifreeze Kit.

In the case of prolonged inactivity (second case), we also recommend that:

- the electric power supply is disconnected;
- the heating circuit and boiler domestic water circuit must be drained. In systems that are drained frequently, filling must be carried out with suitably treated water to eliminate hardness that can cause lime-scale.

2.19 CLEANING THE CASE.

Use damp cloths and neutral detergent to clean the indoor and outdoor units casing. Never use abrasive or powder detergents.

2.20 DECOMMISSIONING.

In the event of permanent shutdown of the Victrix Hybrid, contact professional staff for the procedures and ensure that the electrical, water and gas supply lines are shut off and disconnected.

3 INSTRUCTIONS FOR MAINTENANCE AND INITIAL CHECK.

3.1 GENERAL WARNINGS.

ATTENTION:
operators who install and service the Victrix Hybrid must wear the personal protective equipment (PPE) required by applicable law.



Note: the list of possible PPE is not complete as they are indicated by the employer.

ATTENTION:
before performing any maintenance operation, make sure:



- you have disconnected the power to the appliances Victrix Hybrid;
- you have closed the gas cock;
- you have discharged the pressure from the system and domestic hot water circuit.

Risk of material damage after using sprays and liquids to search for leaks.



Leak sprays and liquids clog the reference hole P1 (Fig. 52) of the gas valve, damaging it irreparably.

During installation and maintenance, do not use spray or liquids in the upper area of the gas valve (side referring to the electric connections)

Supply of spare parts.



The device's warranty shall be rendered null and void if unapproved or unsuitable parts are used for maintenance or repairs. These will also compromise the Victrix Hybrid compliance, and the said product may no longer be valid and fail to meet the current regulations.

With regard to the above, only use Immergas original spare parts when replacing parts.

If additional documentation needs to be consulted for extraordinary maintenance of Victrix Hybrid, contact the Authorised After-Sales Service



3.2 INITIAL CHECK.

To commission the system, you must:



- make sure that the type of gas used corresponds to indoor unit settings;
- check connection to a 230V-50Hz power mains, correct L-N polarity and the earthing connection;
- make sure that all electrical connections between: indoor unit and control panel, outdoor unit and control panel were performed according to the available documentation and applicable regulations;
- ensure sealing efficiency of water circuits;
- make sure the central heating system is filled with water and the indoor unit pressure gauge reads a pressure of 1÷1.2 bar;
- switch the boiler on and ensure correct ignition;
- check the proper calibration of the number of fan revolutions of the indoor unit;
- check the CO₂ flow rate in the flue:
 - the values must comply with what is indicated in the relative tables (Par. 3.3);
- check activation of the safety device in the event of no gas, as well as the relative activation time;
- check the activation of the main switch located upstream of the indoor unit and the outdoor unit;
- check that the intake and/or exhaust terminals of the indoor unit are not blocked;
- ensure activation of all adjustment devices;
- seal the gas flow rate regulation devices (if settings are modified);
- ensure production of domestic hot water;
- check ventilation and/or aeration of the installation room where provided.
- check that there are no damaged components or crushed pipes in the outdoor unit.
- make sure that the shut-off valves are installed correctly and completely open;
- make sure that the air discharge valves are closed and the automatic air discharge valves are open;
- check the safety valves for water leaks, when they are open;
- check that the minimum water volume is guaranteed in all conditions;
- if glycol is used, make sure that the concentration is correct and set the related parameter on the control panel.

Even if just one single safety check provides a negative result, do not commission the system. Even if just one single safety check provides a negative result, do not commission the system.

3.3 YEARLY VICTRIX HYBRID CHECK AND MAINTENANCE.



The following checks and maintenance should be performed once a year to ensure operation, safety and efficiency of the Victrix Hybrid over time.

- Clean the flue side of the heat exchanger.
- Clean the main burner.
- Check the correct positioning, integrity and cleanliness of the detection and ignition electrode; remove any oxide present.
- If deposits are detected in the combustion chamber they must be removed and the heat exchanger coils must be cleaned using nylon or broomcorn brushes; it is forbidden to use brushes made of metal or other materials that may damage the combustion chamber. It is also forbidden to use alkaline or acid detergents.
- Check the integrity of the insulating panels inside the combustion chamber and if damaged replace them.
- Visually check for water leaks or oxidation from/on connections and traces of condensate residues inside the sealed chamber.
- Check the contents of the condensate drain trap.
- Check that there are no material residues in the condensate drain siphon clogging the condensate passage; also check that the entire condensate drainage circuit is clear and efficient. In the event of obstructions (dirt, sediment, etc.) with consequent leakage of condensate in the combustion chamber, one must replace the insulating panels.
- Check that the burner and gas manifold seal gaskets are intact and perfectly efficient, otherwise replace them. In any case the gaskets must be replaced at least every two years, regardless of their state of wear.
- Check that the burner is intact, that it has no deformations or cuts and that it is properly fixed to the combustion chamber lid; otherwise it must be replaced.
- Visually check that the water safety drain valve is not blocked.
- Check that, after discharging the system pressure and bringing it to zero (read on boiler pressure gauge), the expansion vessel pressure is at 1.0 bar.
- Check that the system static pressure (with system cold and after refilling the system by means of the filling valve) is between 1 and 1.2 bar.
- Visually check that the safety and control devices have not been tampered with and/or short-circuited.
- Check the condition and integrity of the electrical system and in particular:
 - electrical power cables must be inside the fairleads;
 - there must be no traces of blackening or burning.
- Check correct lighting and operation.

- Check the CO₂ by using the chimney sweep function at the reference heat outputs, using the parameters in the table below. Should values out of the indicated tolerance range be detected, check calibration again (Ref. Par. CO₂ adjustment).
- Check correct operation of control and adjustment devices and in particular:
 - system regulation probes intervention;
 - domestic hot water control thermostat intervention.
- Check sealing efficiency of gas circuit and the internal system.
- Check the intervention of the device against no gas ionisation flame control. Intervention time must be less than 10 seconds.



Victrix Hybrid		
	CO ₂ at nominal output	CO ₂ at minimum output
G 20	9.70 % + 0.30 / - 0.10	8,80 % + 0.10 / - 0.30
G 31	11.40 % + 0.10 / - 0.30	10.60 % ± 0.20

In addition to yearly maintenance, one must also check the energy efficiency of the thermal system, with frequency and procedures that comply with the indications of the technical regulations in force.



On the outdoor unit:

Check the following points at least once per year:

• External coil

The external coil of the Audax.DK4 may be obstructed by dirt, dust, leaves, etc... It is recommended to clean the coil on a yearly basis to prevent reaching excessively high or low temperatures which could decrease the performances of the outdoor unit.

• Water Pressure

Check that the system static pressure (with system cold and after refilling the system by means of the filling valve) is between 1 and 1.2 bar.



ATTENTION:

• Water filter



Clean the system water filter.

Handle the water filter with care. Do not use excessive force when reinserting the water filter in order to avoid damaging the mesh of the filter.

- **Safety valve**

Visually check that the drain of the water safety valve is not clogged

The points to be checked are:

- the flow rate of the safety valve is optimal;
- if there is dirty water coming from the safety valve:
- open the valve until the discharged water no longer contains dirt;
- wash the system and install an additional water filter (possibly a magnetic cycloidal filter).

We recommend performing this maintenance multiple times per year.

- **Electrical part**

Perform a visual check of the electrical part of the outdoor unit checking the electrical connections and the wiring.

In case of faults on the wiring or electrical connections, the replacement must be performed by qualified personnel (for example the Immergas Technical Assistance Service).

- **Antifreeze protection valve**

Replace the antifreeze protection valve every 3-7 years (according to the quality of the water).

Replace the antifreeze protection valve if it does not close properly.

- **Vacuum breaker valve**

Disassemble the vacuum breaker valve and clean the cartridge with water.

In case of malfunctions replace the vacuum breaker valve. Keep the area around the unit clean.



ATTENTION!

The coolant inside the unit is slightly flammable.

If the refrigerant were to come out, coming into contact with the flame of a burner, a heater or a gas kitchen, it may cause a fire or form noxious gas.

Switch off the flammable heating devices, air the room and contact an authorised company (e.g. Immergas Technical Assistance Service). DO NOT use the unit until a qualified technician has repaired the leaking component that is leaking coolant.



ATTENTION!

- **DO NOT perforate or burn the components of the coolant cycle.**
- **DO NOT use cleaning materials or tools to accelerate the defrosting process other than those recommended by the manufacturer.**
- **Keep in mind that the coolant in the system is odourless.**



COOLANT GAS RECOVERY IN CASE OF LEAKS



If you wish to recover the coolant gas in case of a leak in the circuit:

- **DO NOT use the automatic gas recovery function by means of “Pump down”.**

Possible consequence: self-combustion or explosion of the compressor due to air mixing with the flammable coolant.

- **Use a separate recovery system so that the compressor of the unit is NOT operated.**

During the coolant recovery operation with the Pump Down, stop the compressor before removing the coolant piping.



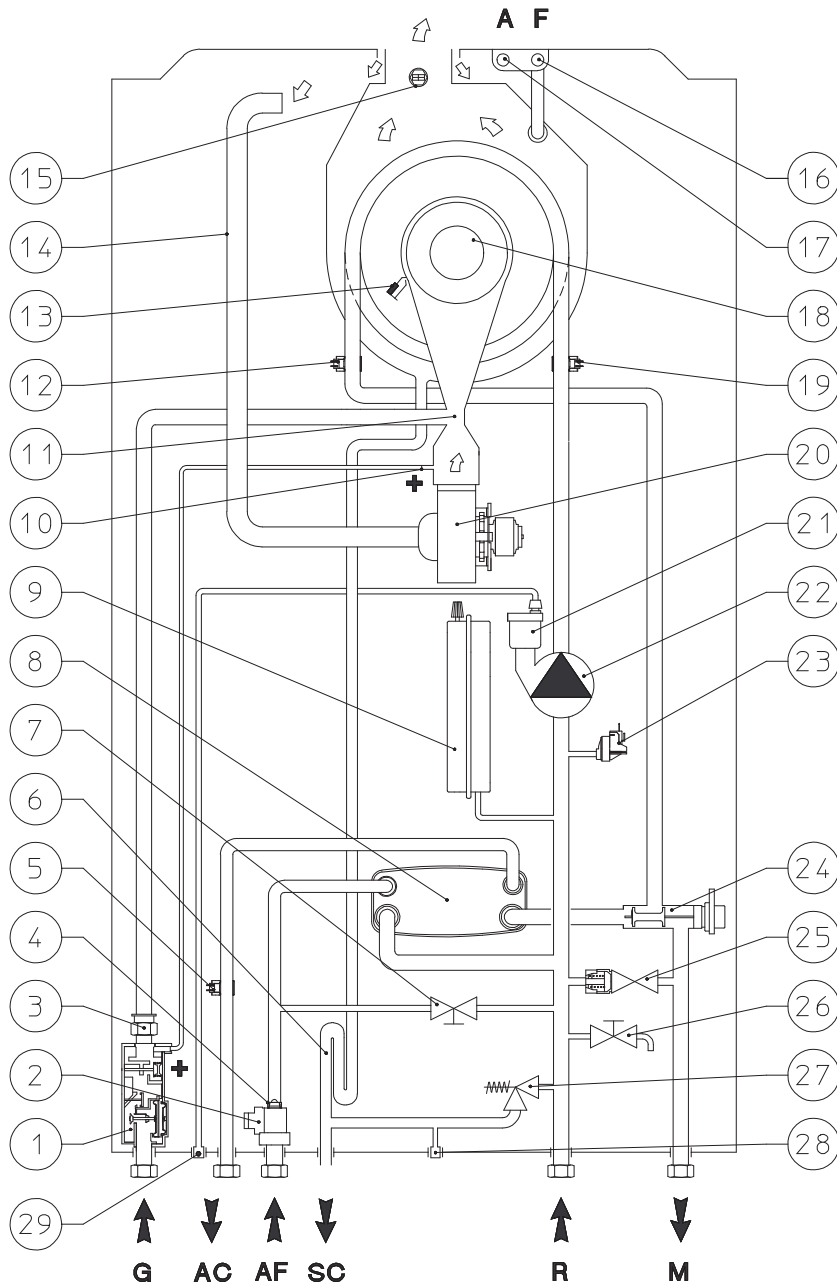
If the compressor is still operating and the stop valve is open during coolant recovery with the Pump Down, air will be sucked into the system.

Due to the abnormal pressure in the coolant cycle, the compressor may brake and the unit may be damaged.

The coolant recovery operation with the Pump Down extracts all the coolant from the hydronic unit and sends it to the compressor module.

- 1) Remove the cover of the liquid stop valve and the gas stop valve.
- 2) Set the stand by mode from the control panel (insert stand by icon) and then access the assistance menu ->manual->Pump Down-> On
- 3) After ± 2 minutes, close the liquid stop valve with a hex key.
- 4) Check that a vacuum was achieved on the pressure gauge.
- 5) After ± 5 minutes, close the gas stop valve and stop the Pump Down from the assistance menu ->manual->Pump Down-> Off

3.4 INDOOR UNIT HYDRAULIC DIAGRAM.



Key:

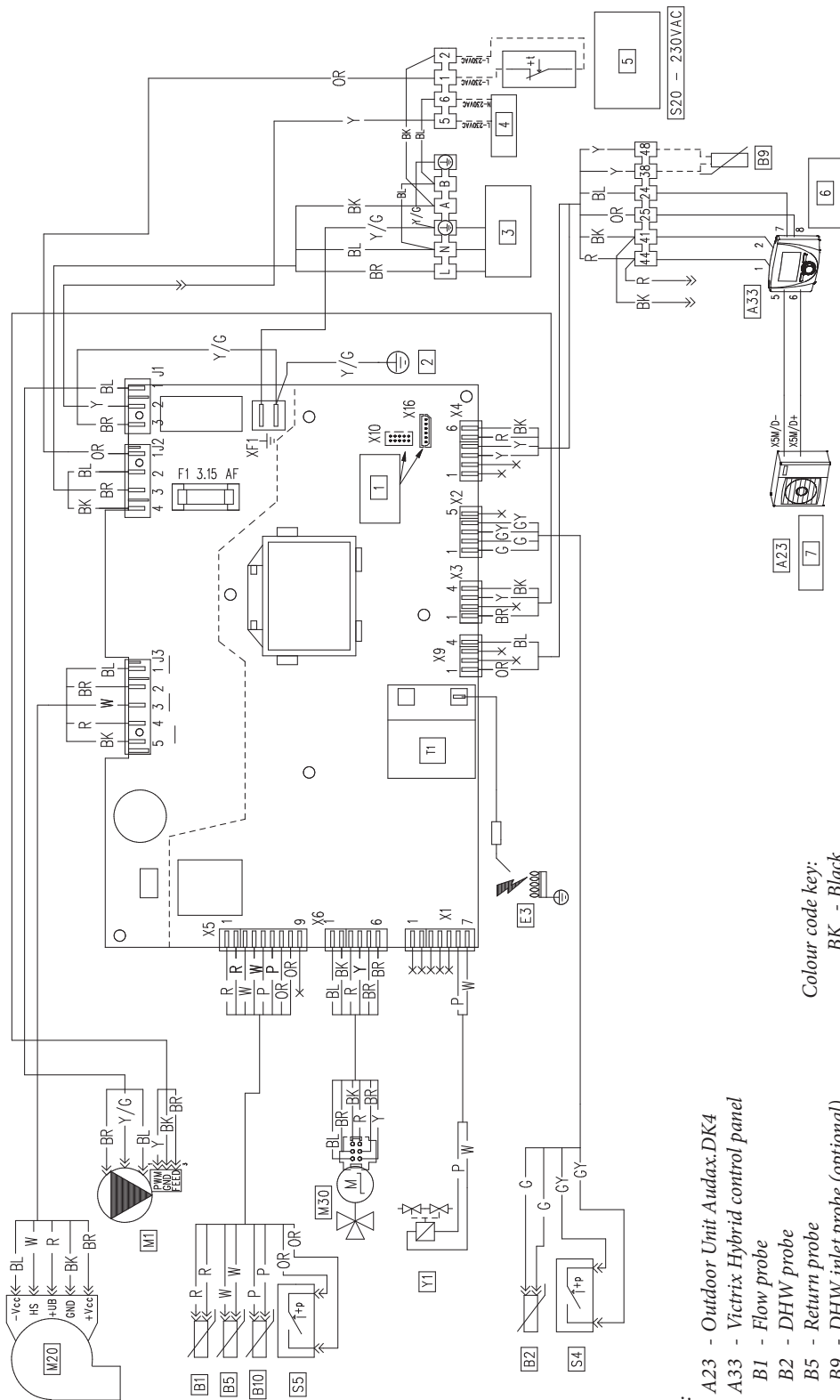
- | | |
|------------------------------------|--|
| 1 - Gas valve | 20 - Fan |
| 2 - D.H.W. flow switch | 21 - Air vent valve |
| 3 - Gas nozzle | 22 - Boiler pump |
| 4 - Flow limiter | 23 - Absolute pressure switch |
| 5 - DHW probe | 24 - 3-way valve (motorised) |
| 6 - Condensate drain trap | 25 - Bypass |
| 7 - System filling valve | 26 - System draining valve |
| 8 - DHW heat exchanger | 27 - 3 bar safety valve |
| 9 - System expansion vessel | 28 - 3 bar safety valve drain fitting signal |
| 10 - Positive (+) pressure point | 29 - Air vent valve drain |
| 11 - Venturi | |
| 12 - Flow probe | |
| 13 - Ignition/detection electrodes | |
| 14 - Air intake pipe | |
| 15 - Flue probe | |
| 16 - Flue sample point | |
| 17 - Air sample point | |
| 18 - Burner | |
| 19 - Return probe | |
-
- | |
|--------------------------------|
| G - Gas supply |
| AC - Domestic hot water outlet |
| AF - Domestic hot water inlet |
| SC - Condensate drain |
| M - System flow |
| R - System return |

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3.5 INDOOR UNIT ELECTRICAL DIAGRAM.



- Key:
- A23 - Outdoor Unit Audax.DK4
 - A33 - Victrix Hybrid control panel
 - B1 - Flow probe
 - B2 - DHW probe
 - B5 - Return probe
 - B9 - DHW inlet probe (optional)
 - B10 - Flue probe
 - E3 - Ignition and detection electrode
 - M1 - Indoor unit circulator
 - M20 - Fan
 - M30 - Three-way motor stepper
 - S4 - D.H.W. flow switch
 - S5 - System pressure switch
 - S20-230VAC - Room thermostat 230VAC (optional)
 - T1 - Ignition transformer
 - Y1 - Gas valve
- Colour code key:
- BK - Black
 - BL - Blue
 - BR - Brown
 - G - Green
 - DY - Grey
 - OR - Orange
 - P - Purple
 - PK - Pink
 - R - Red
 - W - White
 - Y - Yellow
 - Y/G - Yellow/Green

- Key:
- 1 - Virgilio palmtop
 - 2 - Frame earth
 - 3 - 230Vac 50Hz power supply
 - 4 - Configurable relay outlet
 - 5 - Room thermostat 230Vac (Optional)
 - 6 - Victrix Hybrid control panel
 - 7 - Audax.DK4 Outdoor Unit

The connection of the room thermostat (S20) can only be made by always keeping the control panel connected with the room sensor disabled.

The connection to the connection control panel is required for the hybrid heat pump to operate.

3.6 PROGRAMMING VICTRIX HYBRID.

By modifying these parameters as described below, the system can be adapted according to specific needs.

Access the “Assistenza” (Assistance) menu by pressing the right “Menu” button and turning the main switch until selecting the desired menu. Press the main switch to confirm the selection. Insert the relative access code and customise the parameters according to your requirements.

Service Menu		
Menu item	Description	Range
Zone definition	Zone system sub-menu settings	-
System definition	Sub-menu to define the devices connected to the system	-
Thermoregulation	Temperature control setting sub-menu	-
Integration	System integration setting sub-menu	-
Heat pump	Heat pump operating parameters sub-menu	-
Information	System information sub-menu	-
Factory settings	Allows to reset all parameters with factory values	Yes / No

Service Menu -> Zone definition				
Menu item	Description	Range	Default	Customised value
Room Control Interface	Establishes the temperature control device in use	P. Rem. / T.A.	P. Rem.	
Enable Heating kit	Enables operation of the heater kit	Yes / No	No	
Enable Glycol	Indicates the presence of antifreeze fluid in the system	Yes / No	No	

Service Menu -> System definition				
Menu item	Description	Range	Default	Customised value
Reduction function	Enables a reduction of PdC noise.	No Level 1 Level 2 Level 3	No	
Minimum pump speed	Minimum speed used value	10 - 100 %	50 %	
Maximum pump speed	Maximum speed used value	10 - 100 %	100 %	
O.U. function delta T	Temperature delta to be maintained with UE operation	5 - 10	5	
I.U. function delta T	Temperature delta to be maintained with UI operation	5 - 20	10	
Pump mode	The pump can function in two ways. - Intermittent: in “winter” mode, the circulator is managed by the control panel or the room thermostat - Continuous = in “Winter” mode the pump is always in operation	Inter. / continuous	Inter.	
DHW hysteresis	Not used on this model	-	-	
DHW priority timing	In winter mode the boiler, at the end of a domestic hot water request, is ready to switch to central heating mode if there is an active request. Timing sets a time period in which the indoor unit waits before changing the operating mode, in order to quickly and comfortably satisfy an additional request for domestic hot water.	0 - 100 seconds (10 sec step)	20 seconds	
Heating start timing	The indoor unit has an electronic timer, which prevents the burner from igniting too often in central heating mode	0 - 600 seconds (10 sec step)	180 seconds	
Heating ramp timing	In central heating mode, the indoor unit performs an ignition ramp in order to reach the maximum output set	0 - 840 seconds (10 sec step)	180 seconds	
Heating start delay	The indoor unit is set to switch-on immediately after a request. In the event of particular systems (e.g. area systems with motorised thermostatic valves etc.) it may be necessary to delay ignition	0 - 600 seconds (10 sec step)	0	

Service Menu -> Thermoregulation				
Menu item	Description	Range	Default	Customised value
External probe enabling	Defines the use of the external probe	Yes / No	Yes	
Flow set heat min	With the external probe not in use it defines the minimum flow temperature that can be set by the user. With the external probe enabled it defines the minimum flow temperature corresponding to operation with maximum external temperature	20 ÷ 45	30	
Flow set heat max	Without the external probe it defines the maximum flow temperature that can be set by the user. With the external probe present it defines the maximum flow temperature corresponding to operation with minimum external temperature	35 ÷ 80	50	
External min temp.	With the external probe enabled it defines at what external temperature the system must operate at the maximum flow temperature	-25 ÷ +15 °C	-5	
External max temp.	With the external probe present it defines at what maximum external temperature the system must operate at the minimum flow temperature	-5 ÷ +45 °C	25	
Room probe modul.	It enables you to set operation of the control panel as modulating ON/OFF. Set "Yes", the flow temperature will be varied depending on the room temperature set. Set "No", the flow temperature will be kept constant until the desired room temperature is reached. N.B.: if an outdoor temperature probe is enabled, the flow temperature will be set depending on the relative functioning curve.	Yes / No	Yes	
System inertia	It establishes the system reaction speed according to the type of system present. Example: 5 system with little heat inertia 10 system with normal dimensions with radiators 20 system with a lot of heat inertia (e.g. floor-standing system)	1 ÷ 20	10	
Antifreeze enable	Enables the room antifreeze function	Yes / No	Yes	
Antifreeze set	Allows to set the room temperature for activation of the anti-freeze function.	3 ÷ 10 °C	5 °C	
O.U. antifreeze disable	Disables all the antifreeze protections of the heat pump	Yes / No	No	

Service Menu -> Integration												
Menu item	Description	Range	Default	Customised value								
DHW integrat. enabled	Enables domestic hot water mode of the UI	Yes / No	Yes									
Heating integrat. enabled	Enables the operation of the UI in heating	Yes / No	Yes									
DHW waiting time	Waiting time to reach the setting set before activation of the integration in the production of domestic hot water	0 - 240 (5 minute intervals)	20'									
Heating waiting time	Waiting time to reach the setting set before activation of the integration in room heating	0 - 240 (5 minute intervals)	20'									
Integration mode	Establishes how to integrate the heat generator to the condensing unit, you can choose between automatic and manual	Auto - Man	Man									
Manual activation temp.	Establishes the outdoor temperature under which central heating integration is enabled.	-15 ÷ 35 °C	0									
Integration band	If the flow temperature of the outdoor unit is lower than the heating-set value minus the activation band divided by 2, then after a period equal to the activation delay time, the indoor unit will be turned on.	0 ÷ 15 °C	3									
F1 Electricity price	Allows to enter the price of electricity in € per kWh for time slot 1	0 ÷ 2,55 €/kWh	0,23									
F2 Electricity price	Allows to enter the price of electricity in € per kWh for time slot 2	0 ÷ 2,55 €/kWh	0,23									
F3 Electricity price	Allows to enter the price of electricity in € per kWh for time slot 3	0 ÷ 2,55 €/kWh	0,23									
Gas price	<p>Allows to enter the methane price in € per cubic metre.</p> <p>For other gasses, the value to be inserted must be calculated by multiplying the user gas price by the correction factor indicated in the table below:</p> <table border="1" data-bbox="359 1034 893 1191"> <thead> <tr> <th>Gas used</th> <th>Correction factor</th> </tr> </thead> <tbody> <tr> <td>Methane</td> <td>1</td> </tr> <tr> <td>GPL (m³)</td> <td>0,38</td> </tr> <tr> <td>GPL (L)</td> <td>1,45</td> </tr> </tbody> </table>	Gas used	Correction factor	Methane	1	GPL (m ³)	0,38	GPL (L)	1,45	0 ÷ 2,55 €/m ³	0,95	
Gas used	Correction factor											
Methane	1											
GPL (m ³)	0,38											
GPL (L)	1,45											

Service Menu -> Heat Pump	
Menu item	Description
Working parameters	Sub-menu for working data
Status	Sub-menu for operating state
Maintenance	Sub menu for maintenance operations

Service Menu -> Heat Pump -> Working parameters	
Menu item	Description
Flow temperature	Instant outlet temperature from the outdoor unit
Return temperature	Outdoor unit return temperature
Calculated plant setpoint	Flow temperature determined by the outdoor unit
Calculated DHW setpoint	DHW temperature determined by the outdoor unit
Compr. discharge temp.	Outdoor unit compressor temperature
Plate exchange temp.	Coolant temperature inside the heat exchanger
Evaporator temperature	Evaporator temperature
External temperature	External room temperature
Compressor frequency	Current compressor frequency
Max compr. frequency	Indicates the maximum frequency that can be reached by the compressor with the present conditions

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Service Menu -> Heat Pump -> Working parameters

Menu item	Description
Circulator forcing by O.U.	Not used on this model
Boiler forcing by O.U.	Heater activation request for safety functions

Service Menu -> Heat Pump -> Status

Menu item	Description
O.U. initialization	Indicates that the initialisation phase of the outdoor unit has ended
O.U. Heating req.	Indicates the presence of a heating demand to the U.E.
O.U. DHW req.	Indicates the presence of a DHW demand to the U.E.
O.U. availability	Indicates that the heat pump is available
O.U. startup time	Time elapsed since the U.E. start-up request
O.U. antifreeze function	Indicates that the heat pump is performing an antifreeze function
Defrost	Indicates that the defrosting of the outdoor unit is in progress
O.U. HX pre-heating	Indicates the machine was hot started in DHW
Cold start	Indicates the machine was cold started

Service Menu -> Heat Pump -> Maintenance

Menu item	Description	Range	Default	Customised value
Pump down	Function for gas removal on water/gas heat exchanger	Off / On		
Heating kit test	UE anti-freeze resistance kit control outlet forcing	Off / On		

Service Menu -> Information

Menu item	Description	Range	Default	Customised value
Pump speed	Calculator speed status	0 - 100 %		
Flow rate	Indicates circulation inside the hydraulic circulator	0 - 2000 l/h (only reading)		
Three way valve	DHW three-way status	San - Risc		

3.7 TROUBLESHOOTING

Maintenance interventions must be carried out by an authorised company (for example contact the Authorised Technical Service Centre).



Red pump LED.

There can be three possible causes for this anomaly:

- **Low power supply voltage.** When the minimum voltage is reached after about 2 seconds, the LED switches from green to red and the pump stops. Wait for the power supply voltage to rise; when the pump restarts, the LED will turn green again with a delay of about one second.
Note: obviously the flow rate decreases as the supply voltage decreases.
- **Rotor seized.** Powering the pump with the rotor seized, after about 4 seconds the LED switches from green to red. Carefully act on the screw in the middle of the head to manually release the crankshaft; circulation starts up immediately after the rotor is released and the LED switches from red to green after about 10 seconds.
- **Electrical error.** Pump, wiring or P.C.B. fault. Check the indicated components.
- **Smell of gas.** Caused by leakage from gas circuit pipelines. Check sealing efficiency of gas intake circuit.
- **Repeated ignition blocks.** Check the presence of pressure in the network and that the gas adduction cock is open. Incorrect adjustment of the gas valve, check the correct calibration of the gas valve.
- **Irregular combustion or noisiness.** It may be caused by: a dirty burner, incorrect combustion parameters, intake-exhaust terminal not correctly installed. Clean the above components and ensure correct installation of the terminal, check correct setting of the gas valve (Off-Set setting) and correct percentage of CO₂ in flue gas.
- **Frequent interventions of the safety thermostat function (delegated to flow probe and system return probe).** It can depend on the lack of water in the boiler, little water circulation in the system or blocked pump. Check on the pressure gauge that the system pressure is within established limits. Check that the radiator valves are not closed and also the functionality of the pump.
- **Siphon blocked.** This may be caused by dirt or combustion products deposited inside. Check that there are no residues of material blocking the flow of condensate.
- **Heat exchanger blocked.** This may be caused by the drain trap being blocked. Check that there are no residues of material blocking the flow of condensate.
- **Noise due to air in the system.** Check opening of the special air vent valve cap (Part. 18 Fig. 39). Make sure the system pressure and expansion vessel pre-charge values are within the set limits; The factory-set pressure values of the expansion vessel must be 1.0 bar, the value of system pressure must be between 1 and 1.2 bar.

3.8 CONVERTING THE BOILER TO OTHER TYPES OF GAS.



If the boiler has to be converted to a different gas type to that specified on the data nameplate, request the relative conversion kit for quick and easy conversion. The gas conversion operation must be carried out by an authorised company (e.g. Authorised After-Sales Centre). To convert to another type of gas the following operations are required:

- remove power from Victrix Hybrid;
- replace the nozzle located on the upper fitting of the gas valve (Part. 8 Fig. 39), taking care to disconnect the indoor unit during this operation;
- restore power to Victrix Hybrid;
- calibrate the number of fan revolutions (Parag. 3.8);
- adjust the correct CO₂ value (Parag. 3.9);
- seal the gas flow rate devices (if adjusted);
- after completing the conversion, apply the sticker, contained in the conversion kit, on the data plate in the area relating to the type of gas.

These adjustments must be made with reference to the type of gas used, following that given in the table (Par. 4.2).

3.9 INDOOR UNIT FAN REVS NUMBER CALIBRATION.

ATTENTION:



verification and calibration are necessary, in the case of transformation to other types of gas, in the extraordinary maintenance phase with replacement of the PCB, air/gas circuit components or in the case of installations with flue extraction systems, with horizontal concentric pipe measuring more than 1 metre.

The indoor unit heat output is correlated to the length of the air intake and flue exhaust pipes. This decreases with the increase of pipe length. The indoor unit leaves the factory adjusted for minimum pipe length (1m coaxial).

- activate flue test (Parag. 3.16);
- detect the flue signal ΔP (Ref. 12 and 13 Fig. 50);
- compare the signal ΔP and, if necessary, correct the S1 operating parameters with the following table:

Victrix Hybrid	
	$\Delta P > 200 \text{ Pa}$
G20	S1 = 126 (6300 rpm)
G31	S1 = 121 (6050 rpm)

3.10 INDOOR UNIT CO₂ ADJUSTMENT.

ATTENTION:

the verification operations of the CO₂ must be carried out with the casing mounted, while the gas valve calibration operations must be carried out with the casing open and removing the voltage from the Victrix Hybrid.



Calibration of the CO₂ at minimum output

Enter the chimney sweep mode without withdrawing DHW and set the output to minimum (0%). To have an exact value of CO₂ the technician must insert the sampling probe to the bottom of the sample point, then check that the CO₂ value is that specified in the table (Ref. Parag. 4.2), otherwise adjust the screw (Part. 3 Fig. 52) (Off-Set adjuster). To increase the CO₂ value, turn the adjustment screw (3) in a clockwise direction and vice versa to decrease it.

Calibration of the CO₂ at maximum output

When you finish the minimum CO₂ adjustment, while maintaining the chimney sweep function active, set the output to maximum (99%). To have an exact value of CO₂ the technician must insert the sampling probe to the bottom of the sample point, then check that the CO₂ value is that specified in the table (Ref. Parag. 4.2), otherwise adjust the screw (Part. 12 Fig. 52) (gas flow rate regulator). To increase the CO₂ value, turn the adjustment screw (12) in a clockwise direction and vice versa to decrease it.

At every adjustment variation on the screw 12 it is necessary to wait for the boiler to stabilise itself at the value set (about 30 sec.).

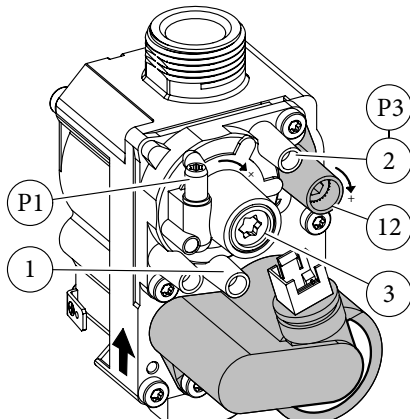
3.11 CHECKS FOLLOWING CONVERSION TO ANOTHER TYPE OF GAS.

After making sure that conversion was carried out with a nozzle of suitable diameter for the type of gas used and the settings are made at the correct pressure, check that the burner flame is not too high or low and is stable (does not detach from burner);

Maintenance interventions must be carried out by an authorised company (e.g. Authorised After-Sales Centre).



Gas Valve 42



Key:

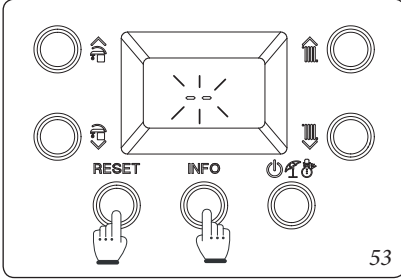
- 1 - Gas valve inlet pressure point
- 2 - Gas valve outlet pressure point
- 3 - Off/Set adjustment screw
- 12 - Outlet gas flow rate adjuster

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3.12 PROGRAMMING THE INDOOR UNIT P.C.B..

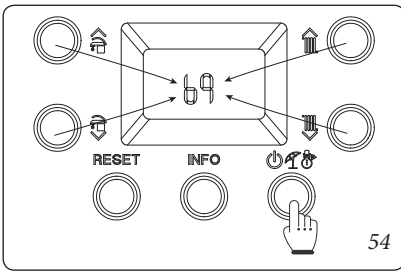
The indoor unit is prepared for possible programming of several operation parameters. By modifying these parameters as described below, the boiler can be adapted according to specific needs.

To access the programming phase, press and hold the buttons “RESET” and “INFO” for more than 5 seconds, the display shows two dashes “--” flashing and you must enter the password to access the programming menus.

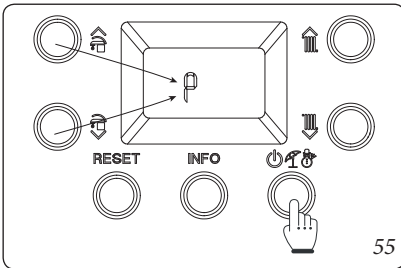


To enter the first digit use the buttons to adjust the DHW “”, to enter the second digit use the buttons to adjust the central heating temperature “”.

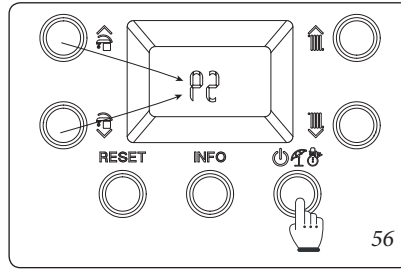
To confirm the password (69) and access the menu, press the operating mode button “”.



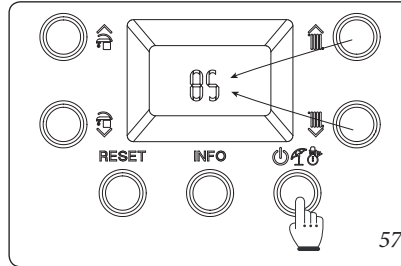
Once in the menu, you can cyclically scroll the four submenus (P, t, A, S) by pressing the DHW buttons “”, to access the menu press the button “”.



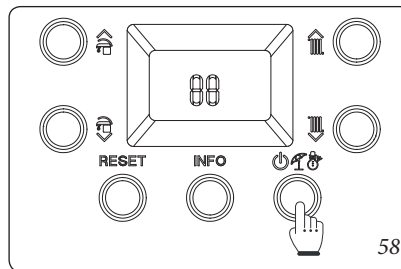
The first digit of the central indicator (19) shows the family of the parameter, while the second digit shows its number.



Pressing the mode of operation button “” displays the value of the selected parameter and by pressing the buttons to adjust the central heating temperature “” you can adjust its value.



Press the mode of operation button “” for more than 1 second to store the parameter value; confirmation is given by the word “00” which appears for 2 seconds.



If you want to exit a parameter without changing its value, press the button “RESET”.

Wait for 15 minutes or press the “RESET” button to exit programming mode.

Programming phase sequence.

RESET + INFO > 5”	Menu “P” “t” “A” “S” 	← RESET 	P0 ÷ P5 t0 ÷ t9 A0 ÷ A6 S0 ÷ S2 	← RESET 	Parameter value 	← RESET (Without memorising) > 1” (Memorise)	“00”
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Id Parameter	Parameter	Description	Range	Default	Customised value
P0	Max DHW output	Defines the maximum heat output percentage of the boiler during the D.H.W. phase compared to the maximum heat output available	0 - 100 %	100 %	
P1	Min CH output	Defines in percentage the minimum output in central heating mode	0 - P2	0 %	
P2	Max CH output	Defines the maximum heat output percentage of the Indoor Unit during the central heating mode compared to the maximum heat output available	0 - 100 %	G20 = 84 G31 = 82	
P3	UI P.C.B. relay operation	0 = OFF 1 = Not available 2 = General alarm 3 = CH phase mode 4 = External gas valve power supply 5 = Not available 6 = U.I. circulator command 7 = Not available 8 = Not available 9 = Not available 10 = Not available	0 - 10	0	
P4	Pump functioning	Set this parameter from the control panel. see Par 3.6	0 - 1	0	
P5	External probe correction	If the reading of the external probe is not correct it is possible to correct it in order to compensate any environmental factors.	-9 ÷ 9 K	0	
P6	-	Not available for this model	-	-	
P7	-	Not available for this model	-	-	
P8	Three way delay standby OFF UE	Management of three-way commutation delay for UE switch of standby	0 - 10	3	

Id Parameter	Parameter	Description	Range	Default	Customised value
t0	Central heating set point minimum temperature	Set this parameter from the control panel. see Par 3.6			
t1	Central heating set point maximum temperature	Set this parameter from the control panel. see Par 3.6			
t2	-	Not available for this model	-	-	
t3	Domestic hot water priority timing	Set this parameter from the control panel. see Par 3.6			
t4	Central heating ignitions timer	Set this parameter from the control panel. see Par 3.6			
t5	Central heating ramp timer	Set this parameter from the control panel. see Par 3.6			
t6	CH ignition delay from TA and CR request	Set this parameter from the control panel. see Par 3.6			
t7	Display lighting	Establishes the display lighting mode. 0 : the display lights up during use and lowers after 15 seconds of inactivity. In the case of anomaly the display flashes. 1 : display lighting off. 2 : the display is always lit up.	0 - 2	0	

Id Parameter	Parameter	Description	Range	Default	Customised value
t8	Display	Establishes what the indicator displays 19 (Fig. 49). "Summer" mode: 0: the indicator is always off 1: pump active displays the flow temperature, pump off the indicator is off "Winter" mode: 0: always displays the value set on the CH selector 1: pump active displays the flow temperature, pump off always displays the value set on the CH selector	0 - 1	1	
t9	Flow off temperature increase	Increases the flow off temperature at ignition only in the first 60 seconds. After the flame is detected, the temperature is increased by t9	0 - 15	0	

Id Parameter	Parameter	Description	Range	Default	Customised value
A0	Hydraulic model	Defines the type of hydraulics in the indoor unit (0 = instant; 1 = storage tank)	0 ÷ 1	0	
A1	Maximum pump speed	Set this parameter from the control panel. see Par 3.6			
A2	Minimum pump speed	Set this parameter from the control panel. see Par 3.6			
A3	Pump operating mode	Set this parameter from the control panel. see Par 3.6			
A4	Storage tank flow offset	Establishes the temperature to be added to the DHW set-point to calculate the flow set to heat the storage tank (only useful with a coupled storage tank and parameter A0=1).	5 ÷ 50 °C	25	
A5	Storage tank activation offset	Temperature value to be subtracted from the DHW set-point to calculate the boiler ignition to heat the indoor unit (only useful with a coupled storage tank and parameter A0=1).	0 ÷ 15 °C	3	
A6	DHW thermostat	Set this parameter from the control panel. see Par 3.6			

Id Parameter	Parameter	Description	Range	Default	Customised value
S0	DHW minimum no. of fan revs	Defines the operating speed of the fan at minimum DHW output	20 ÷ 60 (x 50 = RPM)	27 (G20) 26 (G31)	
S1	DHW maximum no. of fan revs	Defines the operating speed of the fan at maximum DHW output	S0 ÷ 140 (x 50 = RPM)	121 (G20) 115 (G31)	
S2	Ignition phase no. of fan revs	Defines the operating speed of the fan during the ignition phase	40 ÷ 80 (x 50 = RPM)	44 (G20) 44 (G31)	

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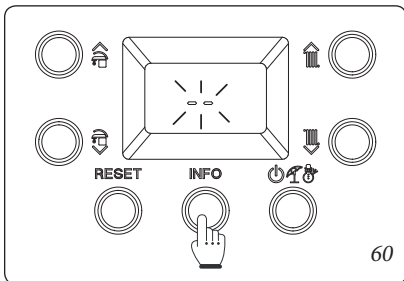
MANUTENTORE

3.13 PASSWORD-PROTECTED SPECIAL FUNCTIONS.

Attention: the boiler is equipped with some special functions, access to which is granted if this is in stand-by (⏻).

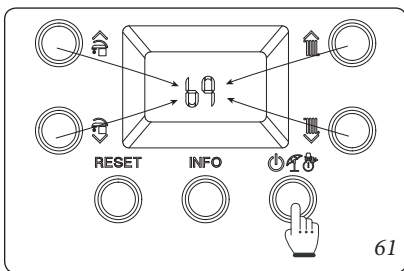
IMPORTANT NOTE: if the boiler is connected to the CAR^{V2} the “stand-by” function can only be activated via the remote control panel.

Press and hold the “INFO” button for more than 5 seconds. The display will show two dashes “--” flashing. Now enter the password to access the programming menus.



To enter the first digit use the buttons to adjust the DHW (⬆️⬆️), to enter the second digit use the buttons to adjust the central heating temperature “⬆️⬆️”.

To confirm the password and access the menu, press the operating mode button “⏻”.



Once the menu has been accessed, it is possible to cyclically scroll the three available functions (dI, MA, FU) by pressing the DHW buttons “⬆️⬆️”, to access the menu press the button “⏻” to exit wait 15 minutes or press the button “RESET”.

3.14 AUTOMATIC VENT FUNCTION (dI).

In the case of new central heating systems and in particular mode for floor systems, it is very important that deaeration is performed correctly. The function consists of the cyclic activation of the pump (100 s ON, 20 s OFF) and the 3-way valve (120 s D.H.W., 120 s C.H.).

The function is activated by accessing the special “dI” function as described in Paragraph 3.13.

The function lasts for 16.5 hours and it can be stopped by simply pressing the button “RESET”.

Activation of the function is signalled by the countdown shown on the indicator (20).

3.15 FLUE INSTALLATION (FU).

To activate the “Flue” function access the special functions as described in Paragraph 3.12 and select the “FU” function.

Attention: Before performing the test, ensure that the condensate drain trap has been filled correctly and check that there are no obstructions in the air intake circuit and flue exhaust.

Using this function activates the fan at a fixed speed (6000 rpm) for 15 minutes.

In this phase the symbols (⏻) and (⏻) are displayed flashing, while the symbol (⏻) is displayed permanently on, the function can be stopped by simply pressing the button “RESET”.

3.16 MAINTENANCE FUNCTION (MA).

Using this function you can activate some operating devices of the boiler without starting it, thus verifying the functionality.

The function is active for 15 minutes and it can be stopped by pressing the button “RESET”.

To activate the “Maintenance” function access the special functions as described in Paragraph 3.13 and select the “MA” function.

The following loads can be activated within this function:

- Fan (Fn): the fan is brought to ignition speed. Using the buttons “⬆️⬆️” you can increase or decrease the fan speed.
- Circulator (Pu): the circulator is brought to maximum speed, the relative speed is shown on the display, using the buttons “⬆️⬆️” you can increase or decrease the circulator speed.
- Three-way (3d): the symbol is shown on the display according to the position of the valve, DHW (⏻) or central heating (⏻), using the buttons “⬆️⬆️” you can change the valve position, taking care to wait for the completion of passage between statuses.
- Configurable relay (rI): if the configurable relay is present on the boiler P.C.B., it is activated.

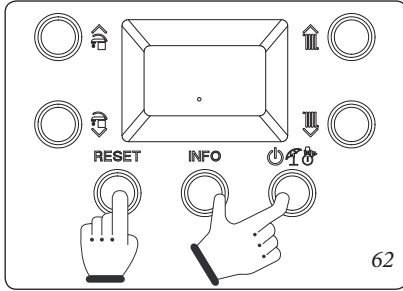
3.17 SCREED HEATER FUNCTION.

The boiler is equipped with a function to perform the thermal shock on new radiant panel systems, as required by the applicable standard.

Attention: contact the manufacturer of the radiant panels for the thermal shock characteristics and its correct execution.

N.B.: to be able to activate the function there must be no remote control connected, while in case of system divided into zones it must be properly connected, both hydraulically and electrically.

The function is activated from boiler in OFF by pressing and holding the buttons “Reset”, “Info” and “Stand-by” for more than 5 seconds



The function lasts in total 7 days, 3 days at the lower temperature set and 4 days at the higher temperature set (Fig. 63).

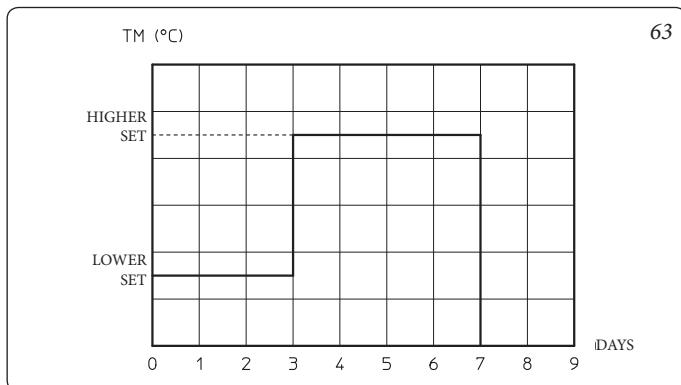
After activating the function, the lower set (range 20 ÷ 45 °C default = 25 °C) and the higher set (range 25 ÷ 55 °C default = 45 °C) appear in sequence.

The temperature is selected by means of the buttons “Up/Down” and confirmed by pressing the button “Power/Stand-by”.

The display now shows the countdown of days alternated with the current flow temperature, as well as the normal operating symbols of the boiler.

In case of failure or lack of supply voltage, the function is suspended and will resume when the normal operating conditions are reset from the point where it was interrupted.

When the time expires, the boiler automatically goes back to “Stand-by” mode, the function can also be stopped by pressing the button “Power/Stand-by”.

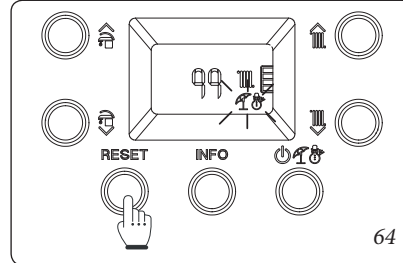


3.18 “CHIMNEY SWEEP FUNCTION”.

When activated, this function forces the boiler to variable output for 15 minutes.

In this state all adjustments are excluded and only the safety thermostat and the limit thermostat remain active. To activate the chimney sweep function, press the “RESET” button until activation of the function in the absence of DHW requests.

Its activation on the boiler display is confirmed by the indicators flashing at the same time (17 and 18 Fig. 47).



This function allows the technician to check the combustion parameters.

Once the function is activated, it is possible to select whether to make the check in CH status or DHW status by opening any hot water cock.

Using the buttons “Up/Down” you can select between three predefined power levels:

- “0%”
- Max CH output (P2)
- Max DHW output (P0).

While by using the buttons “Up/Down” you can select the power from 0% to max DHW output (P0), with intervals of 1%.

The central heating or DHW operating mode is displayed by the relative symbols “CH” or “DHW”.

After the checks, deactivate the function by switching the indoor unit off and then back on again.

3.19 PUMP ANTI-BLOCK FUNCTION.

The boiler has a function that starts the pump at least once every 24 hours for the duration of 30 seconds in order to reduce the risk of the pump becoming blocked due to prolonged inactivity.

3.20 THREE-WAY ANTI-BLOCK SYSTEM

Both in “domestic hot water” and in “domestic hot water-central heating” phase the boiler is equipped with a function that starts the three-way motorised group 24 hours after it was last in operation, running it for a full cycle so as to reduce the risk of the three-way group becoming blocked due to prolonged inactivity.

3.21 RADIATORS ANTIFREEZE FUNCTION.

If the system return water is below 4°C, the boiler starts up until reaching 42°C.

3.22 ROOM ANTI-FREEZE FUNCTION.

When the room temperature drops below 5°C (adjustable, see special functions chapter) a central heating request is made at minimum of the power programmed. This situation remains active until there is a variation in room temperature of 0.6°C equal to 5.6°C measured in the room where the remote panel is positioned.

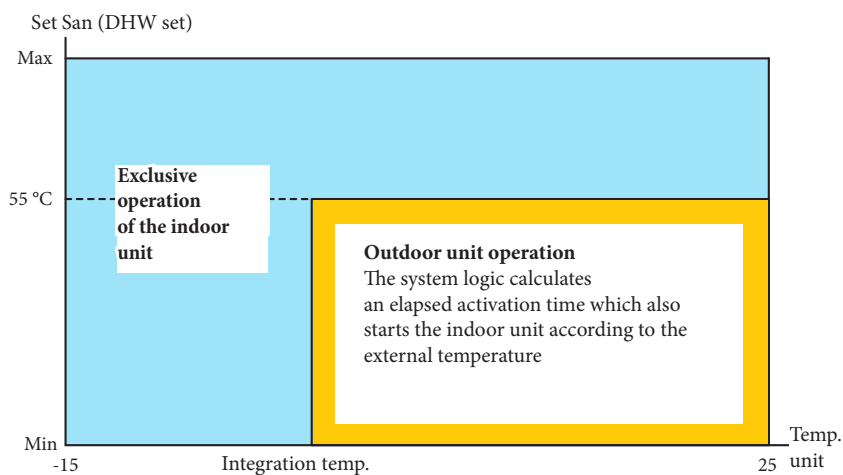
3.23 LOGIC OF OPERATION.

- **Central heating mode.** Following a request during the room heating mode, the electronics decide, according to the external temperature, whether to activate the outdoor unit, or (with cold temperatures) the indoor unit (Fig. 65):

The management electronics select which heat source to be used according to the combination of the parameters set in the integration menu of the control panel. The indoor unit may activate when the external conditions are favourable to the operation of the outdoor unit; this may happen after a time proportional to the "central heating integration standby time" parameter.

Alternatively, you can also set a fixed switching outdoor temperature (manual mode in the parameter "integration mode" setting the temperature with "manual activation temperature"). The DHW request is prioritised compared to a room heating request.

Operation in central heating mode



3.24 INDOOR UNIT CASING DISASSEMBLY.

To facilitate indoor unit maintenance the casing can be completely removed as follows:

• **Lower grid (Fig. 66).**

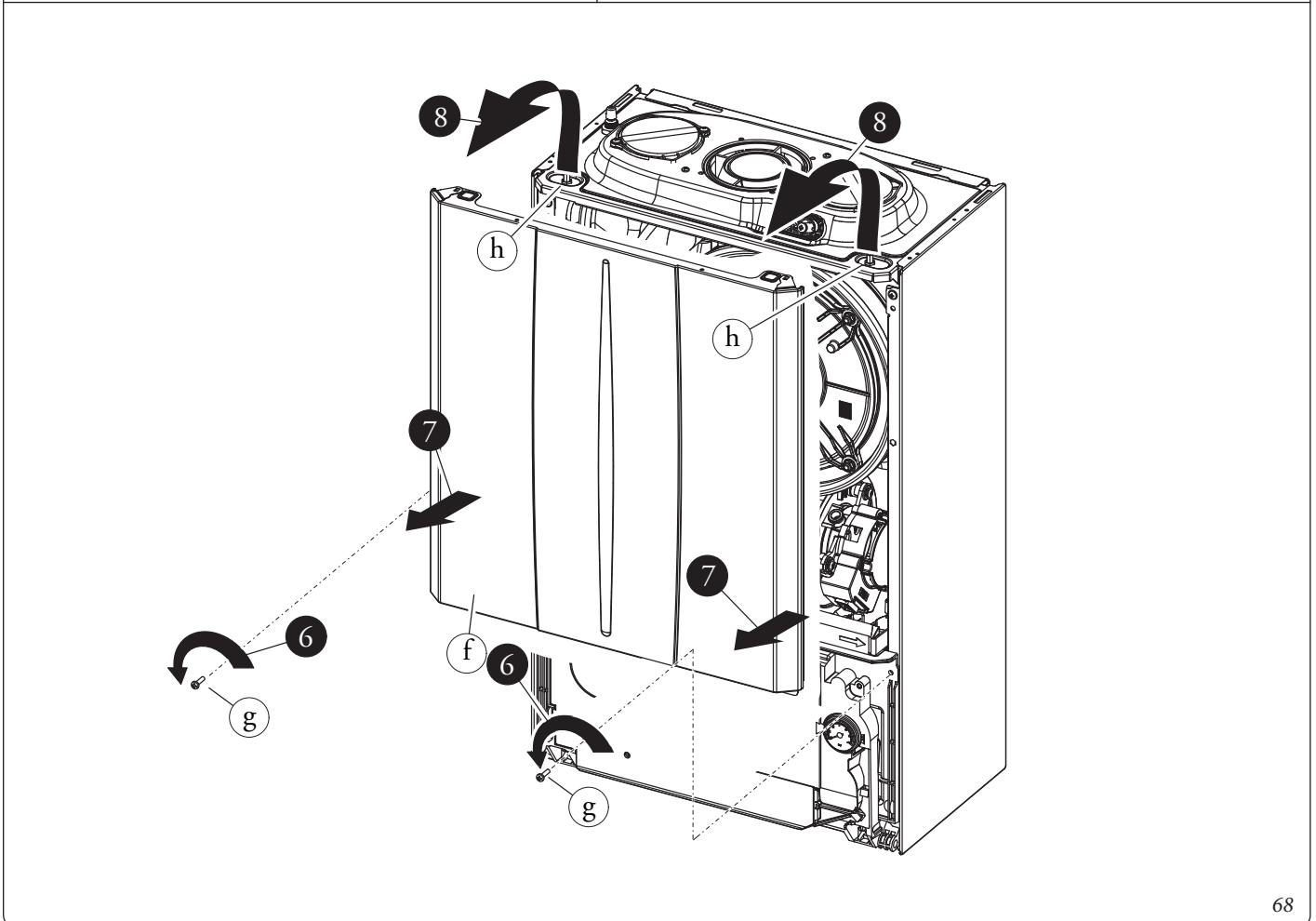
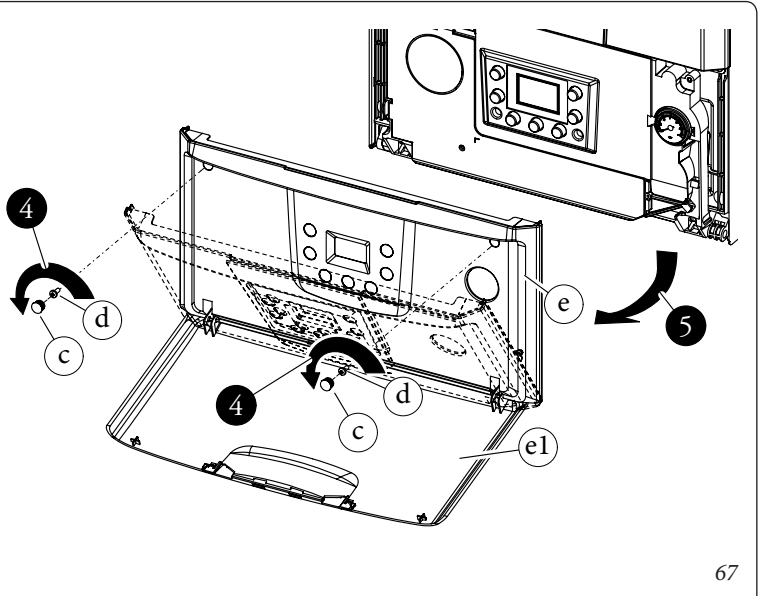
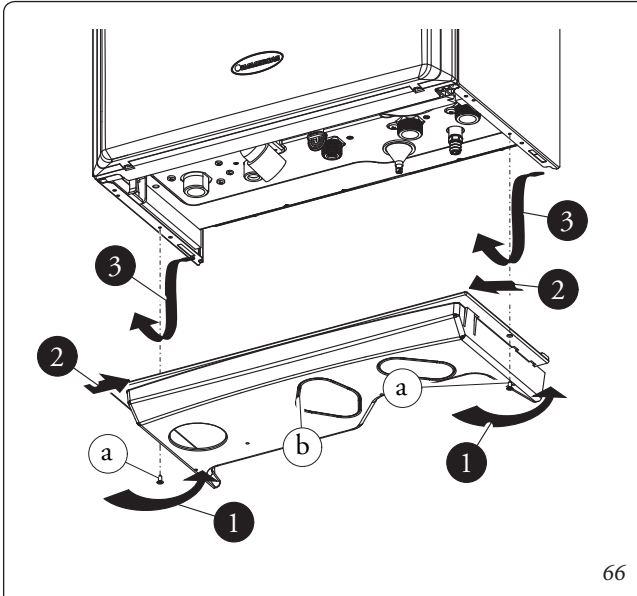
- 1) Loosen the two screws (a).
- 2) Press the hooks inwards, which block the lower grid (b).
- 3) Remove the grid (b).

• **Front panel (Fig. 67).**

- 4) Remove the cover caps (c) and loosen screws (d).
- 5) Pull the front panel (e) towards you and release it from its lower seat.

• **Front (Fig. 68).**

- 6) Loosen the two screws (g).
- 7) Pull the front (f) slightly towards you.
- 8) Release front (f) from pins (h) pulling it towards you while pushing it upwards at the same time.

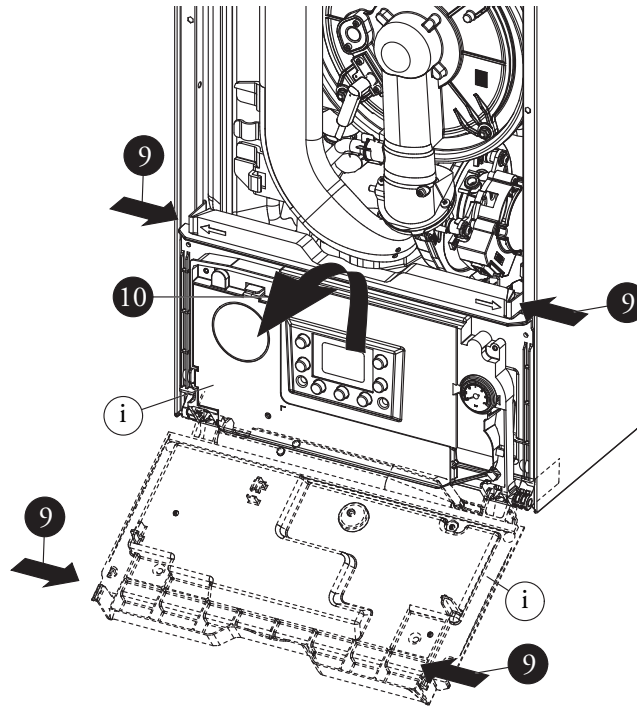


• Control panel (Fig. 69).

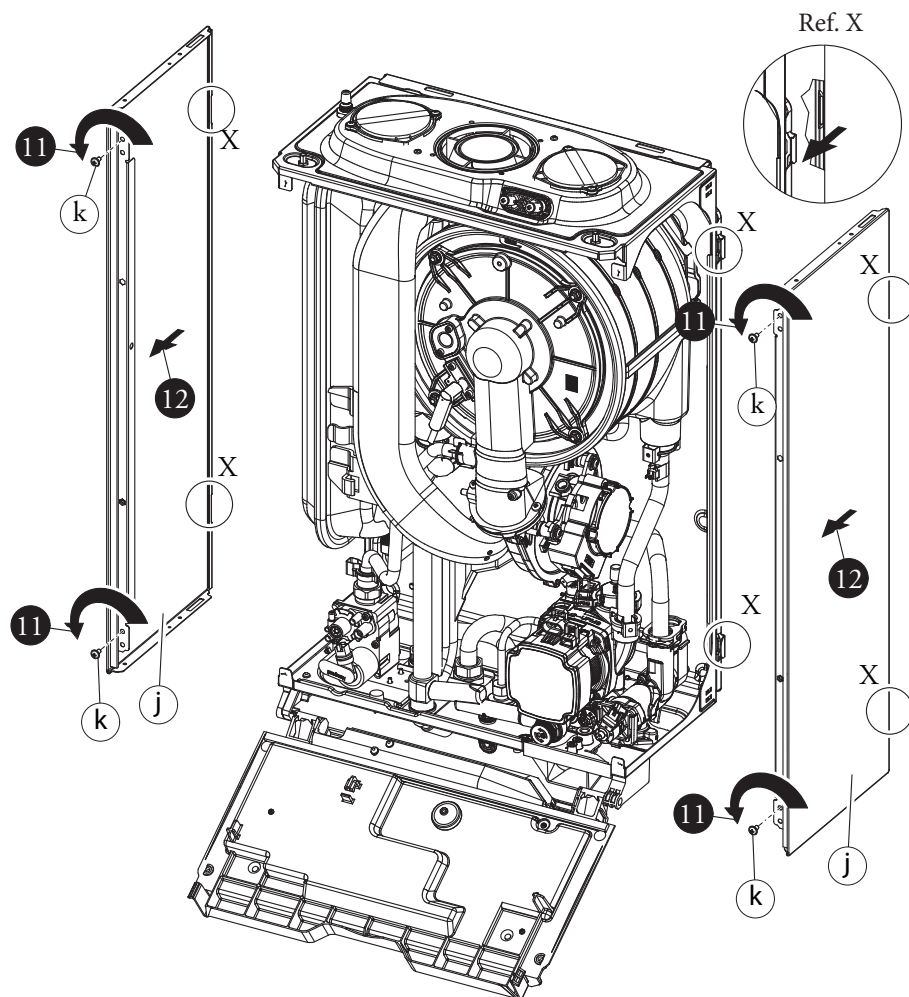
- 9) Press the hooks on the side of the control panel (i).
- 10) Tilt the control panel (i) towards you.

• Sides (Fig. 70).

- 11) Loosen screws (k) of side fastening (j).
- 12) Remove the sides by extracting them from their rear seat (Ref. X).



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4 TECHNICAL DATA.

4.1 INDOOR UNIT VARIABLE THERMAL OUTPUT.

N.B.: the power data in the table has been obtained with intake-ex-

haust pipe measuring 0.5 m in length. Gas flow rates refer to net calorific value below a temperature of 15°C and at a pressure of 1013 mbar.

		METHANE (G20)		PROPANE (G31)	
HEAT THERMAL	HEAT THERMAL	MODULATION	GAS FLOW RATE BURNER	MODULATION	GAS FLOW RATE BURNER
(kW)	(kcal/h)	(%)	(m ³ /h)	(%)	(kg/h)
28.3	24295	100	3.06	100	2.25
27.5	23650	97	2.98	97	2.19
26.5	22790	93	2.87	92	2.11
25.5	21930	89	2.76	88	2.03
24.1	20717	84	2.61	82	1.91
23.5	20210	81	2.54	80	1.87
22.7	19542	78	2.46	75	1.81
21.5	18490	74	2.33	71	1.71
20.5	17630	70	2.22	67	1.63
19.5	16770	66	2.11	63	1.55
18.5	15910	62	2.01	59	1.47
17.5	15050	58	1.90	55	1.39
16.5	14190	54	1.79	51	1.31
15.5	13330	50	1.68	47	1.24
14.5	12470	45	1.58	42	1.16
13.5	11610	41	1.47	38	1.08
12.5	10750	37	1.36	34	1.00
11.5	9890	33	1.26	30	0.92
10.5	9030	29	1.15	26	0.84
9.5	8170	24	1.04	22	0.76
8.5	7310	20	0.93	18	0.68
7.5	6450	16	0.82	14	0.61
6.5	5590	11	0.72	10	0.53
5.5	4730	7	0.61	6	0.45
4.5	3870	2	0.50	2	0.37
4.3	3689	1	0.48	1	0.35

4.2 COMBUSTION PARAMETERS.

		G20	G31
Supply pressure	mbar (mm H ₂ O)	20 (204)	37 (377)
Gas nozzle diameter	mm	5.00	3.80
Flue flow rate at nominal heat output	kg/h (g/s)	44 (12.22) - 38 (10.56)	43 (11.94) - 37 (10.28)
Flue flow rate at min heat output	kg/h (g/s)	8 (2.22)	7 (1.94)
CO ₂ at Q. Nom./Acc./Min.	%	9.70 (+ 0.3 / - 0.1) / 8.80 (+ 0.1 / - 0.3)	11.40 (+ 0.10 / - 0.30) / 10.60 (± 0.20)
CO with 0% O ₂ at Nom./Min. Q.	ppm	300 / 6	430 / 9
NO _x with 0% O ₂ at Nom./Min. Q.	mg/kWh	59 / 34	85 / 55
Flue temperature at nominal output	°C	70	70
Flue temperature at minimum output	°C	64	63
Max air combustion temperature	°C	50	50
Intake / exhaust available head 6050 revs	Pa	140	---
Intake / exhaust available head 6050 revs	Pa	200	---
Intake / exhaust available head 6300 revs	Pa	240	---
Intake / exhaust available head 5750 revs	Pa	---	140
Intake / exhaust available head 5750 revs	Pa	---	200
Intake / exhaust available head 6060 revs	Pa	---	240

Combustion parameters: measuring conditions of useful efficiency (flow temperature/return temperature= 80 / 60 °C), ambient temperature reference = 15°C.

4.3 INDOOR UNIT DATA TABLE.

Domestic hot water nominal heat input	kW (kcal/h)	28.8 (24773)
Central heating nominal heat input	kW (kcal/h)	24.6 (21194)
Minimum heat input	kW (kcal/h)	4.5 (3862)
Domestic hot water nominal heat output (useful)	kW (kcal/h)	28.3 (24295)
Central heating nominal heat output (useful)	kW (kcal/h)	24.1 (20717)
Minimum heat output (useful)	kW (kcal/h)	4.3 (3689)
*Effective thermal efficiency 80/60 Nom./Min.	%	97.8 / 95.5
*Effective thermal efficiency 50/30 Nom./Min.	%	106.1 / 106.1
*Effective thermal efficiency 40/30 Nom./Min.	%	108.2 / 108.3
Casing losses with burner On/Off (80-60°C)	%	0.34 / 0.20
Chimney losses with burner On/Off (80-60°C)	%	0.02 / 1.70
Central heating circuit max. operating pressure	bar (MPa)	3.0 (0.3)
Maximum heating temperature	°C	90
Adjustable central heating temperature (min operating field)	°C	20 - 50
Adjustable central heating temperature (max operating field)	°C	55 - 85
System expansion vessel total volume	l	5.8
Expansion vessel pre-charged pressure	bar (MPa)	1.0 (0.1)
Appliance water content	l	2.2
Head available with 1000 l/h flow rate	kPa (m H ₂ O)	40.6 (4.1)
Hot water production useful heat output	kW (kcal/h)	28.3 (24295)
Domestic hot water adjustable temperature	°C	30 - 60
Domestic hot water circuit min. pressure (dynamic)	bar (MPa)	0,3 (0,03)
Domestic hot water circuit max. operating pressure	bar (MPa)	10 (1,0)
Flow rate capacity in continuous duty (ΔT 30°C)	l/min	14,10
Full Indoor Unit weight	kg	35.8
Empty Indoor Unit weight	kg	33.6
Electrical connection	V/Hz	230 / 50
Nominal power absorption	A	0.60
Installed electric power	W	80
Pump absorbed power	W	41
EEI value	-	≤ 0.20 - Part. 3
Fan power absorbed power	W	87.9
Equipment electrical system protection	-	IPX5D
Max temperature of combustion products	°C	75
Max. flue overheating temperature	°C	120
Ambient operating temperature range	°C	-5 ÷ +50
Ambient operating temperature range with optional antifreeze kit	°C	-15 ÷ +50
NO _x class	-	6
Weighted NO _x	mg/kWh	35
Weighted CO	mg/kWh	20
(**)Type of appliance	C13 - C33 - C43 - C53 - C83 - C93 - B23 - B53p	
Category	II 2H3P	

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- The data relating to domestic hot water performance refer to a dynamic inlet pressure of 2 bar and an inlet temperature of 15°C; the values are measured immediately at the boiler outlet, considering that to obtain the data declared, mixing with cold water is required.

- * Efficiencies refer to the net calorific value.

- The weighted NO_x value refer to the net calorific value.

4.4 OUTDOOR UNIT TECHNICAL DATA TABLES.

The data shown below refer to the Audax.DK4 outdoor unit.

		Audax.DK4
Nominal data for low temperature applications *		
Nominal central heating output	kW	3,98
Absorption	kW	0,87
COP	kW/kW	4,55
Nominal data for intermediate temperature applications **		
Nominal central heating output	kW	3,80
Absorption	kW	1,15
COP	kW/kW	3,30
Nominal data for average temperature applications ***		
Nominal central heating output	kW	3,32
Absorption	kW	1,33
COP	kW/kW	2,50

* Central heating mode status: heat exchanger water inlet/remains at 30 °C/35 °C, outdoor air temperature 7 °C db/6 °C wb. Performance in compliance with EN 14511.

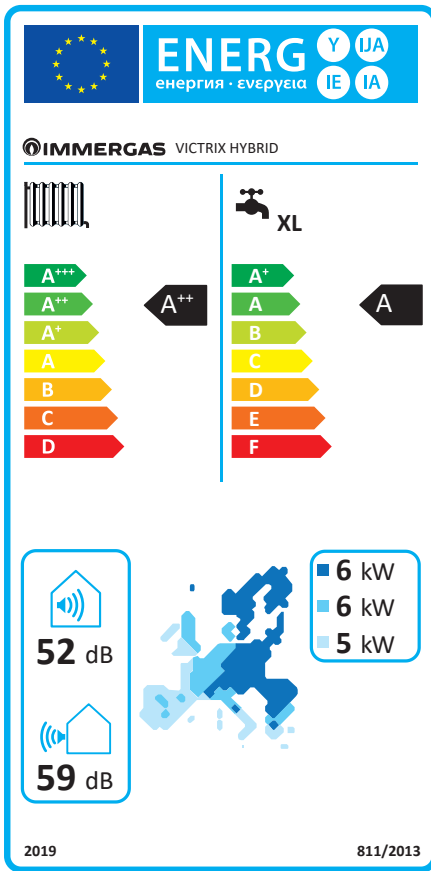
** Central heating mode status: heat exchanger water inlet/remains at 40 °C/45 °C, outdoor air temperature 7 °C db/6 °C wb.

*** Central heating mode status: inlet/remains at 47 °C/55 °C, outdoor air temperature 7 °C db/6 °C wb. Performance in compliance with EN 14511.

Outdoor unit data.

Ambient operating temperature range	°C	-15 ÷ 35
Water content	l	2,0
Central heating circuit maximum operating pressure	kPa	300
Electrical connection	V/Hz	230 / 50
Maximum input	A	10,3
Electric plant protection	-	IPX4D
Empty outdoor unit weight	kg	45,0
Full outdoor unit weight	kg	47,0

4.5 PRODUCT FICHE (IN COMPLIANCE WITH REGULATION 811/2013).



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Average temperature (47/55)

Parameter	value	Colder zones	Average zones	Hotter zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	4770	3800	1674
Seasonal space heating energy efficiency (η_s)	η_s %	122	128	156
Nominal heat output	kW	6	6	5

Low temperature (30/35)

Parameter	value	Average zones
Annual energy consumption for the central heating mode (Q_{HE})	kWh/year	2454
Seasonal space heating energy efficiency (η_s)	η_s %	165
Nominal heat output	kW	5

Average temperature table (47/55) average zones

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Model: Victrix Hybrid							
Air/water heat pump: yes							
Water/water heat pump: no							
Brine/water heat pump: no							
Low temperature heat pump: no							
With additional central heating device: yes							
Mixed central heating device with heat pump: yes							
The parameters are declared for average temperature application, except for low temperature heat pumps. The parameters for low temperature heat pumps are declared for low temperature application							
The parameters are declared for average climatic conditions							
Element	Symbol	Value	Unit	Element	Symbol	Value	Unit
<u>Nominal heat output</u>	<i>Nominal output</i>	6	kW	Room central heating seasonal energy efficiency	η_s	128	%
Central heating capacity declared with a partial load and indoor temperature equivalent to 20°C and outdoor temperature Tj				Central heating capacity declared with a partial load and indoor temperature equivalent to 20°C and outdoor temperature Tj			
Tj = - 7 °C	<i>Pdh</i>	-	kW	Tj = - 7 °C	<i>COPd</i>	-	-
Tj = + 2 °C	<i>Pdh</i>	3,0	kW	Tj = + 2 °C	<i>COPd</i>	3,19	-
Tj = + 7 °C	<i>Pdh</i>	3,2	kW	Tj = + 7 °C	<i>COPd</i>	4,52	-
Tj = + 12 °C	<i>Pdh</i>	3,9	kW	Tj = + 12 °C	<i>COPd</i>	6,42	-
Tj = bivalent temperature	<i>Pdh</i>	3,0	kW	Tj = bivalent temperature	<i>COPd</i>	3,19	-
Tj = operating limit temperature	<i>Pdh</i>	2,5	kW	Tj = operating limit temperature	<i>COPd</i>	2,49	-
for air/water heat pumps: Tj = - 15 °C (if TOL < - 20 °C)	<i>Pdh</i>	-	kW	for air/water heat pumps: Tj = - 15 °C (se TOL < - 20 °C)	<i>COPd</i>	-	-
Bivalent temperature	<i>T_{biv}</i>	2	°C	for air/water heat pumps: operating limit temperature	<i>TOL</i>	- 3	°C
Central heating capacity cycle intervals	<i>Pcyc</i>	-	kW	Cycle intervals efficiency	<i>COPcyc o PERcyc</i>	-	-
Degradation coefficient	<i>Cdh</i>	1,0	—	Water heating temperature operating limit	<i>WTOL</i>	-	°C
Different mode of energy consumption from the active mode				Additional heating appliance			
OFF mode	<i>P_{OFF}</i>	0,015	kW	<u>Nominal heat output</u>	<i>Psup</i>	24	kW
Thermostat mode off	<i>P_{TO}</i>	0,015	kW	Type of energy supply voltage	gas		
Standby mode	<i>P_{SB}</i>	0,015	kW				
Guard heating mode	<i>P_{CK}</i>	0,000	kW	For air/water heat pumps: nominal air output to outside	—	1698	m ³ /h
Other items				For water or brine/water heat pumps: nominal flow of brine or water, outdoor heat exchanger	—	-	m ³ /h
Capacity control	Variable						
Indoor/outdoor sound level	<i>int. - est. L_{WA}</i>	48 - 59	dB				
Annual energy consumption	<i>Q_{HE}</i>	3800	kWh o GJ				
For mixed central heating appliances with a heat pump							
Stated load profile	-			Water central heating energy efficiency	η_{wh}	-	%
Daily electrical power consumption	<i>Q_{elec}</i>	-	kWh	Daily fuel consumption	<i>Q_{fuel}</i>	-	kWh
annual energy consumption	<i>AEC</i>	-	kWh	Annual fuel consumption	<i>AFC</i>	-	GJ
Contact information	Immergas s.p.a via Cisa Ligure n.95						

4.6 PARAMETERS FOR FILLING IN THE PACKAGE FICHE.

In case you should wish to install an assembly, starting from the Victrix Hybrid, use the assembly charts in Fig. 73.

To complete it properly, fill the relevant spaces (as shown in the package fiche facsimile (Fig. 71) with the values shown in tables (Fig. 72).

The remaining values must be obtained from the technical data sheets of the products used to make up the assembly (e.g. solar devices, integration heat pumps, temperature controllers).

Use board (Fig. 73) for “assemblies” related to the central heating mode (e.g.: boiler + temperature controller).

N.B.: since the product is supplied by default with a temperature controller, the package fiche must always be filled in.

Facsimile for filling in the package fiche for room central heating systems.

Room central heating seasonal energy efficiency of the heat pump	<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">1</div> <div style="border: 1px solid black; display: inline-block; width: 30px; height: 20px; vertical-align: middle;"></div> %																														
Temperature control From temperature control board	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> Class I = 1 %, Class II = 2 %, Class III = 1,5 %, Class IV = 2 %, Class V = 3 %, Class VI = 4 %, Class VII = 3,5 %, Class VIII = 5 % </div> <div style="text-align: right;"> <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">2</div> <div style="border: 1px solid black; display: inline-block; width: 30px; height: 20px; vertical-align: middle;"></div> % </div>																														
Supplementary boiler From boiler board	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;"> Seasonal central heating energy efficiency (in %) </div> <div style="text-align: right;"> <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">3</div> <div style="border: 1px solid black; display: inline-block; width: 30px; height: 20px; vertical-align: middle;"></div> % </div>																														
Solar contribution <i>From the board of the solar device</i>	<div style="display: flex; justify-content: space-between; margin-bottom: 5px;"> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;"> Dimensions of the manifold (in m²) </div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;"> Volume of the tank (in m³) </div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;"> Efficiency of the manifold (in %) </div> <div style="border: 1px solid black; padding: 2px 5px; font-size: 8px;"> Classification of the tank A* = 0,95, A = 0,91, B = 0,86, C = 0,83, D-G = 0,81 </div> </div> <div style="text-align: right;"> <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">4</div> <div style="border: 1px solid black; display: inline-block; width: 30px; height: 20px; vertical-align: middle;"></div> % </div>																														
Water heating energy efficiency class of the set in average climate conditions	<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">5</div> <div style="border: 1px solid black; display: inline-block; width: 30px; height: 20px; vertical-align: middle;"></div> %																														
Water heating energy efficiency class of the set in average climate conditions	<div style="border: 1px solid black; padding: 10px; text-align: center; margin-bottom: 5px;"> <table style="margin: 0 auto; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> <td style="border: 1px solid black; width: 20px; height: 15px; margin: 2px;"></td> </tr> <tr> <td style="font-weight: bold; font-size: 12px;">G</td> <td style="font-weight: bold; font-size: 12px;">F</td> <td style="font-weight: bold; font-size: 12px;">E</td> <td style="font-weight: bold; font-size: 12px;">D</td> <td style="font-weight: bold; font-size: 12px;">C</td> <td style="font-weight: bold; font-size: 12px;">B</td> <td style="font-weight: bold; font-size: 12px;">A</td> <td style="font-weight: bold; font-size: 12px;">A*</td> <td style="font-weight: bold; font-size: 12px;">A**</td> <td style="font-weight: bold; font-size: 12px;">A***</td> </tr> <tr> <td style="font-size: 10px;">< 30 %</td> <td style="font-size: 10px;">≥ 30 %</td> <td style="font-size: 10px;">≥ 34 %</td> <td style="font-size: 10px;">≥ 36 %</td> <td style="font-size: 10px;">≥ 75 %</td> <td style="font-size: 10px;">≥ 82 %</td> <td style="font-size: 10px;">≥ 90 %</td> <td style="font-size: 10px;">≥ 98 %</td> <td style="font-size: 10px;">≥ 125 %</td> <td style="font-size: 10px;">≥ 150 %</td> </tr> </table> </div>											G	F	E	D	C	B	A	A*	A**	A***	< 30 %	≥ 30 %	≥ 34 %	≥ 36 %	≥ 75 %	≥ 82 %	≥ 90 %	≥ 98 %	≥ 125 %	≥ 150 %
G	F	E	D	C	B	A	A*	A**	A***																						
< 30 %	≥ 30 %	≥ 34 %	≥ 36 %	≥ 75 %	≥ 82 %	≥ 90 %	≥ 98 %	≥ 125 %	≥ 150 %																						
Water heating energy efficiency class in colder and hotter climate conditions	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Colder: <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">5</div> - 'V' = <div style="border: 1px solid black; display: inline-block; width: 30px; height: 20px; vertical-align: middle;"></div> % </div> <div style="width: 45%;"> Hotter: <div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">5</div> + 'VI' = <div style="border: 1px solid black; display: inline-block; width: 30px; height: 20px; vertical-align: middle;"></div> % </div> </div>																														
<i>The energy efficiency of the set of products indicated in this sheet may not reflect the actual energy efficiency after installation since such efficiency is affected by additional factors, such as the heat loss in the distribution system and the size of the products compared to the size and features of the building.</i>																															

Parameters to fill in the average temperature package fiche (47/55).

Parameter	Victrix Hybrid		
	Colder zones ■	Average zones ■	Hotter zones ■
'I'	121	128	157
'II'	*	*	*
'III'	0,26	0,20	0,16
'IV'	0,10	0,08	0,06

**to be established by means of table 6 of Regulation 811/2013 in case of an "assembly" including a indoor unit to integrate with the heat pump. In this case, the Victrix Hybrid must be considered as the main appliance of the assembly.*

Parameter	Victrix Hybrid
'VI'	Remote control class supplied by default

Room central heating system package fiche.

Room central heating seasonal energy efficiency of the heat pump 1 %

Temperature control 2 %
 From temperature control board

Class I = 1 %, Class II = 2 %,
 Class III = 1,5 %, Class IV = 2 %,
 Class V = 3 %, Class VI = 4 %,
 Class VII = 3,5 %, Class VIII = 5 %

Supplementary boiler 3 %
 From boiler board

Seasonal central heating energy efficiency (in %)

(- _____) x _____ = -

Solar contribution
 From the board of the solar device

Dimensions of the manifold (in m²)

Volume of the tank (in m³)

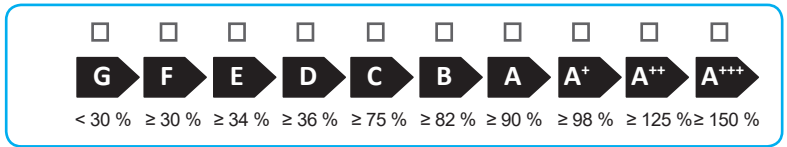
Efficiency of the manifold (in %)

Classification of the tank
 A* = 0,95, A = 0,91,
 B = 0,86, C = 0,83,
 D-G = 0,81

(___ x + ___ x) x 0,45 x (/ 100) x = + 4 %

Water heating energy efficiency of the set in average climate conditions 5 %

Water heating energy efficiency class of the set in average climate conditions



Water heating energy efficiency class in colder and hotter climate conditions

Colder: 5 - ___ = % Hotter: 5 + ___ = %

The energy efficiency of the set of products indicated in this sheet may not reflect the actual energy efficiency after installation since such efficiency is affected by additional factors, such as the heat loss in the distribution system and the size of the products compared to the size and features of the building.





This instruction booklet
is made of ecological paper



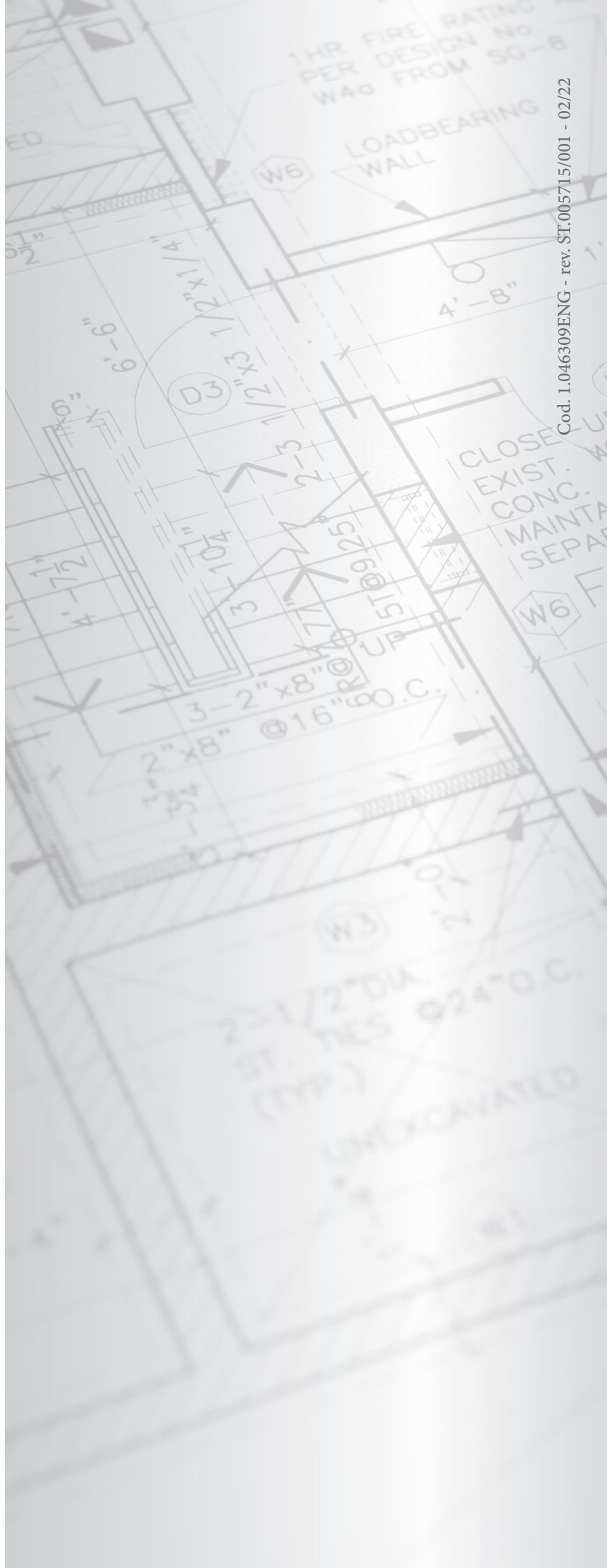
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Fax 0522.680617



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