

MANUAL  
OWNER'S

**Instructions and recommendations** **IE**  
Installer  
User  
Maintenance technician



# JULIUS ECO 11-14

Wall-hung instantaneous water heater open chamber (type B) and natural draught





## **Dear Customer,**

*Congratulations for having chosen a top-quality Immergas product, able to assure well-being and safety for a long period of time. As an Immergas Customer, you can also count on a qualified after-sales service, prepared and updated to guarantee constant efficiency of your water heater. Read the following pages carefully: you will be able to draw useful tips on the proper use of the device, compliance with which will confirm your satisfaction with the Immergas product. For assistance and scheduled maintenance contact Authorised After-Sales centres: they have original spare parts and are specifically trained directly by the manufacturer.*

## **General warnings**

*All Immergas products are protected with suitable transport packaging.*

*The material must be stored in a dry place protected from the weather.*

*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.*

*This instructions manual provides technical information for installing Immergas water heaters. As for the other issues related to water heater installation (e.g. safety in the work site, environment protection, injury prevention), it is necessary to comply with the provisions of the regulations in force and the principles of good practice.*

*Installation and maintenance must be performed in compliance with the regulations in force, according to the manufacturer's instructions and by an authorised company, which has the specific technical skills in the system sector, as provided for by Law.*

*Improper installation or assembly of the Immergas appliance 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.*

*Maintenance must be carried out by an authorised company. The Authorised After-sales Service represents a guarantee of qualification and professionalism.*

*The appliance 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 book (or however supplied by the manufacturer), the manufacturer is excluded from any contractual and extra-contractual liability for any damage and the appliance 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.

## INDEX

| INSTALLER |                                     | USER |  | MAINTENANCE TECHNICIAN |  |
|-----------|-------------------------------------|------|--|------------------------|--|
|           | page                                |      | page   |                        | page   |
| 1         | Installation water heater.....      | 2    | Instructions for use and maintenance... 9              | 3                      | Control and maintenance..... 12                                |
| 1.1       | Installation recommendations.....   | 2.1  | Cleaning and maintenance..... 9                        | 3.1                    | Hydraulic Diagram..... 12                                      |
| 1.2       | Main dimensions.....                | 2.2  | Ventilation of the rooms..... 9                        | 3.2                    | Chimney safety thermostat reset..... 13                        |
| 1.3       | Gas connection.....                 | 2.3  | General warnings..... 9                                | 3.3                    | Wiring diagram..... 13   |
| 1.4       | Hydraulic connection.....           | 2.4  | Control panel..... 9                                   | 3.4                    | Possible problems and their causes..... 14                     |
| 1.5       | Electric power supply.....          | 2.5  | Use of the water heater..... 9                         | 3.5                    | Converting the water heater to other types of gas..... 14      |
| 1.6       | Ventilation of the rooms.....       | 2.6  | Description of the anomalies..... 10                   | 3.6                    | Transformation from methane to LPG. 14                         |
| 1.7       | Flue ducts.....                     | 2.7  | Switch-off of the water heater..... 11                 | 3.7                    | Transformation from LPG to methane. 15                         |
| 1.8       | Flues/Chimneys.....                 | 2.8  | Battery replacement..... 11                            | 3.8                    | Possible adjustments..... 15                                   |
| 1.9       | Gas system start-up.....            | 2.9  | Emptying the water heater..... 11                      | 3.9                    | Yearly appliance check and maintenance..... 16                 |
| 1.10      | Appliance start-up (ignition). .... | 2.10 | Protection against freezing..... 11                    | 3.10                   | Casing removal..... 16   |
| 1.11      | Kits available on request.....      | 2.11 | Cleaning the case..... 11                              | 3.11                   | Combustion parameters..... 16                                  |
| 1.12      | Water heater components.....        | 2.12 | Decommissioning..... 11                                | 3.12                   | Technical data..... 17   |
|           |                                     | 2.13 | Gas system not used for periods over 12 months..... 11 | 3.13                   | Product fiche (in compliance with Regulation 812/2013)..... 18 |

# 1 INSTALLATION WATER HEATER.

## 1.1 INSTALLATION RECOMMENDATIONS.

The Julius Eco 11-14 water heater has been designed for wall installation. It must be used for the production of domestic hot water and similar purposes. In the case of wall installation 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. 1-1).

The place of installation of the appliance 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 and special maintenance);
- removal (outdoors in the place for loading and transporting the appliances and components) as well as their eventual replacement with appliances and/or equivalent components.

Only professionally qualified 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 procedures.

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

Installation of the Julius Eco 11-14 water heater 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 systems powered with the above-mentioned gas in rooms where the floor is at a lower quota than the average external country one).

Before installing the appliance, ensure it has been 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 normal servicing; therefore it is advisable to leave clearance of at least 50 cm between the water heater casing and the vertical sides of the cabinet (Ref. Fig. 1-1A). Leave adequate space above the water heater for possible water and flue removal connections.

Do not rest objects on the appliance.

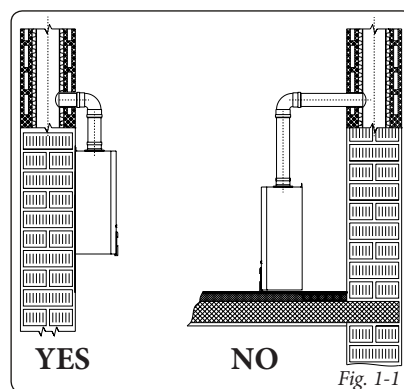
Keep all flammable objects away from the appliance (paper, rags, plastic, polystyrene, etc.).

It is recommended not to position household appliances under the water heater because they could undergo damage in the case of leaks from the hydraulic fittings. If this is not the case, the manufacturer cannot be considered liable for any damage caused to the household appliances. For the aforementioned reasons, we recommend not placing furnishings, furniture, etc. under the water heater.

In the event of malfunctions, faults or incorrect operation, turn the appliance off and contact an authorised company (e.g. the Authorised Technical Assistance centre, which has specifically trained staff and original spare parts). Do not attempt to modify or repair the appliance alone. Failure to comply with the above implies personal responsibility and invalidates the warranty.

### • Installation Standards:

- these water heaters cannot be installed in bedrooms, studio flats and bathrooms. They also cannot be installed in rooms with wood (or solid fuel) burning heat generators and in communicating rooms.
- Installation in places with a fire risk is prohibited (for example: underground car parks, garages), potentially dangerous places, gas appliances and relative flue ducts.
- Installation on the vertical projection of cooking hobs is forbidden.
- 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.
- It is forbidden to install the water heater inside a closed recessed frame (e.g. Omni Container).
- Type B open chamber water heaters 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.). These may be damaging for the components of the appliance and jeopardise functioning.
- They must also be installed in an environment in which the temperature cannot fall below 0°C. They must not be exposed to atmospheric agents.

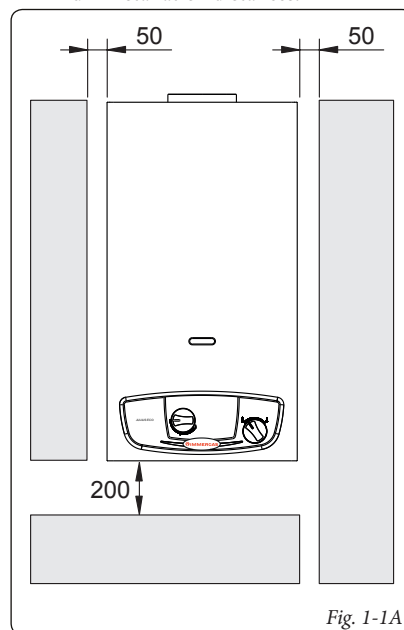


**Attention:** wall mounting of the water heater must guarantee stable and efficient support for the generator.

The dowels, which come as standard, can 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 mount.

These appliances are used to heat water to below boiling temperature in atmospheric pressure. They must be connected to a DHW distribution network suited to their performance and power.

### Minimum installation distances.



INSTALLER

USER

MAINTENANCE TECHNICIAN

1.2 MAIN DIMENSIONS.

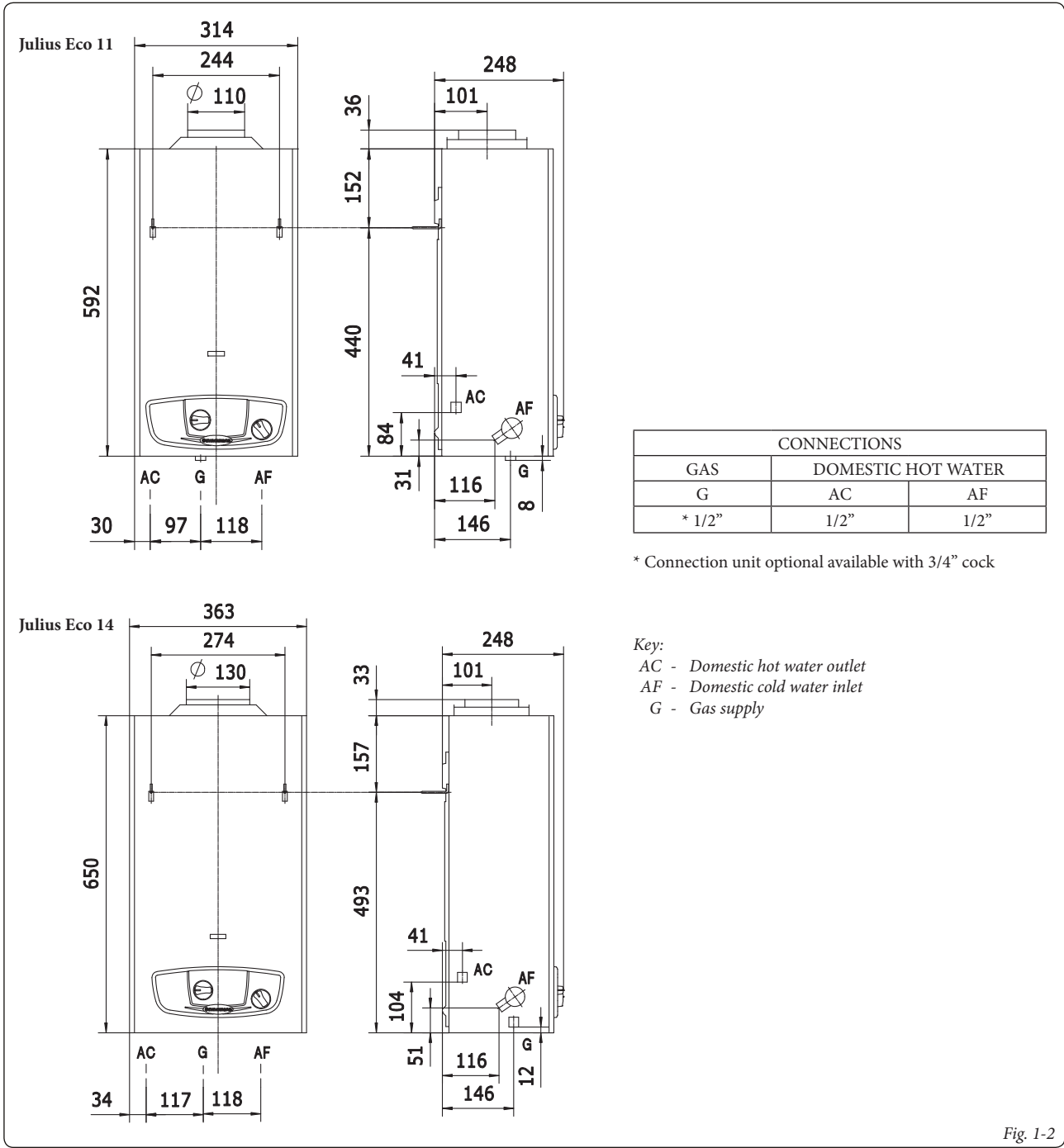


Fig. 1-2

1.3 GAS CONNECTION.

Our water heaters are designed to operate with methane gas (G20) and LPG. Supply pipes must be the same as or larger than the 1/2" G water heater fitting. Before connecting the gas line, carefully clean inside all the fuel feed system pipes to remove any residue that could impair water heater efficiency. Also make sure the gas corresponds to that for which the water heater is prepared (see water heater data-plate). If different, the water heater must be converted for operation with the other type 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 water heater, which must comply with EN437 and its attachment, as insufficient levels may reduce generator output and cause discomfort to the user.

A type-approved and certified gas cut-off cock must be inserted on the gas pipe before connection to the appliance.

Ensure correct gas cock connection, by inserting a flat gasket. 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).

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

**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.

#### 1.4 HYDRAULIC CONNECTION.

**Attention:** before connecting the water heater and so as not to make the warranty null and void on the DHW heat exchanger, wash the system thoroughly (piping, etc.) in a way to remove any residue that could compromise the good functioning of the water heater. Hydraulic connections must be made in a rational way following the set-up of the water heater couplings.

**Attention:** to preserve the duration of appliance efficiency features, in the presence of water whose features can lead to the deposit of lime scale, installation of the polyphosphate dispenser is recommended.

#### 1.5 ELECTRIC POWER SUPPLY.

This water heater is powered by direct current via one 1.5 V "LR 20" alkaline battery.

**N.B.:** The appliance is supplied by Immergas with a battery in the packaging box and then not connected.

In the ignition phase, it is therefore necessary to connect it, setting it up in the correct position.

The battery is housed in a relevant compartment organised in the lower left area, near to the hydraulic couplings (Fig. 1-3).

**Attention:** water heater pipes must never be used to earth the electric or telephone lines. Ensure that this does not occur before the battery is inserted.

#### 1.6 VENTILATION OF THE ROOMS.

In the room in which the water heater is installed it is necessary that at least as much air flows as that requested for by normal combustion of the gas and ventilation of the room. Natural air flow must take place directly through:

- permanent openings in the walls of the room to be ventilated that lead towards the outside;
- ventilation pipes, individual or branched type.

The air used for ventilation must be withdrawn directly from outside, in an area away from sources of pollution. Natural air flow is also allowed indirectly by air intake from adjoining rooms. For further information relating to ventilation of the rooms follow that envisioned in the current technical regulations.

**Evacuation of foul air.** In the rooms where the gas appliances are installed it may also be necessary, as well as the intake of combustion agent air, to evacuate foul air, with consequent intake of a further equal amount of clean air.

This must be realised respecting the provisions of the technical regulations in force.

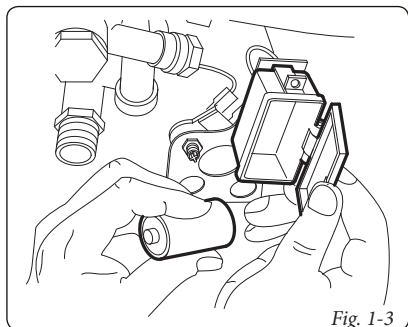


Fig. 1-3

#### 1.7 FLUE DUCTS.

The gas appliances with attachment for the flue gas discharge pipe must have direct connection to chimneys or safely efficient flues. The combustion products can be discharged directly outside only if these are missing, as long as the current technical regulations for the flue terminal are respected as well as the existing laws.

**Connection to chimneys or flues.** The connection of the appliances to a chimney or flue takes place by means of flue ducts.

*In the event of fittings with pre-existing flues, these must be perfectly clean because the detachment of any waste from the walls during functioning, could block the passage of flue gases, thus causing extremely dangerous situations for the user.*

The flue ducts must be connected to the chimney or flue in the same room in which the appliance is installed or, at most, in the adjoining room and must comply with the requirements indicated by the current technical regulations.

#### 1.8 FLUES/CHIMNEYS.

For the appliances with natural draught individual chimneys and branched flues can be used.

**Individual chimneys.** The individual flues must be dimensioned with respect to the standard in force.

**Branched flues.** In buildings with lots of floors, branched flues can be used for the natural draught evacuation of combustion products. New flues must be designed following the calculation method and provisions of the current technical regulations.

**Chimney caps.** The chimney cap is a device positioned on the top of an individual chimney or branched collective flue. This device facilitates the dispersion of combustion products, even in bad weather conditions, and prevents the deposit of foreign bodies.

This must meet the requirements of the current technical regulations.

In order to prevent the formation of counterpressures that prevent the discharge of combustion products into the atmosphere, the outlet height corresponding to the top of the chimney/flue, independently of any caps, must be out of the "respect area". It is therefore necessary to use the minimum heights indicated in the figures stated in current technical regulations.

**Direct exhaust outside.** The natural draught appliances to be connected to a chimney or a flue can discharge the combustion products directly to the outside, through a pipe passing through the perimeter walls of the building. In this case discharge takes place through an flue duct, which is connected to a draught terminal at the outside.

**Positioning the draught terminals.** The draught terminals must:

- be installed on external perimeter walls of the building;
- 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.

**Important:** it is prohibited to put the fumes exhaust control device out of order voluntarily. Every piece of this device must be replaced using original spare parts if they have deteriorated. In the case of repeated interventions of the fumes exhaust control device, check the flue exhaust pipe and the ventilation of the room in which the water heater is located.

#### 1.9 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 the pipelines;
- check that the internal system is properly sealed according to technical regulations in force.

#### 1.10 APPLIANCE START-UP (IGNITION).

To commission the water heater (the operations listed below must only be performed by a qualified firm and without any unauthorised persons):

- check that the internal system is properly sealed according to the specifications set forth by regulations in force;
- ensure that the type of gas used corresponds to water heater settings;
- check that there are no external factors that may cause the formation of fuel pockets;
- switch the appliance on and check correct ignition;
- make sure that the gas flow rate and relevant pressure values comply with those given in the manual (see par. 3.11);
- check the correct ventilation of the rooms;
- check the existing draught during normal functioning of the appliance, e.g. a draught gauge positioned at the exit of the appliance combustion products;
- check that there is no backflow of combustion products into the room, even during functioning of fans;
- ensure that the chimney safety device intervenes in the event of gas supply failure and check the relative intervention time;

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

#### 1.11 KITS AVAILABLE ON REQUEST.

- Water/gas connection cock kit (on request). The gas cock is indispensable and must be type-approved for the pre-fixed use.
- Flexible pipes connection kit. They can be used for the DHW circuit connection.

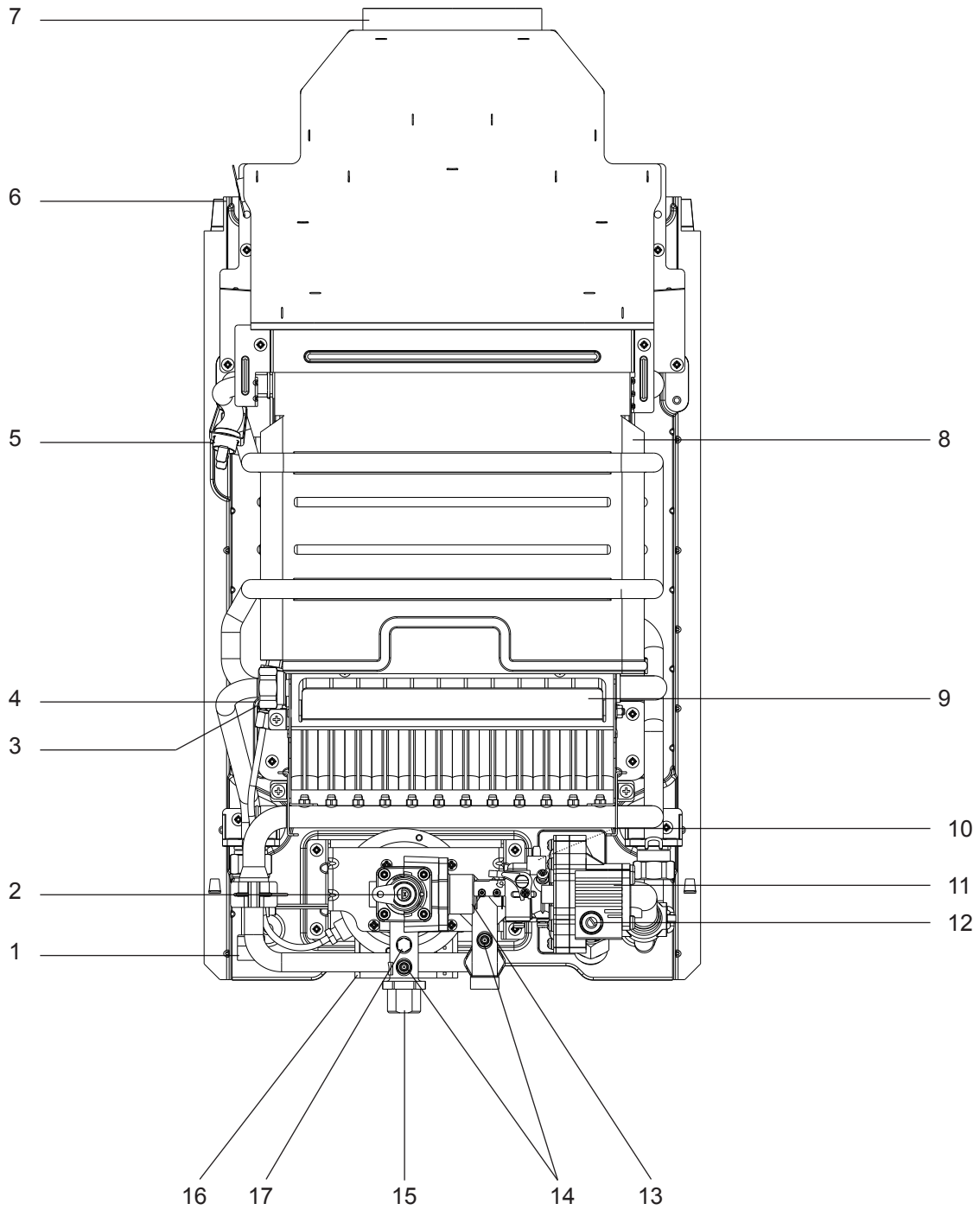
The above-mentioned kits are supplied complete with instructions for assembly and use.

1.12 WATER HEATER COMPONENTS.

INSTALLER

USER

MAINTENANCE TECHNICIAN



Key:

- |                             |                                     |
|-----------------------------|-------------------------------------|
| 1 - Probe                   | 10 - Container for battery          |
| 2 - Economizer              | 11 - Hydraulic valve                |
| 3 - Pilot burner            | 12 - Temperature regulator          |
| 4 - Ignition electrode      | 13 - Gas valve                      |
| 5 - Limit thermostat        | 14 - Gas pressure point             |
| 6 - Flue gas control device | 15 - Gas inlet                      |
| 7 - Exhaust hood            | 16 - Electronic appliance           |
| 8 - Heat exchanger          | 17 - Gas flow rate adjustment screw |
| 9 - Burner                  |                                     |

Fig. 1- 4



## 2 INSTRUCTIONS FOR USE AND MAINTENANCE.

### 2.1 CLEANING AND MAINTENANCE.

**Attention:** to preserve the water heater's integrity and keep its safety features, performance and reliability unchanged over time, maintenance operations must be carried out on a yearly basis in compliance with that stated in the "annual check and maintenance of the appliance" section, in compliance with national, regional, or local standards in force.

### 2.2 VENTILATION OF THE ROOMS.

In the room in which the water heater is installed it is necessary that at least as much air flows as that requested for by normal combustion of the gas and ventilation of the room. The provisions relating to ventilation, flue ducts, chimneys and caps are stated in paragraphs 1.6, 1.7 and 1.8. If in doubt regarding correct ventilation, contact an authorised company.

### 2.3 GENERAL WARNINGS.

Never expose the wall-mounted appliance to direct vapours from a hob.

Use of the water heater by unskilled persons or children is strictly prohibited.

Whenever temporary deactivation of the water heater is decided, disconnect the batteries and the water and gas supplies must be interrupted. In the event of work or maintenance to structures near ducting or flue extraction devices and their accessories, switch off the appliance and on completion of the operations ensure an authorised company verifies the efficiency of the ducting or the devices.

Never clean the appliance or connected parts with easily flammable substances.

Never leave containers or flammable substances in the same environment as the appliance.

It is prohibited and dangerous to obstruct the air intake, even partially, for the ventilation of the room in which the water heater is installed. Due to the danger, operation is also prohibited in the same room as suction devices or the like, at the same time as the water heater unless there are additional openings dimensioned in a way to satisfy the additional requirement for air.

For the dimensioning of these additional openings, refer to qualified technical staff and to the current technical regulations.

• **Attention:** using any components that use electrical power requires some fundamental rules to be observed:

- never pull electrical cables or leave the appliance exposed to atmospheric agents (rain, sunlight, etc.);
- if the appliance is not to be used for a certain period, it is good practice to disconnect the power supply batteries.

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

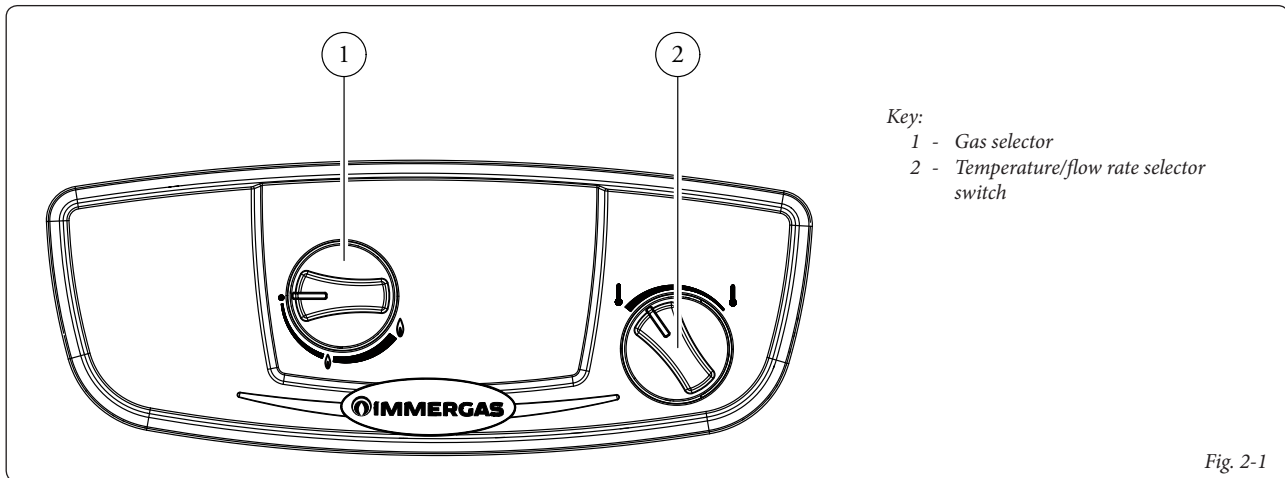


**ATTENTION:**

**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.**

In the event of water leakage close the water supply and inform the Technical Assistance Centre immediately. If you smell gas, do not use the electrical switches, the telephone or any other object that can generate sparks. Ventilate the room, opening doors and windows, and close the main gas cock.

### 2.4 CONTROL PANEL.



Key:

- 1 - Gas selector
- 2 - Temperature/flow rate selector switch

### 2.5 USE OF THE WATER HEATER.

**Ignition of the water heater.** Before ignition, check that the DHW inlet valve is open.

- Open the gas cock upstream from the water heater.
- Turn the knob (1) to the big flame (☀), during rotation, in correspondence with the small flame (☀), it is necessary to slightly press the knob and keep on turning.

**NOTE:** with the selector at "●" the gas supply to the water heater is closed, which thus cannot ignite.

From this moment the water heater functions automatically. While there is no request for the production of DHW, the water heater stays in the "stand-by" function mode. At every withdrawal of DHW, the burner ignites and a power that depends on the size of the withdrawal, with a maximum value limited by the gas selector (1).

**Models 11:** for withdrawals of water between 2.5 and 5 l/min, the temperature of the water supplied remains almost constant around a value of 60°C, (in this condition the gas valve supplies the burner with a quantity of gas proportionate to the quantity of water required); while over 5 l/min up to 11 l/min the water temperature varies between 60°C and 40°C.

**Models 14:** for withdrawals of water between 2.5 and 7 l/min, the temperature of the water supplied remains almost constant around a value of 60°C, (in this condition the gas valve supplies the burner with a quantity of gas proportionate to the quantity of water required); while over 7 l/min up to 14 l/min the water temperature varies between 60°C and 40°C.

If the ignition does not occur in 60 seconds, the flame detector cuts-off the gas flow and puts the appliance in blocked status as it recognises that the flame is missing.

The blocked status requires a manual intervention; to restart the appliance, close the water cock and reopen it so as to restart automatically the ignition sequence.

In case of accidental shut-off of the main burner, an attempt of restart is foreseen.

If the appliance does not restart in 60 seconds, it returns to the blocked status previously described.

In case of failures to the ignition electrode, the gas flow rate is cut-off and the Positive Safety condition is then set.

Appliances are built to be operated with a normal water pressure; they are also fitted with a temperature selector (2).

**With the temperature/flow rate selector fully turned to left, you can reach the maximum water supply; if it is fully turned to right, you reach the minimum water supply.**

The appliance decommissioning is reached by turning the knob (1) to OFF (●).

**Regulation of the domestic hot water temperature.** The temperature of the hot water supplied depends on the position of the water selector (2). By turning the selector clockwise the temperature decreases and anti-clockwise it increases.

**Use of the gas economizer.** The appliance is fitted with a device called gas economizer, which is used to select the appliance output through the selector switch (1).

The economizer is inserted by turning the knob (1) up to reach the position marked by the small flame (◊) or at a setting that is lower than the maximum output. The economizer insertion allows to limit the maximum thermal output supplied when the needs for use are generally moderate (low thermal head or reduced withdrawal rates as it occurs during summer).

## 2.6 DESCRIPTION OF THE ANOMALIES.

| Anomaly signalled                                     | Cause  | Water heater status / Solution   |
|---|--|--|
| No sparks   | Low battery  | Replace  |
|   | Electric cable of the electrode disconnected   | Insert   |
|   | P.C.B. failure   | Check, replace   |
|   | Low water pressure   | Work on the system in order to ensure the pressure, turn the selector fully to right   |
|   | Failure to the membrane  | Replace  |
| The pilot does not turn on in case of spark           | Damaged electrode  | Replace  |
|   | Gas supply missing   | Open gas   |
|   | Air in the gas pipe  | Vent gas   |
| The burner does not turn off when the water is closed | Dirty in the gas shutter seat  | Check, clean   |
|   | Piston or stem of the water valve blocked in opening   | Disassemble, clean and eventually replace  |
|   | Lever of the micro blocked in opening  | Check  |
|   | In the LPG version, check the gas supply pressure  | Adjust and in case replace the bottle pressure regulator   |
| The exchanger blades get dirty fast                   | Poor draught or too dusty room   | Check the flue efficiency  |
|   | Yellow flames  | Check the type of gas and clean the burner   |
|   | Excessive gas consumption  | Check and adjust   |
| Smell of gas  | It is caused by leakage from circuit pipelines, check pipes and identify the leakage   | Do not enable electric switches or any other object that generates sparks, aerate the room   |
| Smell of burnt gases                                  | This can be caused by obstructions in the flue gas circuit<br>Excessive gas consumption  | Check the flue and exhaust pipe<br>Check and adjust  |
| Overheating thermostat block                          | During normal functioning, if a fault causes excessive overheating internally, the water heater goes into overtemperature block.   | After suitable cooling, eliminate the "over-temperature block", interrupting and then restoring the DHW withdrawal. If this phenomenon occurs frequently, contact an authorised company (e.g. Authorised After-Sales Technical Assistance Service)   |
| Chimney thermostat block                              | If the flue evacuation pipe does not work properly during functioning, the flue thermostat intervenes by blocking the water heater | It can only restart after a proper cooling, in case of normal conditions restored and in correspondence with a new request for domestic hot water. The chimney thermostat must be reset as described in par. 3.2; the operation must be carried out by an authorised company (for example the Authorised Technical Assistance Service) |

## 2.7 SWITCH-OFF OF THE WATER HEATER.

Disconnect the battery and close the gas valve upstream from the appliance. Never leave the water heater powered if left unused for prolonged periods.

## 2.8 BATTERY REPLACEMENT.

The battery that powers this appliance is located in the bottom part of the water heater (Fig. 1-3) close to the hydraulic connections. To replace the battery, open the relevant compartment by pulling the lid down and removing the battery present. Insert the new battery respecting the polarities indicated on the internal wall of the lid itself.

**N.B.:** only use new “LR20” 1.5V alkaline batteries. Dispose of the replaced battery according to the indications supplied by the manufacturer. Do not use re-chargeable batteries as they could limit functioning of the water heater.

- If there are leaks of substances from the battery, avoid contact with the skin.
- If the liquid escaping from the battery comes into contact with the eyes, rinse thoroughly with water and contact a doctor.
- If the liquid comes into contact with the skin, rinse thoroughly with water and soap.
- Contact the manufacturer of the batteries for further information.
- Do not throw the batteries in the fire.
- Remove the batteries if the water heater remains unused for a long period.
- Use a dry, rough cloth to clean the battery housing, every time they are replaced.
- Contact the local authorities for information regarding the disposal of the batteries.

## 2.9 EMPTYING THE WATER HEATER.

To empty the water heater, close the cold water inlet valve and open the hot water valve lower down in the water network in the room.

## 2.10 PROTECTION AGAINST FREEZING.

If the appliance remains inactive, in places at risk of freezing, it must be emptied to prevent possible breakage of the hydraulic circuit.

To do this, see the previous paragraph (emptying the water heater).

## 2.11 CLEANING THE CASE.

Use damp cloths and neutral detergent to clean the water heater casing. Never use abrasive or powder detergents.

## 2.12 DECOMMISSIONING.

In the event of permanent shutdown of the water heater, contact an authorised company for the procedures and ensure that the batteries are disconnected and the water and gas supply lines are shut off.

## 2.13 GAS SYSTEM NOT USED FOR PERIODS OVER 12 MONTHS.

The current regulation provides that gas systems not used for over 12 months must be checked prior to being used again, as per regulations in force, by professionally qualified staff.

If the inspection is successful, the water heater can be recommissioned according to the instructions specified in point 1.10 herein.

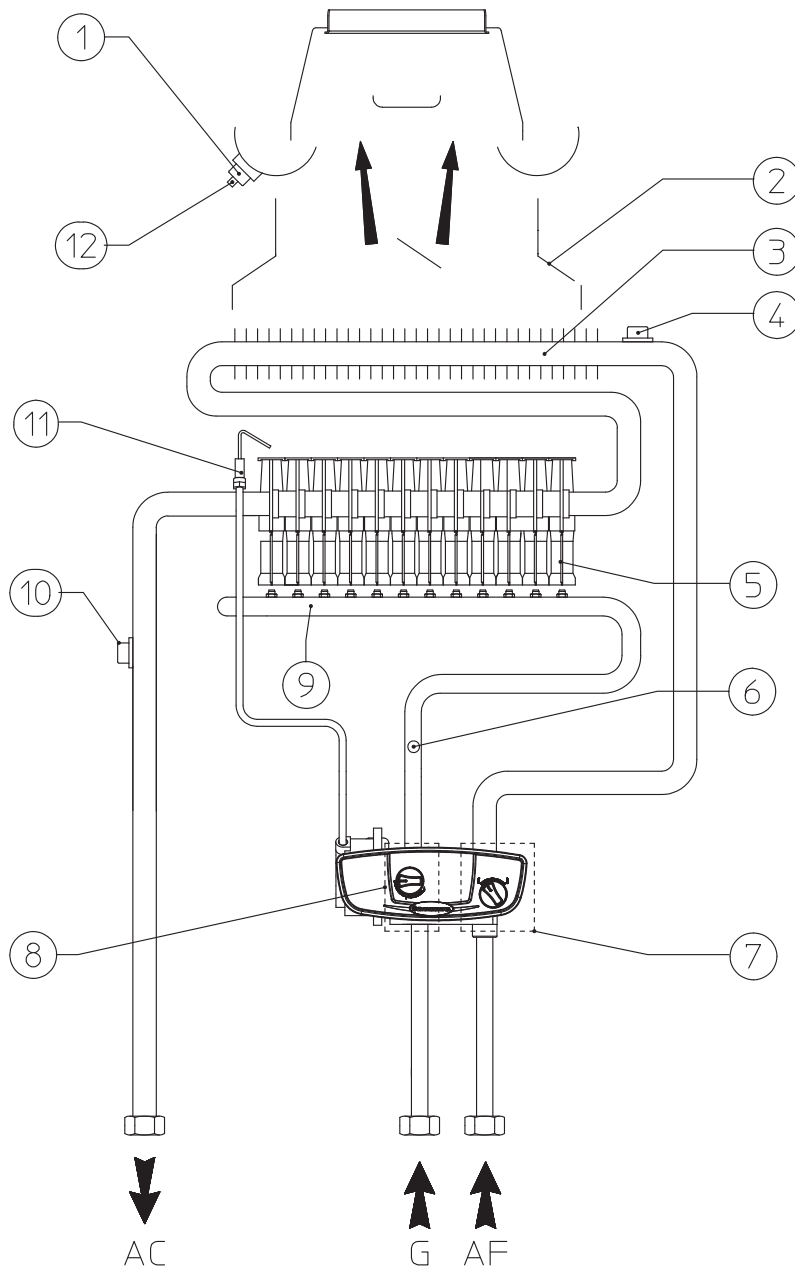
INSTALLER

USER

MAINTENANCE TECHNICIAN

### 3 CONTROL AND MAINTENANCE.

#### 3.1 HYDRAULIC DIAGRAM.



*Key:*

- 1 - Chimney safety thermostat
- 2 - Flue hood
- 3 - Domestic hot water heat exchanger
- 4 - Limit thermostat
- 5 - Burner
- 6 - Valve/burner pipe pressure point
- 7 - Water valve
- 8 - Gas control device
- 9 - Manifold unit and nozzles
- 10 - Overheating safety thermostat
- 11 - Pilot unit (detection, pilot, ignition)
- 12 - Chimney safety thermostat reset button

AC - Domestic hot water outlet  
 AF - Domestic cold water inlet  
 G - Gas supply

Fig. 3-1

### 3.2 CHIMNEY SAFETY THERMOSTAT RESET.

If necessary, remove the casing of the water heater and manually reset the thermostat using a screwdriver as shown in Fig. 3-2, then close and reopen the hot water tap.

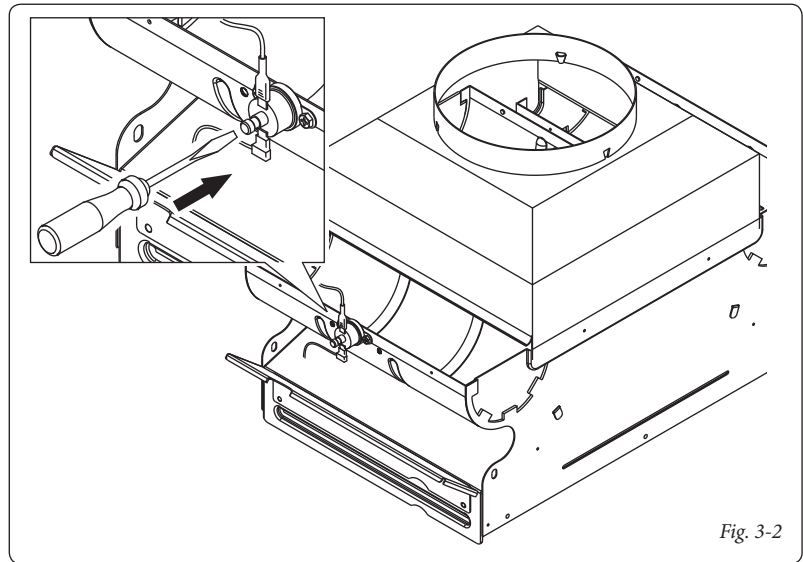


Fig. 3-2

### 3.3 WIRING DIAGRAM.

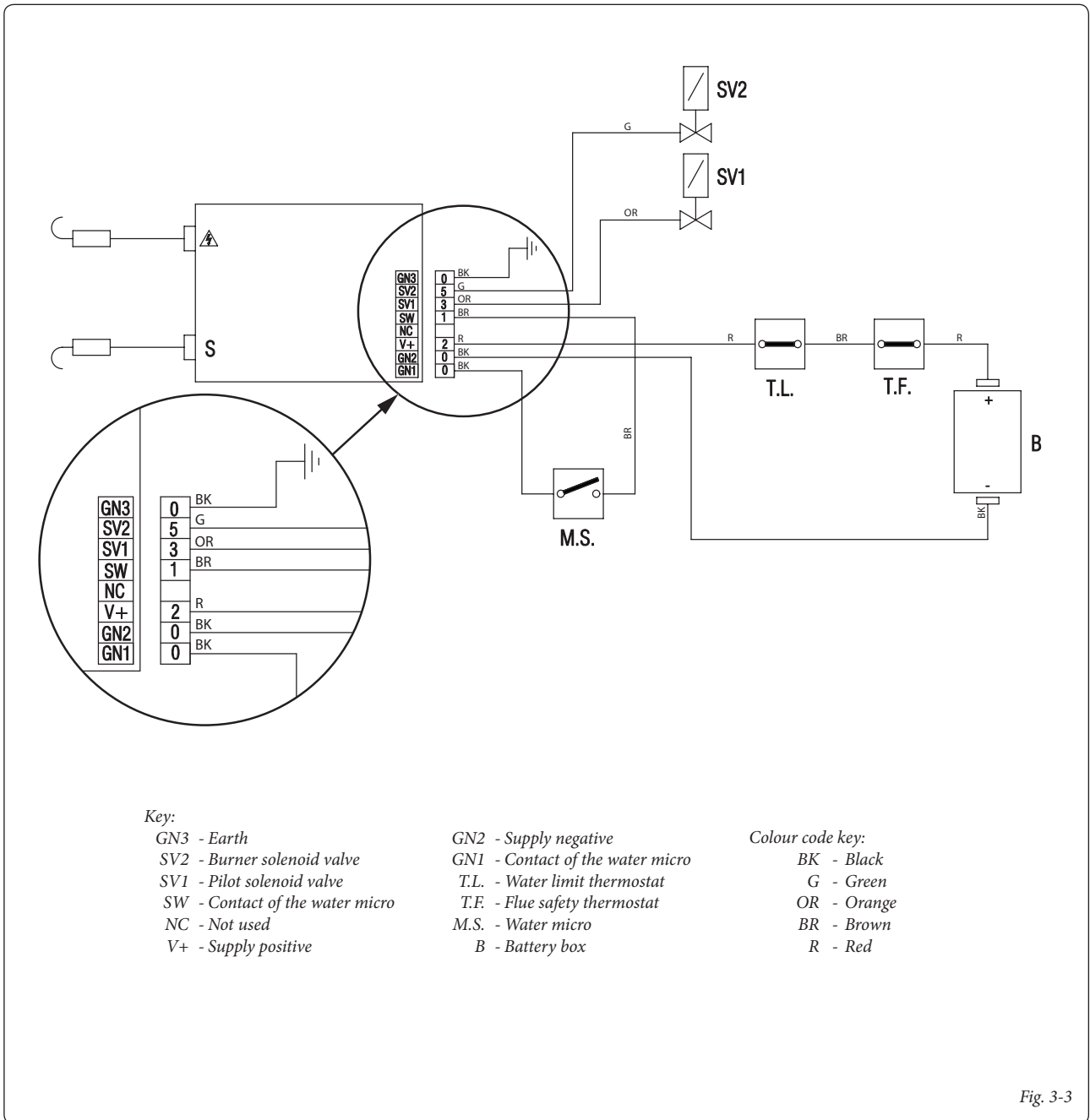


Fig. 3-3

INSTALLER

USER

MAINTENANCE TECHNICIAN

### 3.4 POSSIBLE PROBLEMS AND THEIR CAUSES.

**N.B.:** Maintenance operations must be carried out by an authorised company (e.g. Authorised After-Sales Technical Assistance Service).

- Smell of gas. Caused by leakage from gas circuit pipelines. Check tightness of gas intake circuit.
- Irregular combustion (red or yellow flame). When the burner is dirty or the water heater lamellar pack is blocked. Clean the burner or the lamellar pack.
- The water heater produces condensate. This can be caused by obstructions of the chimney/ies with height or section not proportioned to the appliance. It can also be determined by functioning at water heater temperatures that are excessively low. In this case, make the water heater run at higher temperatures.
- Intervention of the overheating thermostat. It can depend on an anomaly at the water-gas valve or on the clogged heat exchanger.
- Ignition block and Chimney thermostat block. See par. 2.6.
- Frequent trips of the chimney safety thermostat. Can be due to:
  - obstructions on the flue gas circuit. Check the flue. The latter can be blocked or not have a suitable height/section for the water heater.
  - Insufficient ventilation (see par. 1.6).
- Poor water flow: if, as a result of limescale (calcium and magnesium), the domestic hot water system does not work properly contact an authorised company for descaling e.g. Authorised Technical Assistance Service according to good practice. To preserve integrity and efficiency of the heat exchanger, a non corrosive descaler must be used. Cleaning must be carried out without the use of tools which can damage the heat exchanger.

### 3.5 CONVERTING THE WATER HEATER TO OTHER TYPES OF GAS.

If the appliance has to be converted to a different gas type to that specified on the data plate, 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 Technical After-Sales Service).

### 3.6 TRANSFORMATION FROM METHANE TO LPG.

The operation of appliance transformation from a gas family to another can be easily carried out even if the appliance is installed.

Before any operation, make sure that the gas supply to the appliance is cut-out.

- In order to replace the pilot injector:
  - Disconnect the pilot flame tube (Fig. 3-4).
  - Remove the pilot injector (Fig. 3-5).
  - Replace the injector using the one contained in the kit.
- Replacing the burner manifold:
  - Remove the safety clip.
  - Remove the clip that fastens the gas pipe to the manifold (Fig. 3-6).
  - Loosen the nut that fastens the gas pipe to the gas valve.
  - Remove the gas ramp.
  - Undo the screws that hold the manifold in place (Fig. 3-7).
  - Free the manifold from the side injectors.
  - Remove the manifold.
  - Replace it with the manifold in the kit.
  - Tighten the side screws.

**Attention:** the manifold is already equipped with injectors, it is therefore not necessary to replace them.

- In order to replace the modulation valve:
  - Loosen the screws shown in Fig. 3-8.
  - Disconnect the water valve from the water network by operating on the inlet fitting.
  - Disconnect the cables from the micro-switch.
  - Loosen the fitting shown in Fig. 3-9.
  - Undo the 4 screws shown in Fig. 3-10.
  - Turn the water/gas unit to the right as shown in Figure 3-11.
  - Pull out the big spring and the modulation valve/small spring unit (Fig. 3-12).
  - Replace the modulation valve with the one in the kit.
  - Insert the valve and the big spring paying attention to the insertion direction and make sure that the perforated spring guide disc is well in place (Fig. 3-12).
  - Reassemble the components proceeding in the reverse order.
  - Connect the gas ramp to the burner manifold, taking care to insert the two fixing and safety clips.
  - Tighten the nut fastening the gas pipe to the gas valve.
- Decommissioning of the flow rate regulator:
  - Remove the protection cap (Fig. 3-13).
  - Adjust the screw of the flow rate regulator so as to allow the maximum gas flow (fully horizontal disc) and check that pressures are those indicated in the technical data table.

**N.B.:** Please note that for LPG operation it is necessary to fit a pressure regulator on the appliance supply line, set at a pressure of 30 mbar for Butane Gas operation and 37 mbar for Propane Gas operation. The values above must be measured with a pressure gauge whose socket is connected to the pressure fitting on the appliance inlet.

**ATTENTION:** once the gas transformation is completed:

- After the adjustment, seal the cap with paint, lake or other material suitable for this purpose.
- Start-up the appliance and check with a soapy solution the perfect sealing of the gas disassembled parts.
- Write on the adhesive plate provided "Transformed to..."; the date when the transformation was carried out, the name and signature of the operator who made the transformation, stick it close to the existing plate.

### 3.7 TRANSFORMATION FROM LPG TO METHANE.

Perform the “Replacement of the pilot injector”, “Replacement of the burner manifold” and “Replacement of the modulation valve” described in paragraph 3.6 and proceed as follows.

- Commissioning of the flow rate regulator:
  - Remove the protection cap (Fig. 3-13).
  - Adjust the screw of the flow rate regulator so that the pressure indicated in the technical data table is detected on the burner.

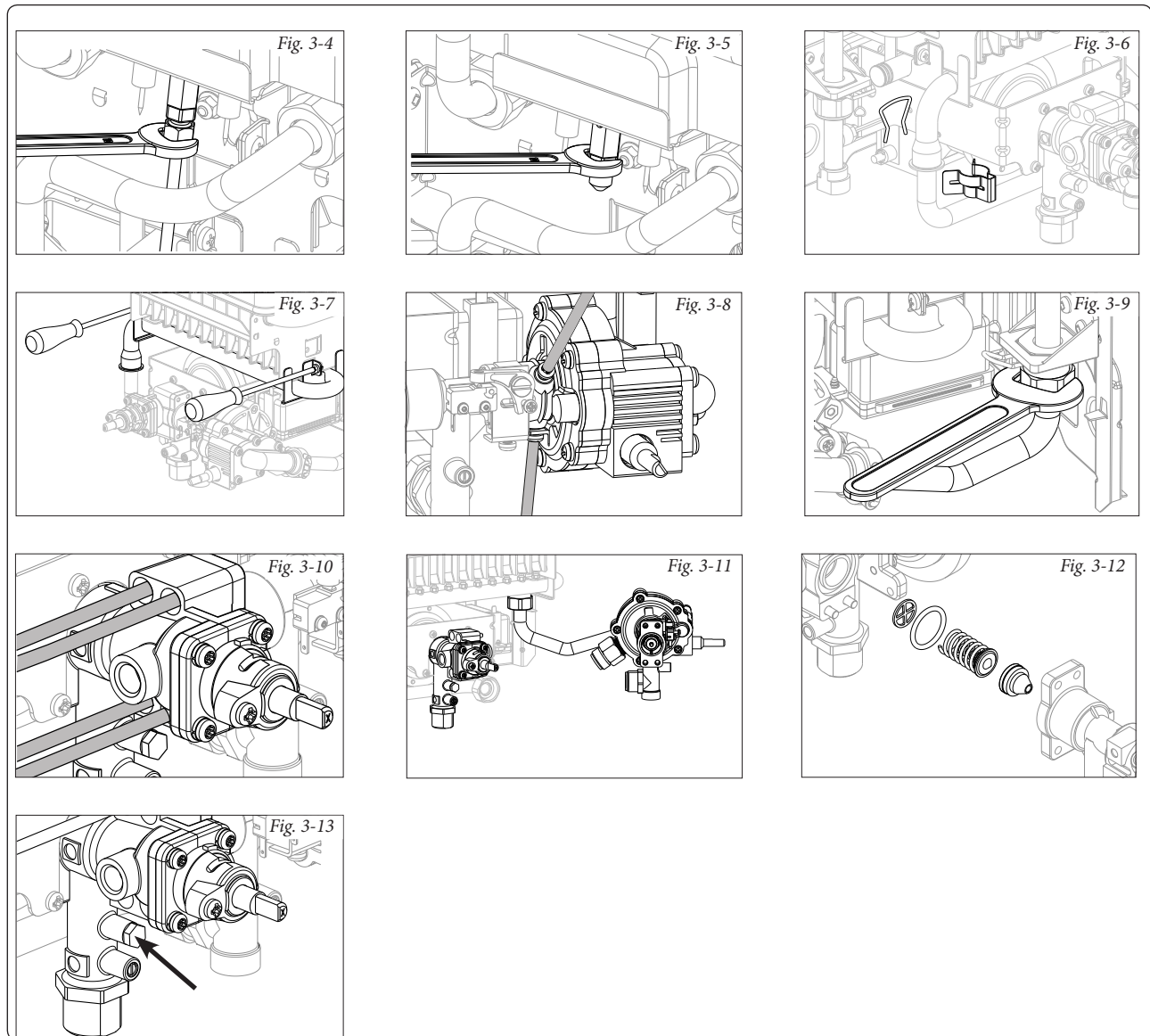
**NOTE:** make sure that the supply gas pressure is 20 mbar.

**ATTENTION:** once the gas transformation is completed:

- After the adjustment, seal the cap with paint, lake or other material suitable for this purpose.
- Start-up the appliance and check with a soapy solution the perfect sealing of the gas disassembled parts.
- Write on the adhesive plate provided “Transformed to...”, the date when the transformation was carried out, the name and signature of the operator who made the transformation, stick it close to the existing plate.

### 3.8 POSSIBLE ADJUSTMENTS.

- Regulation of the water heater heat output (see par. 2.5).



INSTALLER

USER

MAINTENANCE TECHNICIAN

### 3.9 YEARLY APPLIANCE CHECK AND MAINTENANCE.

The following checks and maintenance should be performed at least once a year.

- Clean the flue side of the heat exchanger.
- Clean the main burner.
- Clean the pilot burner.
- Visually check the draught-breaker/anti-wind device for deterioration or corrosion.
- Check correct lighting and functioning.
- Check correct burner calibration.
- Check correct operation of control and adjustment devices of the appliance.
- Check that the internal system is properly sealed according to technical regulations in force.
- Check the intervention of the device against no gas carried out by the ionisation flame control.
- Check for water leaks or oxidation from/on the fittings.

- Visually check that the safety and control devices have not been tampered with and/or shorted, in particular:

- temperature safety thermostat;
- flue exhaust control thermostat.
- Check the condition and integrity of the electrical system and in particular:
  - the power cables must be inside the cable fixings;
  - there must be no traces of blackening or burning.

### 3.10 CASING REMOVAL.

To facilitate water heater maintenance, the casing can be completely removed by following these simple instructions (Fig. 3-14):

- 1) Remove the selector knob (2) and the knob (1).
- 2) Loosen the screw (3).
- 3) Move the casing to the top in order to release it from the side and upper hooks.
- 4) Move the casing forward.
- 5) To reinstall the casing, proceed in reverse order.

### 3.11 COMBUSTION PARAMETERS.

|   |                   | G20       | G30                  | G31                  |
|---|-------------------|-----------|----------------------|----------------------|
| Supply pressure   | mbar              | 20        | 28-30                | 37                   |
| <b>Julius Eco 11</b>                                    |                   |           |                      |                      |
| Pilot nozzle diameter                                   | mm                | 0.33      | 0.23                 | 0.23                 |
| Diameter of the main burner nozzle (No. of nozzles) (*) | mm                | 0.85 (24) | 0.48 (18) - 0.50 (6) | 0.48 (18) - 0.50 (6) |
| Nozzles (*)   | N.                | 24        | 24                   | 24                   |
| P.C.I. (15° C 1013 mbar)                                | MJ/m <sup>3</sup> | 34.02     | 116.09               | 88                   |
| WI (15° C 1013 mbar)                                    | MJ/m <sup>3</sup> | 45.67     | 80.58                | 70.69                |
| Consumption   | m <sup>3</sup> /h | 2.30      | -                    | -                    |
|   | kg/h              | -         | 1.71                 | 1.69                 |
| Burner pressure   | mbar              | 10.50     | 26.40                | 34.00                |
| Flue flow rate at nominal heat output                   | g/s               | 13.50     | 11.80                | 12.48                |
| Flue temperature at nominal output                      | °C                | 161       | 157                  | 173                  |
| <b>Julius Eco 14</b>                                    |                   |           |                      |                      |
| Pilot nozzle diameter                                   | mm                | 0.33      | 0.23                 | 0.23                 |
| Diameter of the main burner nozzle (No. of nozzles) (*) | mm                | 0.85      | 0.48 (22) - 0.50 (8) | 0.48 (22) - 0.50 (8) |
| Nozzles (*)   | N.                | 30        | 30                   | 30                   |
| P.C.I. (15° C 1013 mbar)                                | MJ/m <sup>3</sup> | 34.02     | 116.09               | 88                   |
| WI (15° C 1013 mbar)                                    | MJ/m <sup>3</sup> | 45.67     | 80.58                | 70.69                |
| Consumption   | m <sup>3</sup> /h | 2.88      | -                    | -                    |
|   | kg/h              | -         | 2.15                 | 2.11                 |
| Burner pressure   | mbar              | 11.20     | 25.90                | 33.20                |
| Flue flow rate at nominal heat output                   | g/s               | 18.62     | 17.67                | 18.10                |
| Flue temperature at nominal output                      | °C                | 158       | 155                  | 162                  |

(\*): It is strictly forbidden to replace the nozzles individually. If necessary, replace the entire manifold.



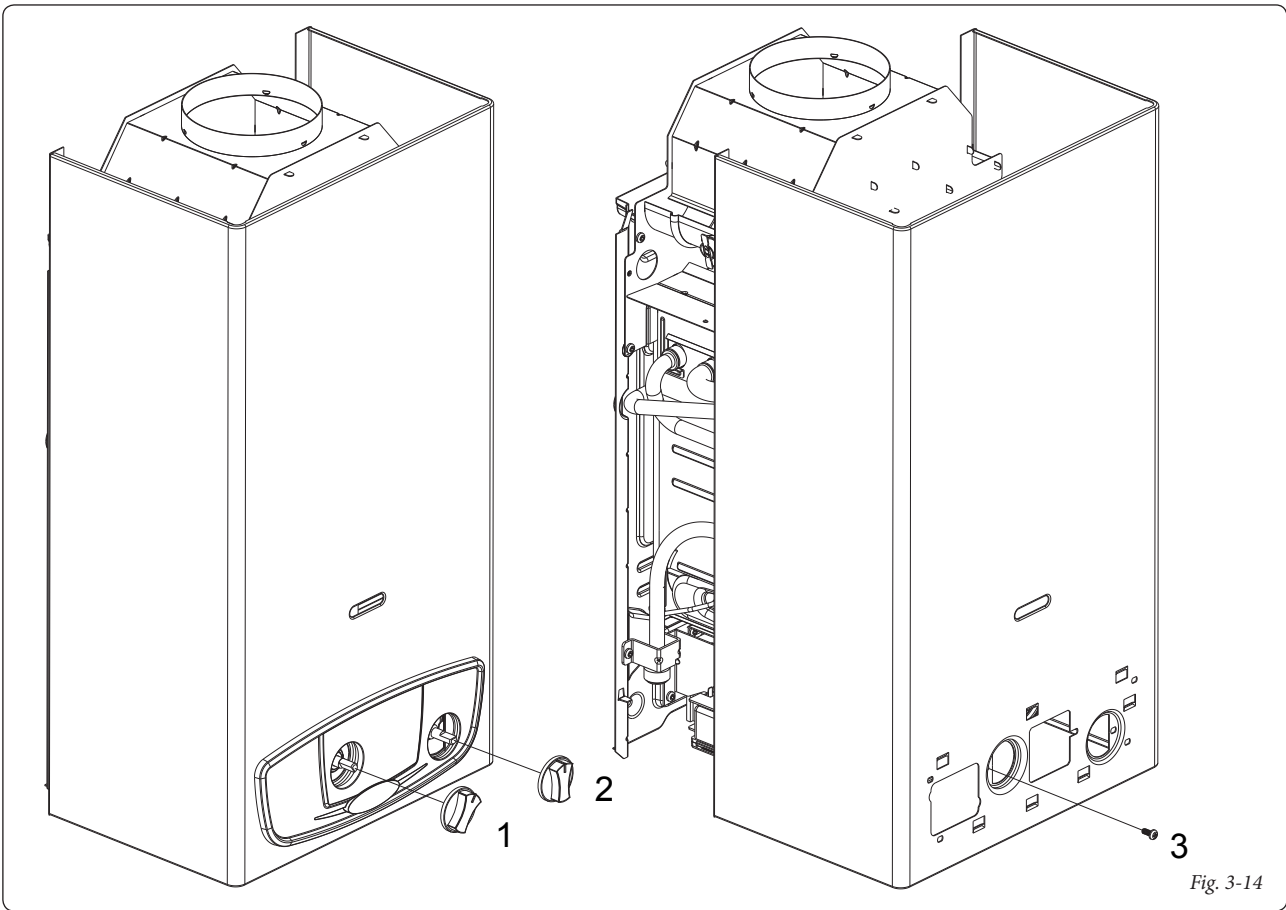


Fig. 3-14

3.12 TECHNICAL DATA.

|                              |             | Julius Eco 11                             |  | Julius Eco 14                               |  |
|------------------------------|-------------|---|--|---|--|
| Nominal heat input           | kW (kcal/h) | 21.7 (18662)                              |  | 27.2 (23392)                                |  |
| Minimum heat input           | kW (kcal/h) | G20<br>9.8 (8428)                         | LPG<br>10.8 (9288)                         | G20<br>10.8 (9288)                          | LPG<br>13.9 (11954)                          |
| Nominal heat output (useful) | kW (kcal/h) | 19.3 (16591)                              |  | 24.3 (20936)                                |  |
| Minimum heat output (useful) | kW (kcal/h) | G20<br>8.7 (7467)                         | LPG<br>9.6 (8238)                          | G20<br>9.7 (8331)                           | LPG<br>12.3 (10603)                          |
| Withdrawal range             | l/min       | selection switch<br>min.<br>from 2.5 to 5 | selection switch<br>max.<br>from 5 to 10.8 | selection switch<br>min.<br>from 2.5 to 6.7 | selection switch<br>max.<br>from 6.7 to 13.6 |
| Water temperature elevation  | °C          | ~50                                       | ~25  | ~50   | ~25  |
| Minimum pressure             | bar         | 0.2                                       |  | 0.2   |  |
| Nominal pressure             | bar         | 2   |  | 2   |  |
| Maximum pressure             | bar         | 10  |  | 10  |  |
| Emissions of nitrogen oxides | mg/kWh      | 26.0 (G20)                                |  | 34.0 (G20)                                  |  |
| Weight                       | kg          | appliance<br>11.80                        | packed<br>13.40                            | appliance<br>13.60                          | packed<br>15.30                              |
| Electric power supply        | Battery     | 1 Battery x LR20 1.5 V Alkaline           |  |   |  |
| Type of appliance            |             | B11 <sub>BS</sub>                         |  |   |  |
| Category                     |             | II2H3+                                    |  |   |  |

- The data relevant 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 directly at the water heater outlet considering that to obtain the data declared mixing with cold water is necessary.

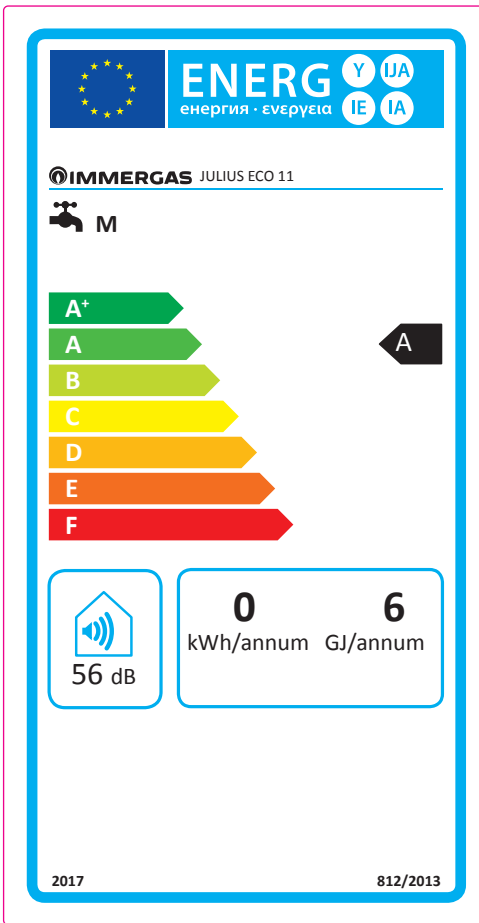
3.13 PRODUCT FICHE (IN COMPLIANCE WITH REGULATION 812/2013).

INSTALLER

USER

MAINTENANCE TECHNICIAN

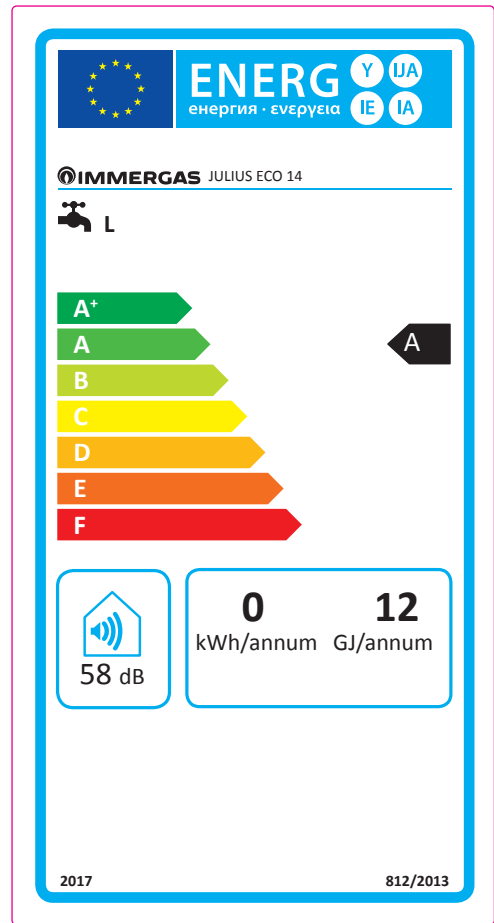
Julius Eco 11



| Parameter   | value |
|---|-------|
| Annual fuel consumption for the domestic hot water function (AFC) | 6 GJ  |
| Water heating energy efficiency ( $\eta_{wh}$ )                   | 74%   |

For proper installation of the appliance refer to chapter 1 of this booklet (for the installer) and current installation regulations. For proper maintenance refer to chapter 3 of this booklet (for the maintenance technician) and adhere to the frequencies and methods set out herein.

Julius Eco 14



| Parameter   | value |
|---|-------|
| Annual fuel consumption for the domestic hot water function (AFC) | 12 GJ |
| Water heating energy efficiency ( $\eta_{wh}$ )                   | 77%   |

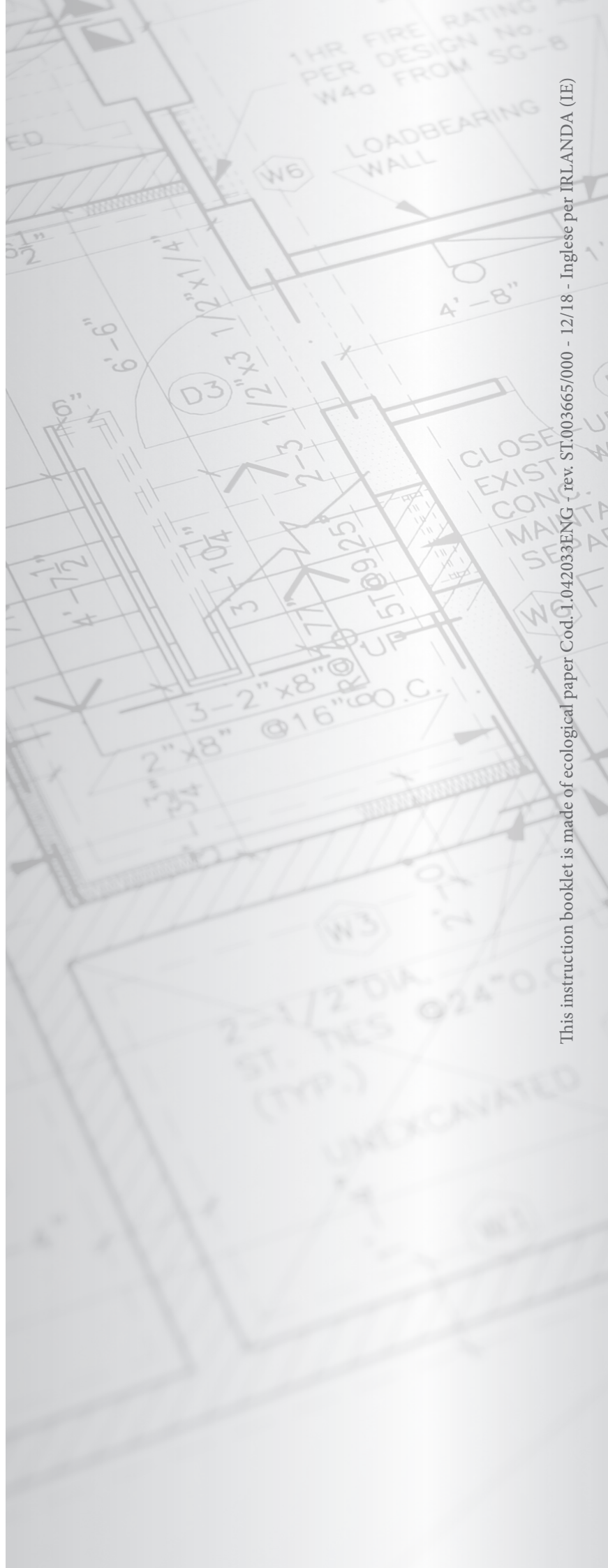




[immergas.com](http://immergas.com)

Immergas S.p.A.  
42041 Brescello (RE) - Italy  
Tel. 0522.689011  
Fax 0522.680617

**Certified company ISO 9001**



This instruction booklet is made of ecological paper Cod. I.042033ENG - rev. ST.003665/000 - 12/18 - Inglese per IRLANDA (IE)