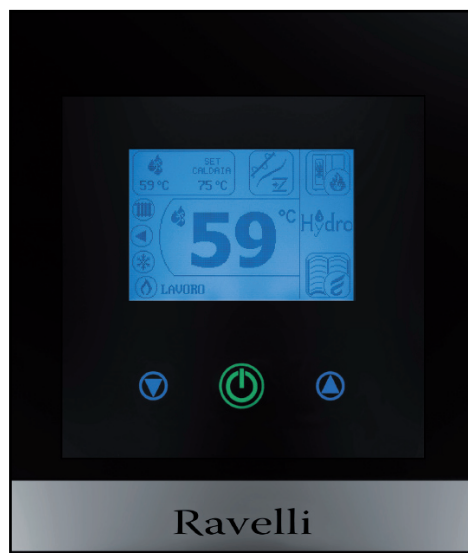


# USER MANUAL

## HYDRO TOUCH



**TOUCH**  
display



Stove model:	
Stove serial number:	
Date of installation:	
Support reference data:	
Telephone number:	

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## Introduction

### Warning:

We recommend you carefully read this booklet, which describes all the necessary phases for perfect functioning of your stove.

### Note:

The standards relevant to the installation and functioning contained in this manual can differ based on local standards in force. In this case, always comply with the indications of the local competent authorities. The drawings in this manual are indicative, not to scale.

### Information:

The packaging we have used offers good protection against any damage due to transport. In any case, check the stove immediately after delivery; in the event of possible visual damage, immediately inform your Ravelli srl dealer.

### Description of the User and Maintenance Manual:

With this User and Maintenance Manual, the company Ravelli srl wishes to provide the user with all the information on safe use of the stove, to avoid damage to people or property or parts of the stove.

**Please carefully read this manual before use and any intervention on the product.**

### Warnings:

Ravelli srl stoves are manufactured while paying particular attention to each component, to protect both the user and the installer from the danger of possible accidents. We recommend authorised staff pay particular attention to electrical connections after each intervention on the product.

**Installation must be carried out by authorised staff, who must issue the customer with a declaration of conformity for the system, while taking full responsibility for final installation and the resulting good functioning of the product installed. It is necessary to keep in consideration all national, regional, provincial and municipal laws and standards for the country in which the equipment is installed. There is no liability on the part of AICO S.p.A. in the event of non-compliance with these precautions.**

This user's manual forms an integral part of the product: ensure that it is always with the stove, also in the case of transfer to another owner or use or transfer to another location. In the event it is damaged or lost, ask technical support for a copy.

This stove is intended exclusively for the use for which it was specifically manufactured. Do not use the equipment as an incinerator or in any other way other than for what it was intended. The manufacturer is excluded from any contractual or out of contract responsibility for damage caused to people, animals or property, errors during installation, regulation and maintenance and improper use. No other fuel other than pellets can be used. Do not use combustible liquids.

Having removed the packaging, ensure the integrity and completeness of the content.

All the electrical components forming the stove should be replaced exclusively by an authorised technical support centre using original pieces. **Stove maintenance must be carried out at least once a year and scheduled in advance with the technical support service.** Do not carry out any unauthorised changes to the equipment.

For safety purposes, remember:

- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. The children should be supervised to make sure they do not play with the device.
- contact with the stove is not recommended if you are in your bare feet or with parts of your body wet;
- it is forbidden to change the safety or regulation devices without the authorisation or without the instruction of Ravelli srl.
- it is prohibited appliance installation in small rooms, bedrooms, rooms with explosive atmospheres etc..
- we do not recommend loading pellets directly into the brazier before switching on the stove;
- before connecting the appliance make sure the water mains pressure is below 3 bars;
- the appliance works exclusively on wooden pellets; do not use the stove with other type of fuel.

The technician carrying out the installation must inform the user that:

1. In the event of water leakage, close the water supply and promptly inform the technical support service.
2. The operating pressure of the system must be periodically checked. Should the stove be inactive for prolonged periods:
  - we recommend you contact the technical support service to carry out the following operations:
  - turn off taps on the heating and sanitary systems;
  - empty the heating and sanitary system if there is a risk of freezing.

When the stove is functioning, it can reach very hot to touch temperatures, especially on the external surfaces: operate with care to avoid burns.

**The stove was designed to function in any climatic condition; in the event of particularly adverse conditions (wind, frost) the safety systems could intervene and switch off the stove.**

If this occurs, urgently contact the technical support service and, in any case, do not disable the safety systems.



## Safety information

The stove must be installed and inspected by specialised staff trained by head office. Please carefully read this user and maintenance manual before installing and operating the stove. If you require further clarification, contact your nearest Ravelli srl dealer.

The stove must be located indoors, never outdoors. Because it is controlled by an electronic board, it enables completely automatic and uncontrolled combustion: in fact, the control panel regulates activation, the 5 power levels and switch off phase, guaranteeing safe functioning.

Most of the hot ash falls into a pan via the basket used for pellet combustion. Check, on a daily basis, if the basket is clean, because not all pellets are of the highest quality and they can leave residues which are difficult to remove.

The glass is equipped with a special air wash for self-cleaning: yet, it is impossible to avoid a slight yellowish film on the glass after some hours of functioning.

As previously mentioned, the stove should be fueled by 6 mm diameter pellets, but can also function with pellets with a different diameter: in this case, contact your Ravelli dealer for technical advice



### NOTE

- Prepare the installation location of the stove according to local, national and European regulations.
- The stove must only be fueled with high quality pellets with a diameter of 6 mm as described in the dedicated chapter.  
**The stove cannot burn traditional wood.**
- **It is forbidden to use the stove as an incinerator. DANGER OF FIRE!!!**
- **Installation, electrical connection, verification of functioning and maintenance must be carried out by qualified and authorised staff.**
- **Improper installation or poor maintenance (non-conformity with what is reported in the following booklet) may cause damage to people or property. In this condition, RAVELLI SRL is released from all civil or criminal liability.**
- Before connecting the stove to electrical power, the connection of the discharge tubes (specifically for pellet stoves, not in aluminium) with the flue must be complete.
- The protection grid placed inside the pellet tank must never be removed.
- There must be a sufficient exchange of air in the room in which the stove is installed.
- Never open the door of the stove when functioning. **DANGER OF FIRE!!!**
- **It is forbidden to operate the stove with the door open or with the glass broken. DANGER OF FIRE!!!**
- When the stove is working, the surfaces, the glass, the handle and the tubes are very hot: during functioning these parts can only be touched using adequate protective equipment.
- **Do not switch on the stove without firstly carrying out a daily inspection as described in the MAINTENANCE chapter of this manual.**
- **Do not dry washing on the stove. Any washing lines or similar must be kept an appropriate distance from the stove. DANGER OF FIRE!!!**
- Scrupulously follow the maintenance schedule.
- Do not switch off the stove by disconnecting the electrical mains.
- Do not clean the stove until the structure and ash are completely cold.
- Carry out all operations in a completely safe and calm manner.

## Responsibilities

With the delivery of this manual, Ravelli srl declines all civil and criminal liability for accidents deriving from the partial or total non-compliance with instructions contained in it.

Ravelli srl declines all liability deriving from improper use of the stove, from incorrect use by the user, from unauthorised changes and/or repairs and from use of non-original spare parts.

The manufacturer declines all direct and indirect civil and criminal liability due to:

- poor maintenance
- non-compliance with the instructions contained in this manual
- use not complying with safety directives
- installation not complying with the standards in force in the country
- installation by unqualified and untrained staff
- changes and repairs unauthorised by the manufacturer
- use of non-original spare parts
- exceptional events

## Spare parts

Exclusively use original spare parts. Do not wait for the components to deteriorate before replacing them. Replace a worn component before it is completely broken to prevent any accidents due to sudden breakage of the components. Carry out periodic maintenance controls as described in the dedicated chapter.

## General information

### What are wood pellets?

Pellets are composed of woodchip and sawdust produced in joineries. The material used cannot contain any foreign substances such as glue, lacquer or synthetic substances.

The wood is pressed using a perforated matrix: due to the high pressure the sawdust heats to activate the natural binders in the wood; in this way, the pellet maintains its shape, also without adding artificial substances. The density of the wood pellets varies based on the type of wood and can exceed 1.5 - 2 times that of natural wood.

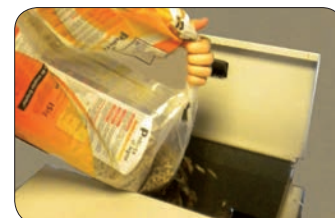
The cylindrical sticks have a diameter of 4 - 10 mm. and a variable width between 10 and 30 mm.

Their weight is equal to approx. 650 KG/m<sup>3</sup>. Due to the low water content (8 - 10%) they have high energy content.

The standards DIN 51731 define the quality of the pellet:



Length	: approx. 10 - 30 mm
Diameter	: approx. 4 - 10 mm
Real weight	: approx. 650 Kg/m <sup>3</sup>
Heat power	: approx. 4.9 kWh/Kg
Residual humidity	: approx. 6 - 12 %
Ash	: <1.5%
Specific weight	: >1.0 Kg/dm <sup>3</sup>



Pellets must be transported and stored in dry places. On contact with humidity they swell, becoming unusable: therefore it is necessary to protect them from humidity both during transport and storage.

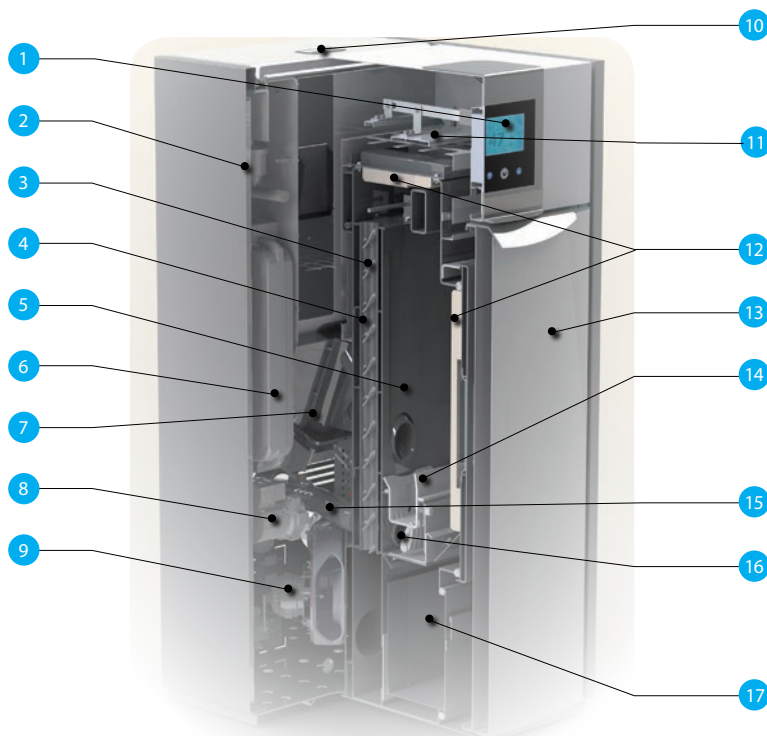
Ravelli srl recommends a pellet with a diameter equal to 6 mm. **If you wish to use a pellet type with a different diameter contact the support centre to carry out the due regulations on the stove.**

### Excerpt from the DIN PLUS standard:

This standard requires that the pellet is produced with starting material "virgin wood" free of contaminants (glues, paints, preservatives). Manufacturing, however, allows the use of vegetable non-chemically modified thermal agglutinating agents such as wheat flour, rye or starch, which cannot however exceed 2% of the product.

The pellets can be light or dark, usually packed in bags bearing the manufacturer's name, the main features and the marking of DIN Plus standard.

## How is a stove made?



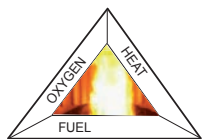
- 1 Display
- 2 Insulation
- 3 Turbulator
- 4 Smoke duct – H2O exchange
- 5 Steel boiler structure
- 6 Expansion vessel
- 7 Pellet infeed screw
- 8 Circulator
- 9 Smoke extractor
- 10 Pellet tank cover
- 11 Tube bundle swing cleaning system
- 12 Vermiculite
- 13 Painted steel door
- 14 Stainless steel grate
- 15 Air intake duct with flow meter
- 16 Automatic grate cleaning system
- 17 Removable ash pan

Included: room temperature detection probe, temperature probe for H<sub>2</sub>O.

### Combustion

Combustion is nothing more than a chemical reaction in which two agents, called the fuel and the oxidizing agent, combine to produce a new substance. A considerable amount of heat is also produced from this reaction (concept of pellet stove functioning).

To facilitate the aforementioned expression, we can take into consideration this practical diagram called the “combustion triangle”; it consists of three elements which are necessary to produce a combustion reaction. These three elements are:



- fuel (pellets)
- oxidizing agent (oxygen in air)
- trigger (electrical resistor on switch on)

The fuel and the oxidizing agent must be in adequate proportions because combustion is restricted to the so-called “flammability field”. The reaction between the fuel and the oxidizing agent is not spontaneous, but occurs using an external trigger. The trigger can be represented for example by a heat source or a spark. The trigger represents the ignition energy necessary for the reagent molecules to start the reaction and must be provided externally (electrical resistor on switch on). Then, the energy released by the reaction makes self-sustainment possible.

Three types of combustion are reported below, the correct one is reported in Figure 3:



Fig. 1

INCORRECT combustion, flame too drawn, in “blowtorch” style with a high quantity of incandescent pellets coming out of the grate. Correct the pellet/air set by reducing the percentage of air (from 0 to -5); if not sufficient, also increase the percentage of falling pellets (from 0 to +5) to arrive to the condition in Figure 3.

If the changes made to the settings do not bring the stove to the right combustion conditions in Figure 3, contact the Technical Support Centre.



Fig. 2

INCORRECT combustion, “spring” flame in “wood stove” style with high quantity of pellets not burning on the grate. Firstly, check the door is closed and the ash pan. Secondly, correct the pellet/air set by increasing the percentage of air (from 0 to +5); if not sufficient, also reduce the percentage of falling pellets (from 0 to -5) to arrive to the condition in Figure 3.

If the changes made to the settings do not bring the stove to the right combustion conditions in Figure 3, contact the Technical Support Centre.



Fig. 3

CORRECT combustion, lively yellow/white flame with a minimum quantity of pellets on the grate.

Ideal combustion which does not require changes.

Figure 3 shows a flame produced by a stove with functioning power set on the maximum value 5.

### Safety devices

The stove is equipped with sophisticated safety systems, which avoid damaging the stove and/or the home in the event of breakage of a single piece or faults on the flue. In any case, if an anomaly occurs, the pellets are immediately stopped from falling and the switch off phase activates.

The corresponding alarm is shown on the display. It is possible to see the details in the chapter dedicated to alarms.

### Technical standards and Directives

All Ravelli srl products are manufactured according to the directives:

- **89/106 CEE** manufacturing materials
- **73/23 CEE** electrical safety
- **2006/42/ CEE** machines
- **2004/108 CEE** electromagnetic compatibility

And according to the standards:

- **EN 14785**
- **EN 60335.1 EN 50165**
- **EN 292 EN 294 EN 349**
- **EN 55014.1 EN 61000-3-2 EN 61000-3-3**
- **EN 55014.2**



## Stove installation

### Advice for installation

Because of the frequent accidents caused by the malfunctioning of the flues in residential buildings, this chapter has been drafted in collaboration with Assocosma (association of stove/sweeping technicians and specialists of the field) in order to facilitate the installer to build a system able to evacuate fumes in accordance with the regulations in force.

- Marking standard Directive CE 89/106 D.P.R. 246 regarding the exclusive use of CE certified material;
- UNI 10683/2012 for the installation of a biomass fire box;
- UNI/TS 11278 regarding the selection of material (only for pellet stoves different than V2)
- UNI 10845 (excerpt from gas-related regulations) for piping with the relative control of the skylight well (material used, state of wear etc.) and safety distances to be observed from combustible materials;
- UNI 7129/08 (standards regarding depressurized chimneys, excerpt from gas-related regulations) regarding the type, height and positioning of chimney terminal;
- UNI/EN 1443 regarding the installation with the minimum essential chimney requirements met (followed by the compilation of fume dataplate to be affixed to the chimney).

### Approved installations

Fireplaces, stoves and barbecues cannot be installed in areas in which are present and functioning equipment fueled by liquid and gas type A and type B (for classification see UNI 10642 and UNI 7129).

It is forbidden to install the stove in rooms used for cooking, if there are:

- collective type ventilation ducts;
- blowers/vacuums connected to the outside and/or equipment that can depressurize the room.

It is forbidden to install the stove in rooms at risk of fire such as garages and garages, bedrooms (only watertight installation) or studios (unless installed in a hermetically sealed combustion chamber).

## EXCERPT OF STANDARD UNI/EN 1443

### System compatibility check

Compatibility check of the system should be carried out before any installation or commissioning intervention.

The adjacent, side and rear walls and the supporting surface must be made of non-combustible and non sensitive to heat material. Installation next to combustible materials or heat-sensitive materials is allowed provided that suitable protection is ensured with insulating and non-combustible materials. This should however be provided by the manufacturer's instructions.

When the installation instructions are not available, the installer will have to secure the appliance and shall be liable for its commissioning.

Before installation you should check the position of the stove, flue or exhaust terminal devices to make sure the following have been observed:

- Installation restrictions
- Legal distances
- Limitations provided by local administrative regulations or specific provisions of the local bodies.
- Conventional limitations imposed by the residence regulations, easement or contracts.

After surveying the installation place, the installer should check the following:

- the type of appliance;
- the compatibility of the installation place with the appliance in terms of minimum installation volume indicated by the manufacturer;
- the instructions of the manufacturer of the heat generator regarding the requirements of the fume exhaust system in case the generator is not working;
- the internal cross section of the fume duct, the composing materials, the evenness of the cross section, the absence of obstructions;
- height and length on vertical plane of the chimney;
- the existence and compliance of chimney terminal;
- the possibility to fit external air vents and the dimensions of existing vents.

The complete flue exhaust system must be supplied and installed in compliance with the regulations issued by the standardization bodies and should be installed according to state-of-the-art standards.

### Air vent

It is used to fuel the fire box and input air into the room; it should be fitted directly from the outside (not through other rooms, garage etc.; its cross section should be equal or 1/4 higher than chimney section by minimum 80 sq.cm for stoves and thermo-stoves (UNI1475) and 100 sq. cm for boilers (UNI303-5).

Manufacturer's and designer's instructions should be however complied with at all times. Also check that the drilling position of the wall allows the intake of fresh air, making sure that no harmful exhausts fumes return into the room (radon gas, ect.).

## Fume duct and fittings

For heat generating devices equipped with an electric fume exhaust fan you must follow the installation instructions of the manufacturer regarding the maximum length and number of bends of the exhaust ducts.

In case the maximum values are not available, you should follow the provisions below:

- Horizontal sections should have a minimum slope of 3% upwards (45° bends are recommended)
- The length of the horizontal section should be minimum and its plan projection should not exceed 3 metres
- The number of direction changes including the one required to use the T fitting and insert the chimney should not be higher than 3.
- This section should have constant diameter and equal at fire box outlet up to the fitting into the flue.
- It is forbidden to use flexible metal and cement fibre tubes and pressurization should be ensured at all times

In any case, the fume ducts should be sealed and protected against combustion products or condensate as well as insulated if passing outside the installation room.

It is not allowed to mount manually regulated draught devices onto appliances with forced draught.

## Flue


- It should be made of suitable materials to ensure resistance to normal mechanical and chemical stress, and be properly insulated to prevent the formation of condensate; it should, therefore, be insulated (flue standard UNI 1856 [1]2 and used materials standard UNI/TS 11278)
- Be free of narrowing throughout its length;
- Be properly spaced by means of air gaps and insulated with non flammable materials.
- Maximum bends allowed are at 45°.
- the flue installed inside the house should be insulated and can be inserted into a chimney terminal as long as the piping standards are being complied with (UNI 10845).
- The fume duct should be connected to the chimney by means of a T fitting with a collection chamber fitted with inspection glass to check the combustion residues and condensate collection.

## Flue dataplate

Supplied with the chimney, it identifies:

- The manufacturer;
- The CE marking;
- designation of the product as per standard UNI 1856(xx)

There is also a part to be completed by the installer which certifies the suitability of the chimney to the product (stove) installed, installation standard EN 1443.

NOME o MARCHIO FABBRICANTE		XX	Last two digits of the year in which the marking has been affixed
		01234	
CERTIFICATO CE: 01234 - CPD - 0999			Certificate number
Sistema Camino EN 1856/1-2 T400 N1 D v2 I50050 G(30)			Designation stated by manufacturer
SEZIONE RISERVATA ALL'INSTALLATORE			
1) DESIGNAZIONE EN 1443 T400 N1 D 3 G(30)			
2) Ø: 100 mm			
3) DISTANZA DEL MATERIALE COMBUSTIBILE 30 mm			
4) INSTALLATORE (nome e cognome): Mario Bianchi Via Rossi 24 Calcinatè (BG)			
5) DATA: 27/07/2011			
ATTENZIONE: LA PRESENTE ETICHETTA NON DEVE ESSERE RIMOSSA O MODIFICATA			

**LEGEND:**

**T:** Indicates the temperature class (T80 - T200 - etc.):

**N/P/H:** Indicates the protection class (N-->negative - P--> Positive - H-->High pressure; "x"--> indicates the loss allowed whereas 1 is the most restrictive):

**D/W:** It indicates the condensate resistance class (D-->for dry use - W-->for wet use);

**V:** Corrosion resistance class (V1-->gaseous fuels; V2-->liquid fuels; V3-->solid fuels;

Vm--> test not performed):

**LX/X:** Indicates the type of material used and the thickness in hundredths of millimetres (i.g.: L50050 indicates L50-->Stainless Steel AISI 316 and 050-->thickness 0.5mm):

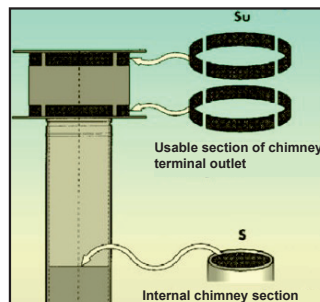
**G/O:** Indicates the fire resistance class of unburnt products (G-->YES; O-->NO) and the value between brackets indicates the distance from flammable materials.

Therefore, the dataplate to be compiled following the requests for a pellet stove shall be:

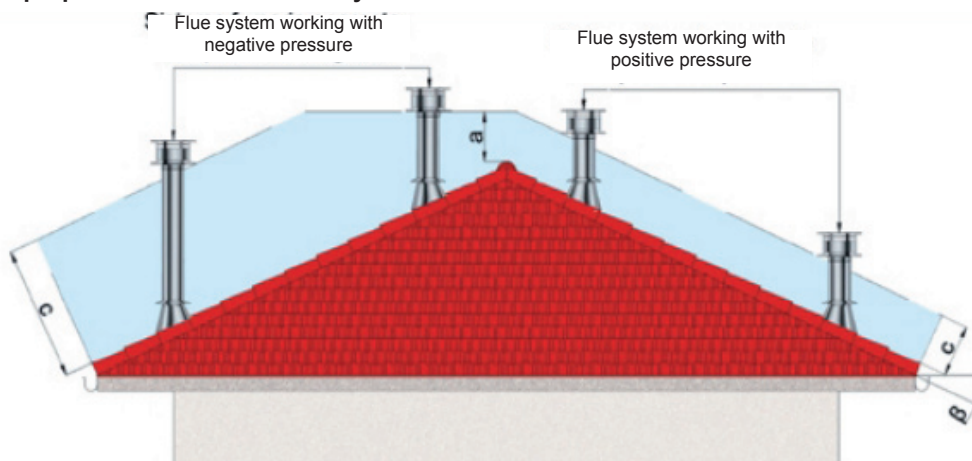
**Designation EN 1443:**                    **T400    N1    D    3    G(xx)**

**Chimney terminal (UNI 7129/08):**

- Fume exhaust cross section should be twice the diameter of the chimney;
- Have a structure suitable to prevent water or snow from entering;
- Be built so that in the presence of wind it still ensures fume exhaust (wind-proof chimney cap)
- Function always as a static suction system facilitating fume dispersion
- the release quota is measured between the lower covering layer and the lower point of the fume release into environment, outside the reflux area to prevent counter-pressures;
- Be built at safe distance from antennas or parabolic antennas never be used as a support;

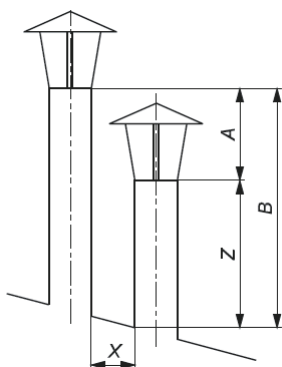


**Safe distances for proper installation of chimney terminal:**



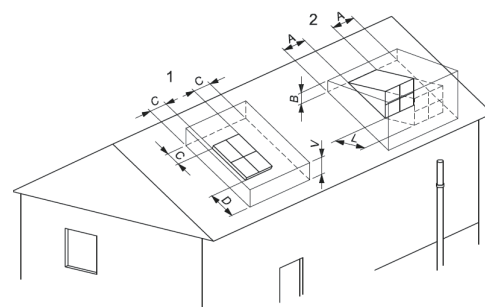
Symbol	Description	Clearance area [mm]
<i>c</i>	Distance measured at 90° from roof surface	1 300
<i>a</i>	Height above roof ridge	500

The pellet stoves have the flue system working with **negative pressure** (see LH and RH side of the roof) the part marked with gray is the reflux area and the chimney terminal should therefore release the fume above these area.

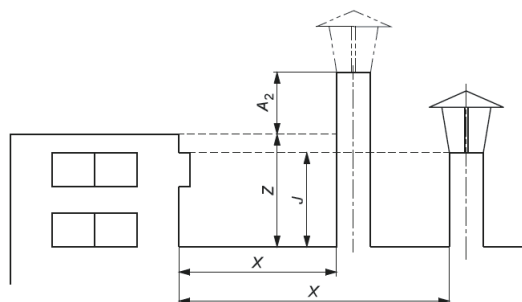


Symbol	Description [mm]	Release area [mm]
<i>Z</i>	Height measured in vertical plane	(See figure 8)
<i>B</i>	$X \leq 500$	$Z + A$
<i>A</i>	Height above the obstacle	200

Symbol	Description	Clearance area [mm]
Dormer window(2)	<i>A</i> Side distance from dormer window	1 500
	<i>B</i> Height above the ridge of dormer window frame	1 000
	<i>L</i> Front distance from dormer window	3 000
Skylight (1)	<i>C</i> Distance from top or side line of openings and windows	1 000
	<i>D</i> Distance from the smaller line of openings or windows	3 000
	<i>V</i> Height above openings or windows	1 000



IT IS FORBIDDEN TO DISCHARGE FLUES THROUGH A DIRECT SYSTEM OR ANY OTHER DRAIN SYSTEM NOT PROVIDED BY THE STANDARDS MENTIONED ABOVE



Distance [mm]	Release quota
$X \leq 2\,000$	$Z + A_2$
$X > 2\,000$	$B$

The symbol Z marks the height (mm) of the obstacle or thermal compartment; for quotas  $A_2$  and  $B$  see table 10.

Distances depending on the distance of the chimney terminal from the obstacle free of openings (roof with slope  $\beta \leq 10^\circ$  (17.6%)).

Symbol	Description	Clearance distances [mm]
$A_2$	Height above the virtual stratum between the building roof or obstacles or adjacent thermal compartments in the absence of openings/windows	500
$B^1$	Height above flat roofs or close parapets	1 000

<sup>1)</sup> If the terrace or flat roof is walkable, the clearance distances should be observed as specified in table 8.

Release quotas depend on the distance of chimney terminal free of openings.

Distance [mm]	Release quota
$X \leq 3\,000$	$Z + A_2$
$X > 3\,000$	$B$

The symbol Z marks the height (mm) of the obstacle or thermal compartment; for quotas  $A_2$  and  $B$  see table 10.

Distances depending on the distance of the chimney terminal from the obstacle free of openings (roof with slope  $\beta > 10^\circ$  (17.6%)).

Distance [mm]	Release quota
$X \leq 5\,000$	$Z + A_2$
$5\,000 < X \leq 10\,000$	$J$

The symbol Z marks the height (mm) of the obstacle or thermal compartment; for quotas  $A_2$  and  $J$  see table 13.

Release quotas depend on the distance of the obstacle free of openings.

Symbol	Description	Clearance distances [mm]
$A_2$	Height above the virtual stratum between the building roof or obstacles or adjacent thermal compartments in the absence of openings/windows	1 000

Release quotas depend on the distance of chimney terminal of opening obstacle.

## Testing and commissioning

Stove commissioning must be preceded by a test that involves the verification of the operation of the following elements:

- the suitability of the fumes exhaust system;
- connection to external air vents, if any;
- electric and hydraulic connections;
- check that all the materials that make up the smoke duct, flue, chimney terminal are suitable for use and compliant with standards (fume exhaust of a stove with solid fuel).

For heat generating devices powered by mechanical systems testing must be done according to manufacturer's instructions.

**The test is considered successful when all operation phases are completed without encountering anomalies.**

## Additional documentation and informations for the user

Upon installation completion, the installer should hand over to the user:

- the user's manual of the appliance supplied by the manufacturer;
- the technical documentation of the accessories used and subject to maintenance;
- the documentation of the flue exhaust system;
- The system booklet (where applicable);
- the documentation that certifies installation completion;

The documentation required to cover installer's liability comprises:

- detailed description (including photos) of other heat generators present;
- declaration of conformity of the state-of-the-art system (D.M. 37/08);
- description of overall dimensions, layout or photos regarding the modifications brought to the layout in case it was necessary to intervene during installation;
- The use of certified material with CE marking (89/106 D.P.R. 246);
- any information regarding the warranty;
- the date and signature of installer;

### Maintenance frequency

Maintenance should be carried out periodically, as shown in the table below, and in the manner prescribed by standards and performed by qualified personnel; upon completion a regular intervention report should be issued.

**The installer should ask for the receipt of delivered documentation and preserve it together with the technical documentation regarding the installation performed.**

Type of appliance installed	< 15kW	(15 - 35) kW
Pellet appliance	2 years	1 year
Appliances with air open firebox	4 years	4 years
Appliances with air close firebox	2 years	2 years
Water appliances (fireplaces, thermo-stoves, thermo-cookers)	1 year	1 year
Boilers	1 year	1 year
Fume exhaust system	4t of fuel used	4t of fuel used

### REFERENCE KEY OF SYSTEM DECLARATION OF CONFORMITY

1. Like in the case of gas plants, by "other" we may mean the replacement of a device installed in a fixed manner.
2. Indicate: name, surname, qualification and (when there is an obligation as per Art.5, paragraph 2) registration data to the relative Professional association of the technician that drafted the project.
3. Specify the technical standards and regulations in force, classifying them per design, execution and inspection.
4. Should the system executed according to the design be modified during work, the project submitted at the end of the works should include the versions made. The project also includes the fire prevention protocol (where applicable).
5. For products subject to standards, the report should contain a complete statement of compliance to the same, where applicable, with reference to marking, test certificates etc. issued by authorized bodies.  
For the other products (to be listed) the signatory should declare that it regards materials, products and parts compliant with the provisions of Articles 5 and 6. The report should state the compliance with installation area.  
When this is relevant for the proper operation of the system, indications on the number or features of appliances installed or about to be installed should be provided (e.g. for gas: 1) number, type and power of appliances; 2) features of the parts that make up the ventilation systems of the area; 3) features of the system that feeds the fuels;  
4) information on appliance wiring, where applicable).
6. The layout of the system executed includes the description of the works done (with simple reference to the project when the latter was drawn up by an authorized professional and variations during works have not been approved). In the case of: modification, enlargement and non-routine maintenance, the intervention should be integrated, if possible, into the layout of the existing system. The layout shall include the fire prevention protocol (where applicable).
7. The reference data include the name of the company that carried out the works and the date of the statement. For plants or parts of plants built before the entry into force of this decree, the reference to declarations of conformity may be replaced by a reference to declarations of conformity (Article 7, paragraph 6). If part of the system is executed by another company (such as ventilation and fume exhaust in gas installations), the declaration should include reference data for the said parts.
8. If the installation includes products or systems legitimately used for the same job in another Member State of the European Union or party to the Agreement on the European Economic Area, for which there are no technical standards for the product and installation, the declaration of conformity should be annexed to the project drafted and signed by a registered professional engineer in accordance with the specific technical skills required, certifying that the risk assessment associated with the use of the product or production system was performed, and the fact that he had adopted all necessary measures to achieve levels of safety equivalent to those guaranteed for the installations carried out, according to state-of-the-art standards and to have supervised the proper execution of the installation in all its phases in compliance with all technical standards provided by the manufacturer of the system or the product.
9. Example: any certificates containing the outcome of the checks performed on the system before commissioning or cleaning, sanitizing treatments etc..
10. Upon completion of works, the company that installed the system should issue the client a declaration of conformity of the systems in compliance with the standards in Art.7. The client or the owner should entrust installation, modification, enlargement and maintenance tasks of the system in Art. 1 exclusively to authorized companies as per Art. 3.



# **DECLARATION OF CONFORMITY OF THE STATE-OF-THE-ART SYSTEM**

As per para.I of Art. 7 of Ministerial Decree 37 of January 22, 2008

no. 20

The undersigned \_\_\_\_\_ owner or legal representative of the company \_\_\_\_\_ (company's name) \_\_\_\_\_  
operating in the handcraft sector with premises in \_\_\_\_\_ municipality \_\_\_\_\_ prov. ( \_\_\_\_ )  
phone \_\_\_\_\_ VAT no \_\_\_\_\_

- ☐ registered in the Registry of Companies (DPR 7/12/95 no.581 of CCIAA of TV no. xxx  
☐ registered in the Provincial Handicraft Enterprises (L. 8.8.1985, no.443) of TV no. xx

system executed by (schematical description, project layout): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

intended as: ☐ new system ☐ makeover ☐ upgrade  
☐ non-routine maintenance ☐ other<sup>(1)</sup> .....

Commissioned by \_\_\_\_\_ installed at the premises in the municipality of \_\_\_\_\_ prov. ( \_\_\_\_ )  
street \_\_\_\_\_ floor \_\_\_\_\_ internal, owned by \_\_\_\_\_ (name, surname or company's name and address) \_\_\_\_\_  
in the building designated as: ☐ industrial ☐ civil ☐ trade ☐ other uses

## **DECLARES**

under its sole responsibility that the machine was built in compliance with state-of-the-art standards in accordance with the provisions of Article 6, taking into account the operating conditions and the designated uses of the building, having in particular:

- ☐ observed the project drafted as per Art.5 by<sup>(2)</sup> .....  
☐ followed the technical standard specific to its use as<sup>(3)</sup> UNI10683/05 UNI10845 UNI/TS11278 UNI/EN1443 UNI7129/08  
☐ installed parts and materials suitable for the place of installation (Art.5 and 6)  
☐ inspected the system for safety purposes and the functionality with positive outcome, having carried out the checks required by the standards and the provisions of the law.

### **Mandatory annexes:**

- ☐ project as per Articles 5 or 7<sup>(4)</sup>  
☐ report with the types of materials used<sup>(5)</sup>  
☐ layout of the system made<sup>(6)</sup>  
☐ reference to previous or partial declarations of conformity, already existing<sup>(7)</sup>:  
executed by the company ..... date .....  
☐ copy of the certificate of acknowledgement of technical and professional requirements  
☐ certificate of conformity for the system executed with non-standard materials or systems<sup>(8)</sup>.

Optional annexes: Photographic Documentation. Use and maintenance manual of the fireplace, the Fume dataplate and booklet of the generator, declaration of insulation compliance, combustion analysis, draught test, local ventilation and CO verification and chimney seal test

## **DENIES**

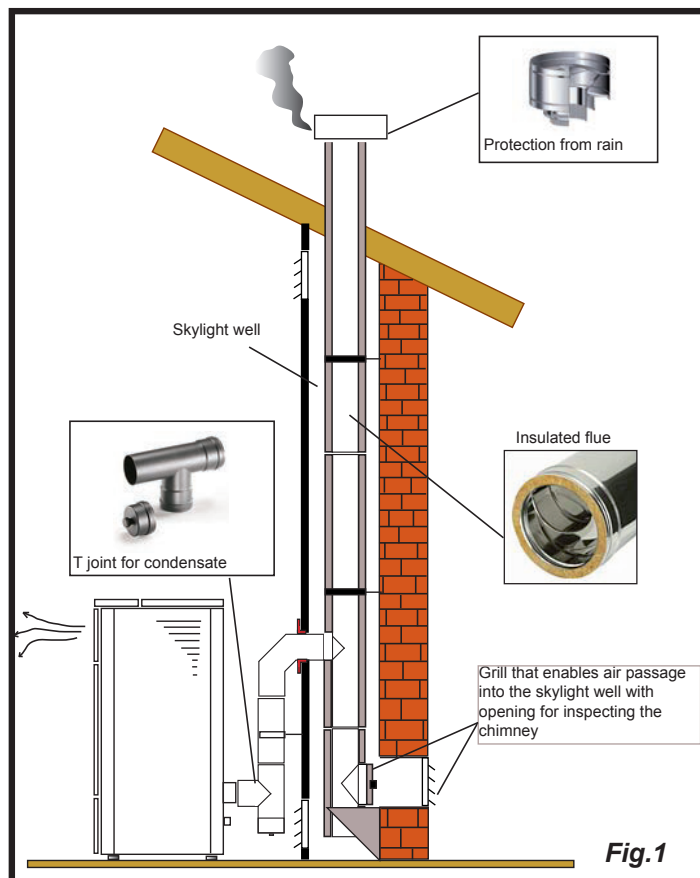
all liability for injuries or damages to property arising from tampering with the system, by third party or due to lack of maintenance or repair<sup>(9)</sup>.

Date \_\_\_\_\_ The technical manager \_\_\_\_\_ The undersigned \_\_\_\_\_  
WARNINGS FOR THE BUYER: liability of the buyer or the owner, Art. 8<sup>(10)</sup>

The undersigned \_\_\_\_\_ buyer of the works/owner of the building declares to have received \_\_\_\_\_  
copies of this document and the specified annexes.

Date \_\_\_\_\_ Signature \_\_\_\_\_

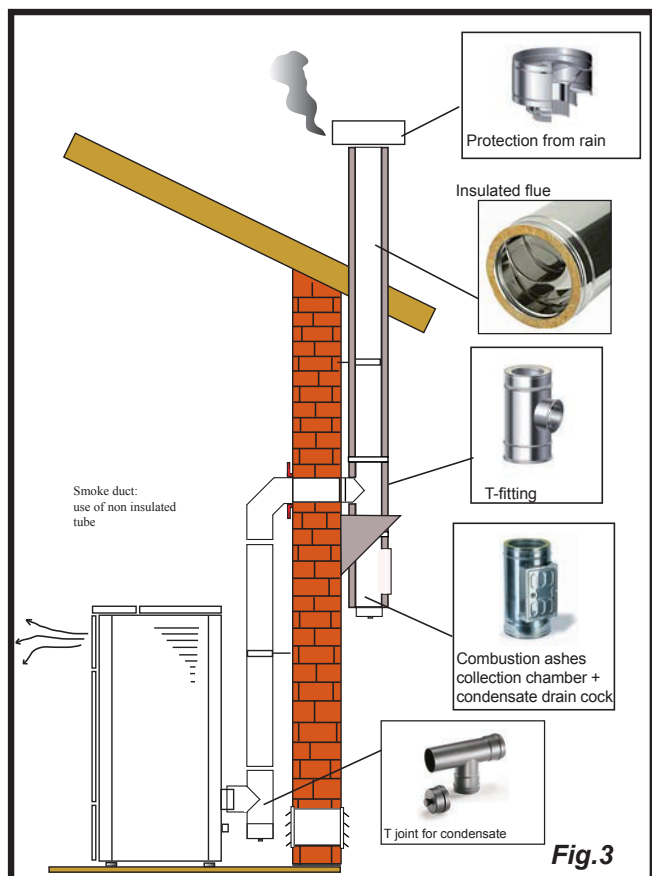
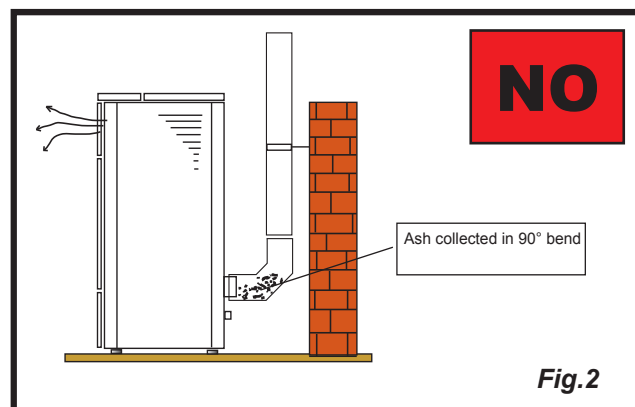
## Examples of installation of a pellet stove/thermo-stove/ boiler



This type of installation (See Figure 1) requires the chimney to be insulated despite the fact that the entire duct is installed inside the building. Moreover, the structure should be inserted into a properly ventilated skylight well.

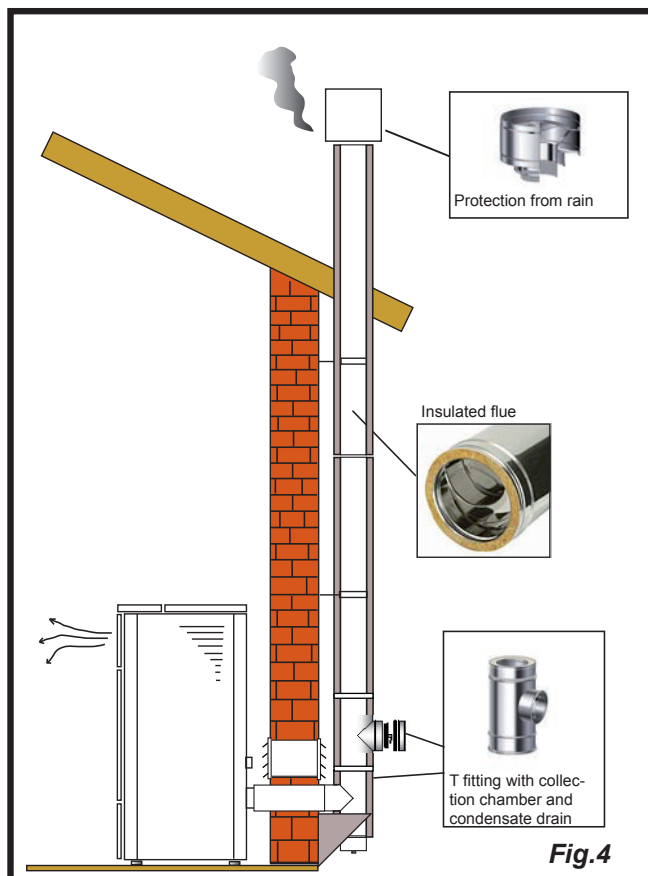
At the bottom of the chimney is provided an inspection cover suitably isolated from wind and rain.

It is not recommended to install a 90° curve as the first initial piece, since the ash could quickly obstruct the smoke passage, causing problems for stove suction. (See fig. 2)



This type of installation (See Fig. 3) does not require the use of insulated chimney for the section inside the building, while the section located outside of the building should be made of insulated tubes. In the lower part of the flue, inside the house, was installed a T fitting with an inspection cap; another one was mounted outside to enable inspection of the external section.

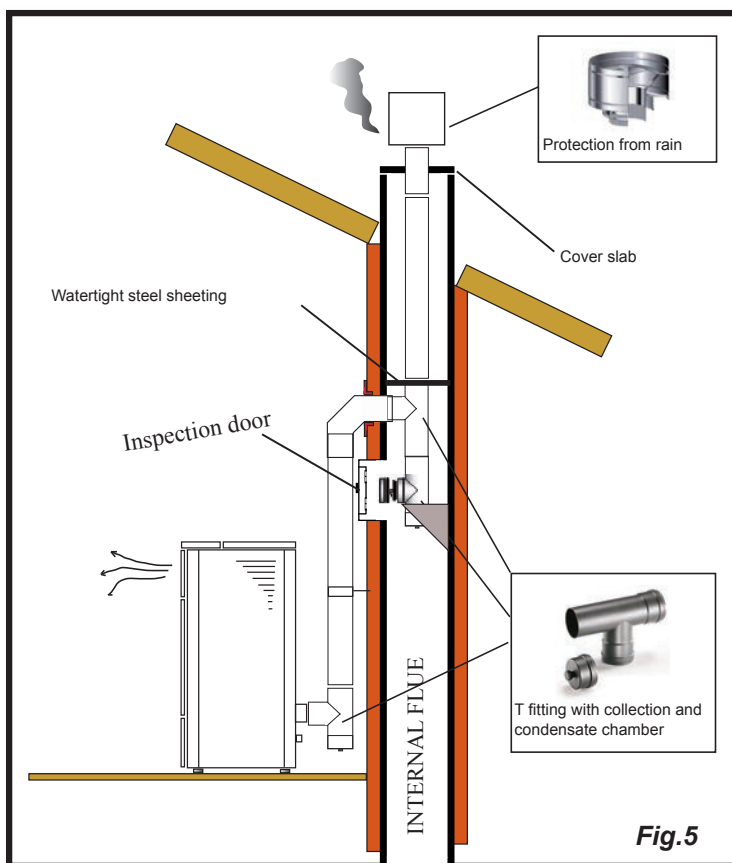
It is not recommended to install two 90° curves since the ash could quickly obstruct smoke passage, compromising stove's draught. (See fig. 2)



This type of installation (see Figure 4) requires insulated chimney since the entire smoke duct was assembled inside the house.

In the lower part of the flue was fitted a T fitting with inspection plug.

It is not recommended to install a 90° curve as the first initial piece, since the ash could quickly obstruct the smoke passage, causing problems for stove suction. (See Fig.2)



This type of installation (See Fig. 5) does not require an insulated flue, since part of the smoke duct was assembled inside the home and part inside an existing flue.

In the lower part of the stove was intalled a T fitting with inspection plug, like for the inner part of the flue.

It is not recommended to install a 90° curve as the first piece, since the ash could quickly obstruct the smoke passage, compromising stove draught. (See Fig.2)

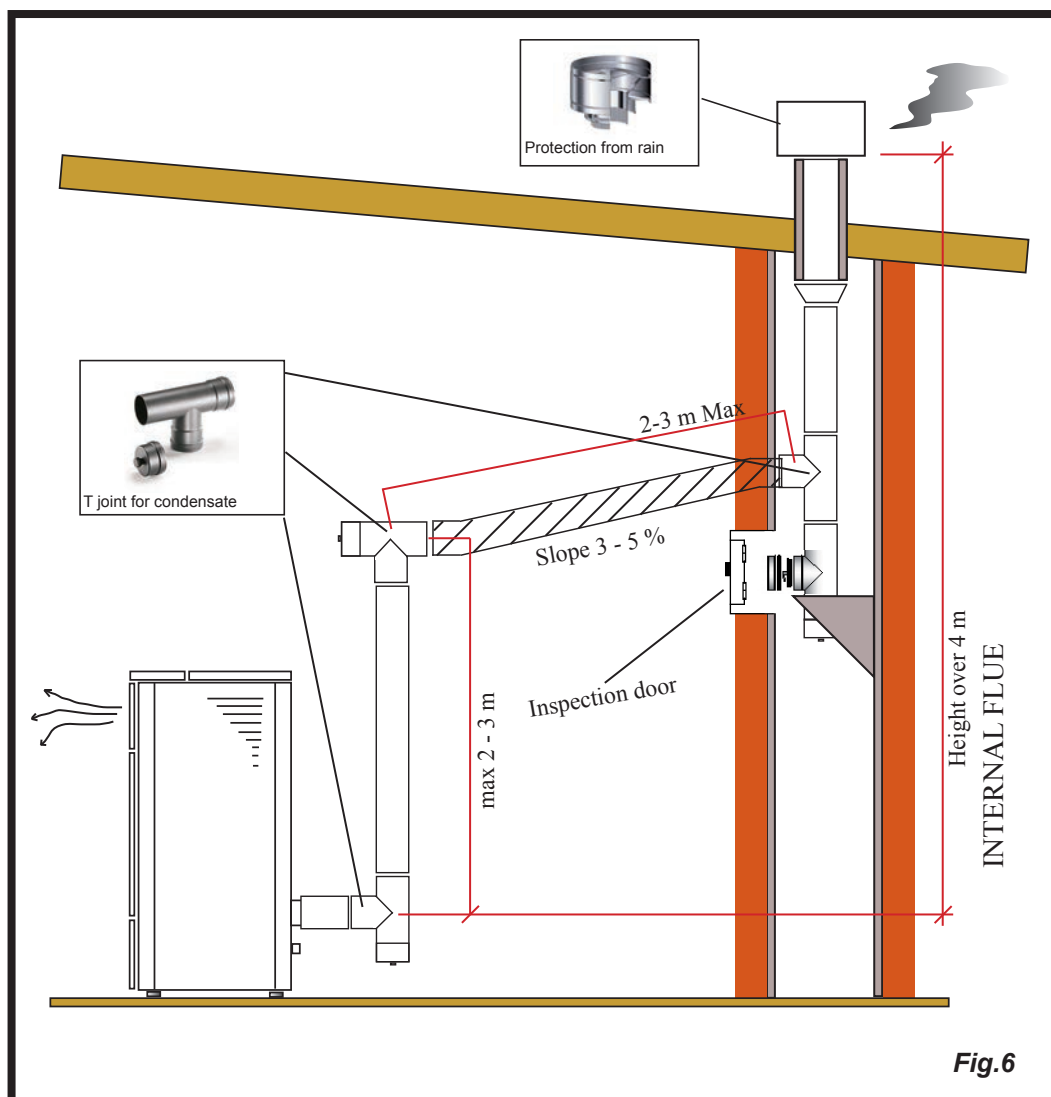


Fig.6

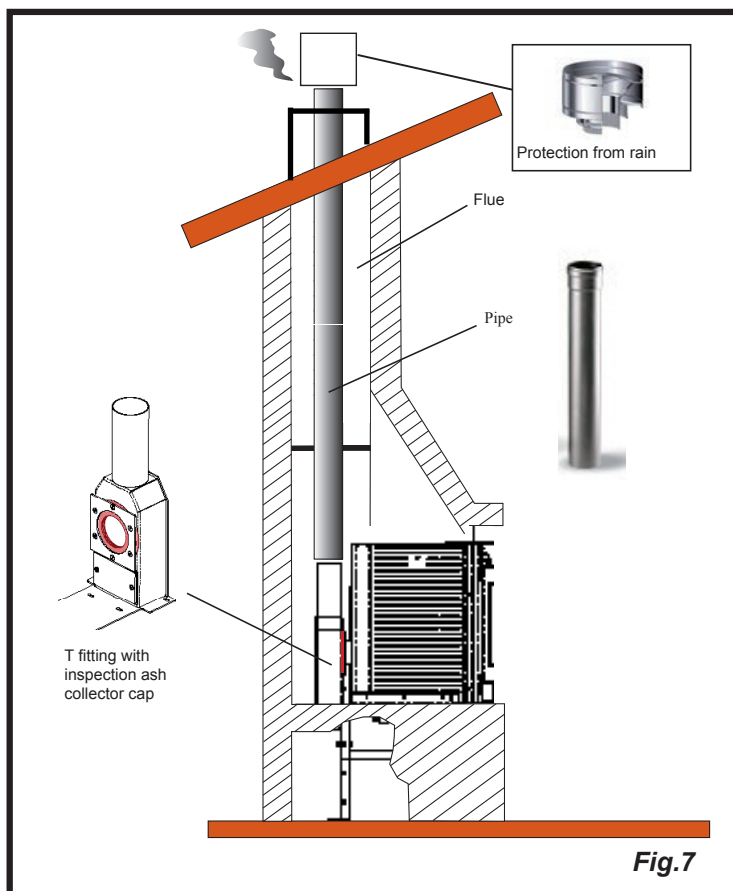
This type of installation (Fig.6) requires a horizontal section for connection to an existing flue. Comply with the slope indicated in the figure, to reduce depositing ash in the horizontal tube section. In the lower part of the flue, was installed a T fitting with inspection plug like for the flue inlet.

It is not recommended to install a 90° curve as the first piece, since the ash could quickly obstruct the smoke passage, compromising stove draught. (See Fig.2)



IT IS MANDATORY TO USE WATERTIGHT PIPES WITH SILICONE SEALS.

**Examples of installation of a pellet stove/thermostove/ insert**

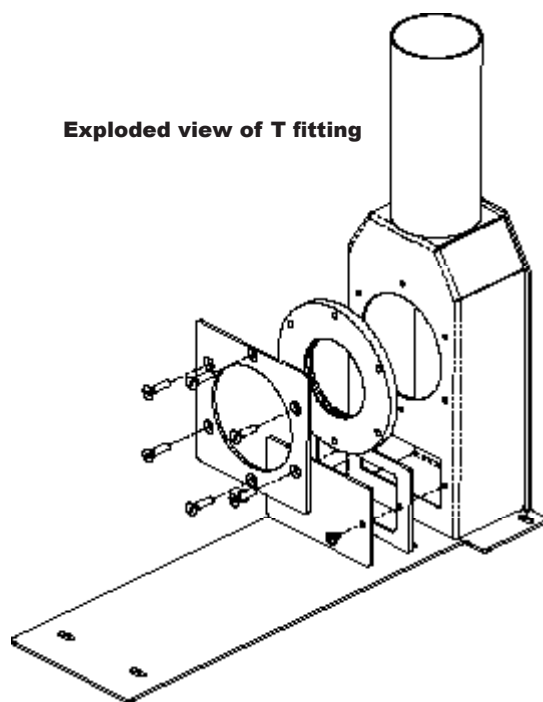


In this type of installation we can notice that the fitting was used to enable connecting the insert to the chimney (so-called "bayonet" mount).

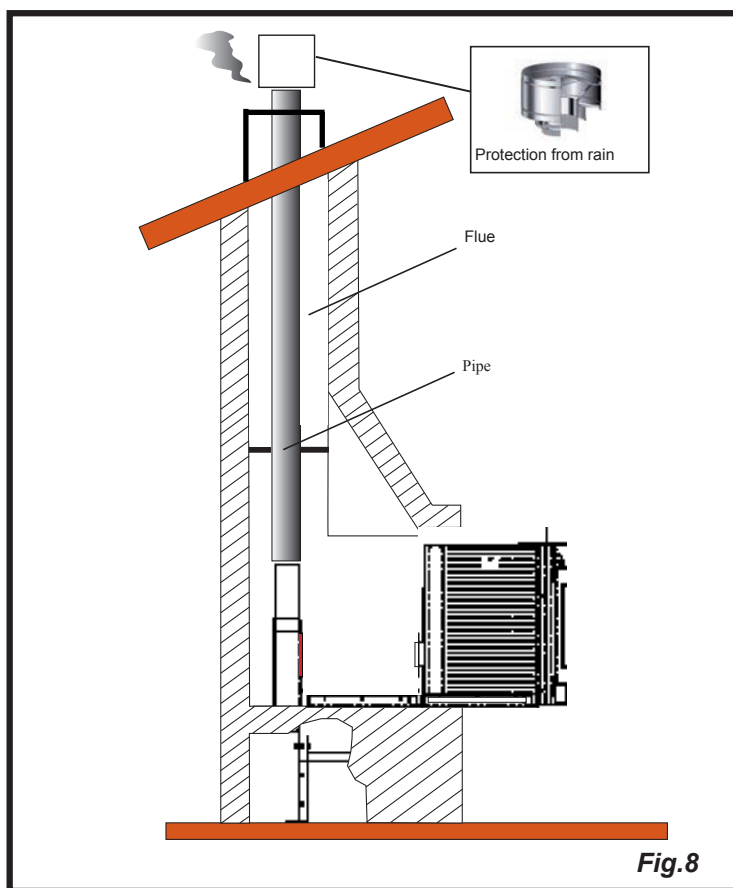
For safety reasons and to ensure proper operation, we recommend you fit pipes into the chimney. (Fig.7)

It is recommended to perfectly match the insert with the fitting, to prevent leaks of smoke during the work phase.

**Exploded view of T fitting**



Here you can see the possibility to slide the insert; this operation can only be performed with the stove turned off for loading pellets or during regular checks. (Fig.8)



IT IS STRICTLY FORBIDDEN TO REMOVE THE STOVE DURING THE WORK PHASES; THE FUME MAY DISPERSE INTO THE ENVIRONMENT.



## Hydraulic installation



PLUMBING MUST ALWAYS BE CARRIED OUT BY QUALIFIED PERSONNEL, ABLE TO CARRY OUT A STATE-OF-THE-ART INSTALLATION IN COMPLIANCE WITH THE LAWS IN FORCE IN THE COUNTRY OF INSTALLATION, AFTER HAVING READ THE NEXT CHAPTER. RAVELLI DENIES ALL LIABILITIES FO DAMAGES TO PEOPLE OR PROPERTY ARISING FROM MALFUNCTIONS DUE TO FAILURE TO COMPLY WITH THIS WARNING

### Safety devices for open tank system

According to the standard UNI 10412-2 (2006) in force in Italy, the systems with an open expansion tank must be equipped with:

- Open expansion tank
- Safety tube
- Loading tube
- Circulator command thermostat (excluded for natural circulation systems)
- Circulation system (excluded for natural circulation systems)
- Acoustic alarm activation device
- Acoustic alarm
- Temperature indicator
- Pressure indicator
- Automatic blocking thermal switch (blocking thermostat)

### Safety devices for closed tank system

According to the standard UNI 10412-2 (2006) in force in Italy, closed systems must be equipped with:

- Safety valve
- Circulator command thermostat
- Acoustic alarm activation thermostat
- Temperature indicator
- Pressure indicator
- Acoustic alarm
- Automatic regulation thermal switch
- Automatic blocking thermal switch (blocking thermostat)
- Circulation system
- Expansion system
- Safety dissipation system built into the generator with thermal safety valve (self-activated), in case the the equipment is not provided with an automatic temperature regulation system.

The appliances for domestic heating with automatic feeding system must be equipped with a block thermostat for the fuel or with a cooling circuit provided by the manufacturer of the device, activated by a thermal safety valve that ensures that the compliant temperature threshold set is not exceeded. Connection between the power supply unit and the valve must be without shut-offs. Pressure upstream of the cooling circuit must at least be 1.5 bar.

### Installation advice

After placing the boiler and installing all fume exhaust pipes, you can connect the hydraulic system. It is recommended to connect the boiler to the system by means of ball valves or gate valves, in order to enable easy detachment, if needed. Before connection we strongly recommend you carry out a thorough cleaning of the system. We recommend that you connect the vent of the safety valve through a special pipe in order to prevent damage in case of overpressure or increase in temperature.



When filling the boiler, check that the Jolly valve (picture on the left) is working properly by venting the system. The maximum Loading pressure with COLD water should be of 1 bar.

In order to ensure proper operation with HOT water, the pressure in the stove should be 1.5 bar.

For installation of an additional expansion tank, remember that normally 1 litre of expansion tank compensates 10 litres of the system and at least two litres are always dedicated to the water inside the stove.



FILLING MUST BE CARRIED OUT USING A "T" JOINT PLACED ON THE HEATING SUPPLY, LOADING TO A MAXIMUM OF 1 BAR WITH COLD WATER PERIODICALLY CHECK ON THE CONTROL CONSOLES THE PRESSURE IN THE STOVE, AND KEEP IT STEADY AT 1 BAR.

Correctly connect the stove to the hydraulic system, bringing pressure of the system to 0.8 or max 1 bar when the stove has not yet been switched on (in the event the system is not a closed tank system, but has an open tank, it is necessary to change the setting on the menu, which is reserved to authorised technician).

Now proceed to bleed the hydraulic system using the valve assembled on the boiler or using the valves assembled on the radiators. This operation can be carried out multiple times, even after activation of the boiler since, from the time the temperature of the water starts to increase, the air bubbles move towards the high part of the boiler. Once you have completed this operation, close the feeding valve.

**While bleeding the boiler, ensure the electrical parts near the valve are not wet!**

**In the event this occurs, do not turn on the boiler, but proceed to dry the electronic board using a hairdryer.**

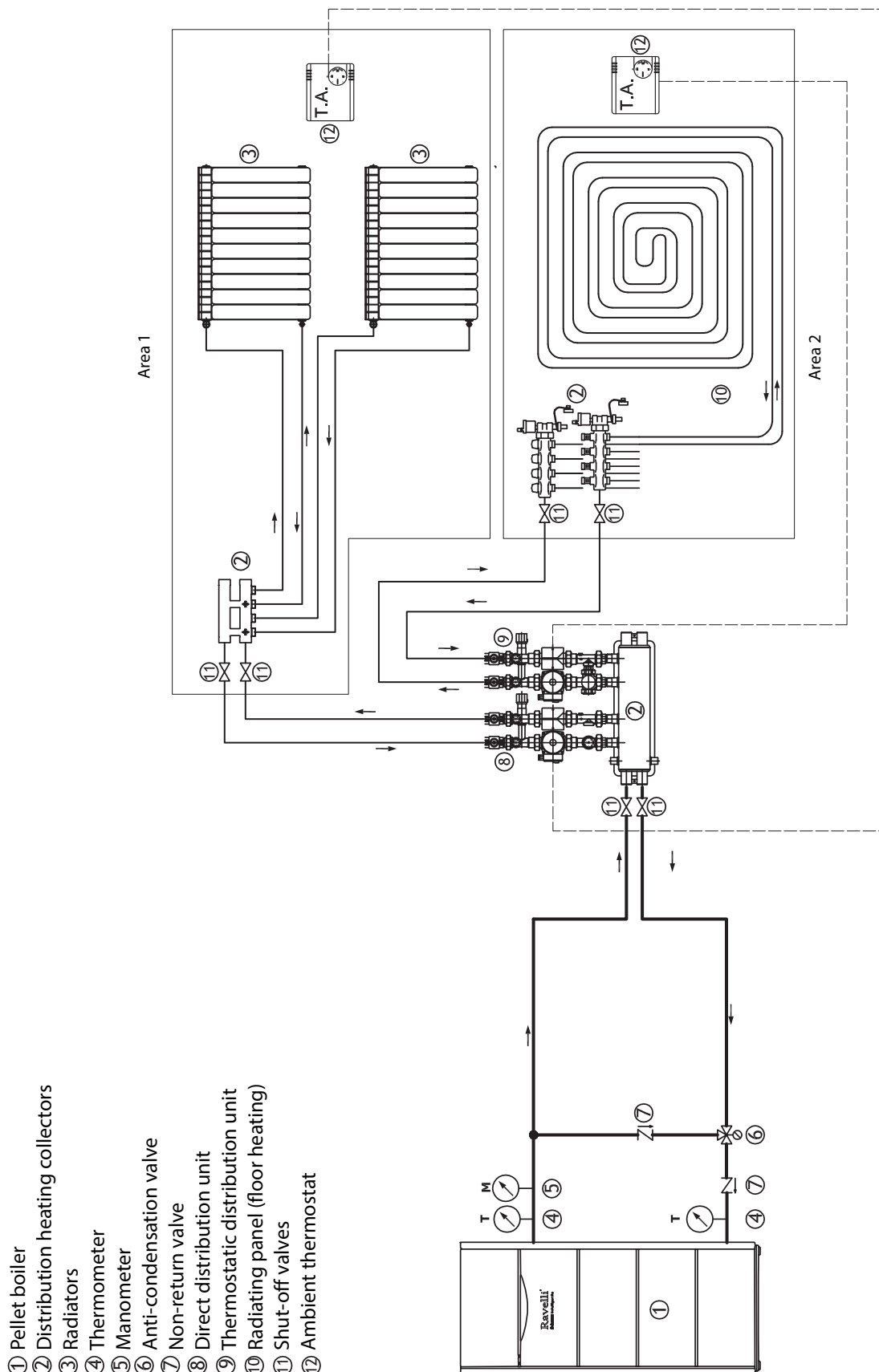


THE HYDRAULIC CONNECTION PROVIDES EXCLUSIVELY THE PRESENCE OF OUR CIRCULATOR INTO THE STOVE AT SYSTEM RETURN LINE. REFER TO THE DEDICATED SECTION TO SEE HOW TO CONNECT EVERY SINGLE MODEL.

## Examples of hydraulic installation

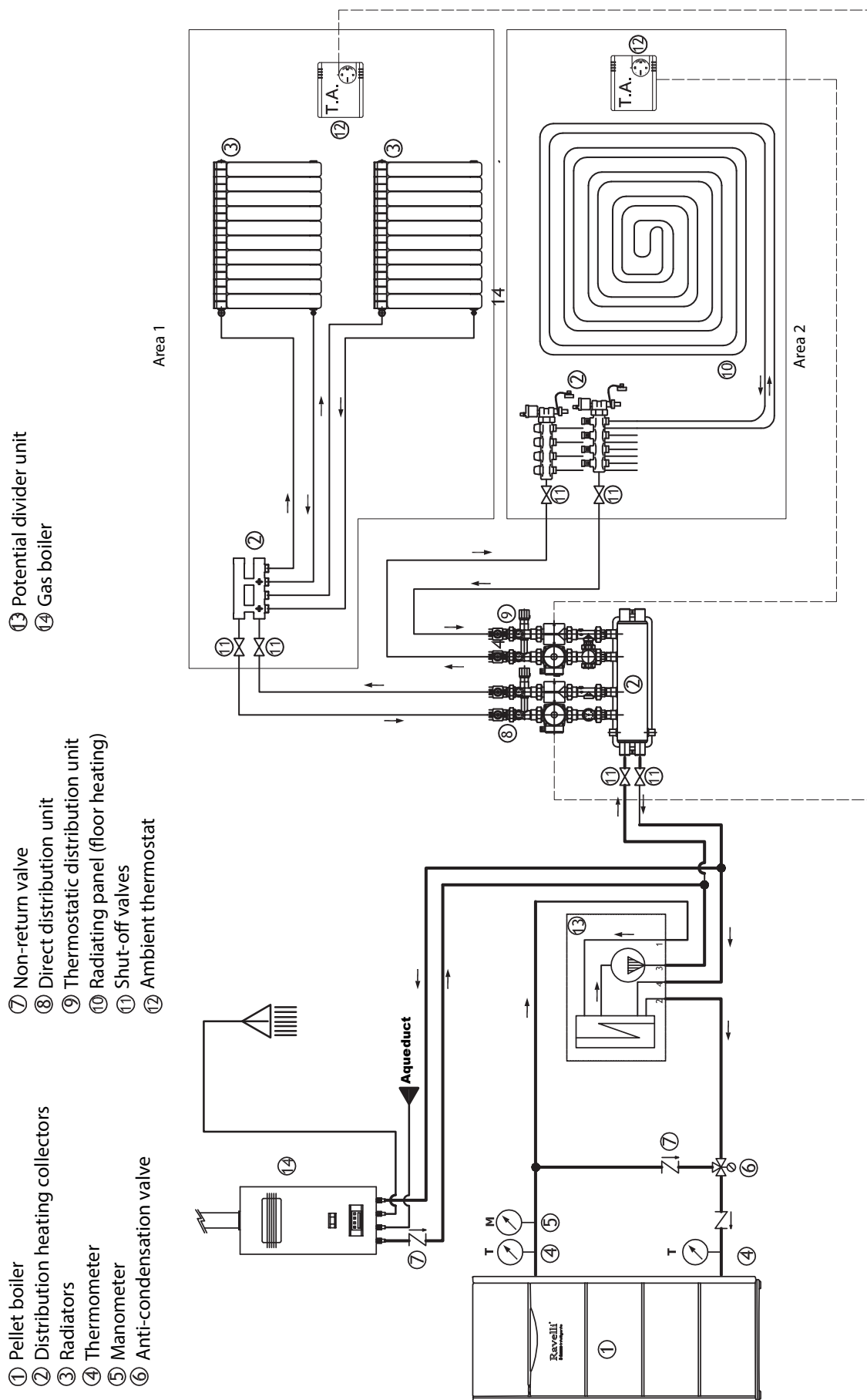
The diagrams below show the various types of connection with existing plants or new plants that are electronically controlled by Ravelli stove. To carry out the connection correctly, always follow the instructions of the plumber. The hydraulic system must comply with the local regulations in force. The installation and checks should be performed exclusively by qualified and authorized staff that certifies the installation.

### Direct circuit to the system



This type of installation enables connecting the stove to the existing system, heating the entire building. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional board that can be found at Retailers authorized by Ravelli.

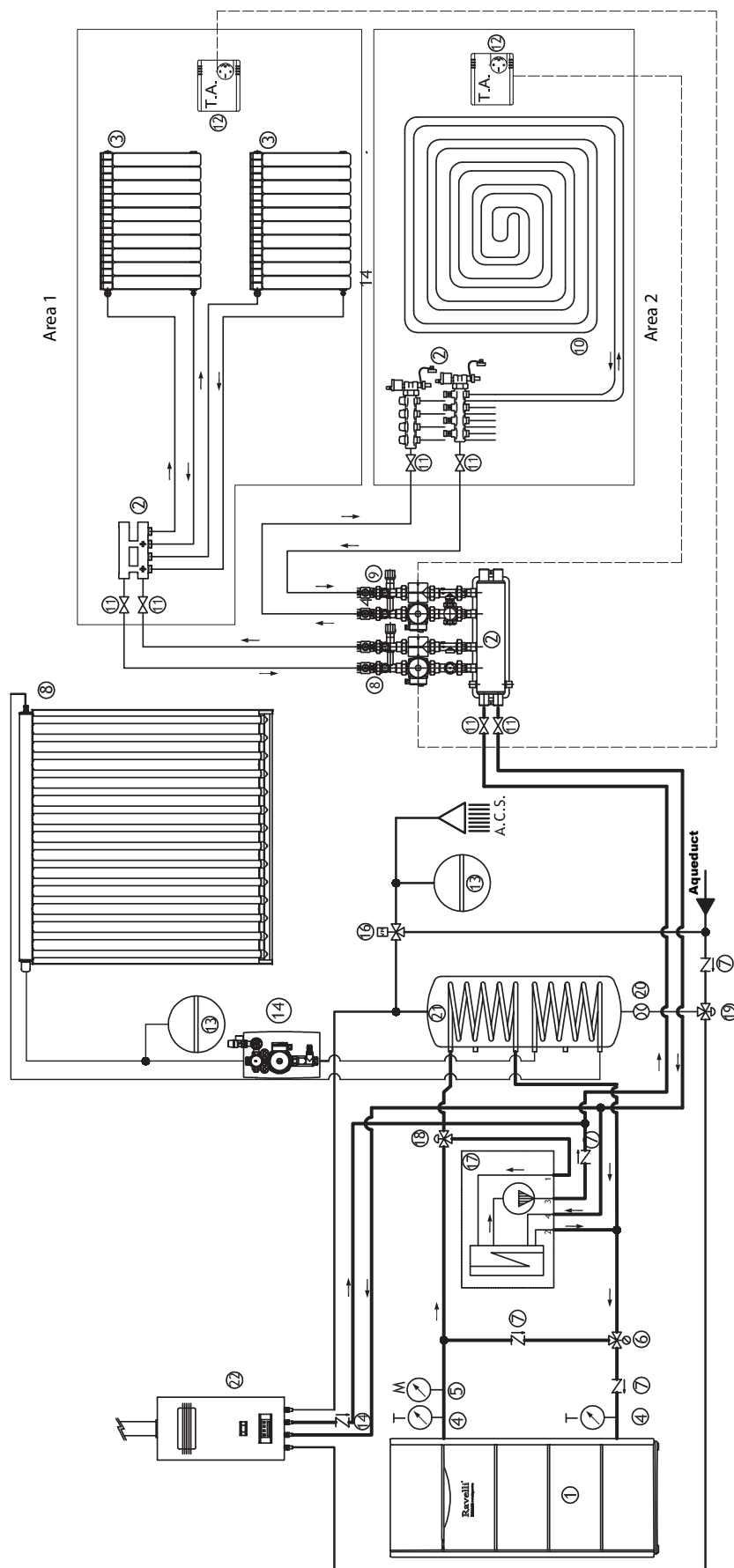
Direct circuit to the system in the presence of gas stove



This type of installation enables connecting the stove directly to the existing system, heating the entire building. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional board that can be found at Retailers authorized by Ravelli. In this layout is provided the use of a potential divider (no. 13) to ensure a correct separation of power within the system (DM1/12/75), to avoid having to lie in the realization of a thermal power to achieve the following layout. The potential divider and gas stove enabling switch are controlled directly by the operation logic of every Ravelli stove, that can also be purchased from authorized distributors.

Direct connection to the system + DHW boiler in the presence of gas stove

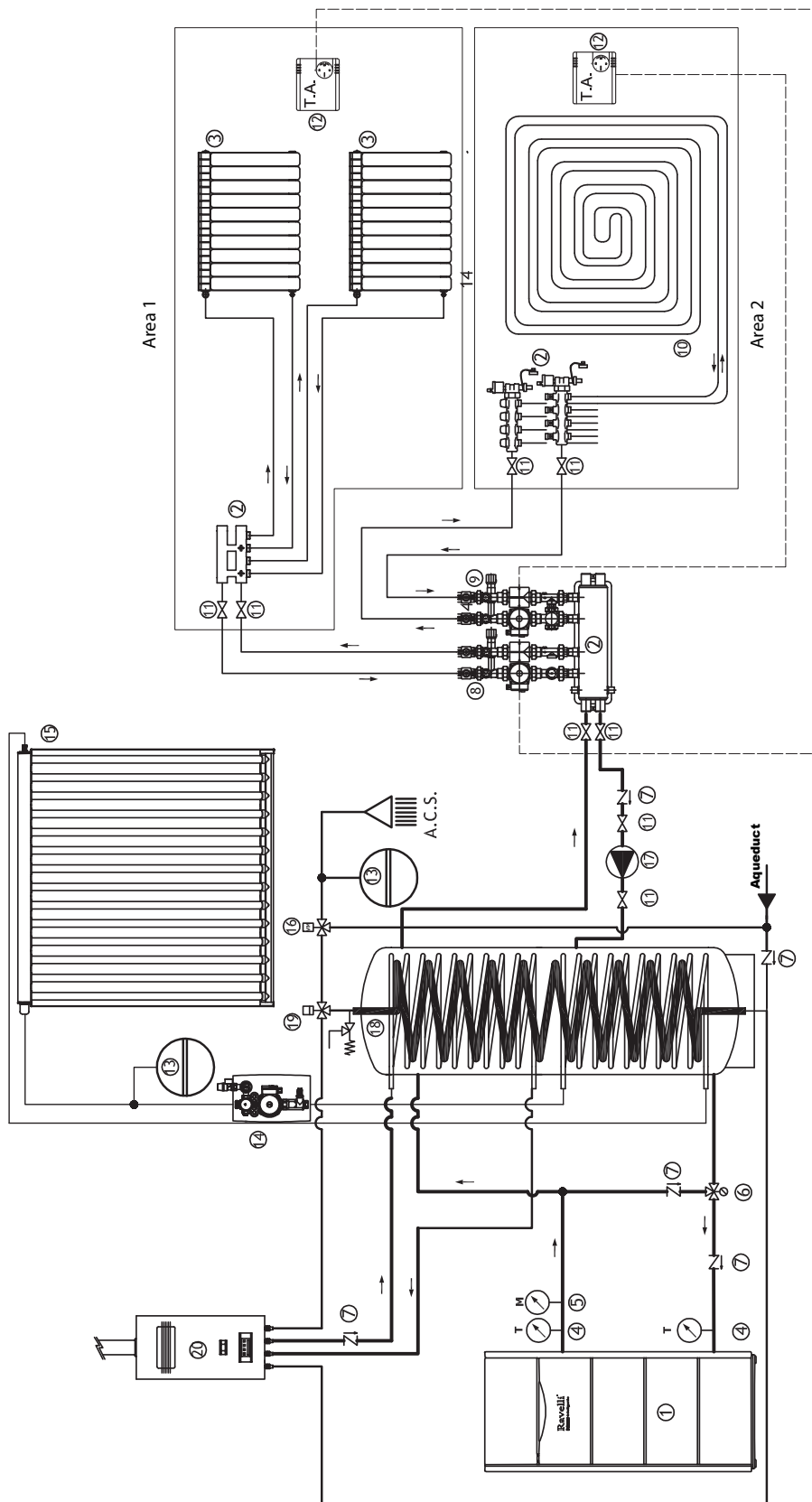
- |                                   |                                   |                             |  |
|-----------------------------------|-----------------------------------|-----------------------------|--|
| ① Pellet boiler                   | ⑦ Non-return valve                | ⑬ Expansion vessel          | ⑲ Motorized three-way valve with spring return |
| ② Distribution heating collectors | ⑧ Direct distribuition unit       | ⑭ Solar pump unit           | ⑳ Flow switch                                  |
| ③ Radiators                       | ⑨ Thermostatic distribution unit  | ⑮ Solar collector           | ㉑ Storage tank boiler                          |
| ④ Thermometer                     | ⑩ Radiating panel (floor heating) | ⑯ Thermostatic mixing valve | ㉒ Gas boiler                                   |
| ⑤ Manometer                       | ⑪ Shut-off valves                 | ⑰ Potential divider unit    |  |
| ⑥ Anti-condensation valve         | ⑫ Ambient thermostat              | ⑱ Motorized three-way valve |  |



This type of connection enables connecting the stove directly to the existing system, heating the entire building, as well as meeting the demand of hot water through the use of a boiler. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional expansion board that can be found at Retailers authorized by Ravelli. In this layout is provided the use of a potential divider (no. 13) to ensure a correct separation of power within the system (DM1/12/75), to avoid having to lie in the realization of a thermal power to achieve the following layout. The potential divider and gas stove enabling switch are controlled directly by the operation logic of every Ravelli stove, that can also be purchased from authorized distributors.

Connection to a storage tank (puffer Pipe in Tank) in the presence of gas stove (1)

- |                                   |                                   |                                |  |
|-----------------------------------|-----------------------------------|--------------------------------|--|
| ① Pellet boiler                   | ⑦ Non-return valve                | ⑬ Expansion vessel             | ⑲ Motorized three-way valve with spring return |
| ② Distribution heating collectors | ⑧ Direct distribution unit        | ⑭ Solar pump unit              | ⑳ Gas boiler                                   |
| ③ Radiators                       | ⑨ Thermostatic distribution unit  | ⑮ Solar collector              |  |
| ④ Thermometer                     | ⑩ Radiating panel (floor heating) | ⑯ Thermostatic mixing valve    |  |
| ⑤ Manometer                       | ⑪ Shut-off valves                 | ⑰ Recirculation pump           |  |
| ⑥ Anti-condensation valve         | ⑫ Ambient thermostat              | ⑱ Puffer pipe in tank with DHW |  |

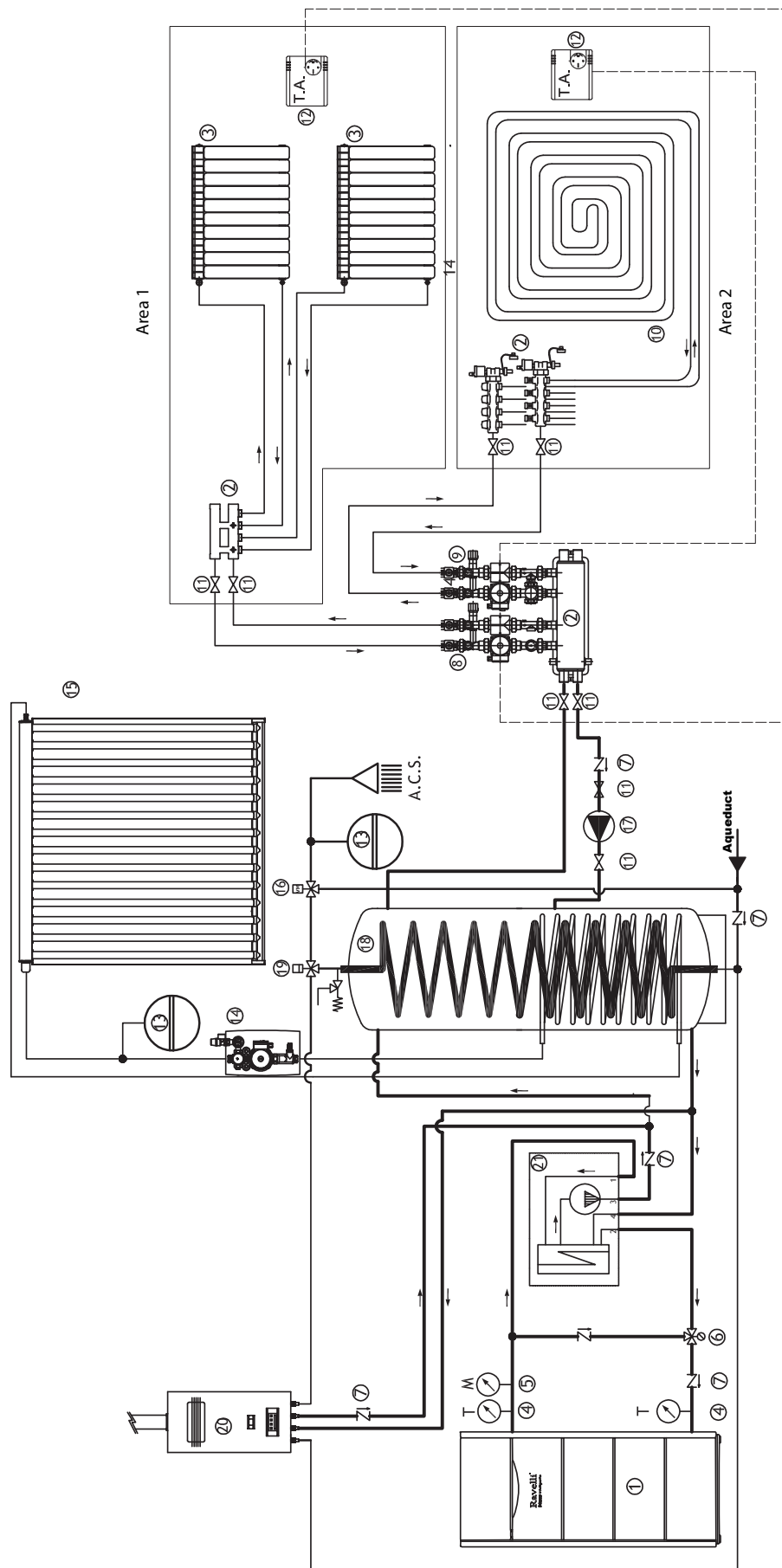


Thus type of connection enables connecting the stove to a storage pipe-in tank (2 coils) with DHW. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional expansion board that can be found at Retailers authorized by Ravelli. In this layout was chosen a pipe-in storage tank to connect the gas stove ensuring a proper separation of the power within the system (DM1/12/75) to avoid having to lie in the realization of a thermal power plant to realize the following layout. The gas stove enabling switch is controlled directly by Ravelli operation logic installed on every stove.



Connection to a storage tank (puffer Pipe in Tank) in the presence of gas stove (2)

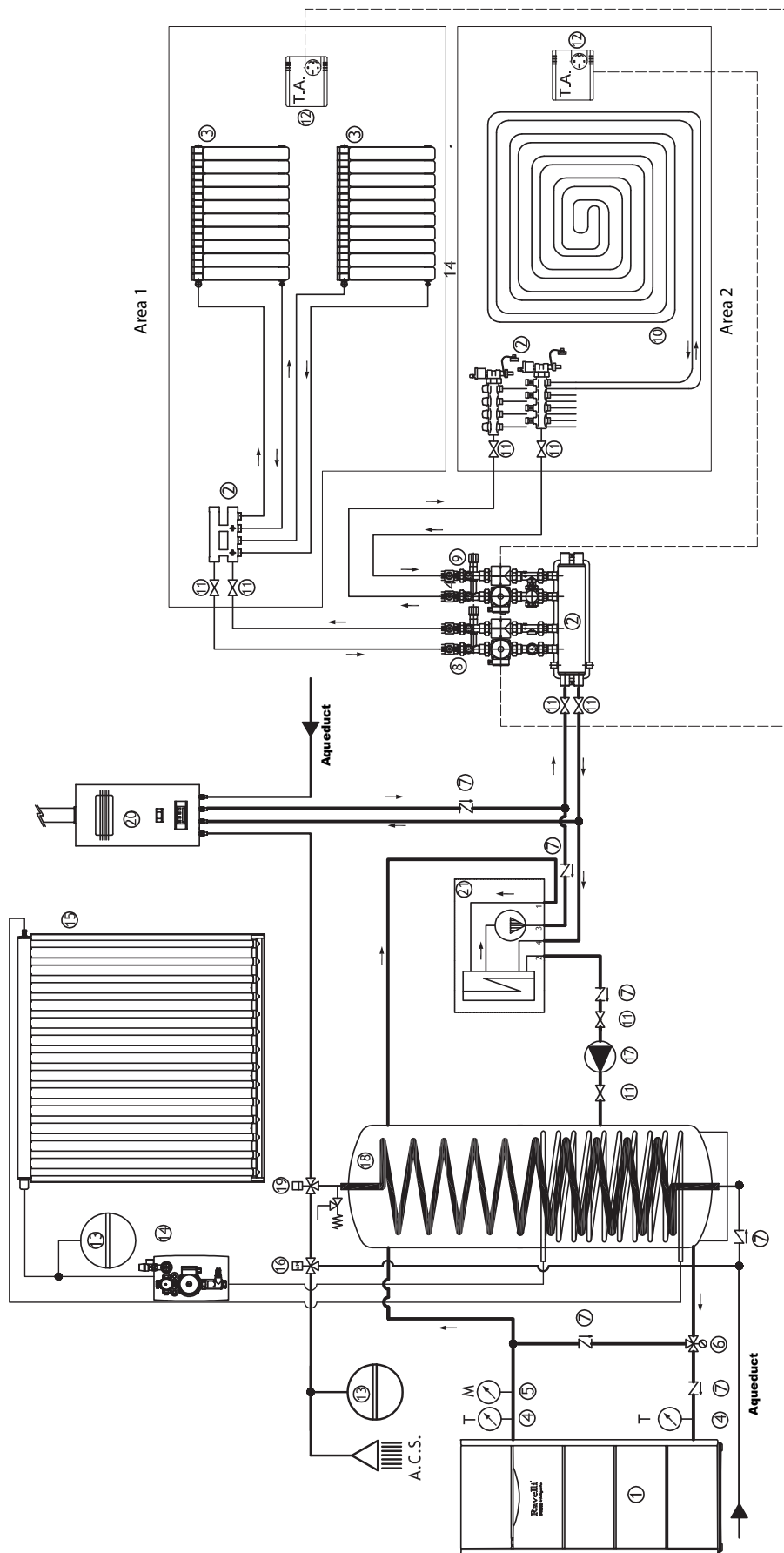
- |                                  |                                   |                                |  |
|----------------------------------|-----------------------------------|--------------------------------|--|
| ① Pellet boiler                  | ⑦ Non-return valve                | ⑬ Expansion vessel             | ⑰ Motorized three-way valve with spring return |
| ② Distributor heating collectors | ⑧ Direct distribution unit        | ⑭ Solar pump unit              | ⑱ Gas boiler                                   |
| ③ Radiators                      | ⑨ Thermostatic distribution unit  | ⑮ Solar collector              | ⑲ Potential divider unit                       |
| ④ Thermometer                    | ⑩ Radiating panel (floor heating) | ⑯ Thermostatic mixing valve    |  |
| ⑤ Manometer                      | ⑪ Shut-off valves                 | ⑰ Recirculation pump           |  |
| ⑥ Anti-condensation valve        | ⑫ Ambient thermostat              | ⑱ Puffer pipe in tank with DHW |  |



Thus type of connection enables connecting the stove to a storage pipe-in tank (1 coil) with DHW. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional expansion board that can be found at Retailers authorized by Ravelli. In this layout is provided the use of a potential divider (no.21) to ensure a correct separation of power within the system (DM1/12/75), to avoid having to lie in the realization of a thermal power to achieve the following layout. The potential divider and gas stove enabling switch are controlled directly by the operation logic of every Ravelli stove, that can also be purchased from authorized distributors.

Connection to a storage tank (puffer Pipe in Tank) in the presence of gas stove (3)

- |                                   |                                   |                                |  |
|-----------------------------------|-----------------------------------|--------------------------------|--|
| ① Pellet boiler                   | ⑦ Non-return valve                | ⑬ Expansion vessel             | ⑱ Motorized three-way valve with spring return |
| ② Distribution heating collectors | ⑧ Direct distribution unit        | ⑭ Solar pump unit              | ⑳ Gas boiler                                   |
| ③ Radiators                       | ⑨ Thermostatic distribution unit  | ⑮ Solar collector              | ㉑ Potential divider unit                       |
| ④ Thermometer                     | ⑩ Radiating panel (floor heating) | ⑯ Thermostatic mixing valve    |  |
| ⑤ Manometer                       | ⑪ Shut-off valves                 | ⑰ Recirculation pump           |  |
| ⑥ Anti-condensation valve         | ⑫ Ambient thermostat              | ⑱ Puffer pipe in tank with DHW |  |



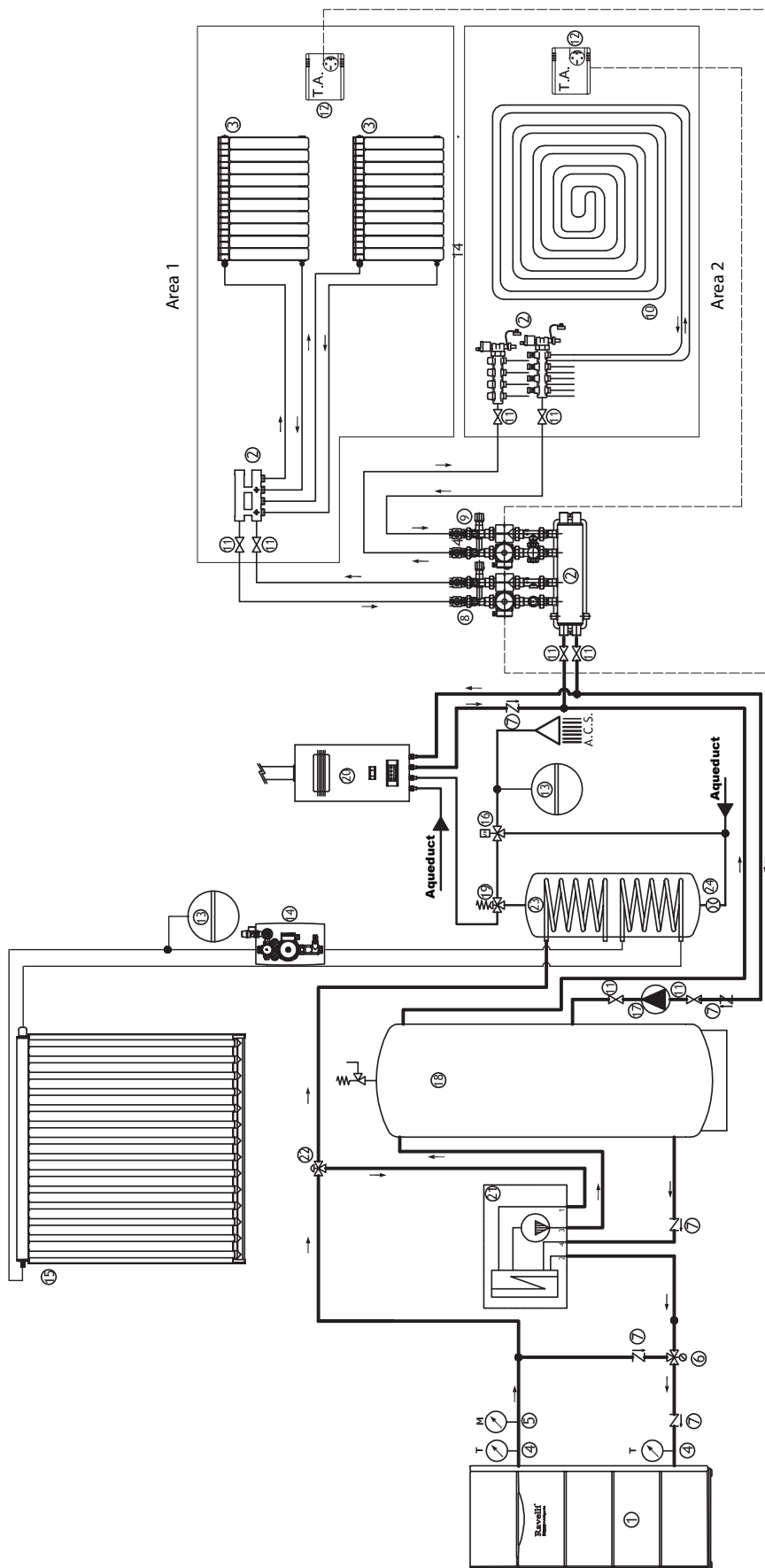
Thus type of connection enables connecting the stove to a storage pipe-in tank (1 coil) with DHW. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional expansion board that can be found at Retailers authorized by Ravelli. In this layout is provided the use of a potential divider (no.21) to ensure a correct separation of power within the system (DM11/1275), to avoid having to lie in the realization of a thermal power to achieve the following layout. The potential divider and gas stove enabling switch are controlled directly by the operation logic of every Ravelli stove, that can also be purchased from authorized distributors.

Connection to a storage tank (puffer) + DHW boiler in the presence of gas stove (1)

- ⑬ Expansion vessel
- ⑭ Solar collector
- ⑮ Thermostatic mixing valve
- ⑯ Recirculation pump
- ⑰ Storage puffer

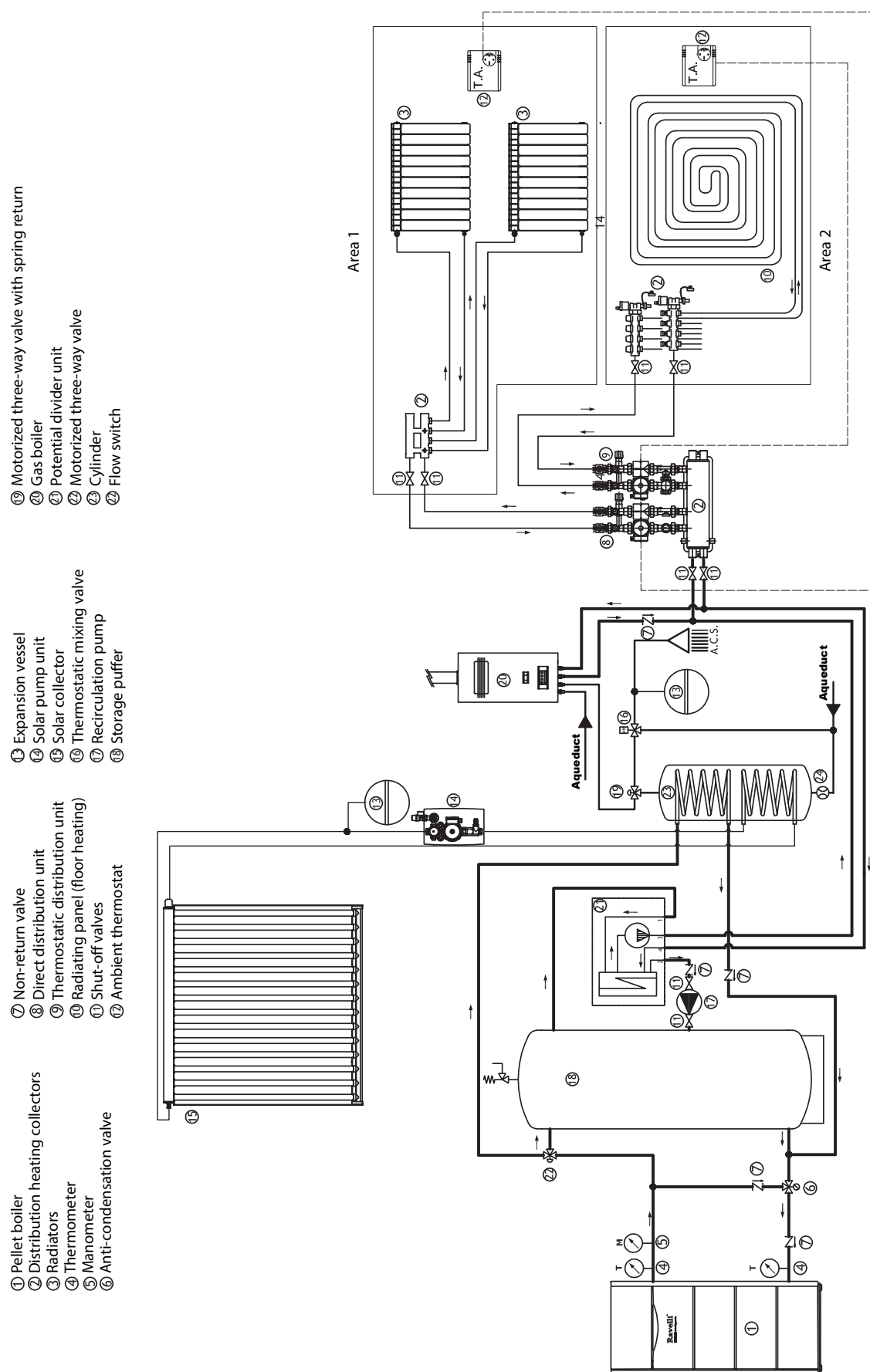
- ① Pellet boiler
- ② Distribution heating collectors
- ③ Radiators
- ④ Thermometer
- ⑤ Manometer
- ⑥ Anti-condensation valve

- ⑦ Non-return valve
- ⑧ Direct distribution unit
- ⑨ Thermostatic distribution unit
- ⑩ Radiating panel (floor heating)
- ⑪ Shut-off valves
- ⑫ Ambient thermostat



This type of connection allows to connect the boiler to a simple storage tank and also to meet the demand of domestic hot water through the use of a boiler. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional expansion board that can be found at Retailers authorized by Ravelli. In this layout was used a potential divider (no.21) to ensure a correct separation of power within the system (DM1/12/75), to avoid having to lie in the realization of a thermal power to achieve the following layout. The potential divider and gas stove enabling switch are controlled directly by the operation logic of every Ravelli stove, that can also be purchased from authorized distributors.

Connection to a storage tank (puffer) + DHW boiler in the presence of gas stove (2)



This type of connection allows to connect the boiler to a simple storage tank and also to meet the demand of domestic hot water through the use of a boiler. In addition, there is the possibility to control generator activation by means of the local thermostats, providing the use of an additional expansion board that can be found at Retailers authorized by Ravelli. In this layout was used a potential divider (no.21) to ensure a correct separation of power within the system (DM1/12/75), to avoid having to lie in the realization of a thermal power to achieve the following layout. The potential divider and gas stove enabling switch are controlled directly by the operation logic of every Ravelli stove, that can also be purchased from authorized distributors.

## Preliminary Operations

### Wiring



Connect the power cord to the back of the stove and then to a wall socket.

The I/O switch in the figure should be set to I to power the stove. If voltage is not supplied check the state of the fuse installed in the box below the switch (4A fuse). During the periods of inactivity, we recommend you disconnect the power cord of the stove.

### What to check before turning on the stove

Make sure you have removed all parts that pose the risk of burns from the combustion chamber or glass (various instructions or stickers).

Before turning on the stove, make sure you have fitted the grate on the support base and check that the door and the ash drawer are properly close.

### How to load the pellets

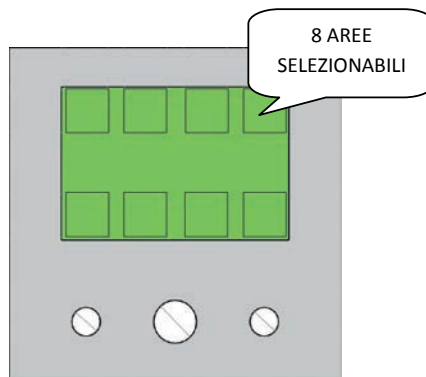
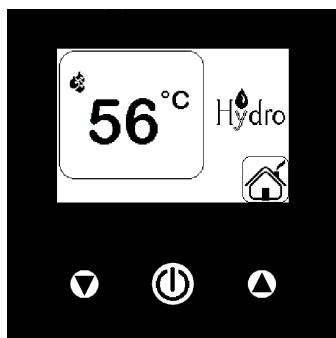
Fuel supply consists in the insertion of pellets from the top of the stove, by opening the door. During pellet loading prevent the pellet bag from coming into contact with hot surfaces.



NEVER INSERT INTO THE TANK OTHER KIND OF FUEL OTHER FROM THE PELLETS COMPLYING WITH THE SPECIFICATIONS BELOW

### Description of control panel

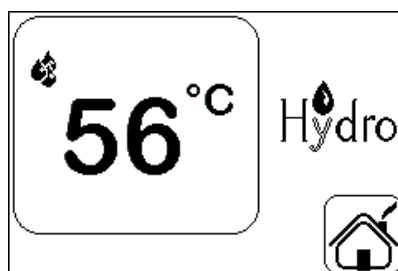
The control panel of your Ravelli stove consists of a "touch screen" display with selectable areas, a middle ON/OFF button (its color varies according to operating conditions) and two selection keys UP/DOWN (A and B in the bottom page figure).



The information below will allow you to become familiar with the product and achieve the best performance.

When powering the stove, before switching to save light - EASY condition (as shown in the picture below), the first page displays the Ravelli logo for a few seconds and the version of the firmware installed.

Display in "SAVE LIGHT" mode



The appearance of the message "ADJUST THE RDS SYSTEM" indicates that the initial parameter testing procedure and calibration has been unsuccessfully. This indication does not block the stove.

The displayed value indicates the currently detected temperature of water in the stove; the setting can be changed using the buttons A and B. The stove can be switched ON/OFF by pressing the middle key C **FOR A FEW SECONDS**.



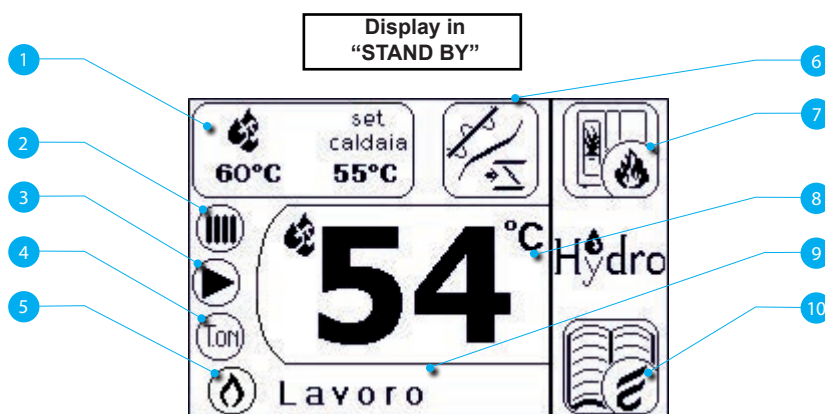
The key identified by letter "C" has the task of turning the stove ON and OFF as well as resetting the alarms; they key has backlight with variable colors; its colour depends on the state of the stove, as well as the background colour of the console. For further information please refer to the table dedicated to operation phases.



Press the icon to access the various functions available (stand-by condition).

Note: the display returns to save light mode if you do not select other functions within the next 15 seconds.





(1) - Double function: to: a: indicates the temperature of H<sub>2</sub>O in the stove and the parameter set;  
b: by pressing the icon you will display the settings at point (8) that can be changed using the UP/DOWN keys. (A and B described above);

(2) - Icon that shows the position of the 3-way valve:



Radiators (heating or puffers, if Evolved Layouts setting is enabled);



Domestic hot water (DHW or boiler, if Evolved Layouts setting is enabled);

(3) - Icon that shows the H<sub>2</sub>O circulator of the stove; when rotating, it indicates that the circulator is active;

(4) - Area that indicates that several icons are alternating:



It shows that the contact of the external thermostat (if active - see the section dedicated to activation) is open;



It shows that the contact of the external thermostat is close (thermostat within set limits);



It shows that the winter function is active (default settings - see the section dedicated to SEASON)



It indicates that SUMMER function is active (it can only be activated if there is a boiler function enabled)



A flashing animation is displayed showing the activity of the cleaner (if present and under certain conditions such as SHUTDOWN - ECO STOP - ALARMS - GRATE CLEANING)

(5) - Graphical icon accompanied by the line that indicates the current state of th stove (9).

N.B.: The sequence of the states appears in several parts of the manual and is always identified by the relative icon.

(6) - by pressing it, you will have access to the "SET AIR/PELLET" function (see the section dedicated to the next function);

(7) - by pressing it, you will have access to the "STOVE STATE" (see the section dedicated to the next function);

(10) - by pressing it, you will have access to the "USER MENU" (see the section dedicated to the next function);



*Not all the icons can be selected. Therefore, please remember that the touch screen display has 8 selectable areas as shown above. Moreover, when we refer to "press" in this manual, it should always be intended as the touch of your fingertip as shown in the picture.*



#### Sequence of operations to be carried out



Access the user menu from the "STAND BY" page by pressing the icon. The following page will be displayed





By presising the icon you will switch to the next page of the menu.



By pressing the icon you will have access to display language setup/change function.



The two keys enable you to select the desired language.



The key allows you to confirm the language set.



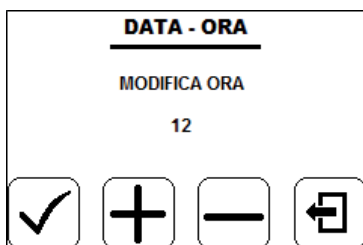
By pressing this key the display returns to function menu page (menu page).

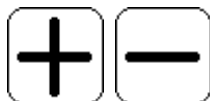


By presising the icon you will return to the home page of the user menu.



By pressing the icon you will have access to date and time setup/change function.





The keys allow you to increase or decrease the hour, the minutes, the day of the calendar, the month, the year and the weekday.



The key enables confirming every single parameter/change made.



By pressing this key the display returns to function menu page (menu page).



By pressing this key, the display returns to "STAND BY" page.



If you press this icon you will access the "STOVE STATUS" page



By pressing on the icon you will start screw rotation upon first stove start-up and every time the tank is empty of pellets due to a previous "Out of pellets" warning signal.



*Make sure you have inserted pellets into the tank and wait for the stove to reach the "SHUTDOWN" or "FINAL CLEANING" status. The number expressed in seconds indicates the rotation time of the infeed screw during the first loading cycle. Once this time has elapsed, the infeed screw stops immediately and then pellets are emptied from the grate before turning on the equipment.*



**MAKE SURE YOU ALWAYS EMPTY THE GRATE BEFORE TURNING ON THE STOVE AND CHECK THAT ALL ITS HOLES ARE FREE OF OBSTRUCTIONS. NEVER EMPTY THE GRATE INTO THE HOPPER. FIRE HAZARD.**



Upon the completion of the previous operation, if this key is pressed, the display returns to "STAND BY" mode





Once the pellet loading operation is completed, press the two buttons to set the most suitable H<sub>2</sub>O value for your stove. In top left side of the previous picture ("STAND BY" status) is always possible to display both the current status and the set value.

### Turning the device on



Press the key to turn on the stove. On display appears the writing "START".  
If this key is pressed for a few seconds, the stove shuts down and alarms are reset.



*In case the infed screw operations decsribed avobe have not been executed, the stove may fail to turn on. In this case, carry out the operations described above, empty the grate and reset the alarm.*

If the stove still fails to turn on, check that the grate is properly installed and perfectly adherent to the base, and also check that there are no deposits that prevent the smooth passage of air to enable ignition. If the problem persists, contact the support service.

### Sequence of ignition phases



SWITCH ON - pellet loading phase;



WAITING FLAME - flame development waiting phase;



FLAME PRESENT - flame stabilization phase and reduction of combustive air inside the grate;



WORK - operation phase described in the following chapter;

### Operating phases of the appliance

#### Modulation

During the work phases, the appliance is aimed at reaching the set water temperature or meet directly an external thermostat installed in the building; when one of these conditions is met, the stove switches to MODULE WORK phase, in which fuel consumption is minimised.

MODULATE STOVE WATER (reaching the set temperature of water in the stove): in this case, the circulator remains active because the temperature inside the house may not be met;

MODULATE AMBIENT (reaching the external thermostat temperature if connected and enabled): in this case, the circulator, that enables water circulation within house system, is disabled;

MODULATED WORK (reaching both conditions described above): in this case the stove acts as if reaching the external thermostat by turning off the circulator. The message MODULATED WORK is displayed.

#### Comfort climate

The activation of this function enables the stove to reduce pellet consumption by activating the modulation phases, after the desired temperature (of water or air) has been reached. Subsequently, the stove checks if the temperature is steady for a set time and if this condition is met, it automatically switches off and on display appears ECO STOP. The stove turns on when the temperature drops below the set threshold.



From the "SAVE LIGHT" display, press the icon to access the "STAND BY" mode;



From the "STAND BY" mode, press the icon to access the "USER MENU"



Upon the first pressure of the button, you will display a thumbnail; a second pressure provides access the ON/OFF activation function of the Comfort Clima function and the relative settings (ref. Figure A and B in the next page).



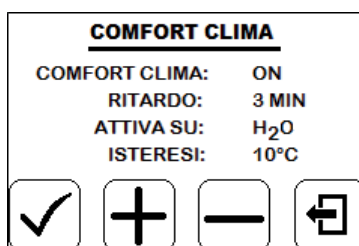
The two keys enable ON/OFF settings, the variation of delay from 0 to 9 minutes, the activation of AIR or H<sub>2</sub>O and the histeresys from 0°C to 20°C.



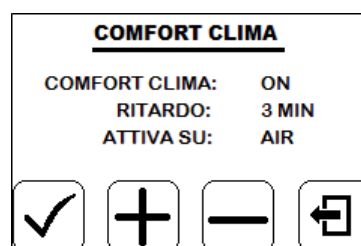
The key enables of confirming the data entered and switch to the next function (comfort clima, delay etc.).



THUMBNAIL



FUNCTION on HYDRO



FUNCTION on AIR

The Figure A indicates the Comfort Clima function (COMFORT CLIMA: ON), if the stove detects the water set temperature (ENABLED TO: H<sub>2</sub>O) is maintained at the set value for a maximum period of 3 minutes (DELAY: 3 MIN) before switching to ECO STOP phase. The stove will maintain this state until the water temperature drops below the set value (HISTERESYS: 10 ° C). For example, with H<sub>2</sub>O set to 65 ° C, the stove will shut down when this value is reached and restarts when the temperature reaches 54 ° C (65 ° C - 10 ° C - 0.5 ° C tolerance).

Figure B does not include the hysteresis value as it is controlled by the external thermostat (see the section the activation of the external thermostat).



We recommend you use an external thermostat with a histeresys value that can be set to maximum 3°C. Stove's operation may enable the switch on/off phase for several times during the day; this may compromise the shelf life of the ignition resistance.



USING THIS METHOD, IT IS NECESSARY TO VERIFY THAT AFTER EACH AUTOMATIC SHUTDOWN THE GRATE IS ALWAYS VERY CLEAN TO GUARANTEE CORRECT AUTOMATIC SWITCH ON.



By pressing this key you will exit the function and return to "USER MENU" page.

### Stand-by

The STAND-BY mode is activated when the temperature of the water reaches 85 ° C, this function is aimed at protecting the circuit especially when COMFORT CLIMATE function is not active on the stove H<sub>2</sub>O. If the stove is in this condition, it automatically passes to STAND-BY mode to protect the hydraulic circuit. The stove restarts automatically after it cooled down, on the condition that heating is requested.

### Description of functions



### STOVE STATUS icon 1



Access the STOVE STATUS page from the "STAND BY" page, by pressing the icon;



In this mode you can check the proper operation of the most important parameters of the appliance. Below is given a list of the actual data of the stove that are useful during checks carried out by technical support service.

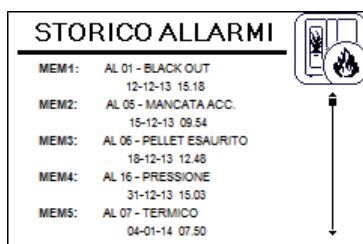
- Actual flow
- Fume extractor revolutions;
- System pressure
- Fume temperature;
- Actual flow set;
- Inlet flow meter temperature;
- Heated flow meter temp.;
- External temperature
- Electronic board temperature;
- Electronic board overtemperature;
- Grate cleaning request;
- Secondary stove probe temperature (optional)



By pressing on the icon you will start screw rotation upon first stove start-up and every time the tank is empty of pellets due to a previous "Out of pellets" warning signal.



By pressing this icon you will display the alarm log of the last 10 alarms triggered. The information displayed includes the date, time, description and code of the alarm.



By placing the cursor in any of the pages you can navigate through all the lines of the list using the UP/DOWN keys.



By pressing the icon you will display one or more anomalies detected by the stove. This signal does not cause the stove to stop.



By pressing this key you will exit the function and return to "STAND BY" page.

## USER MENU icon 2



Access the USER MENU page from the "STAND BY" page, by pressing the icon;



you can switch from one icon to another using the UP/DOWN keys or by touching with your fingertip directly the relevant icon. The first touch shows the icon and a thumbnail of the value set in this parameter. The second touch displays and enables changing the data set for the function.



## All menu icons



Switching from one icon page to another of the functions featured in USER MENU



ON/OFF activation of Comfort Clima function and the relative settings



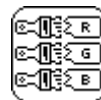
Work hours and warnings display/reset (reset function protected by reserved key)



Setting/changing the date and time



Summer/Winter setting



Display settings (backlighting, contrast)



Setting/changing the function Weekly chrono



Return to "STAND BY" page



Information on set system layout and support service



External thermostat YES/NO activation



Switching from one icon page to another of the functions featured in USER MENU



Access to installer settings (password protected function reserved exclusively to operators)



Correction of pellet/air mixture (from -5 to +5)



Language selection



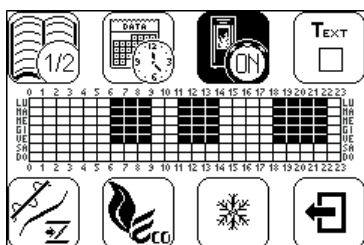
## Other functions available in USER MENU

### Chronothermostat

With the chronothermostat function, it is possible to program the automatic switching on and off of the stove based on set time slots.



Upon the first pressure of the icon, you will display a thumbnail; a second pressure provides access to weekly Chrono setting/change function.



THUMBNAIL



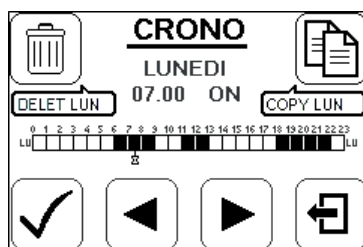
FUNCTION



By pressing the icon you will activate/deactivate the Chrono function (ON indicates that the Chrono function is active).



By pressing the icon you will be able to switch to the next Chrono setup page.



The key enables/disables the stove for the time slots selected.



The two keys enable sliding the cursor to set the desired time; time indication on the display varies according to the position of the cursor; black colours indicates the selected times activated for operation.

The example in the picture above shows that Monday the stove will operate according to the following schedule:

switch on at 6.00 a.m. - switch off at 9.00 a.m.  
switch on at 11.00 a.m. - switch off at 1.00 p.m.  
switch on at 6.00 p.m. - switch off at 10.00 p.m.

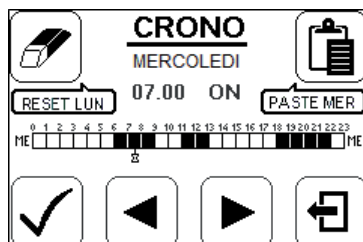


The key allows you to copy the settings of the selected day.



The key allows you to reset the settings of the selected day.

To switch to the next day, use the two UP and DOWN selection keys of the control panel.





PASTE MER

The key enables pasting the copied setting in the next day or during the following days.



RESET LUN

The key enables resetting the setting in the memory, thus saving a new daily setting.

The example in the picture shows that the Chrono function has been copied from Monday to Friday and has the same switch on and off schedule.



By pressing the icon you will cancel all settings shown in the setup menu. The display shows the following confirmation page:



Choose "YES" if you want to reset all previous settings, otherwise select "NO" using the two selection buttons.



Press the key to confirm the selection.



Press the key after completing the settings/changes to exit the function.



USING THIS METHOD, IT IS NECESSARY TO VERIFY THAT AFTER EACH AUTOMATIC SHUTDOWN THE GRATE IS ALWAYS VERY CLEAN TO GUARANTEE CORRECT AUTOMATIC SWITCH ON.

### External thermostat YES/NO activation

The presence of an external thermostat enables immediate control of the temperature desired for the house. Before activating it, make sure you have connected the external thermostat to the special contacts located on the back of the stove, identified by the writing T.EXT.



Upon the first pressure of the icon, you will display a thumbnail; a second pressure provides access to external thermostat YES/NO activation.



THUMBNAIL



FUNCTION



The two keys enable modifying the value; by choosing YES, the external thermostat operation is enabled; by choosing NO, the thermostat is disabled.



Press the key to confirm the selection.

With the external thermostat enabled, the icon will be displayed ticked, as shown in the figure.



Press the key after completing the settings/changes to exit the function.

NOTE: the symbol **TON**, alternated with the symbol **TOFF**, indicates the presence of the thermostat.

TON is displayed when there is a heating request (contact close);

TOFF is displayed when the desired room temperature is reached (contact open);

When the stove reaches the set temperature (TOFF), the ambient modulation is enabled.



For the electrical connection of the external thermostat please refer to the chapter dedicated to wiring of the various parts controlled by the stove.



CONNECT AN EXTERNAL THERMOSTAT WITH A SIMPLE DRY CONTACT, THEREFORE, NOT POWERED. MOREOVER, WE RECOMMEND YOU USE A THERMOSTAT WITH A MINIMUM OFFSET OF 3°C IF YOU INTEND TO USE THE COMFORT CLIMA FUNCTION.

#### Correction of air/pellet mixture (from -5 to +5)

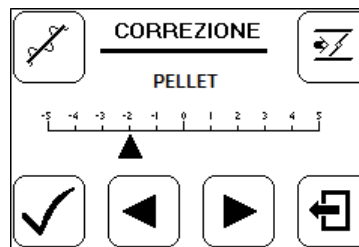
Setting of the AIR-PELLET mix enables immediate variation in the quantity of air inbound of the stove and the quantity of pellets loaded on the grate. The stove is tested and inspected with DIN PLUS certified pellets. If using another type of pellets or uncertified pellets, fuel may need adjustment. Normally, variation is implemented on the "% FLOW" to regulate the air inbound and therefore combustion; if the flow regulation is not sufficient, it may be necessary to also vary the "% PELLETS" feeding rate.



Upon the first pressure of the icon, you will display a thumbnail; a second pressure provides access to pellet/air correction function (both standard settings are 0).



THUMBNAIL



FUNCTION



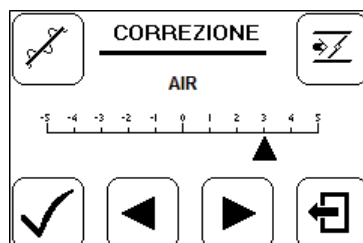
The two keys enable modifying the amount of pellets from minimum -5 to maximum +5.



Press the key to confirm the selection.



By pressing the icon you will display/modify the useful air settings to improve combustion.



Modify the value that varies from minimum -5 to maximum +5 using the keys as shown above.



Press the key after completing the settings/changes to exit the function.



**NOTE:** The number indicated during the change of parameters refers only to a percentage value that acts on the default parameters set on the electronic board (exclusively in the WORK phase). These values should be changed in the event of poor combustion, due in many cases to the purchase of pellets differing from those used during stove testing.

### Summer/Winter setting

Summer/Winter setting should be used exclusively to control advanced layouts in the presence of a hot domestic water storage circuit (boiler). In the standard hydraulic circuit, the SUMMER setting is not active.



Upon the first pressure of the icon, you will display a thumbnail; a second pressure provides access to Summer/Winter season setting function.



THUMBNAIL



FUNCTION



The two keys enable varying the Summer/Winter setting.



Press the key to confirm the selection.



Press the key after completing the settings/changes to exit the function.

### Language selection

This function enables selecting the language of the display among the currently available languages: Italian, French, English, German, Spanish, Danish and Flemish.



Upon the first pressure of the icon, you will display a thumbnail; a second pressure provides access to the page that enables you to change the language.



THUMBNAIL



FUNCTION



The two keys enable you to select the desired language.



Press the key to confirm the selection.



Press the key after completing the settings/changes to exit the function.

## Work hours and warnings display/reset



By pressing the icon the user can display the partial work hours, the total work hours and the total number of switch-ons.



The reset function is protected by password and is exclusively reserved to authorized technicians.

## Displaying the factory settings



Upon the first pressure of the button, you will display a thumbnail; a second pressure provides access to the function.



TITLE



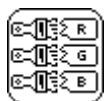
FUNCTION



The user can only read the data displayed and he/she cannot change them. This operation is reserved exclusively to authorized technicians.

## Display settings

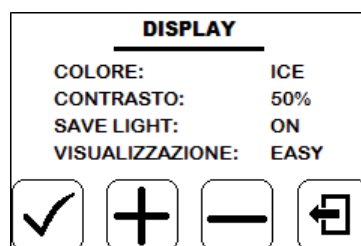
This function enables changing the background colour of the display (ICE, SOFT BLUE, LIGHT BLUE, BLUE and VIOLET), the contrast (default 50%), setting the ON/OFF function of the SAVE LIGHT mode that enables (when set to ON) displaying the EASY or TECHNICIAN mode.



Upon the first pressure of the button, you will display a thumbnail; a second pressure provides access to the function.



TITLE



FUNCTION



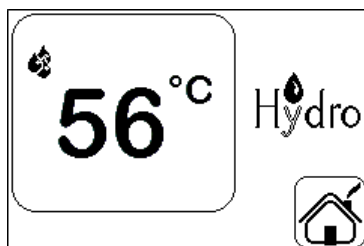
The two keys enable changing the settings.



The key enables confirming the selection and switching to the next setting.



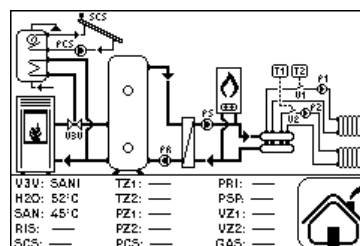
Press the key after completing the settings/changes to exit the function.



Save light: EASY

The displayed value indicates the currently detected temperature of water in the stove; the setting can be changed using the UP/DOWN buttons on the control panel.

The access to STAND BY page is always ensured by pressing the HOME icon.



Save light: PROMAG

From this page the user can only access the STAND BY page by pressing the "HOME" icon on bottom right page.

### Information on set system layout and support service



Upon the first pressure of the button, you will display a thumbnail; a second pressure provides access to the function.



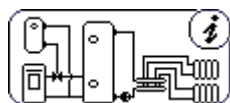
TITLE



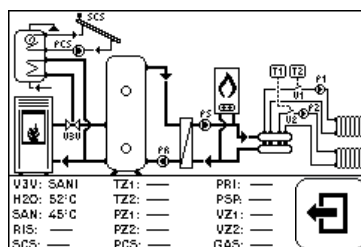
FUNCTION



The icon enables displaying the reference data in case of technical support request



By pressing the icon the user can zoom in the picture of the system layout set by the installer and display the current read data



Press the key after completing the settings/changes to exit the function.

### Access to installer's settings



Upon the first pressure of the icon, you will display a thumbnail; a second pressure provides access to stove parameters page



This function is protected by password and is exclusively reserved to authorized technicians.



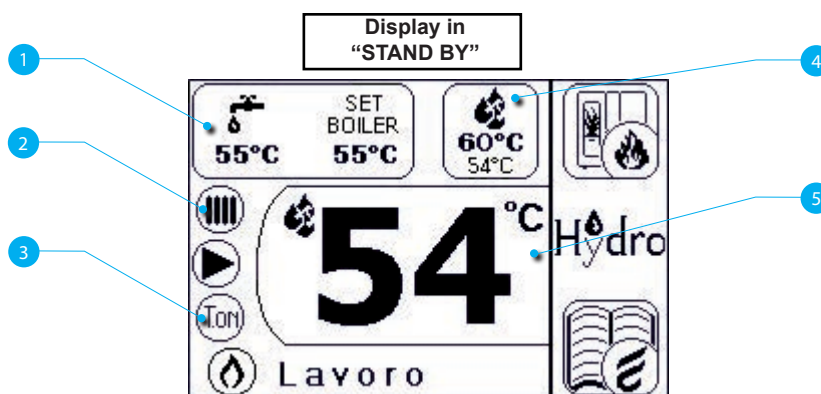
### Pages displayed upon the activation of advanced layouts

By activating a layout different from the standard (layout 0), even if maintaining the same functions of the menu, the "Stand-by" page will display all connected utilities such as the temperature of the boiler of the puffer. Below is shown the new display mode and the function of every icon for every layout, to change the various settings.

#### Layout 1 (DHW boiler management + heating with external thermostat)

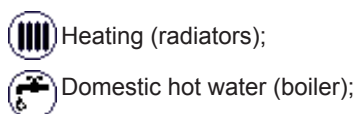
The following layout can be used when you own a stove without a plate heat exchanger and you wish to purchase a storage tank (Boiler) to be connected to the circuit in order to produce domestic hot water.

In this type of circuit, the room temperature is controlled directly by an external thermostat (optional) that should be connected to the back of the stove. The boiler is managed by the thermostat through a contact or immersion probe (not supplied) connected directly to the back of the stove. Below is shown the new "Stand-by" mode.

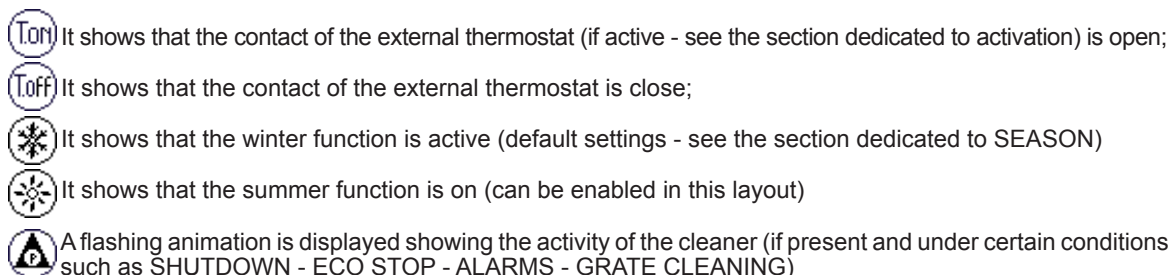


- (1) - Double function: to: a: indicates boiler temperature and active settings;  
b: by pressing the icon you will display the settings at point (5) that can be changed using the UP/DOWN keys. (A and B described above);

- (2) - Icon that shows the position of the 3-way valve:



- (3) - Area that indicates that several icons are alternating:



- (4) - Double function: to: a: indicates the temperature of H<sub>2</sub>O in the stove and the parameter set;  
b: by pressing the icon you will display the settings at point (5) that can be changed using the UP/DOWN keys. (A and B described above).

Operation is the same as described in the standard layout except that in this layout the stove exchanges heat directly in the boiler (priority); when the set value is reached, the 3-way valve changes position and the stove begins to exchange heat in the heating circuit. From this moment, the stove is controlled by the external thermostat (if connected and enabled) or by H<sub>2</sub>O setting (see the operation with layout 0 to find the data on modulation, eco stop etc.).

The 3-way valve is directed again into the boiler when:

- there is a request from the Boiler;
- there is a requested from the flow switch (optional, if connected).

The stove restarts from Eco-stop or Stand by mode according to heating requests or boiler requests.

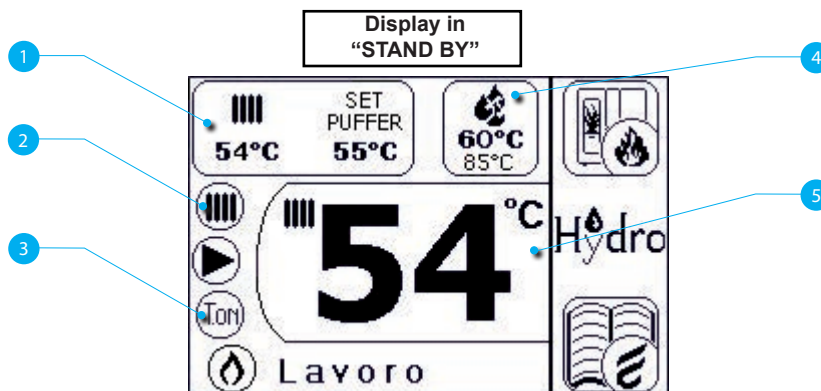


*By setting the SUMMER function, the 3-way valve remains fixed in a single position, enabling the release of heat output by the stove exclusively inside the boiler. As soon as this condition is met, the stove enters in ECO STOP mode.*

## Layout 2 (storage puffer management)

In this type of circuit, the storage puffer is managed by the stove due to a contact or immersion probe (optional) connected to the back of the stove. By connecting the external thermostats to the expansion board (optional), the user can control a recirculation pump or pick-up pumps active on 2 areas.

Below is shown the new "Stand-by" mode.



- (1) - Double function: to: a: indicates puffer temperature and active settings;  
b: by pressing the icon you will display the settings at point (5) that can be changed using the UP/DOWN keys. (A and B described above);

- (2) - Icon that shows the position of the 3-way valve:



- (3) - Area that indicates that several icons are alternating:

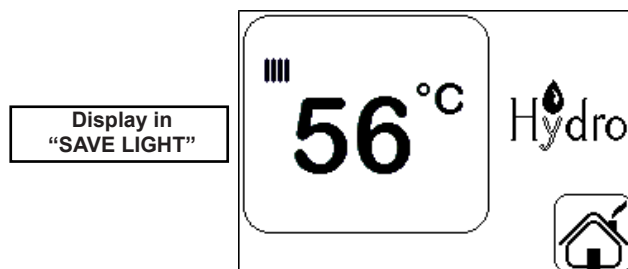
- It shows that the contact of the external thermostat (if active - see the section dedicated to activation) is open;
- It shows that the contact of the external thermostat is close;
- It shows that the winter function is active (default settings - see the section dedicated to SEASON)
- It shows that the summer function is on (cannot be controlled for this type of system)
- A flashing animation is displayed showing the activity of the cleaner (if present and under certain conditions such as SHUTDOWN - ECO STOP - ALARMS - GRATE CLEANING)

- (4) - It shows stove H<sub>2</sub>O temperature and the maximum value (read-only) that can be reached by the water.

The operation is the same as for the standard layout, except for the fact that in this layout the stove exchanges heat directly in the storage puffer; when it reaches the set temperature, the stove switches to ECO STOP mode and then restarts if the temperature drops below a restart value (set by the installer upon testing).



With regard to layouts 2 or 3, the "Save-Light" page shows the temperature and the settings of the storage puffer



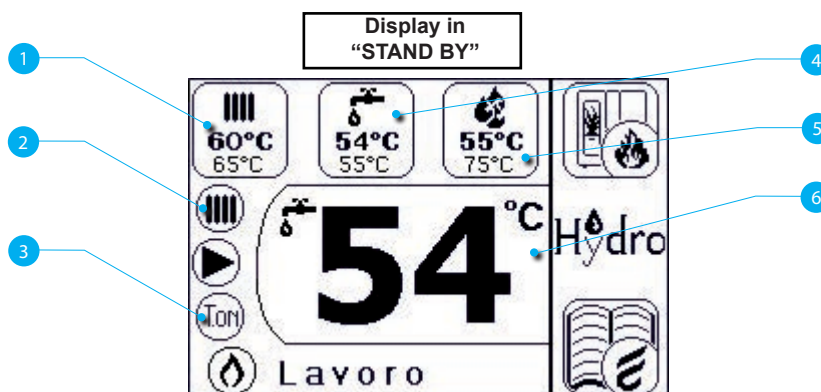
The temperature displayed shows the current value measured by the storage puffer; the settings can be changed using the keys A and B. Switch on and switch off is controlled by **PROLONGED PRESSURE** of middle key C.



### Layout 3 (DHW boiler + storage puffer management)

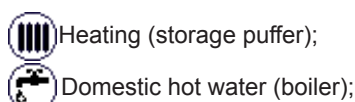
The following layout combines the functions of the previous layouts and is recommended to stoves provided with a storage puffer without internal coil preset for domestic hot water.

In this type of circuit the boiler is managed by the thermostove through a contact or immersion probe (not supplied) connected directly to the back of the stove. The same applies to the control of the storage puffer that is provided by the thermostove through a contact or immersion probe (not supplied) connected directly to the back of the stove. By connecting the external thermostats to the expansion board (optional), the user can control a recirculation pump or pick-up pumps active on 2 areas. Below is shown the new "Stand-by" mode.

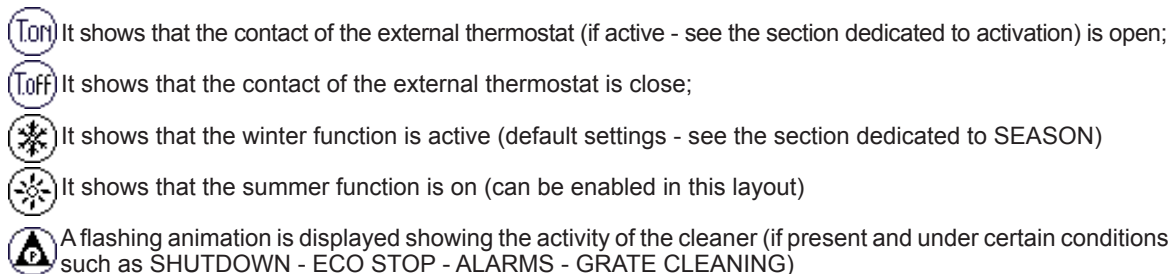


- (1) - Double function: to: a: indicates puffer temperature and active settings;  
b: by pressing the icon you will display the settings at point (6) that can be changed using the UP/DOWN keys. (A and B described above);

- (2) - Icon that shows the position of the 3-way valve:



- (3) - Area that indicates that several icons are alternating:



- (4) - Double function: to: a: indicates boiler temperature and active settings;  
b: by pressing the icon you will display the settings at point (6) that can be changed using the UP/DOWN keys. (A and B described above);

- (5) - It shows stove H<sub>2</sub>O temperature and the maximum value (read-only) that can be reached by the water.

The operation is the same as described in the standard layout except that in this layout the stove exchanges heat directly in the boiler (priority); when the set value is reached, the 3-way valve changes position and the stove begins to exchange heat in the storage puffer. When the set temperature is reached, the stove enters in ECO STOP mode; it restarts if the temperature drops below the restart value (set by the installer upon testing).

The 3-way valve is directed again into the boiler when:



















- there is a request from the Boiler;
- there is a requested from the flow switch (optional, if connected).

The stove restarts from Eco-stop or Stand by mode according to storage puffer requests or boiler requests.




*By setting the SUMMER function, the 3-way valve remains fixed in a single position, enabling the release of heat output by the stove exclusively inside the boiler. As soon as this condition is met, the stove enters in ECO STOP mode.*

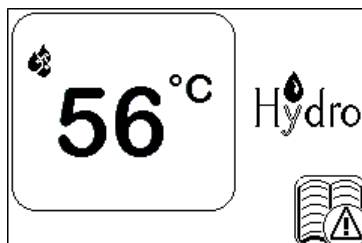
**Phase synthetical layout + colours available for switch on keys**

	PHASE	DESCRIPTION	SWITCH ON KEY
	<b>FINAL CLEANING</b>	The stove is in the switch off phase and the cooling phase has not been completed yet.	RED Display color as per setting
	<b>SWITCH ON</b>	The heater pre-heating phase has started and the pellets start to fall into the grate.	GREEN Display color as per setting
	<b>WAITING FOR FLAME</b>	The pellets ignite and take advantage of the heat in the intake air that passes through the incandescent heater tube.	GREEN Display color as per setting
	<b>FLAME PRESENT</b>	The flame is visible in the grate.	GREEN Display color as per setting
	<b>AREAS</b>	The stove has completed the switch on phase and runs a maximum capacity.	GREEN Display color as per setting
	<b>STOVE WATER MODULATION</b>	The set water temperature in the stove has been reached.	ALTERNATING GREEN / BLUE Display color as per setting
	<b>ROOM TEMPERATURE MODULATION</b>	The value set on the external ambient thermostat has been reached	ALTERNATING GREEN / BLUE Display color as per setting
	<b>WORK MODULA</b>	Bot ambient set temperatures have been reached (external thermostat) and stove H <sub>2</sub> O	ALTERNATING GREEN / BLUE Display color as per setting
	<b>ECO STOP</b>	Comfort Clima enabled, external ambient thermostat met (comfort AIR), or set stove water temperature has been reached (comfort H <sub>2</sub> O). The stove is off.	ICE Display color as per setting
	<b>START/RESTART WAIT</b>	A start request is pending but the stove is in cooling phase; once this condition is met, the stove restarts automatically.	ALTERNATING ICE / GREEN Display color as per setting
	<b>SWITCH ON RESTART</b>	The HOT restart phase is activated. Functioning is similar to the SWITCH ON phase	GREEN Display color as per setting
	<b>HOT SMOKE</b>	The maximum threshold has been reached; to facilitate cooling, the stove runs at minimum capacity to reduce fumes.	ALTERNATING GREEN / YELLOW Display color as per setting
	<b>STAND-BY</b>	The temperature of stove H <sub>2</sub> O has reached 85 °C. The stove switches to STAND-BY mode to guarantee protection of the hydraulic circuit.	ICE Display color as per setting
	<b>OFF</b>	The stove is off	ICE Display color as per setting
	<b>WAIT FOR PELLETS TO FINISH</b>	When the start request from an ECO-STOP mode coincides with an automatic shut-off condition (from TIMER), the stove turns on ensuring total cleaning of the brazier before switching to FINAL CLEANING.	GREEN Display color as per setting
	<b>INFEEED SCREW OVERFLOW</b>	When the pellet setting (set pellets +5) is near the continuous load condition. Set the value back to 0.	GREEN Display color as per setting
	<b>GENERIC ALARM</b>	The stove is in alarm state; refer to the troubleshooting chapter.	FLASHING RED LIGHT Display colored RED
	<b>ANOMALY (general)</b>	The stove has detected an anomaly; refer to the troubleshooting chapter.	YELLOW/GREEN when active or YELLOW alternating with the colour of the current state of the stove. Display colored YELLOW

**Warning Pop-Up**

	POP-UP	DESCRIPTION	SWITCH ON KEY
	<b>RDS SYSTEM ADJUSTMENT REQUEST</b>	It shows that the testing procedure and initial parameter calibration have been completed incorrectly. This indication does not block the stove.	YELLOW/GREEN only during stove working phases Display color as per setting
	<b>SERVICE REQUEST</b>	The threshold value of set work hours has been reached. A symbol is displayed next to the temp. H <sub>2</sub> O stove. Non-routine maintenance is required on the stove.	YELLOW/GREEN only during stove working phases Display color as per setting

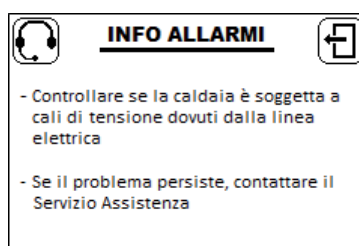
## Alarms



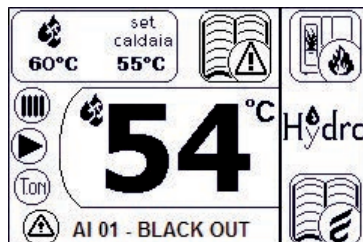
When an alarm is triggered, the stove generates an acoustic signal (of about 15 sec.) and the colour of SAVE LIGHT page turns RED. In addition, an icon is displayed, that, if pressed, shows the user the operations to be performed to eliminate the alarm signalling. This manual contains an exhaustive list in which are described all the alarms and the relative troubleshooting interventions.



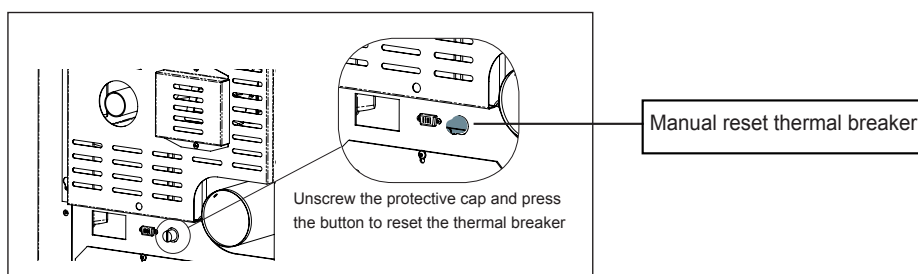
By pressing the icon the user can display the following page that contains the operations to be carried out.



In this page the user can also display the contact data of the Support Service. By pressing EXIT, you will return to STAND BY page where is shown the code of the alarm signalled by the stove.



With regard to alarm signal 07 THERMAL BREAKER and 12 SAFETY TEMPERATURE BREAKER  $H_2O$ , below are the steps required to manually reset the thermal breaker.



If the signal "FUME HOT" is displayed, this is not an actual alarm; however, if the signal persists, you should contact the Support Service and verify the operation of the stove.



EACH ALARM CAUSES THE IMMEDIATE SWITCHING OFF OF THE STOVE. PRESS THE SWITCH ON KEY TO RESET THE ALARM. BEFORE RESTARTING THE STOVE, CHECK THAT THE SIGNAL DISAPPEARED. YOU SHOULD ALSO CHECK THAT THE GRATE IS PROPERLY CLEANED TO ENSURE CORRECT RESTART.

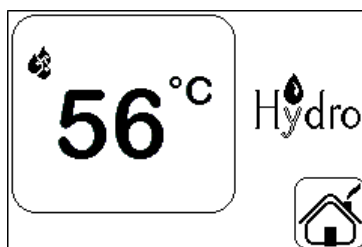
**General table of possible alarms**

SIGNALLING	REASON	SOLUTION
<b>ALARM 06 OUT OF PELLETS</b>	• The pellet tank is empty.	• Check for the presence of pellets in the container. Top up, if necessary.
	• The gear motor is not loading pellets.	• Empty the tank and check nothing fell in that could block the correct functioning of the infeed screw.
	• Not enough pellets loaded.	• Regulate pellets setting from "SET AIR/PELLETS"
		• <b>If the problem persists, contact the Support Service</b>
<b>ALARM 01 BLACK - OUT</b>	• No voltage during work phase.	• Press the switch off key and switch on stove again
		• <b>If the problem persists, contact the Support Service</b>
<b>ALARM 05 NO SWITCH ON</b>	• The pellet tank is empty.	• Check for the presence of pellets in the container. Top up, if necessary.
	• Pellet calibration and suction during switch on phase inadequate.	• <b>Contact the Support Service</b>
	• The switch on heater is faulty or not in positioned.	• <b>Contact the Support Service</b>
<b>ALARM 12 FUME EXHAUST REVOLUTION ANOMALY</b>	• The smoke extractor rotations have a loss of performance due to fan obstruction or voltage drop.	• <b>Contact the Support Service</b>
<b>ALARM 04 EXTRACTOR</b>	• Smoke extractor encoder not working or not properly connected.	• <b>Contact the Support Service</b>
	• No power to fume extractor.	• <b>Contact the Support Service</b>
	• The fume extractor is blocked.	• <b>Contact the Support Service</b>
<b>ALARM 08 DEPRESSION</b>	• The flue is blocked.	• Check the flue is free and clean.
	• The vacuum meter is faulty.	• <b>Contact the Support Service</b>
<b>ALARM 07 THERMAL SWITCH</b>	• The manual reset thermostat connected to the hopper has been triggered.	• Reset the thermostat by pressing the button on the back of the stove.
	• Combustion in the grate is not optimal due to obstructions of the grate or internal stove pass-through tubes.	• Switch off the stove, clean the grate, clean the tube bundle and adjust the combustion through Pellet/Air settings
		• <b>Contact the Support Service</b>
<b>ALARM 03 SMOKE TEMP.</b>	• Combustion in the grate is not optimal due to obstructions of the grate or internal stove pass-through tubes.	• Switch off the stove, clean the grate, clean the tube bundle and adjust the combustion through Pellet/Air settings
		• <b>If the problem persists, contact the Support Service.</b>
<b>ALARM 02 SMOKE PROBE</b>	• The smoke probe is malfunctioning.	• <b>Contact the Support Service</b>
	• The smoke probe is disconnected from the electronic board.	• <b>Contact the Support Service</b>
<b>ALARM 16 PRESSURE</b>	• The pressure in the system is higher or lower than the set value; values allowed from 0.5 bar to 2.5 bar. (Cold circuit pressure should be around 1.0 bar)	• Fill the system or vent it to bring pressure to the value requested for correct functioning.
		• <b>If the problem persists, contact the Support Service</b>
<b>ALARM 10 HOT WATER</b>	• The boiler water temperature exceeds 90 °C.	• <b>Contact the Support Service.</b>
<b>ALARM 14 SCREW PHASE</b>	• No cable connection to power the gear motor screw	• <b>Contact the Support Service</b>
<b>ALARM 15 SCREW TRIAC</b>	• An internal part of the electronic board that controls the pellet infeed screw is faulty.	• <b>Contact the Support Service</b>
	• Possible voltage drops or incorrect voltage at stove inlet.	• <b>Check the mains voltage.</b>
<b>ALARM 09 FAULT AIR FLOW METER</b>	• The part may be dirty.	• <b>Clean the flow meter with the stove in "Switched off" state</b>
	• The part may be disconnected or faulty.	• <b>Contact the Support Service</b>
<b>ALARM 17 NO FLOW</b>	• The flow meter does not measure an input air flow	• <b>Check whether the door and the drawer are properly closed, check if the air input pipe is obstructed.</b>
		• <b>If the problem persists, contact the Support Service</b>
<b>ALARM 13 SAFETY THERMAL BREAKER H<sub>2</sub>O</b>	• The temp. of H <sub>2</sub> O exceeds 90 °C and the manual reset thermostat has been triggered with the probe located in stove well.	• Reset the thermostat by pressing the button on the back of the stove.
<b>ALARM 11 H<sub>2</sub>O PROBE</b>		• <b>Contact the Support Service</b>
	• The smoke probe is malfunctioning.	• <b>Contact the Support Service</b>
	• The smoke probe is disconnected from the electronic board.	• <b>Contact the Support Service</b>

SIGNALLING	REASON	SOLUTION
<b>CLEAN THE GRATE</b>	• The door and the ash box are not closed correctly	• Make sure they are closed properly.
	• Poor combustion in grate.	• Switch off the stove, clean the grate and check the cleanliness of the support bench, clean the tube bundle by activating the turbulators. and adjust the combustion through Pellet/Air settings.
	• Presence of foreign body in air intake tube.	• Check if present and remove foreign body
	• The part may be dirty.	• <b>Clean the flow meter with the stove in "Switched off" state</b>
		• <b>Contact the Support Service</b>



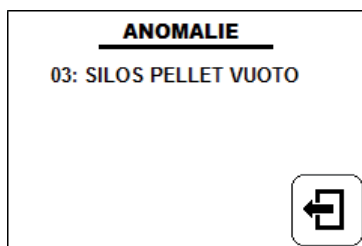
## Anomalies



When the stove detects an anomaly, it emits a long acoustic signal (about 15 sec.), and the color of SAVE LIGHT page turns YELLOW without interrupting the operation of the stove. Access the STAND BY page by pressing the key "HOME"; you will see a new icon that, once pressed, enables you to display the type of anomaly encountered by the stove.



The pressure of the icon gives you access to the classic "STOVE STATE" page, and within that, by pressing the icon once again, you will display the page that shows any anomalies detected by the stove. Below is given an example.



The signal of an anomaly does not compromise the operation of the stove that, as previously said, continues to work. As soon as the anomaly is reset, the page restores the default colour and the icon described above disappears.

## General alarm table

SIGNALLING	REASON	SOLUTION
01 - 09 flow meter	Flow meter faulty, the RDS system is not working	• Contact the Support Service
02 - Expansion 1 offline	Expansion board that controls the Solar, Tank, Zone 1 and Zone 2 does not communicate with the mother board	• Contact the Support Service
03 - Pellet silo empty	The pellet level sensor has detected that there are 0 pellets in the tank (if the optional pellet tank is provided)	• Load pellets into the optional tank
04 - Expansion 2 offline	Expansion board that controls the Zone 1, Zone 2, Zone 3 and Zone 4 does not communicate with the mother board	• Contact the Support Service
05 - Boiler probe faulty	Probe that controls the temperature in the boiler does not read the data	• Check whether the cable that conveys the signal to the mother board is disconnected • Contact the Support Service
06 - Puffer probe faulty	Probe that controls the temperature in the puffer does not read the data	• Check whether the cable that conveys the signal to the mother board is disconnected • Contact the Support Service
07 - LO Puffer probe faulty	Probe that controls the temperature in the optional puffer, that should be installed in the lower part, does not read the data	• Check whether the cable that conveys the signal to the mother board is disconnected • Contact the Support Service
08 - Solar collector probe faulty	Probe that controls the temperature in the Solar collector does not read the data	• Check whether the cable that conveys the signal to the mother board is disconnected • Contact the Support Service

### Cleaning should be provided by the user

Before any cleaning operation on the stove, implement the following precautions:

- switch off the stove and disconnect the power cord with the stove in "Switched OFF" state;
- make sure all the parts of the stove are cold;
- make sure the ash is completely cooled.



PLEASE READ CAREFULLY THE FOLLOWING INSTRUCTIONS TO PERFORM PROPER CLEANING. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY LEAD TO MALFUNCTIONS OF THE STOVE.

### Clean the surfaces

To clean the surfaces of the coated metal parts, use a cloth soaked in water or water and soap. Attention! Use of abrasive detergents or diluents can damage the surface of the stove.

### Grate cleaning should be carried out before each switch on

All stoves made by Ravelli (except for version EVO 14) are equipped with automatic cleaner that displaces any ash deposits from the combustion chamber inside the grate, that does not require their removal as it only releases the bottom of the grate dedicated to primary air intake. Therefore, it is required to make sure the grate is properly cleaned to ensure optimal combustion at all times and avoid possible overheating that could change the color of the paint or cause the door coating layer to peel off. Furthermore, poor cleaning of the grate can cause stove switch on problems.

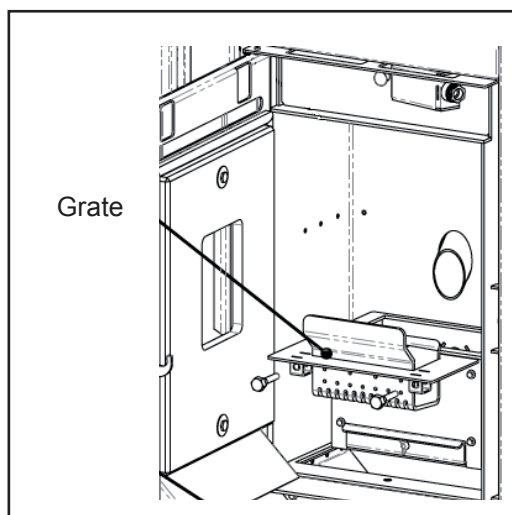
To remove the grate, unthread the pins that lock the grate to its support; now remove the grate and make sure there is no dirt inside it.



Clean basket



Basket that needs cleaning



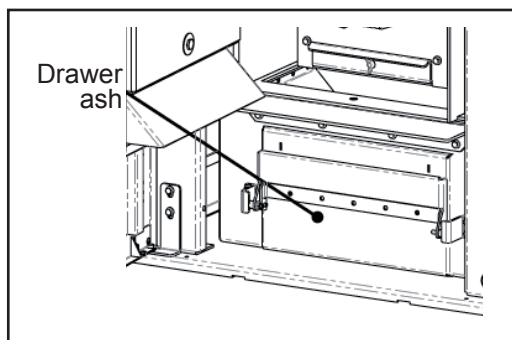
If you use another type of pellets, even of the same brand, this may lead to differences in combustion that may result in greater ash deposits inside the grate. Correct cleaning, carried out on a daily basis, allows the stove to burn pellets optimally with a good and steady heating output, preventing malfunctions that over time may call for the intervention of a technician to restore stove's operation.

Remove the drawer from the stove and remove the ash collected using an ash vacuum; be very careful if the grate is still hot as this can damage the cleaning equipment.

### Cleaning the ash pan



Ash pan that needs to be emptied



*Cleaning operations of the stove depend on the quality of the pellets used and the frequency of use. It may be necessary to carry out these operations on a daily basis.*

### Cleaning glass

The glass of the door should be cleaned with the stove cooled down using a cotton cloth or paper towel. Usually, we recommend you clean the glass with a damp (water) cloth and ash collected after burning (having an abrasive function).

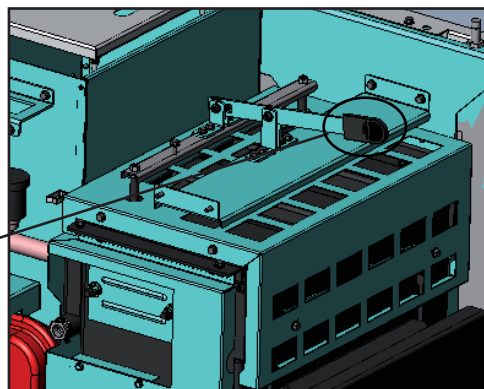


DO NOT SWITCH ON THE STOVE IF YOU NOTICE ANY DAMAGES ON GLASS SURFACE.  
CONTACT THE TECHNICAL SUPPORT SERVICE TO HAVE IT REPLACED.

### Manual actuation of turbolator and tube bundle cleaning

Open the front door to access the movement of the arm which, actuated manually, enables cleaning the turbolator and the tube bundle.

Moving system



Below are summarised the checks and/or maintenance interventions required for the proper operation of the stove.

PARTS / FREQUENCY	1 DAY	2-3 DAYS	30 DAYS	60-90 DAYS	1 SEASON
Grate	●				
Ash pan		●			
Glass		●			
Suction duct*				●	
Door gasket*					●
Turbulators		●			
Flue*					●
Combustion chamber		●			
Vacuum pellet tank			●		
Circulation pump*					●
Hydraulic parts*					●
Electrical-mechanical parts*					●

\* Operations to be carried out by authorized technical staff.

## Accessories

The stoves of touch line made by Ravelli feature a set of hydraulic parts that control all the layouts of the system described in the section "Examples of hydraulic installation". Below are listed all the accessories available.

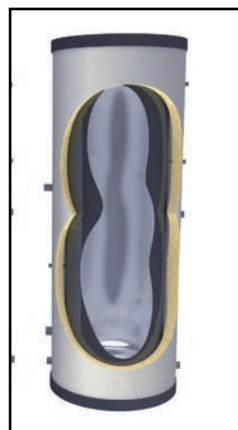


### Wall-mounted thermostat:

It enables activating the heating system when there is a temperature increase request installed in the home. The system operates both manually and by means of a specific programmable ambient thermostat. Compared to a regular thermostat, this thermostat displays the state of Ravelli stove, signalling any anomaly or alarm.

### Electronic expansion board:

It enables a more complex management of home system; the system allows the management of 2 areas with the relative recirculation pumps or zone valves, it controls the pellet level sensors (when the optional TANK is present), and also controls the solar function (from the following firmware versions).



### Puffer

Lately, in the management of heating systems the pellet stove is combined with a storage tank (that acts as a heat reserve). This, thanks to the stratification of the hot water inside it, enables withdrawing water at different temperatures according to the type of heating available; for example wall-mounted radiators or radiant panels (floor panels) that need a withdrawal temperature below 35/40 ° C. It is also recommended because it allows the coexistence of several heat sources such as solar panels, heat pumps or back-up gas boilers.

There are different types of storage tanks, from simple versions to "pipe in tank" with one or several coils or dedicated coil DHW (domestic hot water).

### cylinder

It behaves exactly like a puffer as regards the storage and the stratification of water, with the difference that the boiler is used exclusively for the production of hot domestic water. There are various types of boilers in terms of size and use, there is also the possibility to integrate a solar panel for domestic water management in the summer season, bypassing the use of the pellet boiler.



### 3-way motorized



### 3-way with spring return



### Three-way valve

This electromechanical component controlled by Ravelli electronic equipment, can be used to manage advanced systems that require the use of a boiler combined with the Ravelli stove or a combined boiler + puffer system; it has the purpose of directing the heat output by the stove to heat the entire house heating system, having always available domestic hot water or water for heating both storage tanks.

### Mixing valve:

The mixing valve enables the adjustment of a centralized heating system by mixing the water that comes out from the stove with the water returning from the system to obtain the desired temperature for the utility delivery water (management of radiant systems with delivery temperature below 35/40°C). This valve is also used for hot domestic water request at the temperature desired by the user; in this case, the hot domestic water coming out from the DHW line is mixed with water at lower temperature supplied by the water mains of the house.



### Anti-condensation valve:

The temperature rise valve, more commonly known as condensation valve is a special mixing valve with thermostatic control that optimizes the connection of the pellet heat generator to the storage tank or the heating system, automatically adjusting the temperature of the water returning to the generator, temperature that is set with thermostats chosen according to your specific requirements. It has the task of preventing water from returning into the stove at very low temperatures that may create condensate.



#### NTC immersion probe for storage tanks:

Connected to the electronic board Ravelli, it has the purpose of transferring the data taken from the storage tank directly to the power unit which determines the modulation, switch-off or the movement of the 3-way valve when the value set is reached.

#### PT1000 probe for solar collector

Connected to the electronic board Ravelli, it has the purpose of transferring the data collected by the solar collector directly to the power unit for moving the solar pump if the condition is suitable for the source of solar heat compared to the pellet stove (for example during the summer season).



Solar collector  
flat



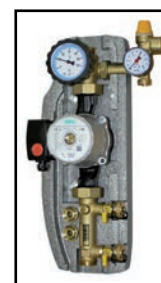
Solar collector  
vacuum

#### Solar collector

The solar collector supplies an additional heat useful for heating the storage tanks (usually boilers for DHW) at zero costs as it uses 100% solar energy. There are several different types of flat or vacuum collectors, with the substantial difference that the highest performance is ensured by the second compared to the first, with different costs.

#### Solar unit

The solar collector, unlike a regular heating system, using a liquid (glycol) working in a closed circuit through a coil installed inside the storage tank or through a plate heat exchanger. The autonomous circuit needs a group that allows the circulation of the liquid (solar pump), reading of the temperature of the glycol, filling plant with flow reader (essential for the calibration of the solar system) and a 6 bar safety valve. There are also more complex groups equipped with deaerators useful for venting the glycol in case it reaches high temperatures.

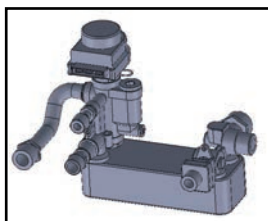


#### Potential divider unit

The simplest version is formed by a plate heat exchanger + separation pump and has the task of separating, as the name implies, two generators which generate heat in the same heating circuit without the need to assign a dedicated machine room (provided that the boiler is of type C). The Ravelli power unit has an internal management system, if the separation pump is connected, that is suitably connected at the inlet of gas boiler, enabling its switching in the event of pellet stove malfunction.

#### Additional pellet tank

Optional pellet storage tank that enables the stove to work with more autonomy. A supplied with the tank, Ravelli provides 2 pellet level sensors that, connected to the optional electronic expansion board of the stove, enable moving the pellet infeed screw properly into the main hopper and signalling the lack of pellets before the stove enters in alarm state.



#### Domestic hot water kit (DHW)

Optional plate heat exchanger to be fitted in the stove for the production of domestic hot water. The kit includes a 3-way valve and a flow switch.

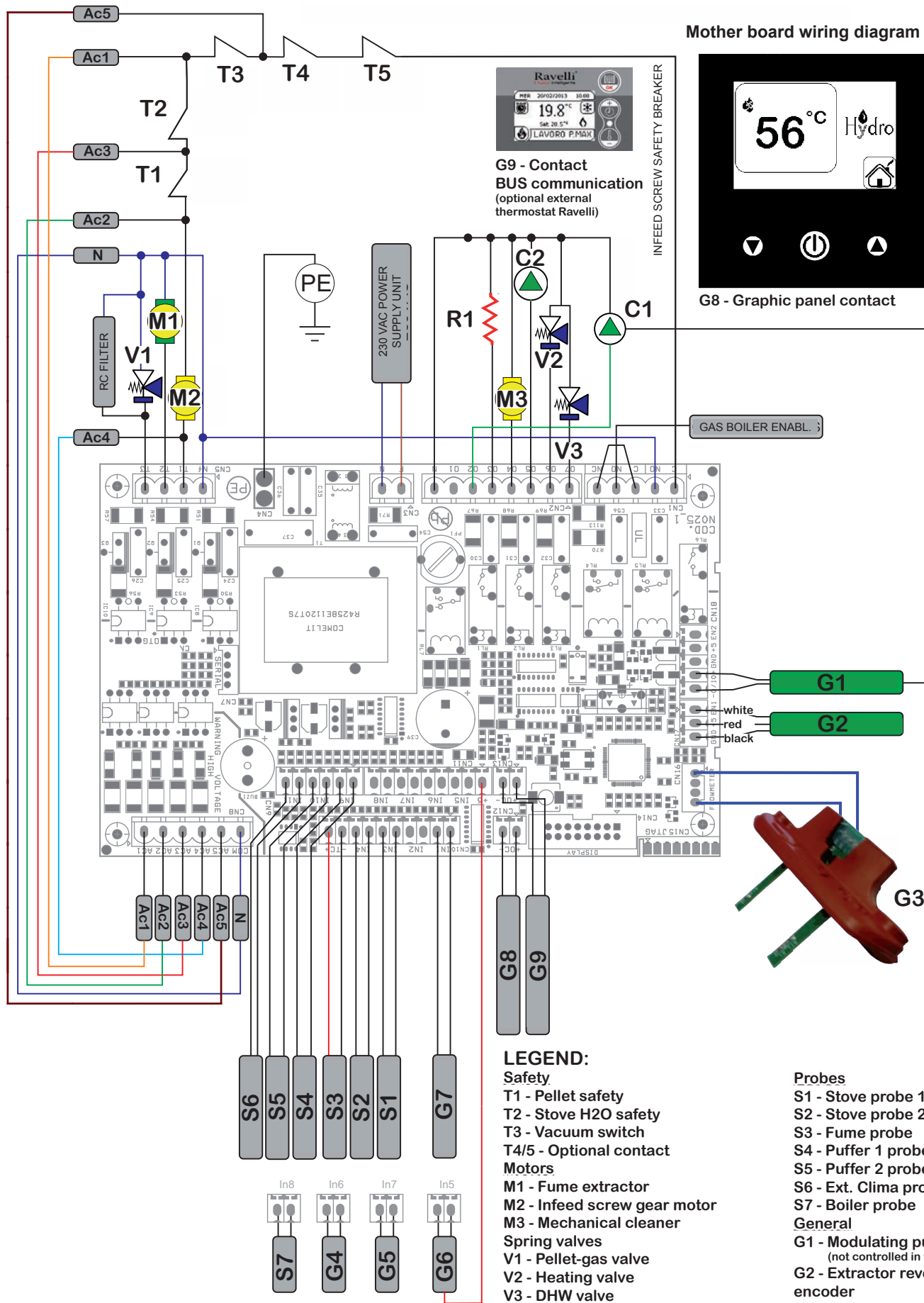


Contact an authorized Ravelli dealer for further information on the accessories available.



TO CHECK THE TYPE OF ACCESSORIES INSTALLED ON THE BOILER IN YOUR POSSESSION, PLEASE REFER TO THE TABLE GIVEN IN THIS MANUAL DEDICATED TO THE RAVELLI PRODUCT PURCHASED BY YOU.





#### LEGEND:

##### Safety

- T1 - Pellet safety
- T2 - Stove H2O safety
- T3 - Vacuum switch
- T4/5 - Optional contact

##### Motors

- M1 - Fume extractor
- M2 - Infeed screw gear motor
- M3 - Mechanical cleaner

##### Spring valves

- V1 - Pellet-gas valve
- V2 - Heating valve
- V3 - DHW valve

N.B.: V2 and V3 can be controlled with a single 3-way valve

##### Circulators

- C1 - Stove circulator
- C2 - Potential divider circulator

##### Resistance

- R1 - 250watt heater

##### Probes

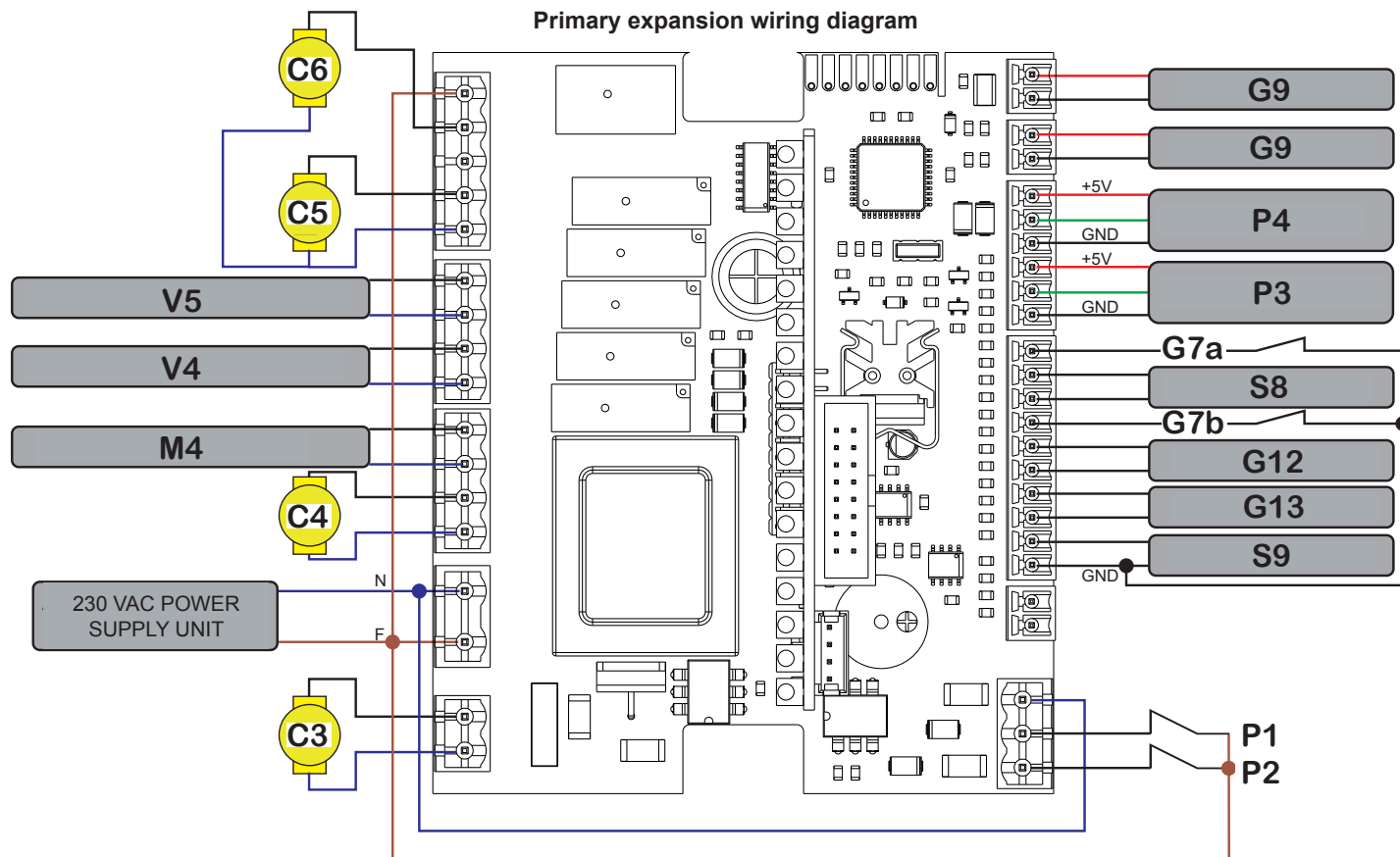
- S1 - Stove probe 1
- S2 - Stove probe 2
- S3 - Fume probe
- S4 - Puffer 1 probe
- S5 - Puffer 2 probe
- S6 - Ext. Clima probe (optional)
- S7 - Boiler probe

##### General

- G1 - Modulating pump controller  
(not controlled in this application)
- G2 - Extractor revolution reading encoder
- G3 - Flow meter
- G4 - Mechanical cleaner contact
- G5 - Flow switch
- G6 - Pressure transducer
- G7 - External thermostat
- G8 - Graphic panel contact
- G9 - BUS communication contact



### Primary expansion wiring diagram



### LEGEND:

#### Motors

M4 - Optional silo loader

#### Circulators

C3 - Modular solar circulator

C4 - Solar circulator

C5 - Zone 1 circulation or recirculation pump

C6 - Zone 2 circulation pump

#### Probes

S8 - Lambda probe (not managed in this model)

S9 - Solar collector probe (PT1000)

#### Sensors

P1 - Stove tank pellet level sensor

P2 - Optional pellet Tank level sensor

#### Spring valves

V4 - Zone 1 valve (daytime)

V5 - Zone 2 valve (nighttime)

#### General

G7a - Zone 1 external thermostat

G7b - Zone 2 external thermostat

G9 - BUS communication contact

G12 - Operating mode (open circuit = zones + solar; close circuit = zones only)

G13 - valves/Circulation pumps (open circuit = zones with valves; close circuit = circulation pump zones only)



T1 - Pellet safety  
T2 - Stove H2O safety



T3 - Vacuum switch



T4/5 - Optional contact  
G4 - Mechanical cleaner contact



M1 - Fume extractor



M2 - Infeed screw gear motor  
3 rpm EVO 14  
4.75 rpm EVO 18  
5.2 rpm EVO 24



M3 - Mechanical cleaner  
2 rpm only for models EVO18 and 24  
M4 - Optional silo loader  
4,75 rpm for all models



V1 - Pellet-gas spring valve  
V2 - Heating spring valve  
V3 - DHW spring valve  
V4 - Zone 1 valve (daytime)  
V5 - Zone 2 valve (nighttime)



V2/V3 - 3-way valve  
heating / DHW



C1 - Stove circulator



C2 - Potential divider circulator  
C3/ - Modular solar circulator  
C4 - Solar circulator  
C5 - Zone 1 circulation or recirculation pump  
C6 - Zone 2 circulation pump



S3 - Fume probe



G5 - Flow switch



S1 - Stove 1 probe (NTC 10k)  
S2 - Stove 2 probe (NTC 10k)  
S6 - Ext. Clima probe (optional)  
(NTC 10k)



S4 - Puffer 1 probe (NTC 10k)  
S5 - Puffer 2 probe (NTC 10k)  
S7 - Boiler probe (NTC 10k)  
S9 - Solar collector probe (PT1000)



G6 - Pressure transducer



G7 - External thermostat  
G7a - Zone 1 external thermostat  
G7b - Zone 2 external thermostat



P1 - Pellet level sensor (stove tank)  
P2 - Pellet level sensor (optional tank)



G12 and G13  
---- close contact  
open contact ---->

## Warranty

### Warranty Certificate

AICO S.p.A. would like to thank you for agreeing to buy one of our pellet stoves and invites you, the customer, to read the instructions for installation, use and maintenance of the stove.  
- note the warranty conditions reported below.

The warranty form annexed must be compiled and stamped by the installer to activate the warranty.

**Otherwise, the warranty of the product shall not be effective.**

### Warranty conditions

The warranty covers manufacturing material defects, provided the product was not subject to breakages caused by improper use, negligence, incorrect connection, tampering or installation errors.

Not covered by the warranty:

- vermiculite (firex 600)
- the door glass;
- the fibre seals;
- the paint;
- the combustion basket in stainless steel or cast iron;
- the resistor;
- the coloured majolica;
- any damage due to inadequate installation and/or tampering with the stove and/or negligence on the customer's part.

Use of poor quality pellets or any other material which could damage the components of the stove cause the warranty to become invalid, as well as the relevant liability of the manufacturer.

Therefore, we recommend you use pellets that meet the requirements in the specific chapter.

All damages caused by transport are not recognised, therefore we recommend you carefully check the goods on receipt, immediately advising the dealer of any damage.

The warranty form must be detached and sent within 8 days of purchase to the following address:

**AICO S.p.A.**  
**Via Kupfer, 31**  
**25036 Palazzolo s/O**  
**Brescia (ITALIA)**

### Info and problems

For any information or support request, please contact the local dealer or support centre as they are authorized to provide solutions to all requests and intervene directly, when necessary.

## MAINTENANCE

[illegible]

# Ravelli®

il fuoco intelligente

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