



THERMOROSSI

TECNOLOGIE ED INNOVAZIONI PER IL RISCALDAMENTO

INSTALLATION, USE AND MAINTENANCE GUIDE

ECOTHERM 1000

www.thermorossi.com

C O N T E N T S

DECLARATION OF CONFORMITY

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“CE” DECLARATION OF CONFORMITY

In accordance with the following directives:

European Directive	73/23/EEC and its amending directive	93/68/EEC
	89/336/EEC and its amending directives	93/68/EEC 92/31/EEC 93/97/EEC

Thermorossi S.p.A., Via Grumolo 4 - ARSIERO (VI), declares that the heaters of the ECOTHERM series have been designed and manufactured in compliance with the safety requirements of the standards for EC marking.
This declaration refers to the entire range of the specified series.

ARSIERO , 18th February 2008

THERMOROSSI S.p.A.

1 INTRODUCTION

1.1 GENERAL GUIDELINES

- °This installation, use and maintenance guide is an integral and essential part of the product and must be kept by the user.
- ° Before commencing with the installation, use and maintenance of the product, carefully read all the instructions contained in this booklet. The Manufacturer recommends carrying out all the maintenance operations described in this manual.
- °This appliance must only be used as intended by the manufacturer. Any other use is considered incorrect and therefore hazardous; consequently, the user shall be totally liable for the product if used improperly.
- °Installation, maintenance and repairs must be carried out by personnel with professional qualifications and in compliance with current regulatory standards and in accordance with the instructions of the manufacturer of the appliance.
- °Use only original spare parts.
- °Incorrect installation or poor maintenance could injure or damage people, animals or things; in this case the manufacturer shall be relieved of all responsibility.
- °Before commencing any cleaning or maintenance operation ensure that the appliance has been disconnected from the mains power supply by means of the main system switch or some other disconnecting device installed upstream from the appliance.
- °The product must be installed in locations suitable for fire-fighting and furnished with all the services (power and outlets) which the appliance requires for a correct and safe operation.
- °If the appliance is sold or transferred to another user ensure that the guide is handed over with it.

Thermorossi S.p.A. maintains the author's rights on these service instructions. The information in this booklet may not be reproduced or given to third parties or used for competitive purposes without the appropriate authorization.

1.2 SAFETY GUIDELINES

PERSONAL INJURY

This safety symbol identifies important messages throughout the manual. Read the information marked by this symbol carefully as non-observance of this message can cause serious injury to persons using the heater.



DAMAGE TO PROPERTY

This safety symbol identifies messages or instructions that are fundamental for the heater and system to function well. To avoid serious damage to the heater adhere strictly to these instructions.



INFORMATION

This symbol indicates important instructions for good functioning of the heater. If this information is not correctly observed, the performance of the heater and/or system will not be satisfactory.



1.3 STANDARDS AND RECOMMENDATIONS

RECOMMENDATIONS



Before using the appliance, carefully read every section of this instruction manual as knowledge of the information and the regulations contained in it are essential for a correct use of the appliance.

GENERAL WARNINGS

Caution: the appliance must be connected to a system provided with a PE conductor (in compliance with the specifications of 73/23/EEC, 93/98/EEC, concerning low voltage equipment).



Before installing the appliance check the efficiency of the earth circuit of the power supply system.

Caution: the power supply line must have a section which is suitable for the power of the equipment. The appliance must be powered with a voltage of 220/240 V and 50 Hz. Voltage variations which exceed 10% of the nominal value can cause poor functioning or damage the electrical device. Position the appliance so that the electric power plug is easily accessible. Voltage variations less than 10% of the nominal value can cause lighting and use problems. Apply a current regulator.



Caution! Warning for Swiss users

Refer to the local cantonal regulations imposed by the Fire Department (Mandatory signalling and safety distances) and the Note concerning installation of heaters issued by the Association of Cantonal Fire Agencies (VKF - AEAI).

1.4 TRANSPORTATION AND STORAGE

TRANSPORTATION AND HANDLING

The heater body must always be in a vertical position when handled and exclusively by means of trolleys. Take special care to protect the electric panel, the glass, the ceramics and all the fragile parts from mechanical impact which could damage them and their correct functioning.

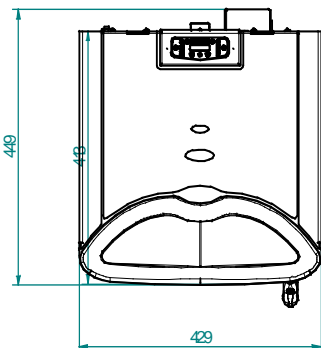
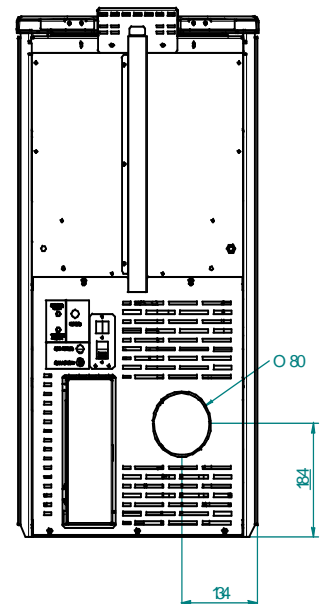
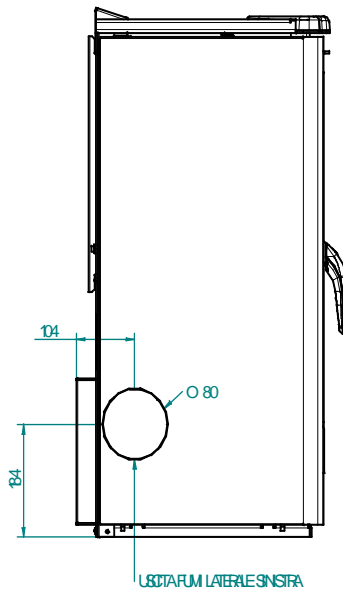
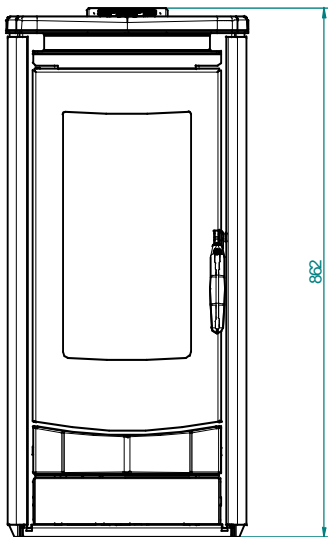
STORAGE

The heater must be stored in a humid-free environment and sheltered from the weather; do not place the heater directly on the floor. The Company denies all responsibility for damage caused to wood floors or floors made from any other material. It is inadvisable to store the heater for long periods of time.

2 TECHNICAL CHARACTERISTICS *

ECOTHERM 1000

Power min / max	2.5 Kw - 7 Kw
Smoke temperature	~220°C
Average smoke flow rate	9,3 g/s
Minimum draft	0.09 mbar
Smoke exhaust pressure switch	yes
Smoke exhaust diameter mm	80
Dual combustion system	yes
Hopper capacity Kg	~14
Pellets consumption min/max	0.5 - 1.4 Kg / h
Weight	85 Kg
Automatic lighting	yes
6-speed fan-forced ventilation	yes
5 power levels	yes
Weekly chronothermostat	yes
Adjustable mounting feet	yes



LEGENDA

uscita fumi laterale sinistra

KEY

left side smoke outlet

* All the data are based on the appliance fuelled with Austrian standard ÖNORM M 7135 type-approved pellets. Pellets consumption may vary depending on length.

3 GENERAL DESCRIPTION

3.1 OPERATING TECHNOLOGY

•Your heater has been built to fully satisfy all your heating and practical requirements. Top-grade components and functions managed with microprocessor technology guarantee high reliability and optimal performance.

3.2 PELLETS

•The appliance is fuelled by pellets, that is, cylinders of compressed sawdust; this will make it possible for you to enjoy to the full the heat of the flame

•The pellets are cylinders of compressed sawdust having a 6 mm diameter and a maximum length of 20 mm.

They have a maximum moisture content of 8%, a thermal value of 4000/4500 Kcal/Kg and a density of 620-630 Kg/m³.

All data presented in the table of Technical Features (para.2) are taken using pellets certified according to O M 7135 standards, the consumption of pellets may vary depending on length.



The use of fuel which does not comply with the description given above immediately voids the warranty.

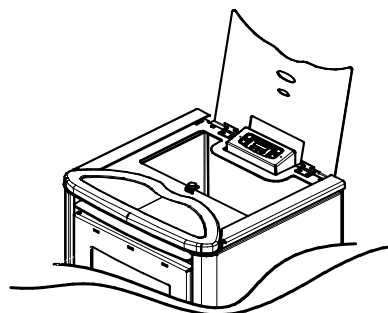
3.3 THE FEEDBOX



•The feedbox is situated in the top part of the heater.

•The maximum load capacity of the tank is approximately 14 Kg, but varies according to the specific weight of the pellets.

The manufacturer recommends emptying the tank and vacuuming the screw feeder zone once a month and during the summer period.



4 INSTALLATION

4.1 HEATER LOCATION



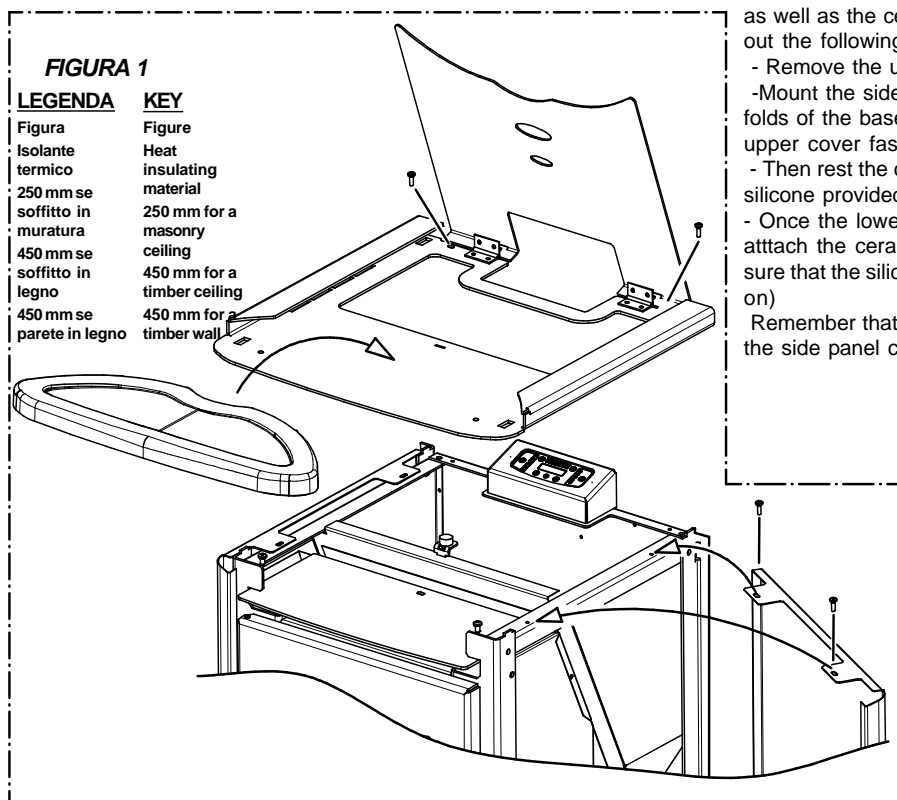
Follow the general guidelines set out in paragraph 1.1 to the letter. Above all keep in mind that the floor of the room must be capable of bearing the weight of the heater. CAUTION: The heater must be installed in a room with adequate ventilation (minimum air intake of 80 cm²).



The appliance must be positioned at a minimum safe distance from walls and furnishings. This distance will have to be increased considerably if the objects surrounding the appliance are inflammable (matchboarding, furniture, curtains, picture frames, sofas, etc...). The recommended minimum distances are illustrated in the drawing below on the right. Installation in the vicinity of heat-sensitive materials is only permitted if suitable insulating protection is placed between them and the heater (ref.Uni 10683).

Adjust the mounting feet to allow a 10 mm space between the floor and the heater.

4.1.1 INSTALLATION OF METALCOLOR CASING



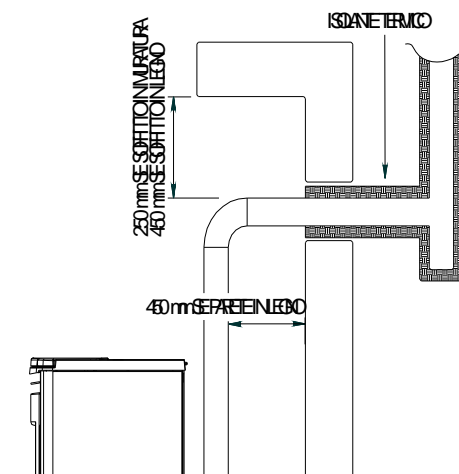
After the heater is put in place, the side panels must be assembled, as well as the ceramic top and bottom as shown in figure 1-2. Carry out the following operations:

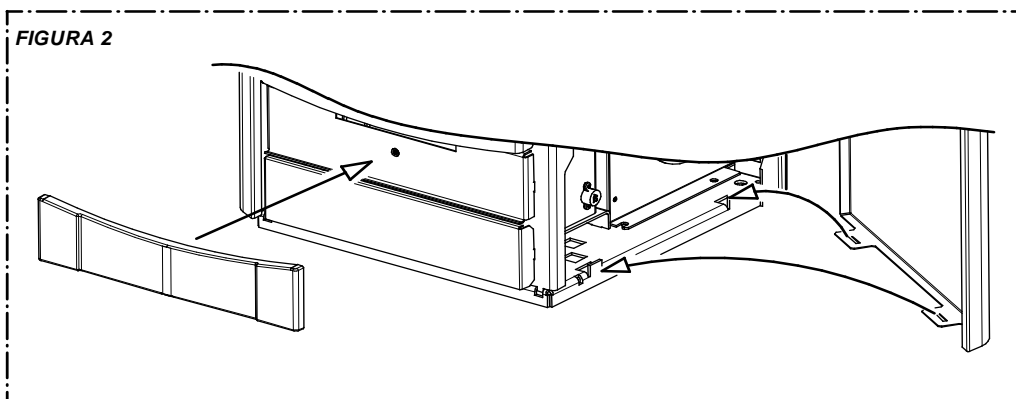
- Remove the upper steel cover by means of the 2 screws shown.
- Mount the side panels by firstly inserting the bottom holes on the folds of the base then fasten the 2 top screws. Then assemble the upper cover fastening the 2 screws where indicated.

- Then rest the ceramic top attaching it with dots of silicone (thermal silicone provided) to the steel support.

- Once the lower support has been cleaned, degreased and dried, attach the ceramic element to its support (wait 24 hours to make sure that the silicone has completely dried before the heater is turned on)

Remember that the heater must be completely cooled down before the side panel can be cleaned with a soft cloth and water.



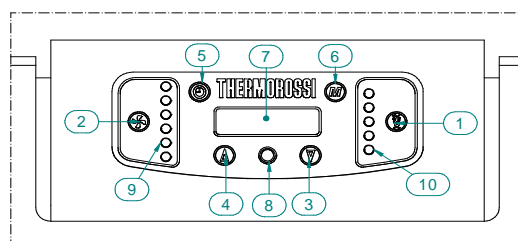


5 DESCRIPTIONS OF CONTROLS

5.1 DESCRIPTION OF CONTROL PANEL AND HEATER REAR PANEL

5.1.1 DESCRIPTION OF THE CONTROL PANEL

There are two main control pushbuttons marked with the ventilation symbol (2) and the symbol of the flame (1). The flame pushbutton (1) sets the power of the heater with 5 levels available which are activated as the 5 leds light up in sequence (10). The off cycle is activated when all power leds are turned off. Key (2) controls the ventilation of the heater. It is activated when the heater reaches a temperature over 42 °C. The fan can be set to any of speed levels (9): when the heater is on the ventilation cannot be switched off .



All controls and indicators are presented here below :

(1) Insert on/off and flame adjustment button . When you press this button the appliance (10) switches to **Star / ON / OFF**. Up to 5 leds (10) are activated when pressed repeatedly.

(2) Ventilation setting button . Press this button to set the desired level of ventilation: up to a maximum of 6 speeds are available, indicated by the lighting of the corresponding leds (9).

(3) (4) Auxiliary setting keys.

Keys (3) and (4) are operating keys necessary when on-off cycles are programmed, for operative levels, clock setting, etc..

5) Programming Enable / Disable keys.

(6) "MENU" selection button To access the main menu press the button marked with 6. Press button 6 repeatedly to scroll the adjustment, setting and programming windows (see para. 5.2 , 5.3 , 5.4) .

(7) Display

(8) Infrared sensor for remote control

(9) Ventilation level leds .

(10) Combustion level leds

5.1.2 BACK PANEL OF THE HEATER

A description of the functions of the buttons and LEDs on the back panel of the heater:

(11) Main switch 0-1

(12) Heater electrical power outlet 220-240V 50 Hz.

(13) Overtemperature thermostat button cap.

In the event of overtemperature this safety thermostat stops the loading of pellets. When it is activated LED 15 comes on.

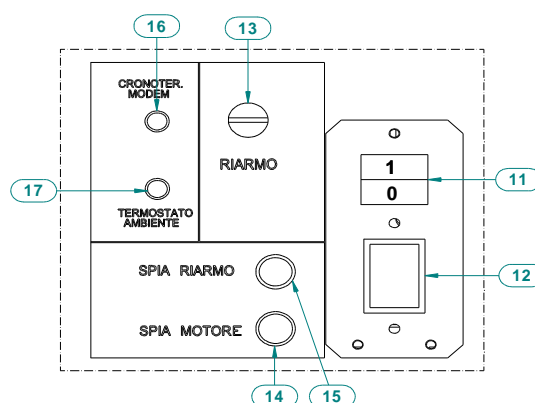
To restart the heater you need to wait until it cools down, then verify the cause for the overheating, remove the cause, unscrew the protective cap and press the button (13) .

(14) Feed motor test indicator light. When the pellet screw feeder is set in motion the light must come on.

(15) Reset thermostat tripped indicator light. This LED comes on when the reset thermostat is activated.

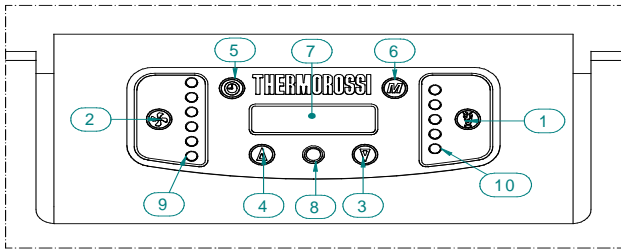
(16) Power outlet for additional chronothermostat (see para.7) (additional chronothermostat not supplied)

(17) Power outlet for additional room temperature thermostat.(see para. 7) (additional room temperature thermostat not supplied)



5.2 DAY AND TIME SETTING

The heater must be fed and the rear switch in position "1". Display (7) may show the inscriptions On , OFF or Star.



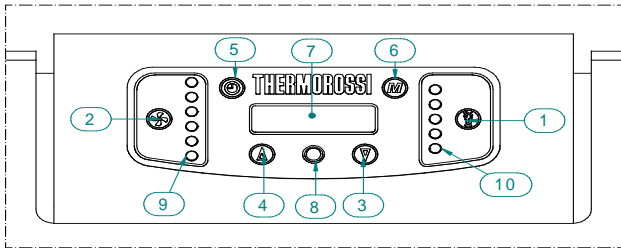
To set the time and the day of the week carry out the procedures described below.

Press once the key (6), and the inscription HoUr will flash. After a few seconds the fixed inscription **days** will appear. In order to adjust the day, repeatedly press key (4) and/or (3) until the led turns on in area (9) which corresponds to the present day; Monday is indicated by the 1st led on, Tuesday is indicated by the 2nd led on,..... Saturday is indicated by led (6) on, while Sunday corresponds to all 8 leds being on. Then confirm the day by pressing the key (1). The 2 digits representing the hours will start flashing in the display: it is possible to select the present hour using the arrow keys (4) and/or (3); the selection must be confirmed by pressing

key (1). The 2 digits indicating the minutes will start flashing: it is possible to select the present minutes using the arrow keys (4) and/or (3), the selection must be confirmed by pressing the key (1). The setting of the day and of the hour is now completed. For the entire procedure to be confirmed and to move back to the heater status display, key (6) must be repeatedly pressed until the operating status is displayed: On , Off, or Star.

5.3 ON/OFF PROGRAMMING.

The heater must be fed with the rear switch in position "1". Display (7) may show the inscriptions On , OFF or Star.



It is possible to carry out the weekly programming by setting up to 3 on/off cycles for each day from Monday to Sunday. To carry out the programming, push button (6) must be pressed twice until the inscription **cr on** is on.: in area (9) a led goes on (which indicates that the first day of the week, Monday, is being programmed). Inscription **On1** will appear on the display, and the 2 digits representing the hours will turn on. Press button (3) and/or (4) to enter the hour of the first cycle start time. To confirm the selection press the button (1). The two digits representing the minutes will be turn on. Press button (3) and/or (4) to enter the minutes of the first cycle start time. For the selection to be confirmed press the key (1). The first hour for the Monday on-cycle has been set. Then the inscription **OFF1** will appear in the display and the two digits representing the hours will turn on. When the

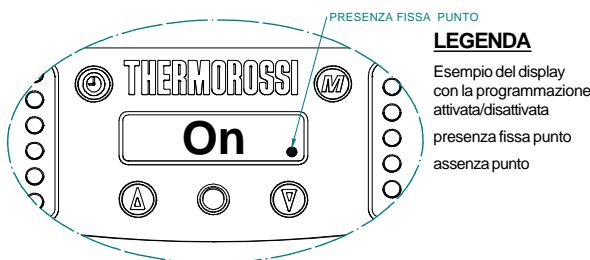
(3) and/or (4) is pressed the hour of the first off-cycle is entered. To confirm the selection press the button (1). The two digits representing the minutes will be turn on. By pressing the key (3) and/or (4) the minutes for the first off-cycle will be entered. To confirm the selection press the button (1). At this point the first on-off cycle for Monday has been entered. Later, it is possible to set the Monday's second on-off cycle (shown with the display of **On2** and **OFF2**) and the third Monday's on-off cycle (shown with the display **On3** and **OFF3**). Inside the programming menu, if for example the Wednesday's programming is to be changed, go to the third green led by pressing key (2): then it is possible to change the on-off programs for Wednesday. If the second on-off cycle is not required simply set the ON2 time as 00:00 and the OFF2 time as 00:00.

The programming stage may be terminated by pressing the key (6), i.e. by quitting the programming menu. Pressing pushbutton (5) programming is enabled/disabled (Enabled= message **on cr** temporarily displayed and, at the same time, a fixed point is present on the right side at the bottom of the display. Disabled= message **of cr** temporarily displayed and, at the same time, the point on the right side at the bottom of the display is not present.): this function is useful if one wants to prevent the weekly established programming. With the programming active, the operating conditions at the start-up (combustion power – ventilation speed) are the same as set-up before the last off-cycle of the heater.

In order to display the present time and programmings, key (6) must be repeatedly pressed until the current time is displayed. By pressing keys (3) and/or (4) all programming values will be displayed :to exit this condition, twice press the key (6).



In the event of a programmed cycle on always ensure that the brazier is clean and seated correctly in its lodging: failure to keep the brazier clean can reduce the life of the spark plug.

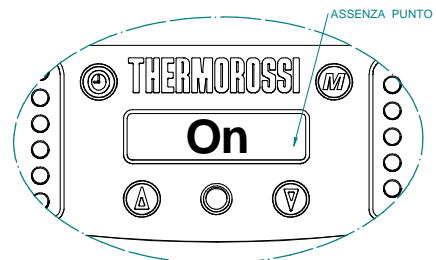


LEGENDA

Esempio del display con la programmazione attivata/disattivata
 presenza fissa punto
 assenza punto

KEY

Example of the display with the programming activated/deactivated
 Point steady presence
 Point absence



ESEMPIO DEL DISPLAY CON LA PROGRAMMAZIONE ATTIVATA

ESEMPIO DEL DISPLAY CON LA PROGRAMMAZIONE DISATTIVATA

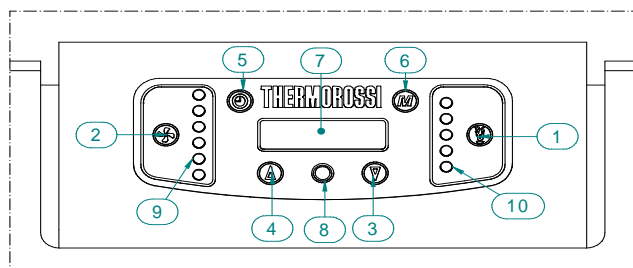


When the programming is enabled (temporary inscription **on cr** on the display and, at the same time, a fixed point is present on the right side at the bottom of the display) any additional chronothermostat (see para.7.2) is deactivated.

Programming can be reset by keeping key (5) pressed for 8 seconds until the inscription **rEst** is displayed: this operation can be carried out when the inscriptions **On** or **OFF** or **StAr** are shown on the display.

5.4 OPERATING LEVEL SETTING

The heater must be fed and the rear switch in position "1". Display (7) may show the inscription **On**, **OFF** or **Star**.



Your appliance is delivered with an excellent program installed that favours combustion yield; the program is called **P 1**.

If you are using pellets with an out-of-standard incidence of residues after combustion in the brazier, alternative levels may be selected:

P 2 : this program increases the smoke suction unit speed acceleration.

P 0 : when using too long pellets and/or flue outlets with very high vacuum, over 2 mm water column.

The pellet consumption value is not affected by the operating level settings.

Select the required level by acting as follows:

Repeatedly press three times the key (6) until the inscription **LIV** flashes on the display and, then, the corresponding level set on the heater will show (P1 o P2 o P0) In order to change the operating level as key (4) is kept pressed, press the key (3).

By holding down button (4) and pressing button (3) repeatedly the level changes in the following sequence: **P2... P0 ... P1**.



If the change is made while the insert is running the difference in the flame will be apparent. It is mandatory to pay particular care when selecting the most appropriate operating cycle for your installation. After the selection of the operating cycle a thorough cleaning of the brazier is mandatory.

For an overall confirmation and to return to the status display of the heater, repeatedly press the key (6) until the operating status is displayed. It is possible to set back the operating level to **P1** by keeping the key (5) pressed for 8 seconds until the display shows the inscription **rEst**: this operation may be carried out when the display shows the inscription **ON** or **OFF** or **StAr**.

6 USE OF THE HEATER

6.1 5.1 SWITCHING ON THE HEATER

Before using the appliance check that all the movable parts are in place; also remove any labels and stickers from the glass to avoid having permanent traces remain on the surfaces.

Turn the switch installed on the back of the heater to position "1" (= ON). Press button (1) to start the start up phase. When key (1) is repeatedly pressed, the desired combustion level can be set and it will be active at the end of the ignition stage.

The electrical heater will start to overheat and after a few minutes the first lot of pellets will start dropping into the brazier. This occurs because the screw feeder has to fill up because it is completely empty. The first time the heater is started up the start up phase will have to be carried out twice for this very reason.



CAUTION : The start up phase (word **Star** appearing on the display) takes 20 minutes during which the heater ignores any commands transmitted to it. After this time has elapsed the word **ON** appears on the display. The fan starts as soon as the heater body exceeds 42°C. During the work stage it is then possible to adjust combustion and the ventilation: Combustion is adjusted by 5 leds (through key (1)) , while the ventilation adjustment is distributed over 6 levels shown by the leds that turn on in succession (through key (2)).



To turn the heater on it is necessary for the inscription **OFF** to be present on the display; if it is not present, the key (6) must be repeatedly pressed until the inscription **OFF** appears.

6.2 HEATER COMBUSTION AND VENTILATION ADJUSTMENTS

The heating capacity is adjusted by pressing key **(1)** or on the remote control provided. Act on this command to adjust the quantity of pellets fed to the firebox. Maximum combustion power is achieved when all 5 leds are lit.



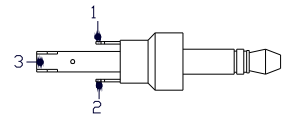
Caution: The fan starts as soon as the heater body exceeds 42°C. The fan setting is expressed visually by means of 6 different positions represented by 6 bars: press button **(2)** repeatedly to regulate it.

7 ADDITIONAL ROOM TEMPERATURE THERMOSTAT / ADDITIONAL CHRONOTHERMOSTAT (not supplied)

Your heater is already provided with all programming functions:

Two connectors are located on the back of the heater near the electric power socket. They refer to two operating modes:

→ With the room temperature thermostat. → With the chronothermostat or modem.
Procure a jack where the 2 wires are to be welded as illustrated in the diagram:



Use only contacts 1 and 2, do not use contact 3.



Contacts 1-2 are defined as "CLEAN" contacts and they must never be fed with 220 V. If the board is energised with 220V or voltages exceeding 6 V the control board will be permanently damaged and will not be covered by the GUARANTEE.

7.1 OPERATING WITH THE ADDITIONAL ROOM TEMPERATURE THERMOSTAT (NOT SUPPLIED)

It is possible to install an additional room temperature thermostat by connecting it to the back of the Ecotherm heater, by inserting a jack in the socket marked "THERMOSTAT" (see drw. para.5.1). This stereo jack is not supplied with the heater but is readily available in electrical or stereophonic equipment supply stores. The operating principle is as follows:

- When the room temperature reaches the set temperature (only during the RUNNING phase) the thermostat closes the contact and the heater shifts to the minimum room fan speed and minimum combustion power. By using the room temperature thermostat the heater does not shut down, therefore electrical energy consumption is kept to the minimum and the heater has a longer life.
- When the room temperature drops the thermostat opens the contact and the heater returns to its original position in terms of thermal power and ventilation.
- In this position it is not possible to start up the heater automatically or shut it down automatically.



CAUTION: N.C. (normally closed) contacts must be used for the connection to the additional room temperature thermostat. Contacts 1-2 of the chronothermostat mod. "Perry".

7.2 OPERATING WITH THE ADDITIONAL CHRONOTHERMOSTAT (NOT SUPPLIED)

It is possible to install, as an alternative to the additional room thermostat, a chronothermostat that must be connected by means of a jack to the back of the Ecotherm heater in the socket marked "CHRONOTHERMOSTAT" (see drw. para.5.1). Using this outlet when the chronothermostat contact closes the ON cycle starts, whereas when the contact opens the OFF cycle starts. The operating level at start up (combustion power - fan speed) is the same as the level used before the last time the heater shut down. This operation can also occur by adjusting its room temperature. Once the desired temperature set on the chronothermostat is reached the contact opens and executes the shut down cycle. Similarly when the room temperature drops below the set temperature the contact closes and the ON cycle starts. If an unsuitable room temperature value is selected the heater will be subjected to continual ON-OFF cycles, consequently the increased number of start ups will result in greater consumption of electrical energy. The chronothermostat can be used to program temperatures, times and dates for the ON-OFF cycles. It is therefore possible to program a momentary shutting down of the heater according to the room temperature.



CAUTION: The manufacturer denies all responsibility for the life of the electrical heater if subjected to excessive start ups. The manufacturer recommends setting a suitable room temperature value in the chronothermostat in order to prevent this possibility.

CAUTION: Use N.O. (normally open) contacts for the connection to the chronothermostat. Contact 1-3 of the chronothermostat mod. "Perry".

CAUTION: In the event of connections to the chronothermostat Thermorossi shall not be held responsible for the insert not starting up, smoke leaks, breakage of the lighting component. In the event of a programmed cycle on always ensure that the brazier is clean and seated correctly in its lodging.



When the programming is enabled (temporarily shown on the cr display, with the fixed presence, at the same time, of a point on the right side at the bottom of the display of the control panel (refer to par. 5.3)) any additional chronothermostat (refer to par. 7.2) is disabled.

8 CLEANING AND MAINTENANCE

8.1 FOREWORD

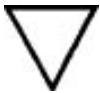


Before beginning any maintenance operation ensure that the appliance is in the OFF phase and disconnect it from the electric power outlet.

Your pellet heater / boiler ECOTHERM is a solid fuel generator : it requires frequent controls and general cleaning operations. This will guarantee regular operation and optimal output at all times. If the product is unused for a prolonged period of time it is mandatory to inspect the smoke channel and outlet to ensure that there are no obstructions before use . It is necessary to accurately follow the directions given below: Otherwise severe damages may occur for the product, the installation, objects and the people who use the generator.

8.2 CLEANING AND MAINTAINING THE HEATER

- **EVERY DAY** clean out all the combustion residues from the brazier and remount the brazier and catalyst blade (figure 2 below).
- **EVERY 2 DAYS** empty the ash pan "V" of all residual ash (figure 3).
- **EVERY WEEK** vacuum the residual ash from the compartment "V1" under the brazier (figure 3).
- **EVERY 2 WEEKS** clean the smoke exhaust "T" at the heater inlet .
- **EVERY MONTH** inspect and clean the vents identified as "A1" , "A2". To access vent "A2" (figure 1) remove the cover "A3" by pressing the two side folds inwards and rotating it upwards. In order to access vent "A1" (figure 4) remove the steel cover complete with ceramic (to remove it unscrew the 2 screws as indicated in par.4.1.1). Unscrew the screw on the air deviator blade and pull the blade out from its housing: now you can access the vent "A1".
- **EVERY MONTH** clean the grate of the room fan, positioned as in figure 5.
- **EVERY MONTH** check that the smoke exhaust is free from fly ash deposits, particularly in the initial sections.
- **EVERY MONTH** vacuum the pellet ash deposited on the bottom of the tank (when the tank is empty).
- **AT THE END OF THE WINTER SEASON OR WHENEVER NECESSARY** we recommend thoroughly cleaning the Ecotherm firebox, using brushes and vacuum cleaner.
- **TWICE A YEAR** clean the smoke exhaust, including the flue outlet.



A vacuum device simplifies the cleaning procedure. Use a damp cloth or a scrunched up piece of newspaper, dampened and rolled in the ash, to wipe the glass until it is perfectly clean. Do not clean the glass while the heater is operating. The glass remains reasonably clean if the catalyst - deviator blade is installed correctly in the brazier as shown in figure 2. The heater must be completely cooled down before the side panel can be cleaned with a soft cloth and water.

LEGENDA

figura

lama catalizzatrice

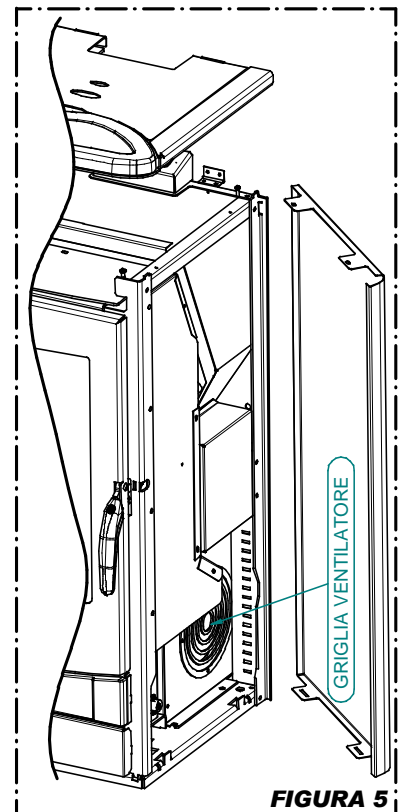
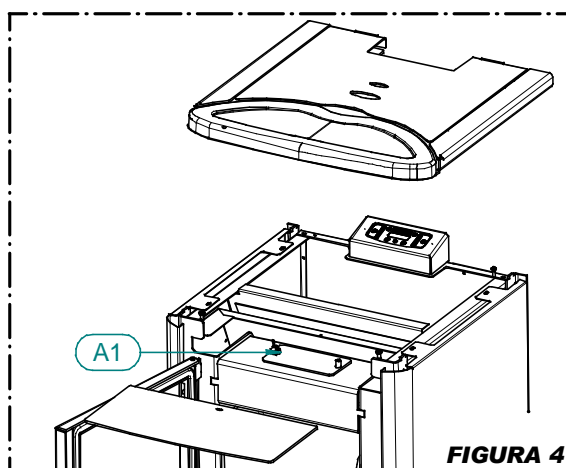
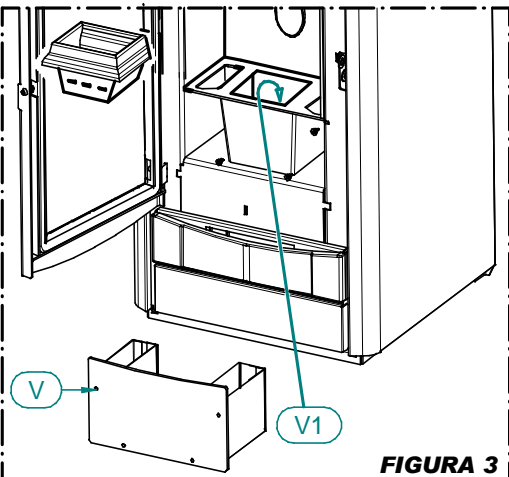
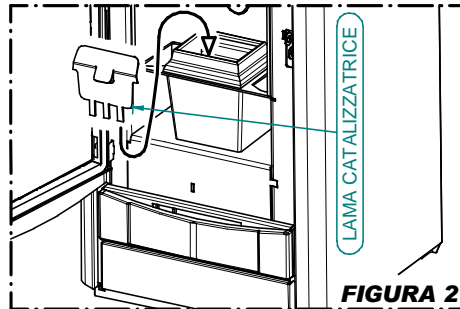
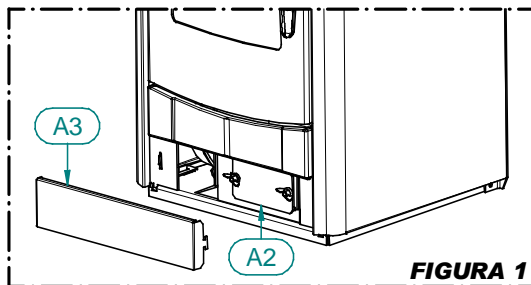
griglia ventilatore

KEY

figure

catalyst blade

fan grate



8.3 REPLACEMENT OF THE REMOTE CONTROL BATTERY

When the infrared remote control does not send out the transmission signal (led on), the battery must be replaced. Use a Phillips screwdriver of proper size, to separate the half shells and replace the battery. When the dead battery is removed, it must be safely disposed of.

8.4 CONTROL PANEL BUFFER BATTERY REPLACEMENT

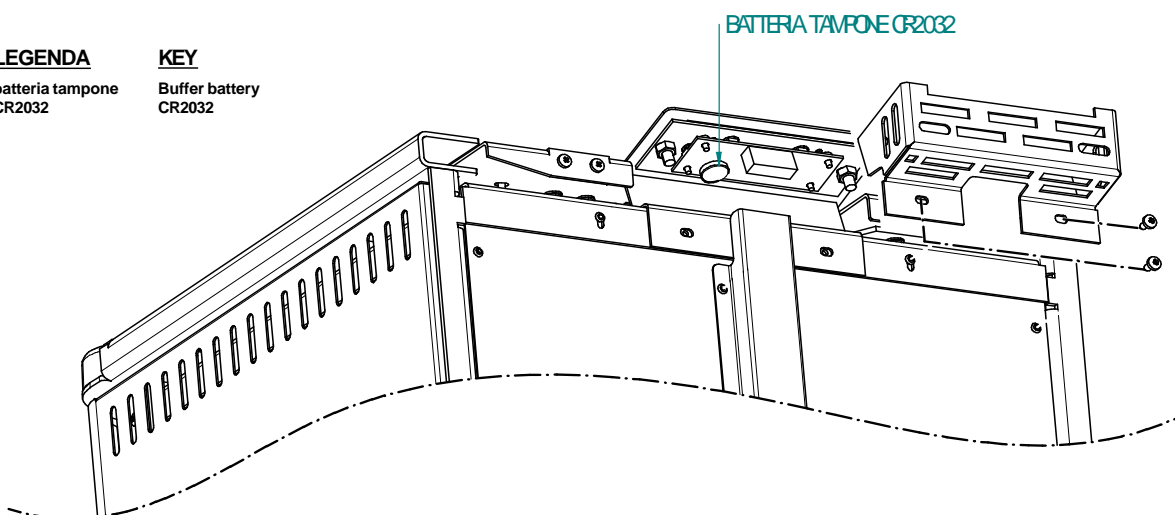
Inside the control panel there is a buffer battery type CR2032 . . . When hour and programming are not kept in storage , the battery must be replaced using the 2 screws in the rear of the control panel. The dead battery, after it is removed, must be safely disposed of.

LEGENDA

batteria tampone
CR2032

KEY

Buffer battery
CR2032



9 SMOKE DISCHARGE TUBE



Due to the frequent accidents caused by poor functioning of flue outlets installed in private dwellings, we have prepared the following paragraph to assist the installer in his inspection of the parts concerned with eliminating the gases produced by combustion. The smoke exhaust must be installed in compliance with UNI7129/92 , UNI 10683 and EN14785 and must respect the following reference values: T. Smoke discharge ~ 220°C Discharge smoke flowrate ~ 9,3 g/s Required draft ~ 0,09 mbar The instructions provided in the regulations mentioned above must be accurately followed: Non-observance may cause serious damages to the product, to objects and to people who make use of the generator.

9.1 VENTILATION OF THE ROOMS

•The room where the heater is installed must have a good air flow to guarantee secondary air for the appliance for the combustion process and for ventilation of the room. The natural air flow occurs directly through permanent apertures to the outside made in the walls of the room, or by means of single or multiple ventilation ducting.

The ventilating air must come from outside and if possible, away from sources of pollution. Indirect ventilation is also allowed by taking in air from rooms adjacent the one where the insert eater is installed taking into account all the warnings and limitations specified below.

•The apertures in the walls must comply with the following requirements:

- have an unobstructed section of at least 6cm² for each Kw of installed thermal power, with a minimum limit of 100cm²;
- be made in such a way that the vent openings, both on the inside and outside of the wall, cannot be obstructed;
- be protected with grills or similar systems in order not to reduce the section described above;
- be situated at floor-level.

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

- the adjacent room is equipped with direct ventilation in compliance with the points described above;
- in the room to be ventilated the installed appliances are only connected to one flue outlet;
- the adjacent room is not used as a bedroom or a common area of the building;
- the adjacent room is not a room with a fire hazard, such as storage sheds, garages, combustible material store rooms;
- the adjacent room does not become a vacuum compared to the room to be ventilated due to an opposite draught effect;
- the air flow from the adjacent room to the room to be ventilated is unobstructed through the permanent apertures having an overall net section of no less than that indicated above. These apertures can be obtained by enlarging the space between the door and the floor.



This chapter is not intended to replace UNI 7129/92, UNI 10683 and EN 14785 standards to which it refers. The qualified installer must in any case be fully aware of this standard and its amending versions.

9.2 SMOKE OUTLET

•The smoke exhaust shown in the following figures is the best solution to ensure the discharge of smoke even when the fan is not operational, such as for example if there is an electrical power failure. A minimum drop of 1.5 metres is required between the T terminal on the outside of the building and the outlet at the back of the appliance, to ensure that residual combustion smoke is discharged in the case described above (Otherwise the residues would stagnate inside the firebox and be discharged out to the free atmosphere).

The figures below illustrate the best solution for discharging the smoke out through the roof or into the flue outlet. If you opt to discharge the smoke out through the roof it is important to operate as shown in the figure below on the left. Insert a union tee with inspection cap, connecting brackets suitable for the height of the flue outlet, flashing that crosses the roof and chimney cap to protect against bad weather conditions. If you decide to use a classic masonry outlet see the diagram below on the right. A union tee with inspection cap and suitable supporting brackets are required. If the flue outlet is too big we recommend inserting a stainless steel or porcelain-coated steel tube with a diameter not exceeding 150mm. Seal area where the inlet and outlet part of the smoke exhaust meets the wall. **It is strictly forbidden to apply mesh to the end of the outlet tube, as it could cause the heater to malfunction.** If the smoke tube is installed in a fixed position it is advisable to provide inspection openings for clean-out purposes especially in the horizontal sections. See the diagram. These openings are essential to allow for the removal of ash and unburned products which tend to accumulate along the discharge path.

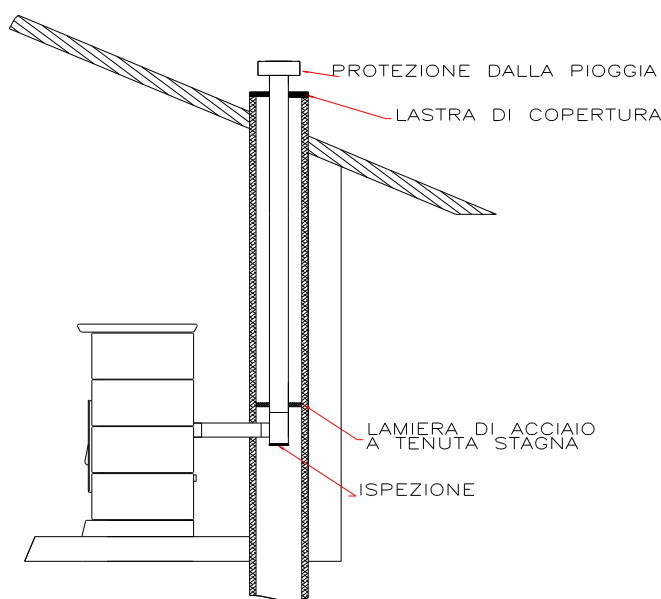
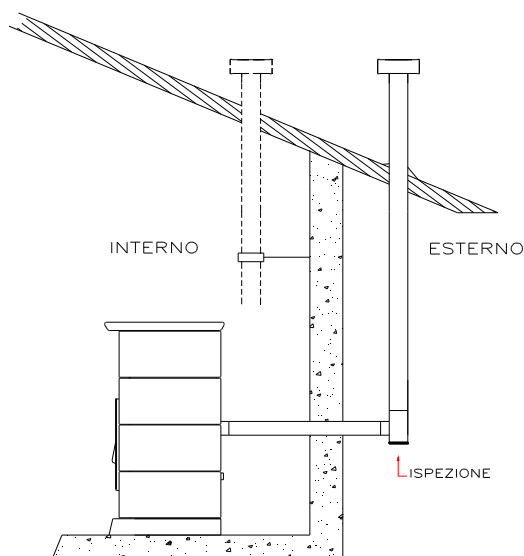
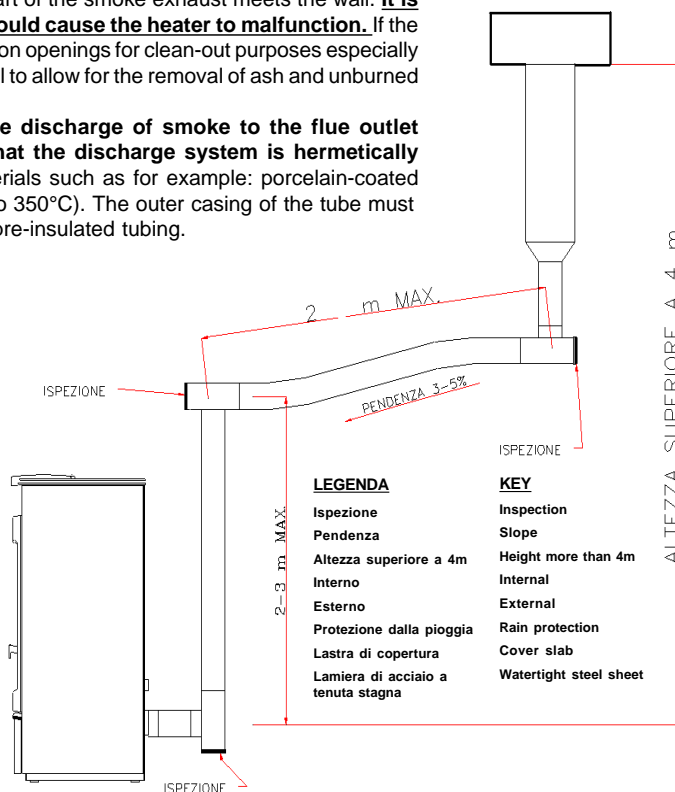
The appliance functions with the firebox in a vacuum, while the discharge of smoke to the flue outlet has a slight pressure, consequently it is imperative to ensure that the discharge system is hermetically sealed. The smoke discharge tube must be made from suitable materials such as for example: porcelain-coated steel tubes, and the various fittings sealed with red silicone (resistant to 350°C). The outer casing of the tube must be made with insulating material (mineral wool, ceramic fiber) or use pre-insulated tubing.



It must be possible to inspect and remove all the smoke tube sections for clean-out purposes.



If the side outlet is used take care not to damage the silicone tube that connects the pressure switch.



10 ALARMS

The heater is programmed to communicate 3 fundamental alarms. The alarms are listed below:

- PE OF** : is communicated when the temperature during the **On** mode drops below 42 °C.
This indicates that the heater is switching off due to lack of pellets.
- AL AC** : is communicated if after the start up phase the temperature does not rise above 42°C.
- AL OP** : this occurs when the smoke outlet is partially blocked.

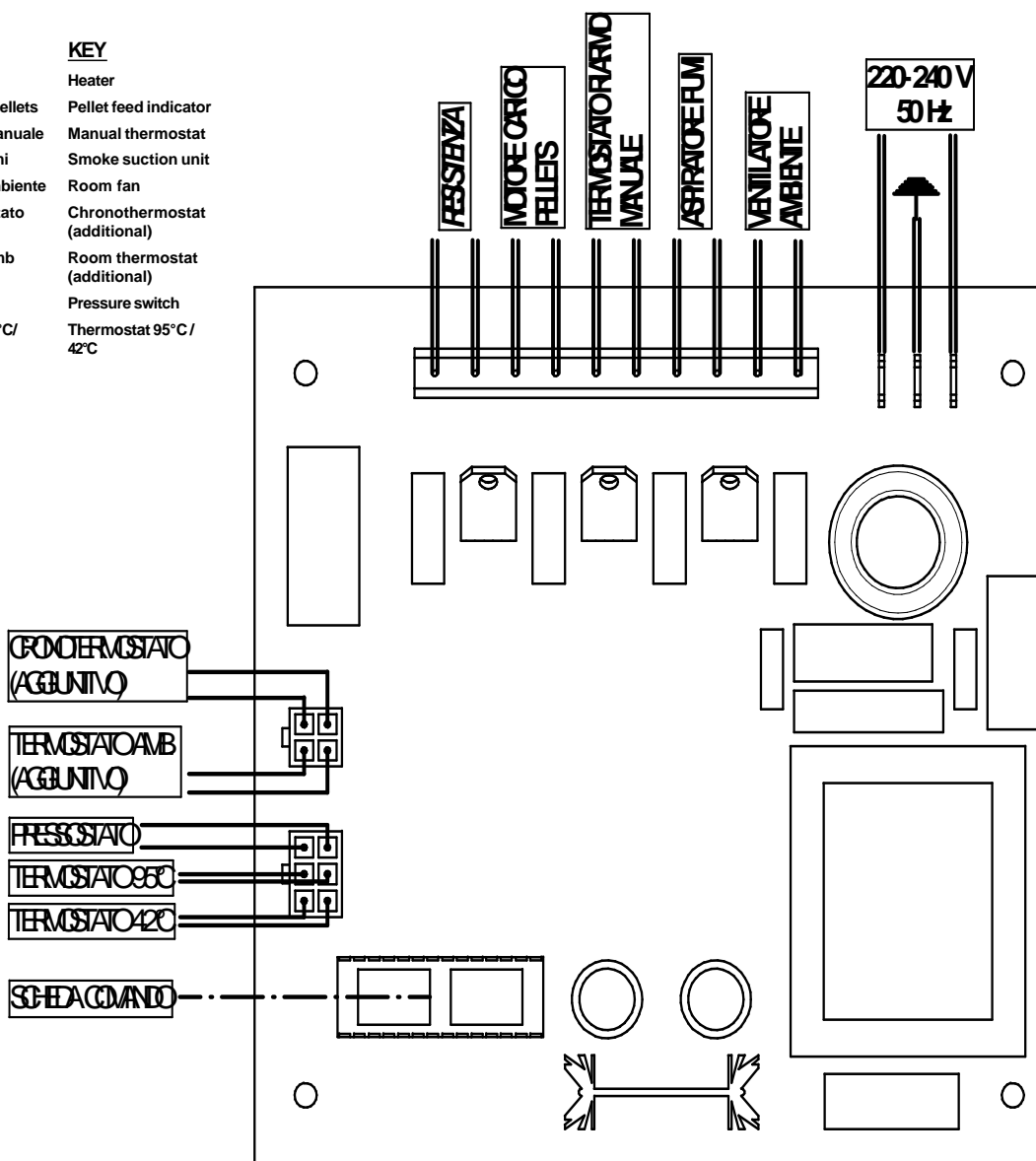
In order to set the alarms to zero, the feed to the heater must be turned off and restored using switch 0-1 on the back of the heater.

11 ELECTRICAL WIRING

LEGENDA

Resistenza	Heater
Indice carico pellets	Pellet feed indicator
Termostato manuale	Manual thermostat
Aspiratore fumi	Smoke suction unit
Ventilatore ambiente	Room fan
Cronotermostato (aggiuntivo)	Chronothermostat (additional)
Termostato amb (aggiuntivo)	Room thermostat (additional)
Pressostato	Pressure switch
Termostato 95°C / 42°C	Thermostat 95°C / 42°C

KEY



12 INFORMATION FOR THE SKILLED TECHNICIAN

12.1 MAIN COMPONENTS AND THEIR OPERATION

SMOKE PRESSURE SWITCH

This is a safety switch that stops the screw feeder motor whenever necessary. The main cause for the pressure switch tripping is a blocked flue outlet or smoke exhaust pipe. Note that it is strictly forbidden to apply any kind of mesh screen to the end of the pipe. When the holes of the mesh clog up they create a plug that trips the pressure switch which stops the pellet feeder.

SCREW FEEDER MOTOR

This motor is powered at regular on/off intervals controlled by a microprocessor. The operation of this motor is affected when:

- The motor's thermal cutout trips.
- Pellets finished.
- The manual reset thermostat trips at 125°C
- The pressure switch trips due to blocked smoke exhaust.
- The heater is switched off intentionally.

ROOM FAN

The fan starts automatically as soon as the 42°C thermostat closes the contact. The fan stops when the fuel hopper is empty or when the insert is switched off intentionally, two situations in which the thermostat's contact is opened.

SMOKE SUCTION UNIT

This is activated when the start up signal is given. In the first two minutes it «washes» the smoke discharge tube, that is, it functions at maximum working rate. Once this time has elapsed it self-adjusts to the optimal speed. The exhaust continues to operate for approximately one hour from the time the heater is switched off to allow for the evacuation of all the smoke and for safety purposes. It stops 30' after the thermostat at 42°C opens.

THERMOSTAT AT 42°C

Its function is critical for the following reasons: When the contact closes the heater powers up and the working cycle starts. Similarly, when the contact opens the smoke exhaust stops.

HOPPER SAFETY THERMOSTAT

This thermostat start operating as soon as the temperature in or near the pellet hopper approaches 85°C and sends an immediate signal to the room fan to operate at maximum power.

125°C MANUAL RESET THERMOSTAT

When the temperature exceeds 125°C the pellet feed screw shuts down. A red light at the back of the appliance remains lit. Once the causes for the overtemperature have been identified and remedied the heater can be reactivated by unscrewing the plastic cover of the thermostat located at the back of the heater and pressing the button (the heater temperature must be below 117 °C).

GLOW PLUG

It is activated in the **Star** phase. Heats the air to 800°C, which assist the first combustion of the pellet s present in the brazier.

12.2 USEFUL ADVICE FOR INSTALLATION AND OPERATION

- 1 The appliance must never be deliberately disconnected from the electric power supply. Whenever the appliance is deliberately disconnected from the electric power supply smoke could be emitted into the room and be a hazard. Similarly never switch off the appliance by suddenly cutting off the electric power supply.
- 2 Do not install the appliance with horizontal wall outlets only: evacuation of the combustion products must be guaranteed in a natural manner.
- 3 Do not install the appliance with horizontal sections only: the wall could be exposed to high wind conditions and the appliance could shut down due to back draft.
- 4 Operate the appliance at maximum for 1 hour for a complete drying and baking of the silicates contained in the enamel which covers the body of the heater.
- 5 Do not install a grill or outlet terminal which could restrain the flow of the combustion gases: this could affect the dynamic gas to the point where it would not allow the pellets to burn correctly.
- 6 Read this instruction booklet.
- 7 Keep the appliance clean and check the burner as described in this manual.
- 8 Clean the smoke outlet regularly.
- 9 Use top quality pellets: by saving 20 cents a bag you heat up to 50% less.
- 10 Maximum useable lengths of smoke exhaust tubes:
Painted aluminized steel tubes (1.5 mm minimum thickness), Aisi 316 stainless steel tubes or 0.5 mm enamelled tubes may be used.

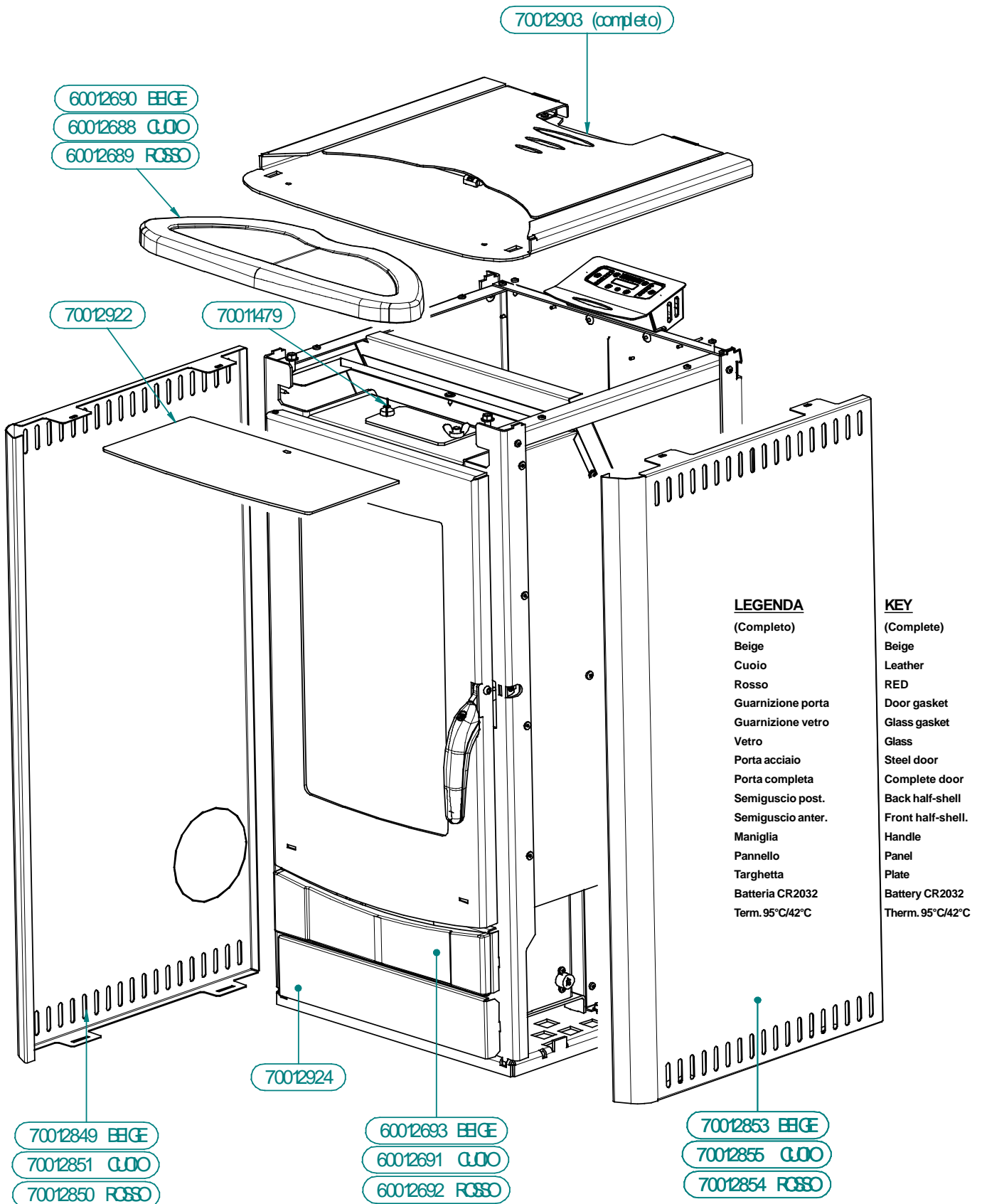
Minimum vertical length	4 m
Maximum vertical length	8 m
Length with min slope .5%	0.5 m
Maximum number of elbows at least 0.5 m apart	2

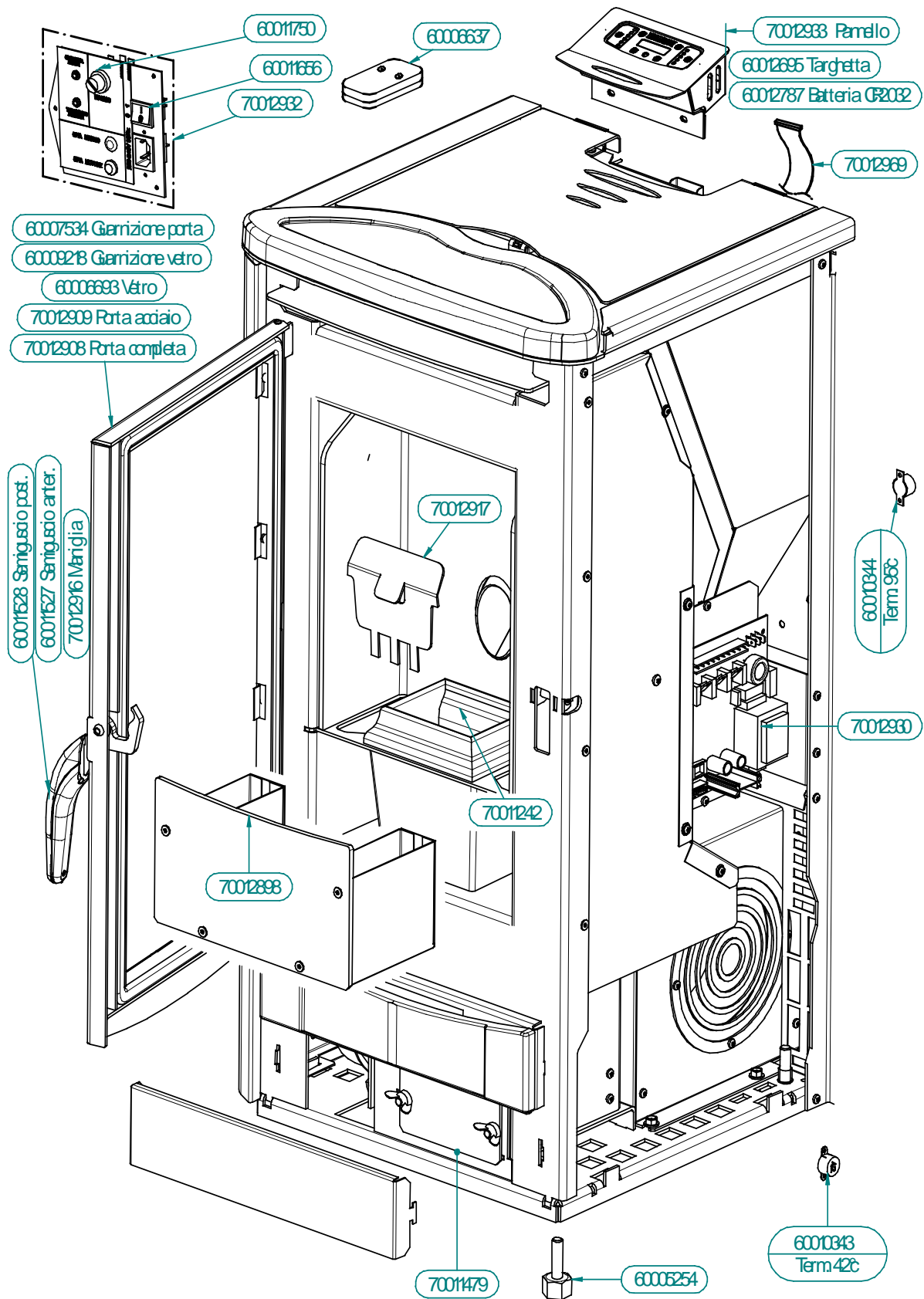
12.3 TROUBLESHOOTING CAUSE-SOLUTION

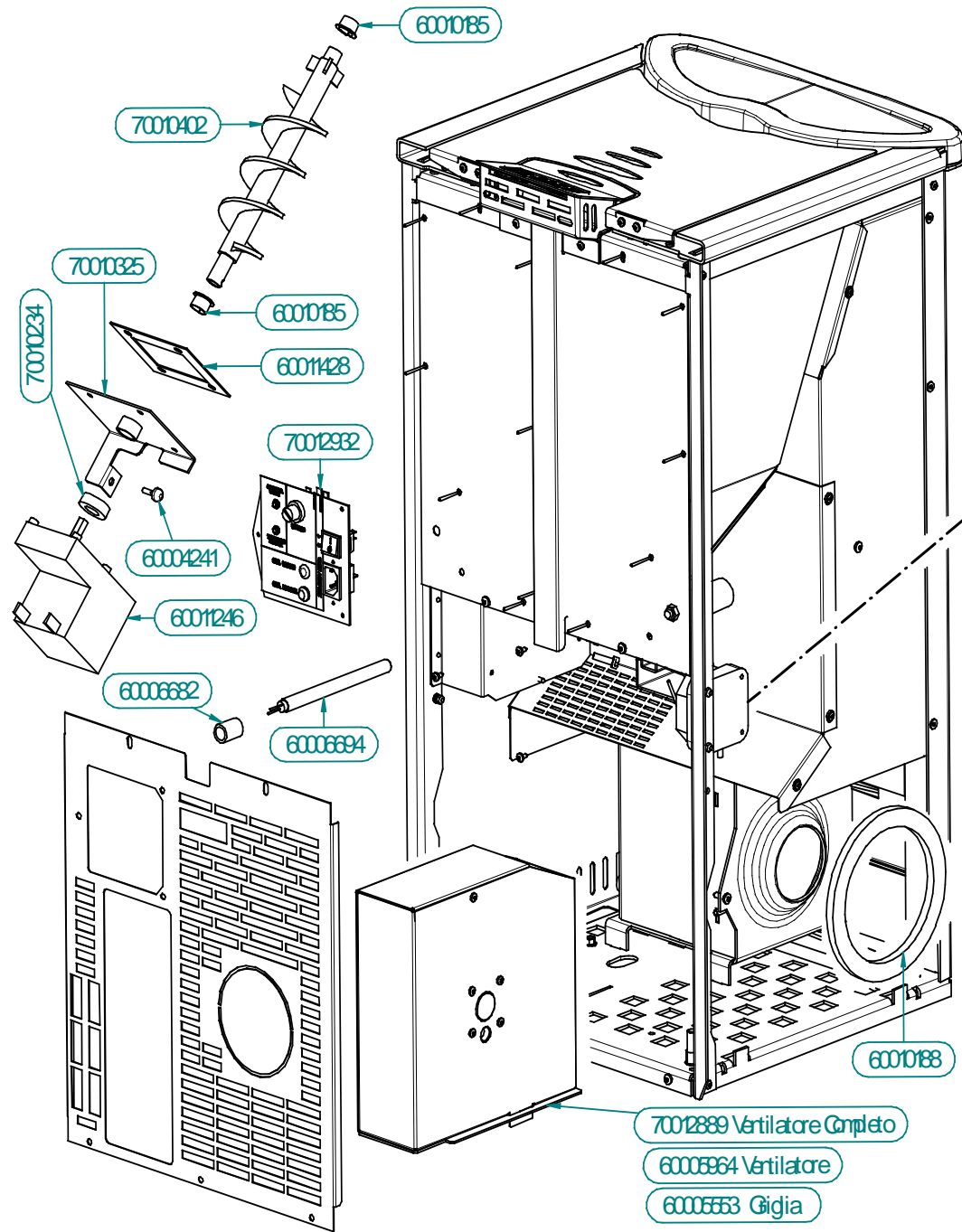
PROBLEM	CAUSE	SOLUTION
PELLETS DO NOT DROP INTO THE BURNER	PELLET TANK IS EMPTY (THE INSCRIPTION <i>PE OF</i> IS PRESENT IN THE DISPLAY)	FILL UP THE TANK
	FOREIGN BODY SUCH AS NAIL, NYLON, PIECE OF WOOD ON THE FEEDER SCREW ON THE BOTTOM OF THE TANK (THE INSCRIPTION <i>PE OF</i> IS PRESENT IN THE DISPLAY)	REMOVE THE FOREIGN BODY
	SMOKE EXHAUST NOT FREE, OR WITH TERMINAL THAT OBSTRUCTS THE PASSAGE OF SMOKE (THE INSCRIPTION <i>AL OP</i> IS PRESENT IN THE DISPLAY)	CHECK THE SMOKE EXHAUST AS IT COULD BE DIRTY OR CLOGGED
	OUTLET TERMINAL CLOGGED BECAUSE A GRILL OR TERMINAL HAS BEEN INSERTED WHICH PREVENTS THE FREE PASSAGE OF SMOKE (THE INSCRIPTION <i>AL OP</i> IS PRESENT IN THE DISPLAY)	REMOVE THE TERMINAL AND REPLACE IT WITH A MORE SUITABLE ONE.
	SUDDEN GUST OF WIND WHICH HAS MADE THE APPLIANCE GO INTO SAFETY MODE. (THE INSCRIPTION <i>AL OP</i> IS PRESENT IN THE DISPLAY)	SWITCH THE POWER SUPPLY TO THE APPLIANCE OFF THEN BACK ON AGAIN.
	THE PELLETS SCREW MOTOR DOES NOT WORK	REPLACE THE PELLETS SCREW MOTOR
	THE RESET THERMOSTAT TRIPS AND LOCKS THE GEARMOTOR	THE ROOM FAN IS BROKEN AND MUST BE REPLACED; THEN, PUT BACK INTO SERVICE THE RESET THERMOSTAT, WAIT UNTIL THE HEATER COOLS DOWN AND RESET THE THERMOSTAT (PARA. 12). THE GRATE OF THE FAN IS VERY DIRTY AND MUST BE CLEANED (SEE TO PARA. 8.2), THEN SET THE THERMOSTAT BACK INTO SERVICE; WAIT FOR THE HEATER TO COOL DOWN AND RESET THE THERMOSTAT (SEE PARA 12).
THE APPLIANCE ACCUMULATES PELLETS IN THE BRAZIER WHILE OPERATING	SMOKE EXHAUST NOT FREE, OR WITH TERMINAL THAT OBSTRUCTS THE PASSAGE OF SMOKE	REMOVE THE TERMINAL AND REPLACE IT WITH A SUITABLE TERMINAL. CHECK THE SMOKE EXHAUST AS IT COULD BE DIRTY OR CLOGGED
	BURNER IS DIRTY	CLEAN THE BURNER ON A MORE FREQUENT BASIS; CARRY OUT ALL THE CLEANING OPERATIONS INDICATED (SEE PARA. 8.2)
	PELLETS WITH DEPOSIT ABOVE PERMISSIBLE LIMITS	CLEAN THE BURNER MORE OFTEN. SET OPERATING PROGRAM P2.
	THE BURNER IS NOT PROPERLY PLACED ON ITS SEAT	SET THE BURNER ON ITS SEAT PROPERLY
	THE BURNER STAYS LIFTED FROM ITS SEAT	SET THE BURNER ON ITS SEAT PROPERLY
THE APPLIANCE SMOKES	OCCURS THE FIRST TIME THE HEATER IS SWITCHED ON AS THE SILICONE PAINT IS BEING BAKED	RUN THE HEATER AT FULL POWER FOR 1 HOUR TO COMPLETE THE BAKING.
	THE SMOKE EXHAUST IS NOT SEALED CORRECTLY	MAKE SURE THAT THE GASKETS HAVE BEEN FITTED TO THE SMOKE EXHAUST PIPES
	IF THE APPLIANCE STARTS TO SMOKE AFTER 25 MINUTES: DIRTY BURNER, VERY DELAYED START	CLEAN THE BURNER
	IF THE APPLIANCE STARTS TO SMOKE AFTER 25 MINUTES: DELAYED START BECAUSE THE SCREW FEEDER IS EMPTY	FILL UP THE TANK
THE APPLIANCE SHUTS OFF 5 MINUTES AFTER THE END OF THE START UP CYCLE	DELAYED START BECAUSE THE SCREW FEEDER IS EMPTY (THE INSCRIPTION <i>AL AC</i> IS PRESENT IN THE DISPLAY)	FILL UP THE TANK
	DIRTY BURNER, VERY DELAYED START (THE INSCRIPTION <i>AL AC</i> IS PRESENT IN THE DISPLAY)	CLEAN THE BURNER
	THE 42°C THERMOSTAT IS FAULTY. (THE INSCRIPTION <i>AL AC</i> IS PRESENT IN THE DISPLAY)	REPLACE THE THERMOSTAT
THE HEATER DOES NOT START UP	THE SPARK PLUG IS BLOWN (THE INSCRIPTION <i>AL AC</i> IS PRESENT IN THE DISPLAY)	REPLACE THE SPARK PLUG.

THE GLASS IS COVERED IN BLACK SOOT	THE APPLIANCE ACCUMULATES PELLETS IN THE BRAZIER	SEE POINT "PROBLEM-CAUSE-SOLUTION" "THE APPLIANCE ACCUMULATES PELLETS IN THE BRAZIER WHILE OPERATING"
	NO CAUSE	CLEAN THE GLASS MORE OFTEN
	STEEL BLADE NOT PLACED CORRECTLY OR MISSING	PLACE THE BLADE CORRECTLY OR INSTALL IT
ABSENCE OF FLOW OF VENTILATION AIR	VENTILATION GRATE DIRTY	CLEAN THE VENTILATION GRATE FOLLOWING THE INSTRUCTIONS PRESENTED IN THIS MANUAL
IT DOES NOT WARM UP	THE HEATER OPERATES AT INTERVALS.	THE HEATER MUST OPERATE FOR MORE HOURS WITH MORE POWER
	THE ROOM IS TOO LARGE, THE WALLS ARE COLD	SEPARATE THE SPACES. THE HEATER SHOULD OPERATE FOR MORE HOURS AND WITH MORE POWER.
	CEILINGS TOO HIGH OR PRESENCE OF STAIRS THAT DISPERSE THE HEAT ELSEWHERE.	SEPARATE THE SPACES. THE HEATER SHOULD OPERATE FOR MORE HOURS AND WITH MORE POWER.
THE APPLIANCE IS OFF BUT THERE ARE UNBURNT PELLETS IN THE BRAZIER	THE TANK IS EMPTY	EMPTY THE BURNER AND FILL UP THE TANK.
PROGRAMMING AND/OR TIME ARE NOT STORED	THE BUFFER BATTERY CR2032 INSIDE THE CONTROL PANEL IS FLAT	REPLACE THE BATTERY (SEE PARA. 8.4)

13 SPARE PARTS FOR ECOTHERM 1000







LEGENDA

Ventilatore completo
 Ventilatore
 Griglia
 Condensatore

KEY

Complete fan
 Fan
 Grate
 Condenser

