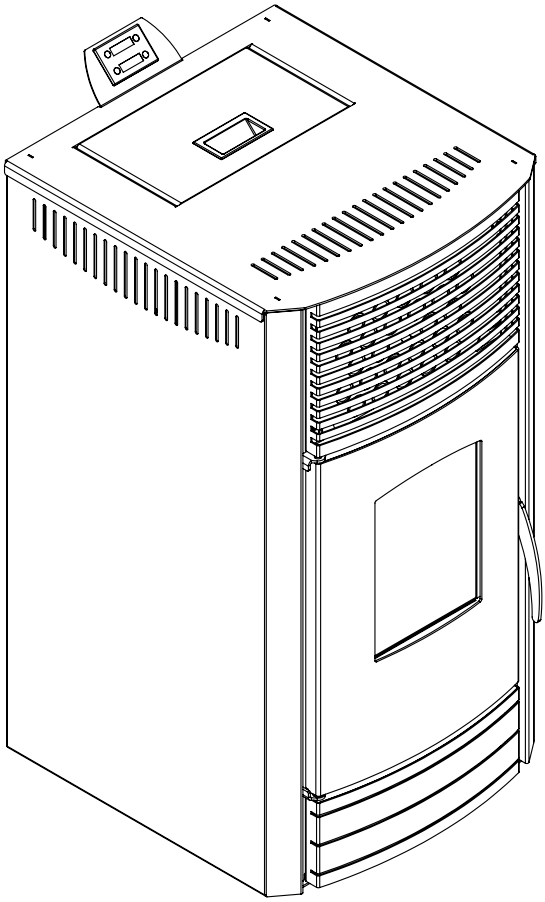
Mareli Systems

STEP FORWARD



Pellet stove

Onyx Air 8/10/12

User manual

rev. 2.0

Content

1. Introduction

Dear Customer,
Our products are designed and manufactured in accordance with standards in force, with high quality materials and using our extensive experience in the transformation processes.

To get the best performance, we suggest you read the instructions in this manual carefully. It is and integral part of the product so ensure that the manual is always supplied with the appliance, even if it changes owner.

If the manual is lost you can download it directly from the company's website.

2. Warnings and safety instructions

The pellet heating system may only be installed and started up for the first time by an authorised technician. Professional installation and start up is the prerequisite for safe and economical operation.

- Never make any changes to the flue gas system;
- This appliance is not intended for use by people (including children) with limited physical, sensory or mental abilities or lack of experience and knowledge.
- The place and way of connecting the stove should be selected carefully in accord with the safety instructions. Install away from flammable objects!
- Before starting any operation, the user must read and fully understand the contents of this instruction manual. Incorrect setup may cause hazardous conditions and/or incorrect function of the stove;
- Do not wash the stove with water. Water can get inside the fireplace and damage the electronics and cause an electric shock;
- Do not put clothes to dry on the stove. Any clothes hangers and other objects must be located within a reasonable distance from the fireplace. Fire hazard;
- The user is fully responsible for the proper use of the product which exempts the company from liability of any users errors or misbehaviour or omissions;
- Any intervention or replacement that is made by unauthorised people or using non original spare parts for the product can be risky for the user and release the company from all liability;
- Most surfaces of the stove are extremely hot (the door handle, glass, flue pipe, etc.). Avoid contact with these parts before assuring yourself that you usev temperature resistant gloves as well as suitable temperature resistant instruments;

- The product must be electrically connected to a system equipped with an effective earth conductor. (Must be grounded);
- Turn off the stove in case of failure or malfunction;
- It is strictly forbidden to use alcohol, petrol, liquid fuel for lanterns, diesel, bio-ethanol, charcoal or any other similar liquids to light up the flame in the device. Keep such liquids away;
- Do not put any fuel other than wood pellets in the hopper;
- Periodically check and clean the smoke outlet ducts of the stove (connection to the flue pipe);
- Pellet stove is not a cooker;
- Under no circumstances should the fire be ignited with the door open or broken glass;
- Do not light the stove with flammable materials if the ignition system failed;
- All unburnt pellets in the burner after each unsuccessful ignition attempt must be removed before a new ignition;
- When installing the product all fire safety requirements must be respected;
- If there is a fire in the flue pipe, extinguish the stove, disconnect the power cord and never open the door. Call competent authorised service technicians;
- The product maintenance operations must be exclusively carried out by a qualified operator on a yearly basis;
- A non-compliant or improper maintenance of the product can cause hazardous situations and/or irregular operation;
- Always keep the cover closed;

Seeing this sign means you must strictly fallow the instructions for your own safety!

3. Type of fuel

The pellet is obtained from natural dried wood sawdust (without paint). The compactness of the material is guaranteed by the lining contained in the wood itself, without glue or binders.

The market offers different type of pellets with characteristics that vary according to the wood mixture. The most common diameter on the market is 6 and 8mm, with a length between 3 and 40mm. A good quality pellet has a density of between 600 and 750kg/cubic meter (or even more). The moisture content must account for 5 to 8% of its weight.

Pellets have technical advantages besides being an ecological fuel, as the wood residue is used completely, thereby achieving cleaner combustion than the fossil fuels.

While good-quality wood has calorific value of 4.4 kW/kg (15% moisture after 18 months of seasoning), that of the pellets is around 4.9 kW/kg. To ensure good combustion, the pellets must be stored in a dry place protected from dirt. Good quality pellets guarantee good combustion, thereby decreasing harmful emissions into the atmosphere.

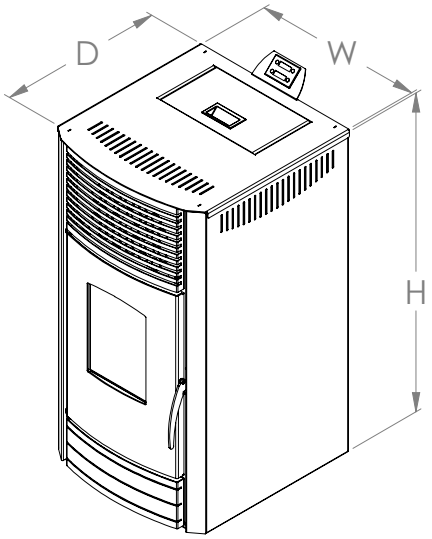
The main quality certifications for pellets currently available on the European market guarantee that the fuel complies with class A1/A2 according to ISO17225-2. These certifications include, for example, EN Plus, DIN plus, Ö-Norm M7135, and specifically assure that the following characteristics are complied with:

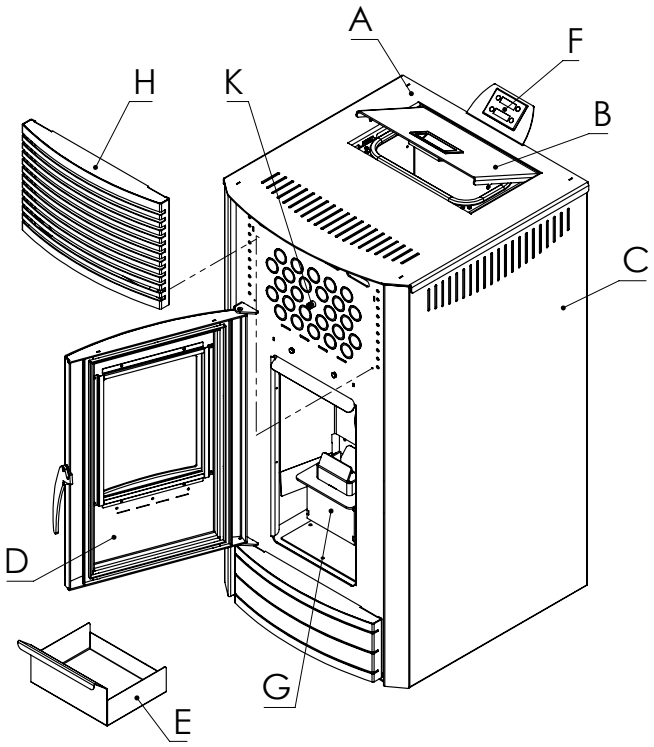
- Calorific value: 4.6 - 5.3 kWh/kg.
- Water content: ≤ 10% of the weight.
- Percentage of ash: max 1.2% of the weight (A1 less than 0.7%).
- Diameter: 6±1/8±1 mm.v
- Length: 3-40 mm.
- Content: 100% untreated wood without the addition of binding agents.

	**The use of pellets that do not comply with the above characteristic may compromise the operation of your product!**

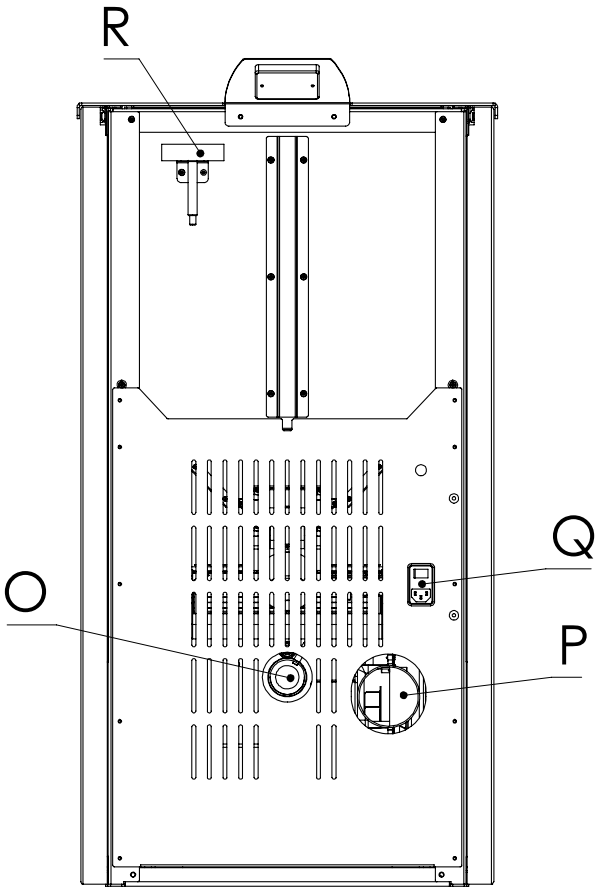
4. Technical data

Maximum output	kW	8	10	12
Heated area	m^3	180	220	260
Height H	mm	1010		
Width W	mm	540		
Depth D	mm	580		
Pellet bunker volume	kg	29		
Fresh air pipe	Φmm	48		
Exhaust gas pipe	Φmm	80		
Weight	kg	126		
Fuel type	-	Pellet Φ6-Φ8 mm		
Chimney draft	Pa	12		
Electrical consumption	W	60/350		
Electrical supply	V/Hz	230/50		
Energy conversion efficiency	%	>91	>92	
Co emissions	Mg/m3	<250		
Temperature of the flue gas	°C	130	135	145





A - top cover
B - pellet bunker door
C - side panel
D - front door
E - ash tray
F - control display
G - combustion chamber
H - front grill
K - manual pipe cleaning system



O - air inlet
P - flue gasses outlet
Q - power socket with switch
R - handle for manually cleaning the turbolators

5. Installation

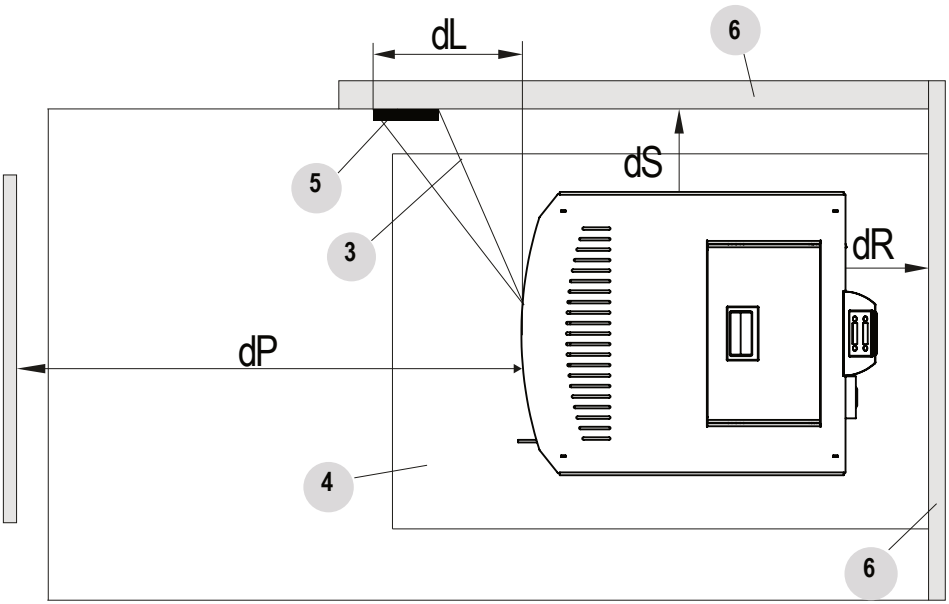
5.1 Placing

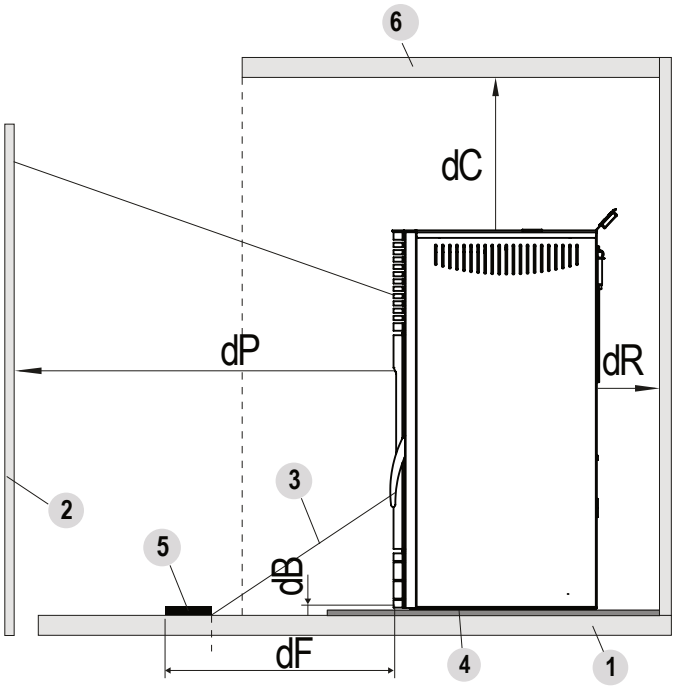
All national, regional and European requirements for safe operation of the appliance must be respected during installation and operation.

Prior to installation, load capacity of the place where the stove will be intended must be ensured. The weight of the stove is specified in the technical data table.
To ensure the correct and safe operation of the stove, the following conditions must be met:

- The installation of the stove and its accessories must be carried out by authorised technician.
- The floor where the stove is installed should be flat and horizontal, made of fire-resistant materials.
- Minimum distances from the wall to the stove should be at least 400 mm. The minimum space in front of the fireplace should be 1500 mm. The minimal distance of the stove from combustion materials should be no less than 1500 mm.

Observe the distances from flammable objects (sofas, furniture, wood panelling, etc..) as specified in the following diagrams:

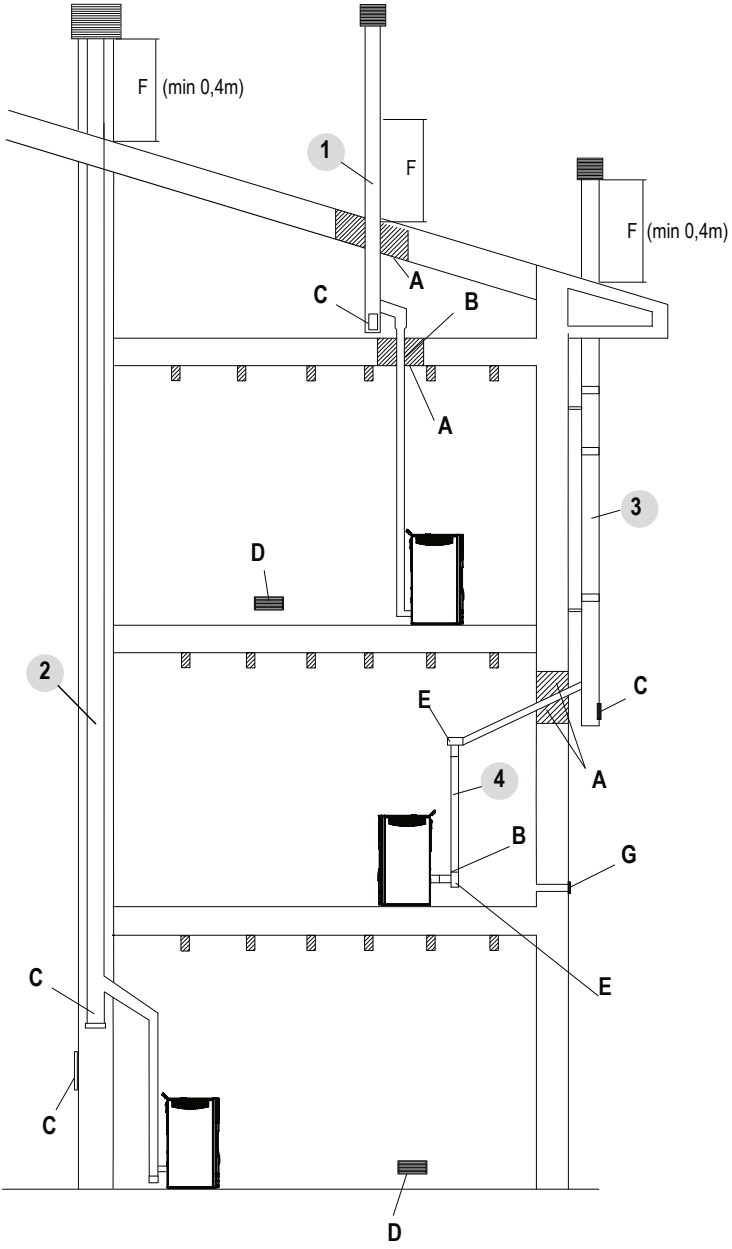




1	Floor	4	Floor guard
2	Front flammable material	5	Radiated surface to be protected
3	Area subject to radiation	6	Rear/side/upper flammable surface

	Minimum safety distance (mm)
dR (rear distance)	600
dS (side distance)	400
dB (lower distance)	0
dC (upper distance)	800
dP (front distance)	1500
dF (floor radiation)	1000
dL (side radiation)	1000

5.2 Connecting to chimney



Option 1. Flue installation with hole for the passage of the pipe:

- minimum 100mm around the pipe if next to non-flammable parts such as cement, brick, etc.;
- minimum 300mm around the pipe if next to flammable parts such as wood etc.

In both cases, install suitable insulation between the flue and the ceiling. Those previous rules also apply for holes made in walls.

Option 2. Built in chimney by bricks or concrete. With insulation and moisture channel. Suitable access door for chimney cleaning.

Option 3. External flue made of insulated stainless-steel pipes. i.e. with double walls. Must be securely mounted on the wall. With windproof chimney pot.

Option 4. Ducting system using T fittings that allow easy access for cleaning without having to remove the pipes.

A - insulation

B - possible diameter increase

C - inspection access panel

D - air inlet with protective grid

E - T fitting with inspection cap

F - reflux area (min 0,4m)

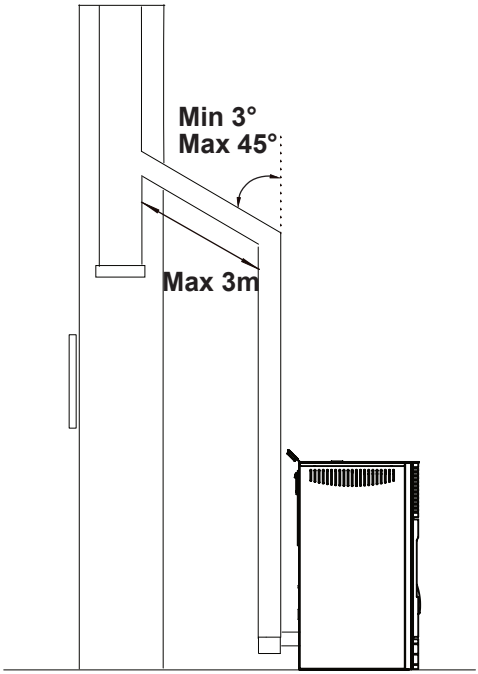
G - air ducting with protective grid

The figure shows typical, but not exhaustive, examples of all possible installations (which must always be approved by a qualified technician).

The chimney or the duct component must be airtight, waterproof and properly insulated, to be constructed with materials resistant to the normal mechanical wear, to the heat coming from the combustion products and condensation.

The recommended chimney draft at work is from 12 Pa up to 20 Pa. To ensure smooth operation of the product and no sudden changes due to strong winds the chimney must have a suitable anti-wind cover at the top.

⚠	**The chimney and the flue pipes must be cleaned and checked regularly depending on the installation and the fuel quality, but no less than once per year before the heating season.**



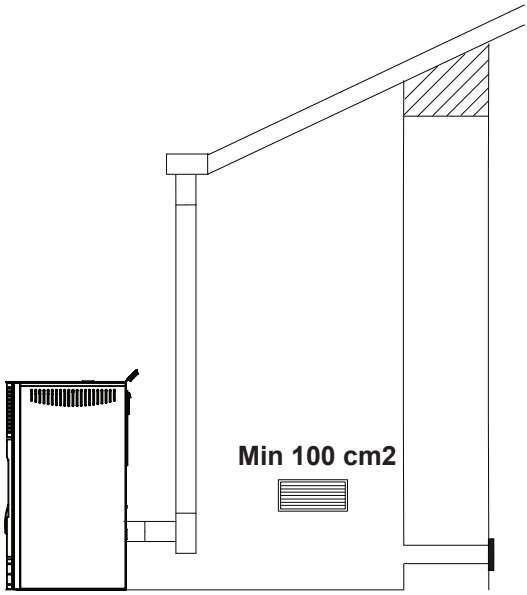
For the assembly of the flue pipes the use of non-flammable materials, fire and condensation resistant products is obligatory. The assembly must be performed in such a manner so it guarantees the airtight sealing and prevents condensation. If possible, avoid adding horizontal sections. Direction shift is done by using knee joints with a max angle of 45˚.

For heating devices equipped with a smoke ventilator, i.e all of the “MARELI SYSTEMS” stoves, the following instructions must be observed:

- Horizontal sections must have a minimum incline of 3° upwards;
- The length of the horizontal sections must be as short as possible, but without exceeding 3 m;
- More than four direction shifts are forbidden, including the cases where a T-shaped element is used;
- The flue components must be airtight and to be insulated if extending outside the premises in which the fireplace is installed;
- The flue components must allow a soot cleaning;
- The flue components must have a constant section. A diameter change is allowed only in the chimney joint;

⚠	**In case of a fire hazard turn off the product from the display. This will stop the oxygen flow.**

5.3 Air inlet



The suction pipe is placed at the rear and has a circular cross-section. The combustion air can be aspirated from the room, as long as it is close to an air intake connected to the external wall with a minimum area of 100 cm2, correctly positioned and protected by a grille.

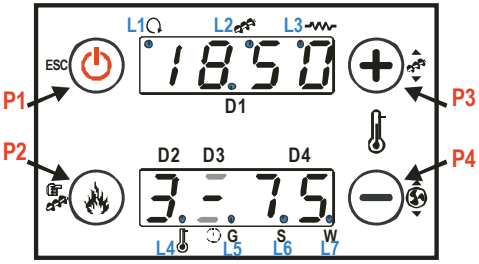
⚠	**When the fire is ignited for a first time, a smell occurs as a result of the paint being heated. The firereplace is painted with heat-resistant paint, which achieves maximum resistance after being heated multiple times.**

5.4 Connecting to electricity

The product must be electrically connected to a system equipped with an effective earth conductor. (Must be grounded); The other requirements can be found on the data plate on the back. The power socket must be easily accessible.

⚠	**The power cable must never touch the exhaust pipe or other hot surfaces.**

6. Operating with the display



KEY	CLICK	LONG PRESSURE
P1	Visualisations/ Exit Menu	Ignition / Extinguishing/ Block reset
P2	Combustion Power modify / Save data	Manual pellet loading
P3	Thermostat modify (+) / Increase data	Pellet loading correction
P4	Thermostat modify (-) / Decrease data	Combustion Fan speed correction

Values shown on the main frame

Display D1: time, system state, error, Menu,Submenu, parameter value; Display D2: power, parameter code; Display D3: recipe; Display D4: main temperature, parameter code.

L1			Heating fan On
L2			Auger On
L3			Ignition Resistance On
L4			Thermostat temperature reached
L5		G	Daily program selected
L6		S	Weekly program selected
L7		W	Weekend program selected

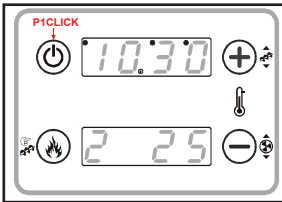
Messages

Description	Code
Anomaly of the probes checking, during Check Up phase.	Sond
Room temperature greater than 50 °C	Hi
This message notifies that the planned hours of functioning (parameter T67) are reached.	CLr
The message appears if the system is turned off during Ignition (after Preload) not manually: the system will stop only when it goes in Run Mode.	OFF dEL
Periodical Cleaning in progress.	PCLr
No communication between motherboard and keyboard	-

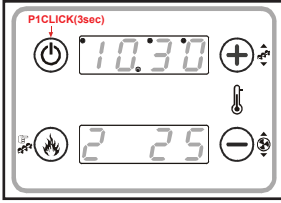
Operating state

State	Code	State	Code	State	Code
Off mode	-	Ignition- Variable Phase	On 4	Safety	SAF
Check Up	ChEc	Stabilization	On 5	Extinguishing	OFF
Ignition- Preheating phase	On 1	Run Mode	-	Block	Alt
Ignition- Preloading Phase	On 2	Modulation exhaust flue gas	runM	Recovery Ignition	rEc
Ignition-Fixed Phase	On 3	Standby	Stby		

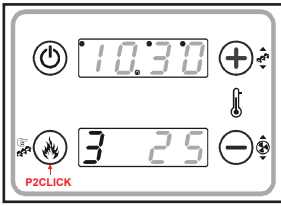
USER MENU 1



tF = Exhaust Temperature [°C];
tA = Room temperature [°C];
FL = Airflow;
UF = Speed Exhaust Fan [RPM];
tr = Remote room temperature [°C];

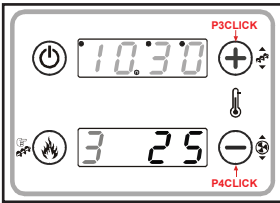


It is possible to activate the **ignition process** with long press on the **P1** button;
It is possible to activate the **extinction process** withl ong press on the **P1** button;
It is possible to clear the **Block** with long press on the **P1** button.



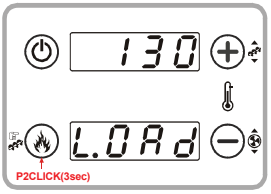
Combustion Power Setting

Click on **P2** button: the **D2** display blinks. With other click of the same button the power is changed. Ex.: 1–2–3–4–5–A (A=Automatic combustion). After 5 seconds the new value is saved and the display shows as normal.



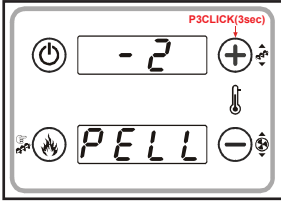
Thermostat Setting

Press the **P3** or **P4** key: the **D4** display blinks. With sequential clicks on the **P3/ P4** button, it is possible to increase or decrease the set temperature of the thermostat. After 5 seconds the new value is saved and the display shows as normal.



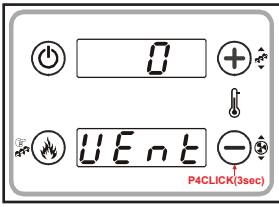
Manual Pellet Loading

The long pressure of button **P2** activates the Pellet Manual Loading with activation of Auger engine in continuous way. The bottom display shows the word **LoAd**,the up display shows the elapsed loading time. To stop the loading push any button. The loading stops automatically after 300 seconds.



Pellet Loading Correction

The long pressure of **P3** button activates this function (You have to do it two times to access the modify modality). The bottom display shows **PELL**,the upper display the value. With buttons **P3/P4** the value is increased or decreased; the default set is '0'. After 5 seconds the new value is saved and the display shows as normal.



Combustion Fan Correction

The long pressure of **P4** button activates this function (You have to do it two times to access the modify modality). The bottom display shows **UEnt**, the upper display the value. With buttons **P3/P4** the value is increased or decreased; the default set is '0'. After 5 seconds the new value is saved and the display shows as normal.

USER MENU 2

The access to the menu is done by pressing **P2** and **P4** at the same time.

Chrono Enable Menu
This menu allows to select the chrono modality. On display appears the label **ModE**.

MODALITY	*LED*
Gior: **Daily Program , 3 programs for each day of the week;**	G S W
SEtt: **Weekly Program , 3 programs for all days of the week;**	G S W
FiSE: **Week-End Program , 3 programs for Mon-Fri and Sat-Sun;**	G S W
OFF: **Programs Disabled;**	G S W

MENU FOR PROGRAMMING TIME RANGES

On display appears the label **ProG.** It has 3 submenus, one for each program modality:
Daily: it allows to set 3 programs for each day of the week **M o**;
Weekly: it allows to set 3 programs for all days of the week **M S**;
Week-End: it allows to set 3 programs for Mon-Fri and 3 programs for Sat-Sun **M F - SS**;

Instructions - For each program, it is necessary to set the time on and the time off.

1) Scroll with the buttons **P3/P4** until the wished Submenu and push the button **P3** (**G i o r n**);
2) Push the buttons **P3/P4** to select one of the 3 available programs;
3) Push the button **P1** for 3 seconds;
4) Select the ignition time;
5) Push the button **P2** to enter in modify mode: the selected value (hours or minutes) blinks. Push the button **P3** to switch between hours and minutes, **P3/P4** to modify the value;
6) Push the button **P2** to save;
7) Select with the button **P3** the Off Timer and repeat the procedure from point 5;

For each time is possible to modify minutes with intervals of 15 minutes (e.g.: 20:00, 20:15, 20:30, 20:45). Only for 11 p.m. is possible to increase minutes from 45 to 59, in order to get an ignition around midnight.

Using the **P3/P4** buttons is possible to view all programs:

- The top of the display shows programs;
- No Programs is shown with (- - - -);
- The bottom of the display shows: day / time zone / start / stop;

Continuously pressing button **P1** is possible to switch on / off the selected time.

Program Chrono across Midnight (00:00)

Set the **ON** time of the previous day to the desired value: Ex. 20h30;
Set the **OFF** time of the previous day: 23h59 Set the hour of the next day 00h00;

Set **OFF** time the next day: Ex. 6h30. The system turns **ON** at 20:30 from Tuesday to Wednesday and turns **OFF** at 06:30.

Clock(**oroL**)- This Menu allows to set time and date. The above display shows hour and minutes, the under display shows the day of the week. Push the button **P2** to enter editing. The selected value (hours, minutes, days) blinks. To change the value use the **P3/P4** button. Push the button **P2** to switch to modify the other parameters. Push again **P2** to save the set value.

Ducting power (**CAn**) - It allows changing the Ducted Fan power:
- Power manually set from 1 to 5;
- Heating Power set automatically by the system.

Remote room thermostat (**rEM**) - This menu allows to modify the value of the Remote Room Thermostat, it is visible only if one input is congured as remote room probe and is P69 > 0.

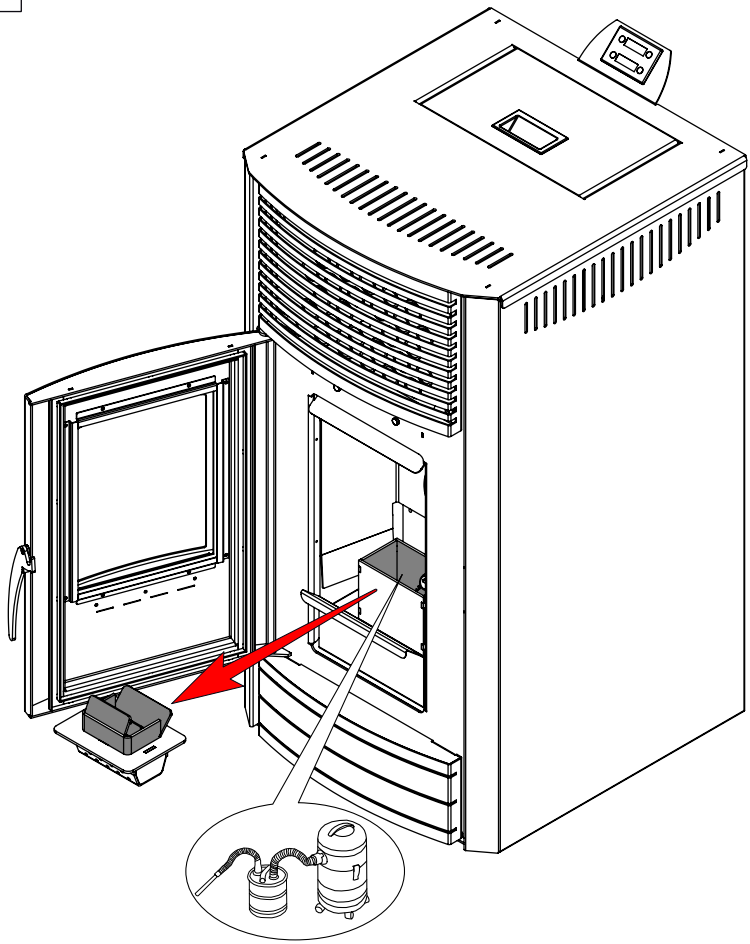
Selector menu (**SEL**) - This menu allows to manage the position of the Selector and change the heating air flow direction.

LoC - Air Flow in the room where is the stove.
rEM - Air Flow in the remote room.

7. Cleaning

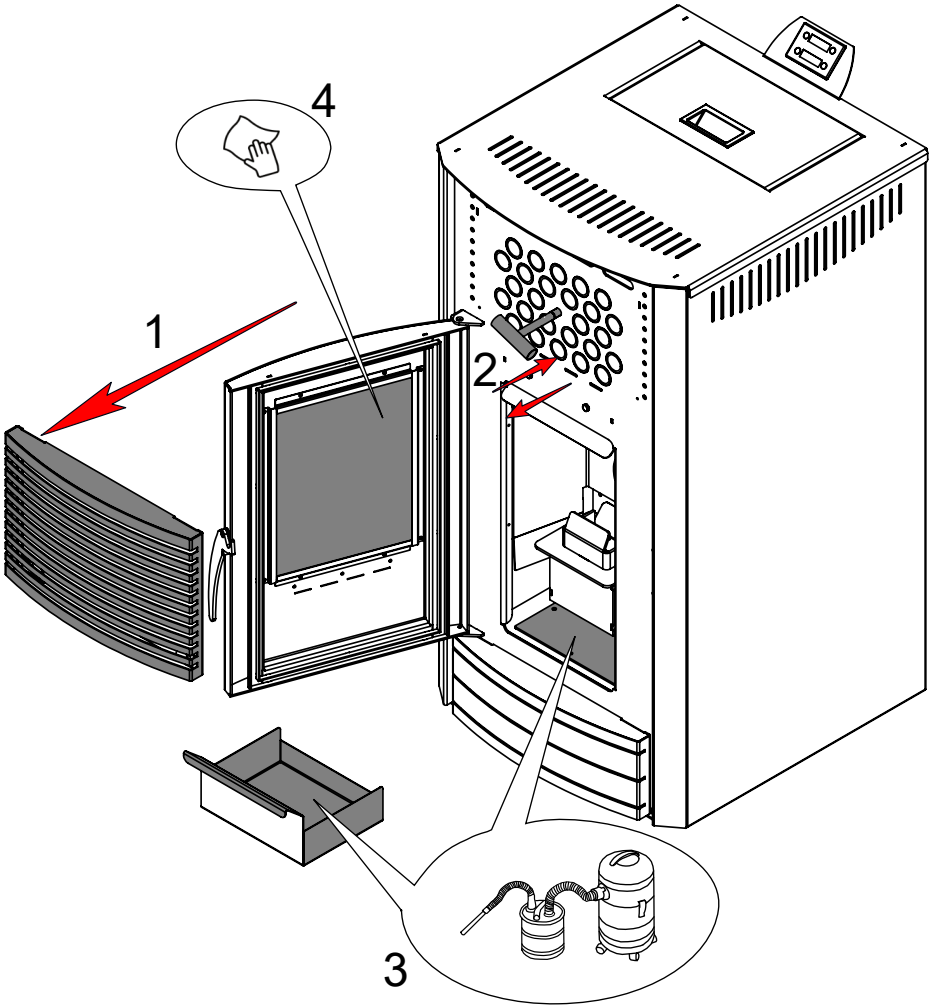
Before any type of cleaning of the stove be sure that the product is switched off and cooled down!

Step 1



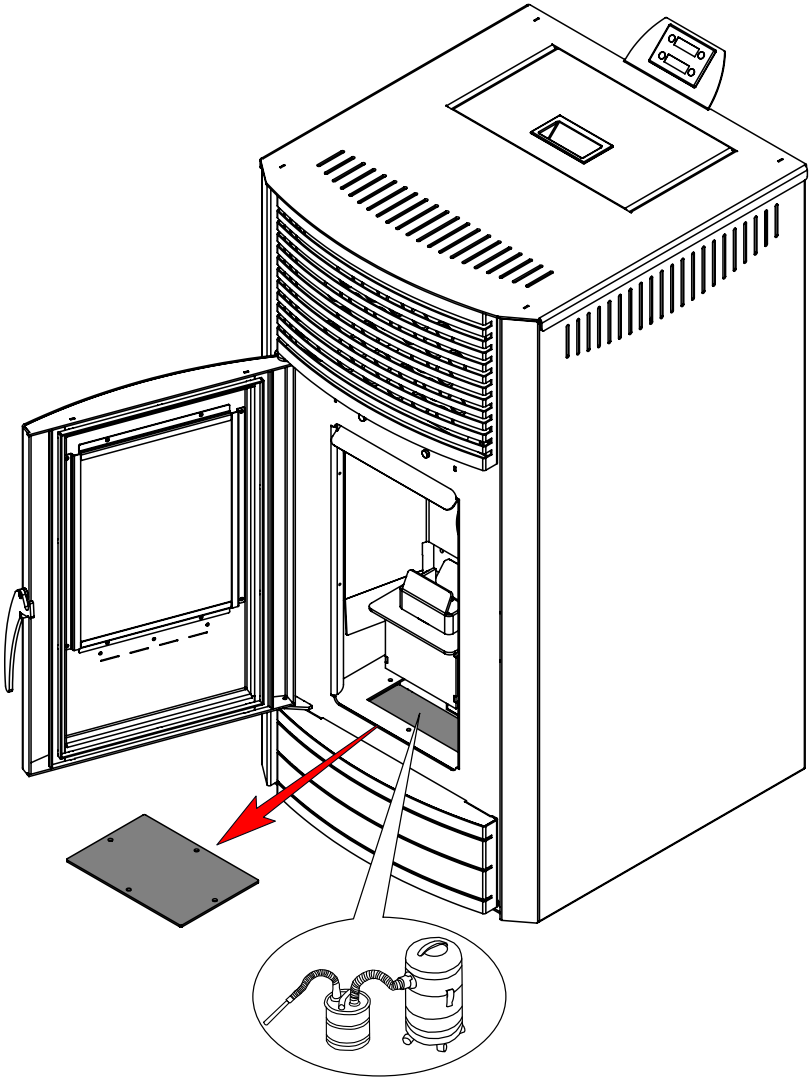
Took out the burning pot and clean it using ash vacuum cleaner.

Step2



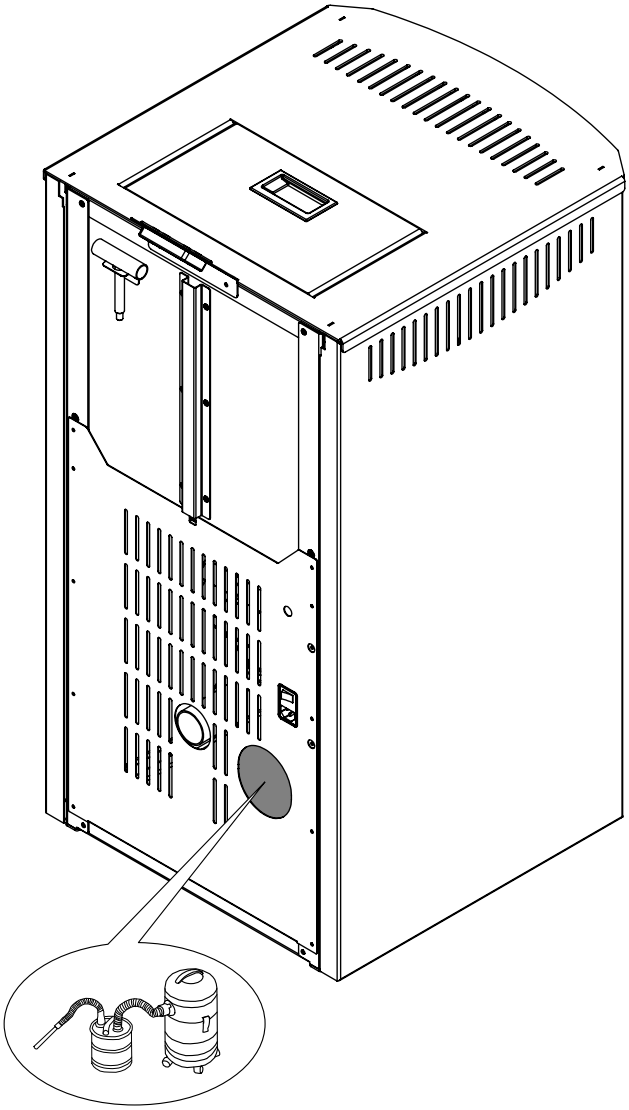
1. Pull the front grid towards you to remove it.
2. Screw the handle and pull front/back a couple of times to clean the pipes.
3. Clean the ash container and the bottom of the stove.
4. Use non-abrasive cloth to clean the window.

Step3



Unscrew the bolts holding the bottom revision cover and remove it. Clean the dust in the lower compartment.

Step4



Use ash vacuum cleaner to clean the flue gas outlet.

Step	Everyday	Weekly	Twice per year
1	X		
2		X	
3			X
4			X

Cleaning intervals are recommended by the manufacturer and may vary according to the type of pellets and legal regulations in the respective country.

	**Always check all the seals integrity when performing some of the steps. If some seal is compromised it should be replaced as soon as possible.**

8.Error codes and messages

Error code/message	Possible cause Solution

Er01 High voltage error 1	The temperature is above the maximum for safety. The stove will automatically turn off.
Er02 High voltage error 2	High temperature in the pellet hopper caused by poorly cleaned fire pot, sensor malfunction or backfire to the fuel bunker by any reason. Fallow the cleaning procedure described in this manual and check for stuck fuel. If the error continues contact your technician.
Er03 Low flue gases temperature	Poor quality pellets, lack of pellets in the hopper, wet pellets. Check the quantity and quality of the pellets. Check the fuel pot for clogging and the fuel bunker for dust.

Er05 High flue gas temperature	Uncleaned stove. Sensor malfunction.
	Fallow the cleaning procedure described in this manual. If this does not help contact your technician.
Er07 Encoder error	Encoder does not receive signal or fan failure. Broken encoder.
	Check the fan cable for damage. Try to disconnect and connect the fan cable.
Er08 Encoder fan error. Fan speed control failed.	The fan can not reach the set speed. Defective fan. Problem with the electronics. Low voltage of the power grid.
	Check the fan cable for damage. Try to disconnect and connect to power grid.
Er11 Electronics get wrong data.	Due to a power failure the clock and date are not correct. Failure in the electronics.
	Set the time and date correctly.
Er12 Ignition failed	Igniter malfunction. Lack of pellets. Uncleaned fuel pot. Need of adjustment.
	Visual inspection of the burning pot during start. Check the pellets quantity and if there is something blocking their way going down. Fallow the cleaning procedure described in this manual for the fuel pot.
Er15 No power supply	Power failure during operation.
	Clear the error and check if the pot is clean to continue the work process.

Er16 Error RS485 Communication connection	Faulty connection of the control board with the display or damaged cable between them.
	Check the plug and the cables between the control board and the display.
Er41 Minimum airflow	Open door. Uncleaned stove. Blocked or missing draft in the chimney.
	Check the door and the seal on it. Fallow the cleaning procedures described in this manual.
Er42 Maximum airflow reached	High pressure in the chimney.
	Check the airflow sensor and the fresh air pipe. Please avoid to connect the fresh air pipe to exterior without a proper cap in the end.

9. Spare parts

Figure 1

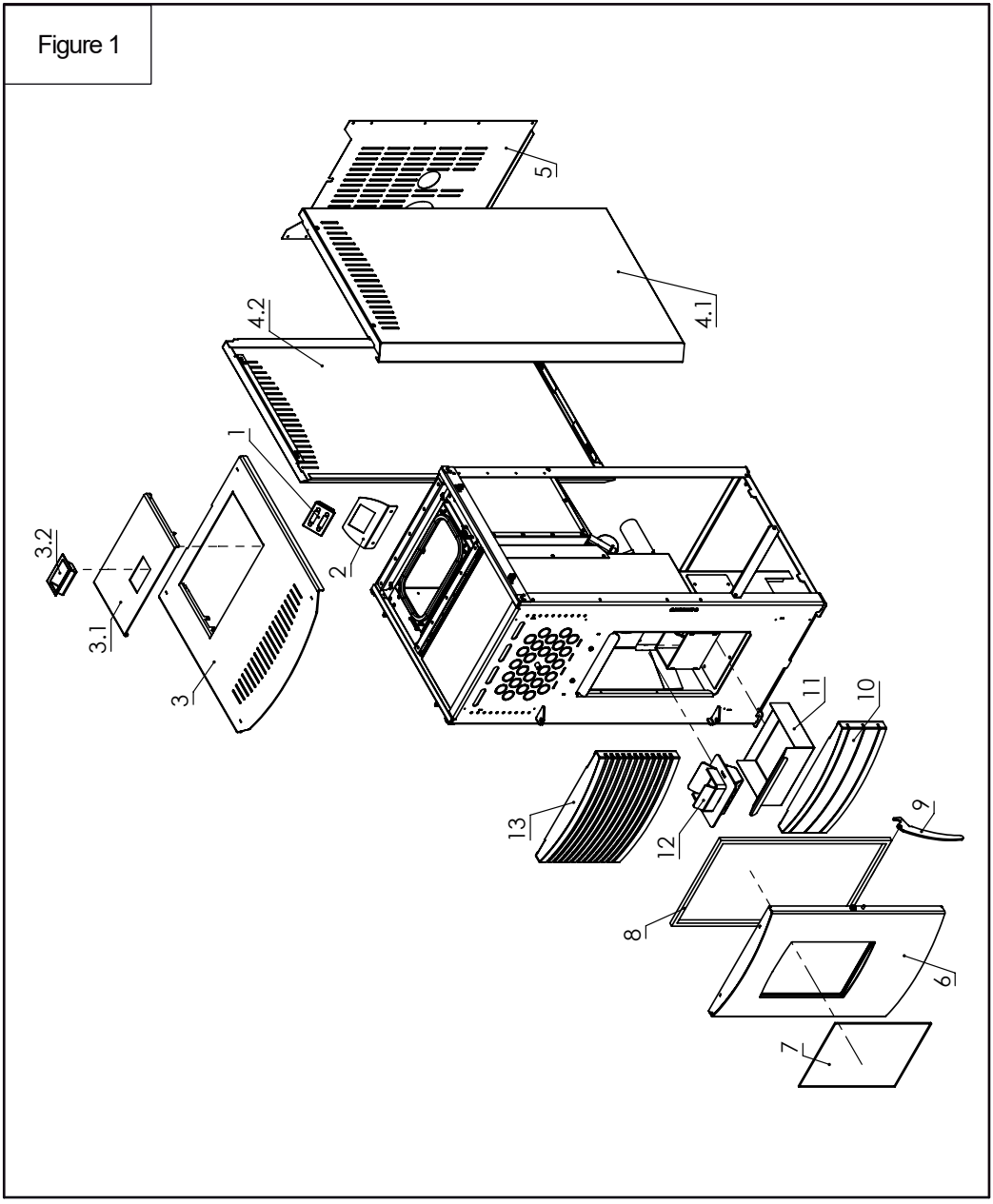
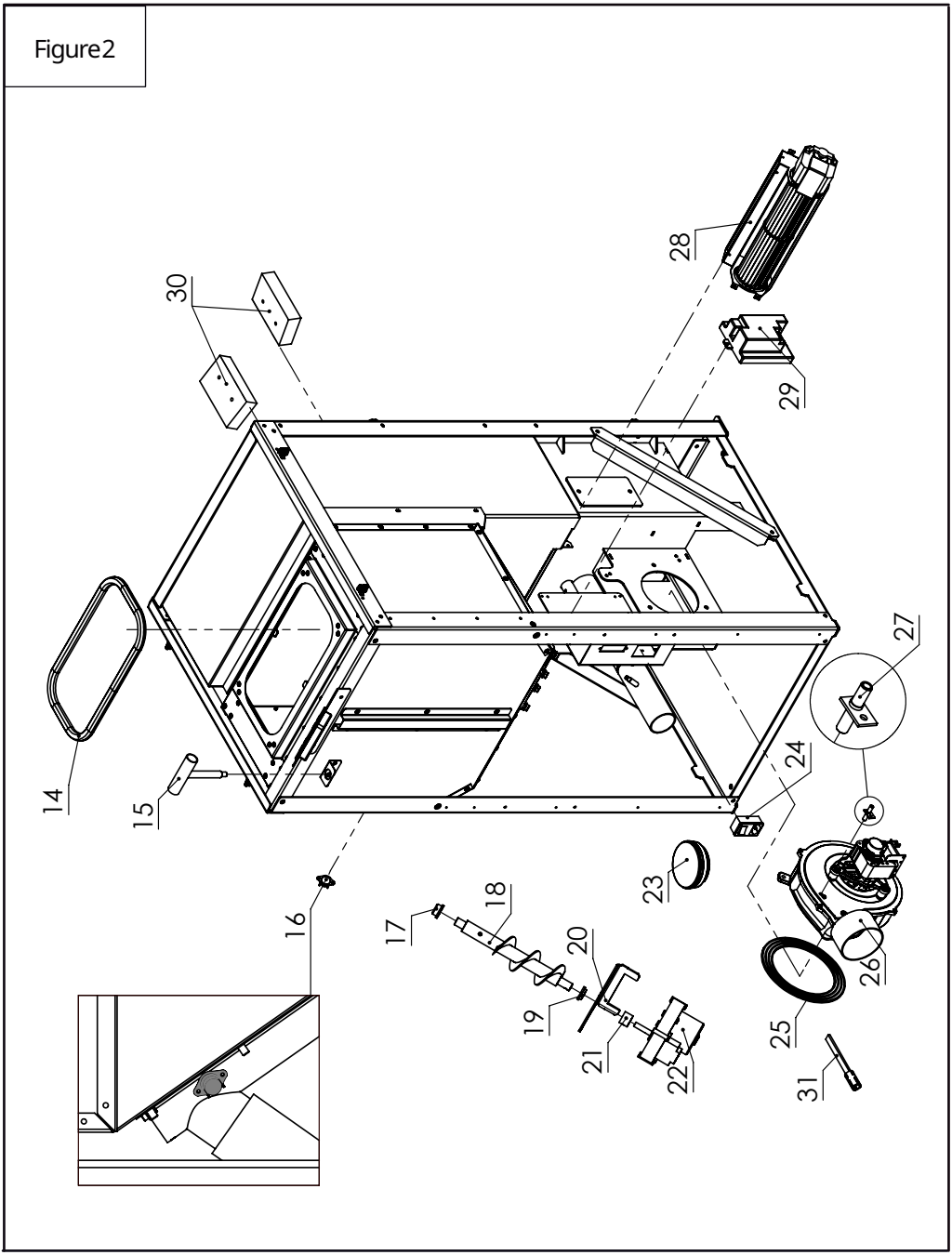


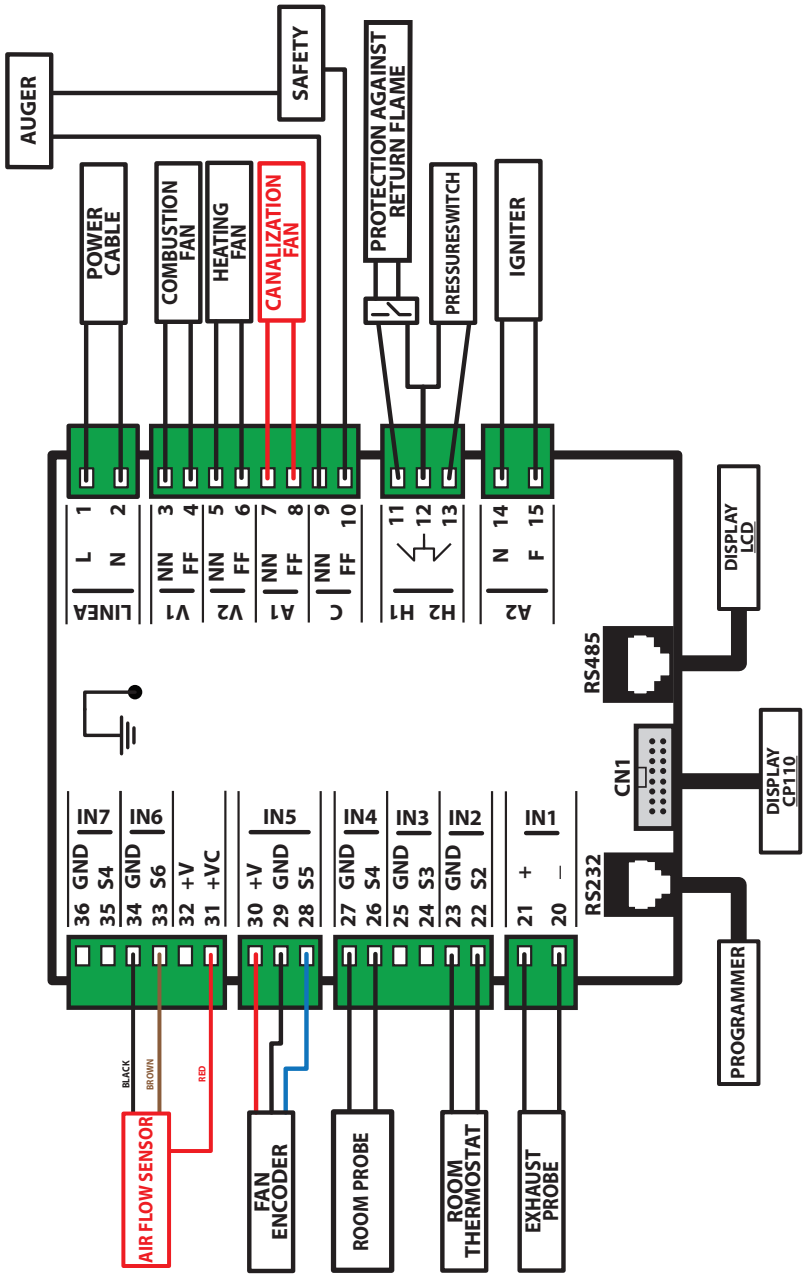
Figure2



Pos.	Name
1	Display
2	Display stand
3	Top cover
3.1	Pellet bunker door
3.2	Pellet bunker door handle
4.1	Right side decorative cover
4.2	Left side decorative cover
5	Back panel
6	Combustion chamber door
7	Glass
8	Combustion chamber door seal
9	Combustion chamber door handle
10	Bottom decorative pannel
11	Ashtray
12	Combustion pot
13	Top decorative pannel
14	Pellet bunker seal
15	Handle for manual cleaning of the pipes
16	Return flame sensor
17	Top plastic sleeve for the auger spiral
18	Auger Spiral
19	Bottom plastic sleeve for the auger spiral
20	Holding plate for the Motor reducer
21	Connector Spiral with Auger motor
22	Motor reducer auger
23	Air flow regulation sensor
24	Power supply outlets - 3P AC POWER CONNECTOR AC-01
25	Exhaust fan gasket
26	Exhaust fan
27	Exhaust temperature sensor
28	Fan
29	Control board
30	Vermiculite above combustion chamber (1 piece)
31	Quartz igniter

Using original spare parts provided only by “Mareli Systems“ or authorized dealer is obligatory! Self repair or using non-original parts may lead to malfunction or injury.

10. Control board wiring diagram



11. Storage and disposal

11.1 Disposal of package

The packaging of the device consists of cardboard and plastic foil. They should be separated and disposed of according to local regulations. Keep them away from children.

11.2 Not used for idle periods

If the stove is not used for a long periods (and/or at the end of each season), proceed as fallows:

- Remove the pellets from the hopper.
- Disconnect the power supply.
- Clean fallowing the procedures in this manual and check for damaged parts. Get them replaced by a qualified personnel.
- Protect the stove from dust with suitable covering.
- Store in dry and sage place protected from atmospheric agents.

11.3 Disposal of the appliance

Follow the operations below for stove decommissioning:

- Disconnect the stove from the power supply and unplug it from the socket.
- Empty all pellets from the hopper.
- Seal the stove inside strong packing.
- Dispose of the stove as required by the regulations in force in the country of installation.

Recycle and disposal of the appliance are the sole responsibility of the owner, who must act in compliance with the applicable laws in the country, regarding safety, respect and protection of the environment. At the end of its useful life the product must not be disposed of together with municipal waste. It can be taken to the appropriate recycling centres set up by the municipalities, or to retailers that provide this service. Disposing of the product separately avoids possible negative consequences for the environment.
In particular, the electrical and electronic components must be separated and disposed of at centres authorized for this activity.

This symbol means the product must not be disposed together with domestic waste. For the purpose of preventing damage to health or the environment, users are kindly asked to separate this equipment and/or batteries or accumulators included from other types of waste and to arrange for disposal by a suitable service, organization or dealer. For more information about how to collect electric and electronic equipment and the appliances, batteries and accumulators, please contact your local council or public authority competent to issue the relevant permit.

Mareli Systems

STEP FORWARD

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