SOLZAIMA

SOLUÇÕES DE AQUECIMENTO A BIOMASSA

Pellet Boilers

Instruction Manual

English

Models

SZM A PLUS 16 kW

SZM A PLUS 24 kW

SZM A PLUS 32 kW

Read these instructions carefully before installing, using and servicing the unit. The product is supplied with this instruction manual.

Mod.946-A

Thank you for purchasing a SOLZAIMA unit.
Please read this manual carefully and retain it for future reference.

* All products here detailed meet the requirements of the EU Construction Products Regulation (Reg. No. 305/2011) and meet EC; conformity approval;

* The pellet-run boilers are manufactured in compliance with European standard EN 303-5:2012;

* SOLZAIMA is not responsible for any damage to units installed by non-qualified personnel;

* SOLZAIMA is not responsible for any damage to units not installed and used in compliance to the instructions included in this manual;

* All local regulations, including but not limited to national and European standards, must be observed when installing, operating and servicing the unit;

* For assistance, please contact the unit's supplier or installer. Remember to provide the serial number of your boiler, which is detailed on the identification plate located on the back panel of the unit, as well as on the sticker found on the plastic cover of this manual.

*The technical service must be performed by the unit Installer or Supplier, except on situations where the assessment performed by the installer or service engineer determines that SOLZAIMA should be contacted, if required.

Contact technical assistance:
www.solzaima.pt
apoio.cliente@solzaima.pt

Address: Rua da Cova da Areia (E. M. 605), 695;
3750-071 Aguada de Cima
Águeda - Portugal

Contents

1. Solzaima

Solzaima's vision has always been to provide the cleanest, renewable and more cost-effective energy. This is why we have been dedicated to manufacturing biomass heating equipment and solutions for the past 45 years.

Due to its persistence and the unconditional support of its network of partners, Solzaima is currently leader in the production of biomass heating systems, best illustrated by its water heat recovery central heating units and its range of pellet stove fires and boilers.

We deliver biomass heating units to approximately 20,000 homes every year. This effectively demonstrates consumers' interest in more ecological and economic solutions.

Solzaima was awarded the international Quality Certificate ISO 9001 and the Environmental Certificate ISO 14001.

2. Package content

Solzaima ships the unit with the following components:
- Boiler model SZM A PLUS;
- Leaflet for accessing the online instruction manual;
- Power cable.

The boiler is a bulky and heavy object, make sure it is as close as possible to the installation site before unpacking. Plan where the boiler will be installed and how it will be transported before you start. We recommend the use of a manual pallet truck for transport.
To unpack the boiler, start by removing the screws that connect the wooden frame to each other and to the pallet. Disassemble the frame into as many pieces as necessary to remove it safely. Place the boards in a safe place, as nails and staples can be dangerous. Carefully cut the plastic bag that surrounds the boiler and the polystyrene boards, leaving the machine uncovered.

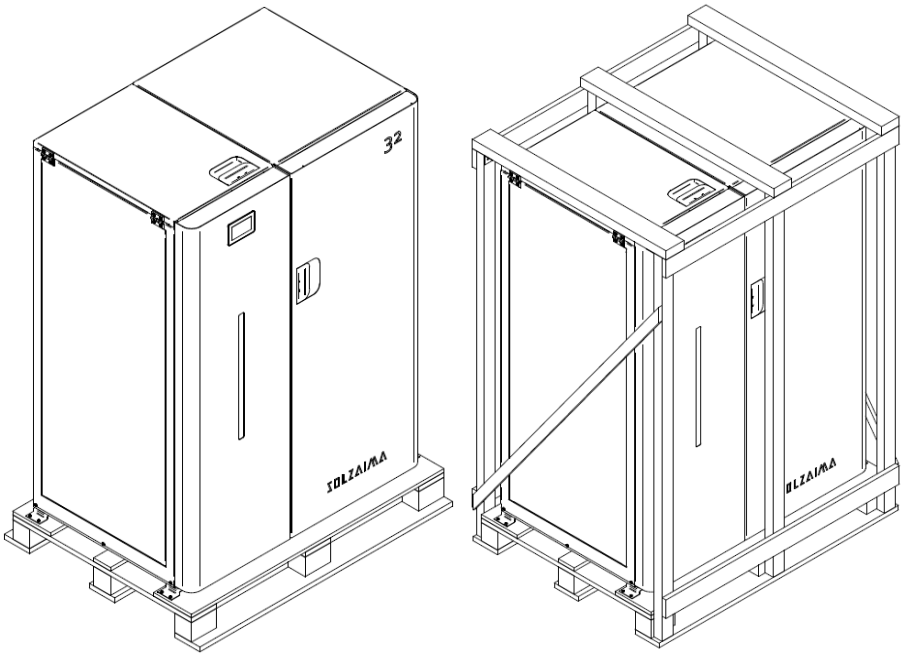


Figure 1 - Unpacking the boiler

The boiler is attached to the pallet with screwed parts that secure the feet at each corner of the boiler. Remove the bolts to remove the boiler from the pallet.
Carefully lower the body of the pallet, making sure to do so on a protected floor area. Although the boiler has rubber levelling feet, there are protruding metal parts which can easily damage the floor.

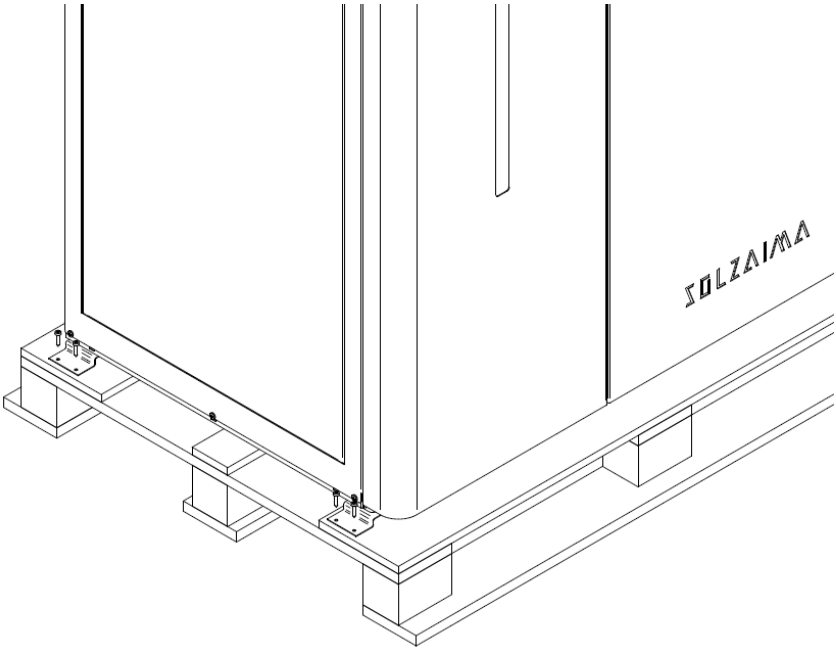


Figure 2 - Unpacking the boiler

3. Safety precautions

Solzaima will not assume any responsibility if the precautions, warnings and operating standards of the equipment are not respected.

The equipment manufactured by Solzaima is simple to operate and special attention has been given to its components in order to protect the user and the installer against possible accidents.

Installation must only be carried out by authorised persons, who must provide the purchaser with a declaration of conformity of the installation, and who will be fully responsible for the definitive installation, and consequently, for the proper functioning of the product.

This equipment must be intended for the use for which it was expressly manufactured. The manufacturer's contractual or extra-contractual liability is excluded if it causes injury to persons, animals or things, due to errors of installation, maintenance or inappropriate use.

After removing the packaging, verify the contents to check its integrity and completeness. If the package contents do not correspond to the parts list specified on item 2, please contact the entity from whom you purchased the unit.

All the unit's components guarantee its operation and energy efficiency and should only be replaced with original parts provided by an authorised technical assistance centre.

The equipment must be serviced at least once a year, for this you should contact your specialist installer.

This instruction manual is an integral part of the product. Make sure you are always near the appliance.

For your safety, we recommend that:

- You fully read and understand the information detailed in this manual before handling the pellet-run boiler, which is a biomass heating unit;
- You make sure the hydraulic circuit was correctly assembled and connected to the water supply before turning on the pellet-run boiler;
- The boiler is not intended for use by children or persons with limited physical, sensory or mental capabilities, nor by those lacking experience and knowledge, unless under direct supervision or instruction;
- Do not touch the boiler when barefoot, nor when any part of your body is wet or humid;

- Do not tamper with safety or adjustment features without the manufacturer's authorization;
- Do not cover or reduce the size of the vents at the installation area;
- The pellet-run boiler requires good air supply to guarantee correct combustion; as such, if the unit is kept in an air tight environment or is exposed to other existing sources of air extraction, its correct functioning may be impeded;
- The existence of vents is a requisite for proper combustion;
- Do not leave the packing materials near children;
- When the unit is operating normally, the boiler door cannot be opened;
- Avoid direct contact with parts of the unit that tend to become hot during operation;
- Check the existence of any obstructions on the fume duct before turning on the unit after a long period of inactivity;
- This pellet-run boiler is intended for residential use, within a protected environment. Safety systems may intervene to shut down the boiler. If this occurs, contact technical assistance. In any circumstances should you attempt to interfere with the safety systems;
- The pellet-run boiler is a biomass heating unit equipped with an electric fume extractor. The occurrence of any power failure during its use may prevent fume extraction and the room will be filled with smoke. For this reason, you should have a natural fume extraction system, like a chimney, available;
- If you intend to use your boiler when leaving it unattended or while you are away from home, it is advised that you utilise the safety system specified above to guarantee its safe functioning in the eventuality of a power failure;
- While in operation, NEVER disconnect the electric plug of your pellet-run boiler. Seeing as the boiler's fume extractor is power-operated, disconnecting the plug would prevent the extraction of combustion fumes;
- Your unit must be disconnected from the mains for servicing. Before doing this, the unit must be totally cooled down (if operating before);
- Never touch the interior of the boiler without first disconnecting it from the power mains;
- The maximum water temperature (set-point temperature) that the user can set for the boiler is 80°C. In the event of the boiler reaching a temperature of 90ºC, it will automatically switch off and activate a corresponding alarm A18 (excess water temperature);

- The surface on which the boiler is installed must be made of non-flammable material and be well levelled;
- The machine is not a condensing boiler, it must work in the conditions for which it was designed;
- It is recommended to regularly check that the boiler is in good condition.

3.1. Advice in the event of a chimney fire

In case of fire, either in the equipment or in the smoke ducts, follow the instructions below in the order given.

- Put the fire out without putting your life in danger;
- If you cannot put the fire out in one minute, call the fire brigade;
- Close the doors and windows or the room where the fire occurred;
- Turn off the electricity and the gas before leaving home;

- Once outside your home, provide information that will help put out the fire, such as: location of the fire and materials that are burning.

4. Technical specifications

Features	SZM A PLUS	SZM A PLUS 24kW	SZM A PLUS 32kW	Units
Weight	413	413	425	kg
Height	1360	1360	1530	mm
Width	1213	1213	1123	mm
Depth	700	700	785	mm
Diameter of the fume discharge pipe	100	100	100	mm
Reservoir capacity	150	150	180	kg
Dimensions of the pellet tank inlet	290x350	290x350	235x430	mm
Maximum heating capacity	391	545	730	m^3
Maximum thermal power	17,2	24,0	32,1	kW
Minimum thermal power	4,5	7,2	9	kW
Minimum fuel consumption	1,0	1,6	2,0	kg/h
Maximum fuel consumption	3,84	5,3	7,11	kg/h
Maximum autonomy (variable)	150	93,4	90	h
Minimum autonomy (variable)	39,0	28,3	25,3	h
Rated electric power	50	50	80	W
Reduced electric power	25	25	35	W
Electric power in start-up (<10 min)	410	410	410	W
Stand-by electric power	5,3	5,3	4,2	W
Rated voltage	230	230	230	V
Nominal frequency	50	50	50	Hz
Thermal yield at rated thermal power	91,0	91,3	91,7	%
Thermal yield at reduced thermal power	92,1	91,6	91,3	%
Max. gas temperature	104,1	112,9	123,4	ºC
Min. gas temperature	63,2	65,7	67,3	ºC
CO emissions at rated thermal power (10%O_2)	0,014	0,013	0,011	%
CO emissions at reduced thermal power (10%O_2)	0,035	0,036	0,036	%
Draught in the chimney	0,12 - 12	0,12 - 12	0,10 - 10	mbar-Pa
Unit water volume	50	50	78	l
Fume extractor sound level (EN 15036-1)	54	54	54	dB(A)

Table 1 - Technical specifications

Tests performed using wood pellets with a heating capacity of 4,9 kWh/kg.

The above information was obtained during product homologation tests performed at independent laboratories accredited for pellet unit tests.

4.1. General vies

SZM A PLUS 16 kW (NS≤01-25-00081) – Reservoir capacity: 124 kg

Front Side Rear Top

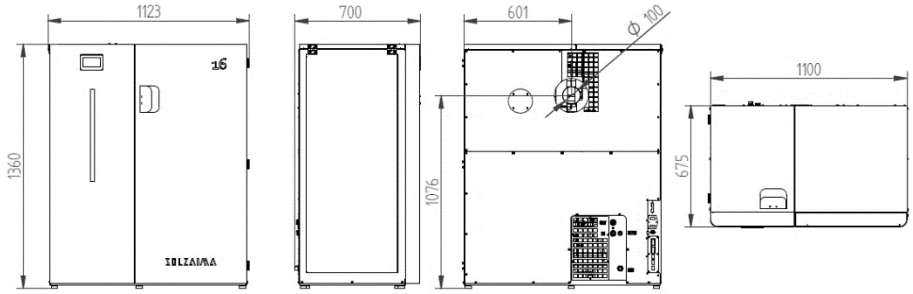


Figure 3 A - Dimensions of the SZM A PLUS 16 kW boiler (NS≤01-25-00081)

SZM A PLUS 24 kW (NS≤01-25-00101) – Reservoir capacity: 124 kg

Front Side Rear Top

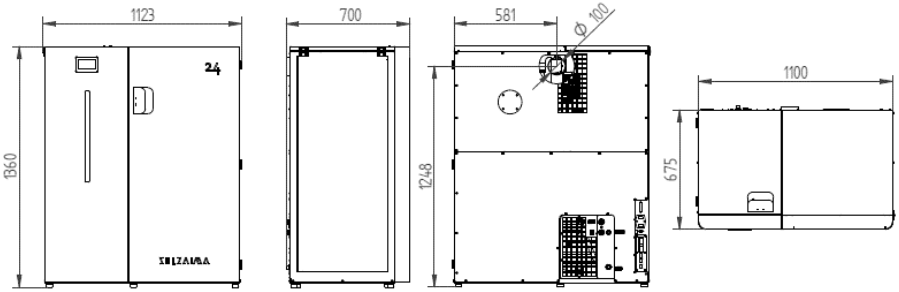


Figure 3 B - Dimensions of the SZM A PLUS 24 kW boiler (NS≤01-25-00101)

SZM A PLUS 16 kW (NS≥01-25-00082) – Reservoir capacity: 150 kg

Front Side Rear Top

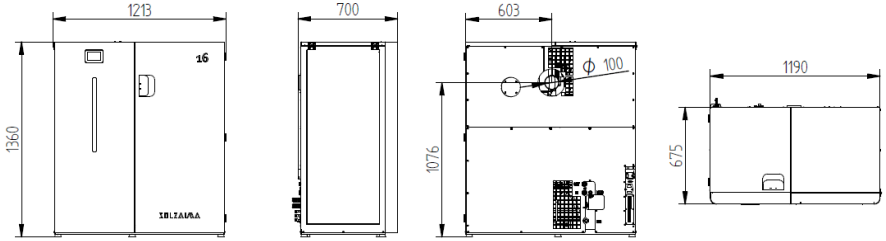


Figure 3 C - Dimensions of the SZM A PLUS 16 kW boiler (NS≥01-25-00082)

SZM A PLUS 24 kW (NS≥01-25-00102) – Reservoir capacity: 150 kg

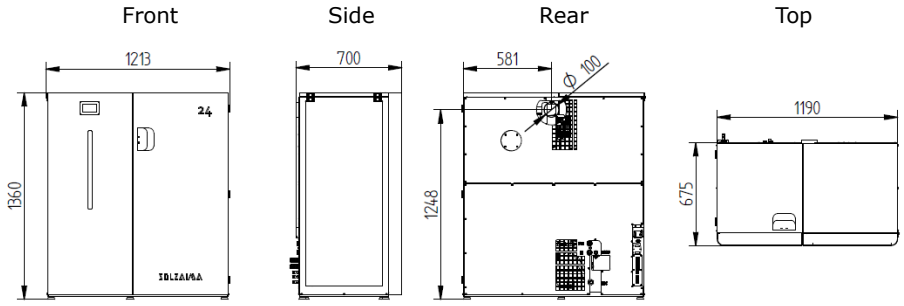


Figure 3 D - Dimensions of the SZM A PLUS 24 kW boiler (NS≥01-25-00102)

SZM A PLUS 32 kW

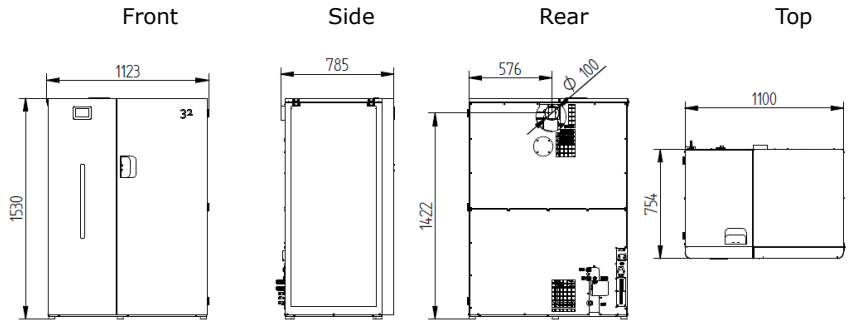


Figure 3 E - Dimensions of the SZM A PLUS 32 kW boiler

4.2. Connections views (NS≤01-25-00081 e NS≤01-25-00101)

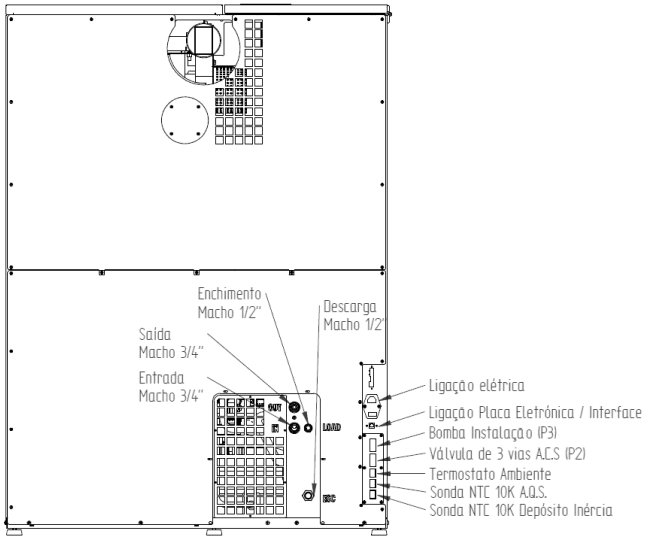


Figure 4 – Pellet boilers connections SZM A PLUS 16 (NS≤01-25-00081) and 24 (NS≤01-25-00101)

4.3. Connections views SZM A PLUS 16 (NS≥01-25-00082), 24 (NS≥01-25-00102) and 32 kW

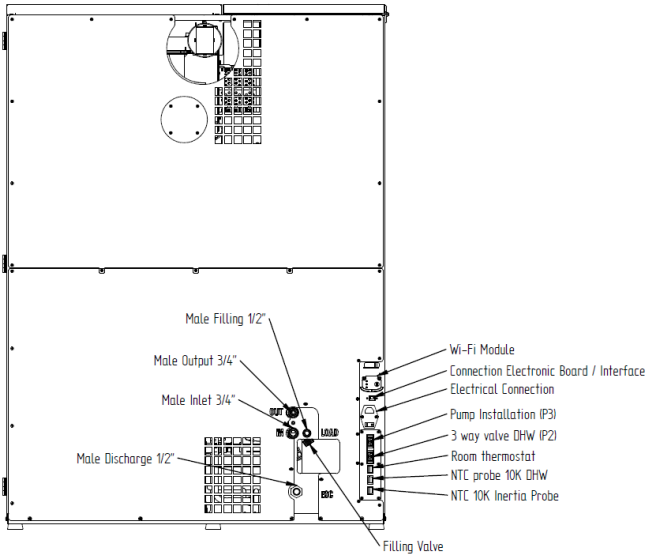


Figure 5 – Pellet boilers connections SZM A PLUS 16 (NS≥01-25-00082), 24 (NS≥01-25-00102) and 32 kW

5. Installation of the pellet-run boiler

5.1. Before installation

Before starting the installation, carry out the following actions:

- Check immediately on receipt that the delivered product is complete and in good condition. Any defects should be reported before installing the appliance.
- Remove the user manual and hand it to the customer.
- Place the boiler in its final operating position and adjust the 6 feet by turning them so that they all bear the same load and the machine is level.

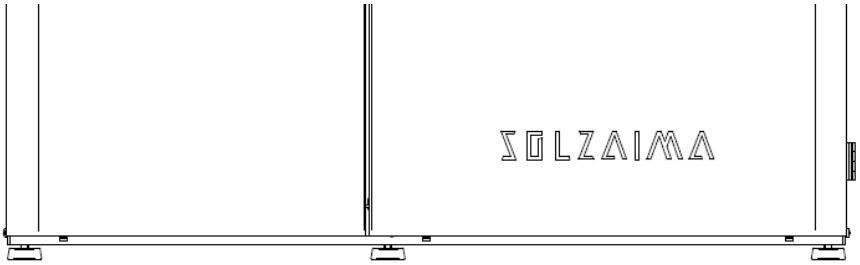


Figure 6 - Unpacking the boiler

- Connect a duct of suitable diameter between the flue gas outlet and a flue for exhausting fumes to the outside of the building (e.g., chimney) - see diagrams in sections 6.1 and 6.2.
- Carrying out the hydraulic installation, see 6.3.
- Connect the 230VAC supply cable to an earthed mains socket.
- The machine is fitted with a chrono-thermostat on the control panel. As an option a conventional external programmer (not supplied) can be used to automatically set the operating times of the appliance, see section 5.3.

5.2. Minimum distances

The following figure shows the minimum distances between the pellet boiler and particularly inflammable surfaces.

On top of the boiler, it is necessary to maintain a minimum distance of 1 m from the ceiling of the room especially if these contain inflammable material in their composition.

We must respect this distance in order to have room to remove the turbulators during maintenance.

The base on which the boiler rests cannot be made of combustible material (carpet, wood, etc.) so there must always be adequate protection, as the boiler can exceed 60°C plus ambient temperature during operation.

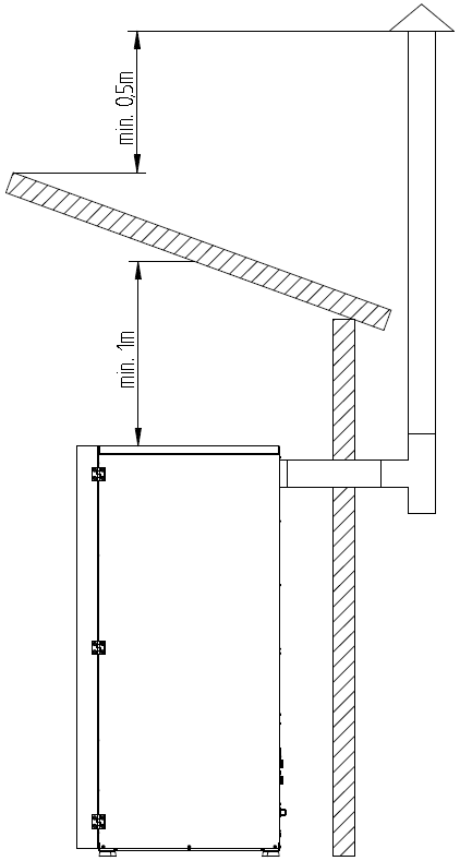


Figure 7 - Minimum surface distances

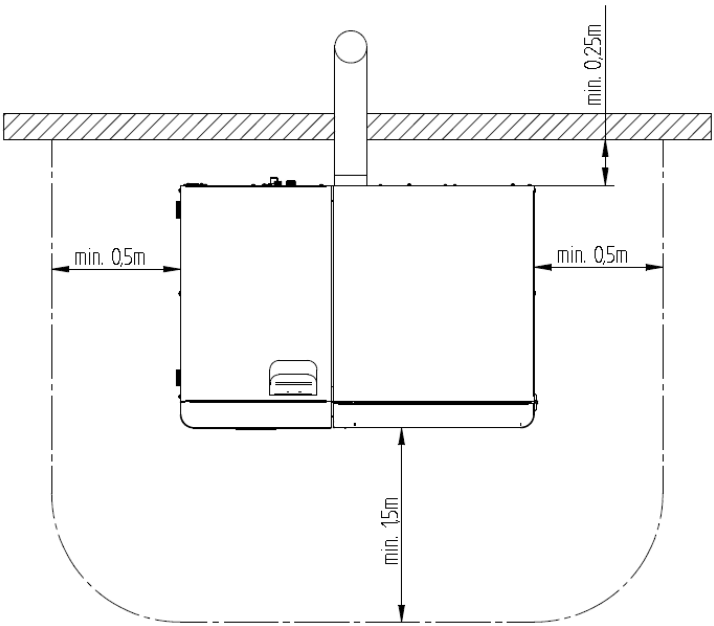


Figure 8 - Minimum surface distances

Warning! Keep combustible and flammable materials at a safe distance.

5.3. Installation of room thermostat or chrono-thermostat

The boilers come prepared with a connector for connecting an ambient thermostat or a chronothermostat on the back. The contact is voltage-free and will instruct the boiler to switch on (contact closed) or off (contact open).

The thermostat must be placed on a wall more than 0,5 m from a window, must not receive direct sunlight at any time of day and must not be in draughty areas.

5.4. Installation kit silo enlargement 225L (optional) - Only applicable to SZM A PLUS 16 kW with NS≤01-25-00081 and SZM A PLUS 24 kW with NS≤01-25-00101

For the 16 kW and 24 kW boilers a silo extension kit can be purchased which increases the silo capacity according to Table 2.

Silo capacity*	Original	With Kit
Capacity in kg	125	150
Capacity in litres	193	230

Table 2 - Silo capacity with extension

* Type of fuel = Pellet (EN 14961-2 A1) diameter 6 mm/ L 10-30 mm. Data may vary depending on the type of pellet used

This silo extension kit, article CA01010065, consists of a side cover (**A**), a silo side (**B**), a front (**C**) and 16 Din 912 8.8 M4x12 Z/B screws (**D**).

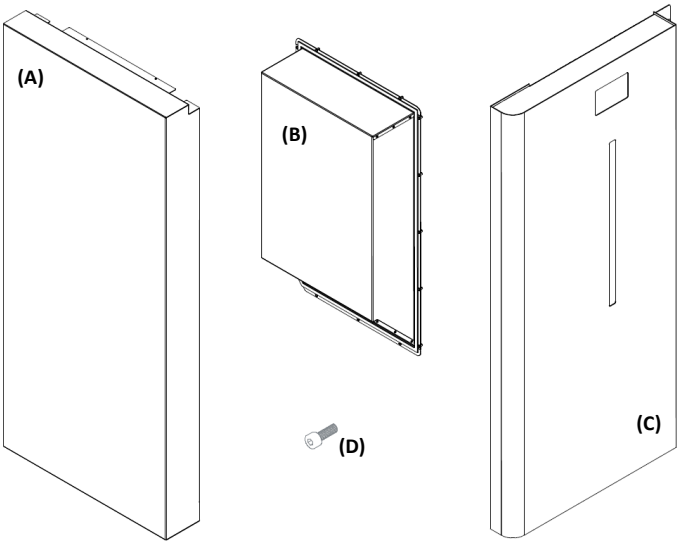


Figure 9 - Components of the silo extension kit

For its installation you must first open the top cover and remove the two screws that fix the side.

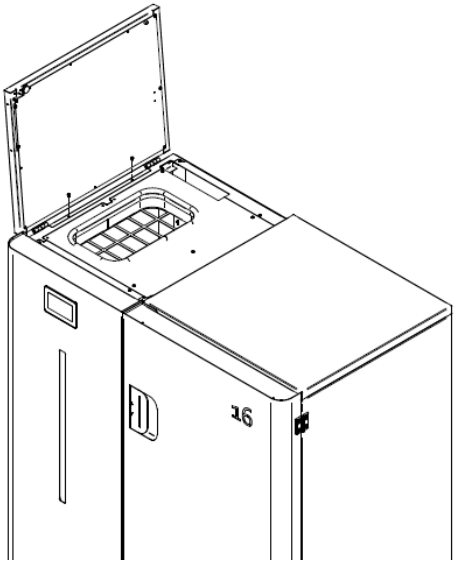


Figure 10 - Removal of the screws that fix the side of the boiler

Then open the boiler door to gain access to the screws that secure the front of the unit and remove it, you must also loosen the screws on the display.

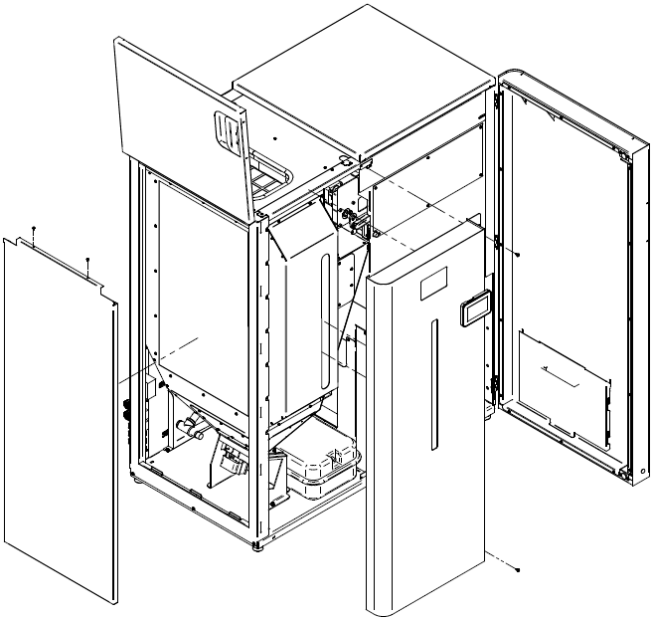


Figure 11 - Removal of the screws that fix the side of the boiler

After removing the side and front of the equipment, remove all the screws that fix the side, Din 7981 screws 4,2x9,5, and the front of the silo, Din 912 screws 8.8 M4x12.

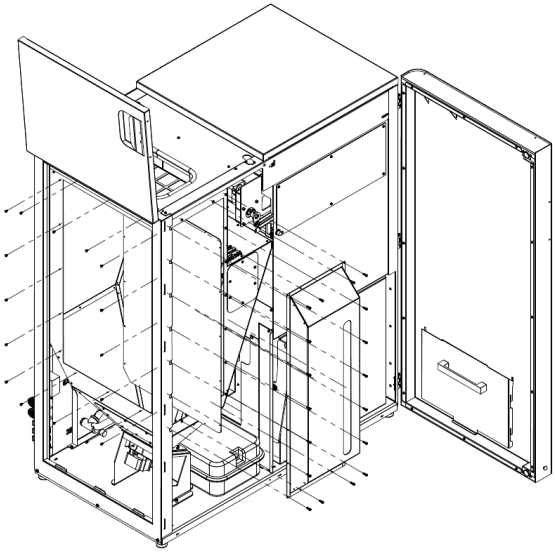


Figure 12 - Removal of the screws from the side and front of the silo

You must then apply the silo lateral that is contemplated in the extension kit using the screws that are sent along with the kit.

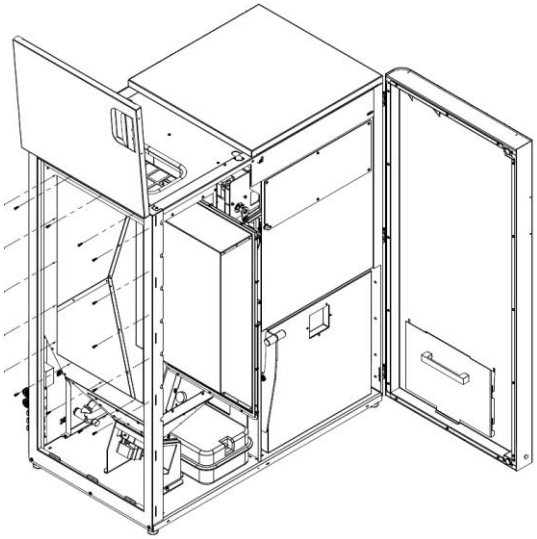


Figure 13 - Application of the new silo side

Put the front of the silo back on and then you should apply the side and front that come with the kit.

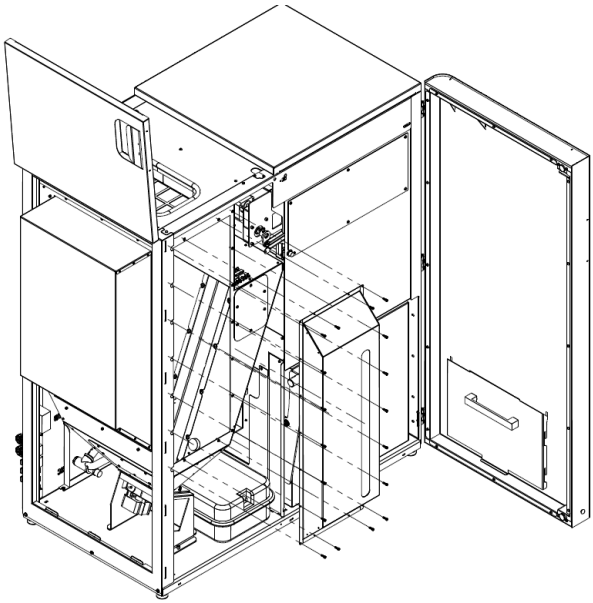


Figure 14 - Silo front application

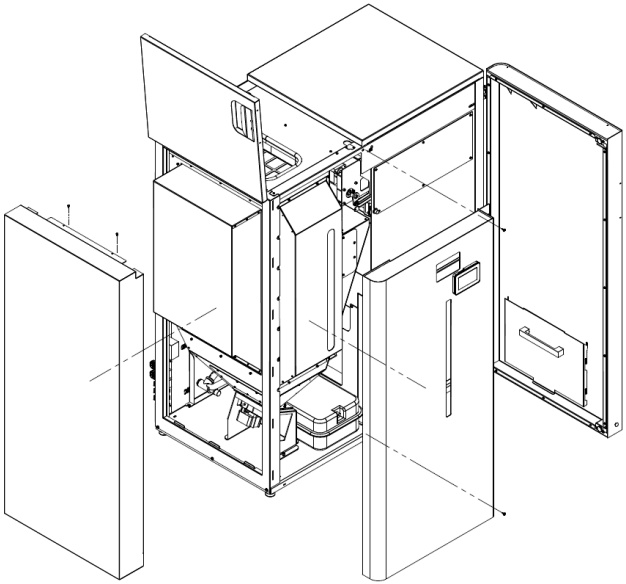


Figure 15 - Application of the side and front of the equipment

With the application of this kit the width of the boilers, both the 16 kW and 24 kW change, increases by 125 mm. The height and depth remain the same.

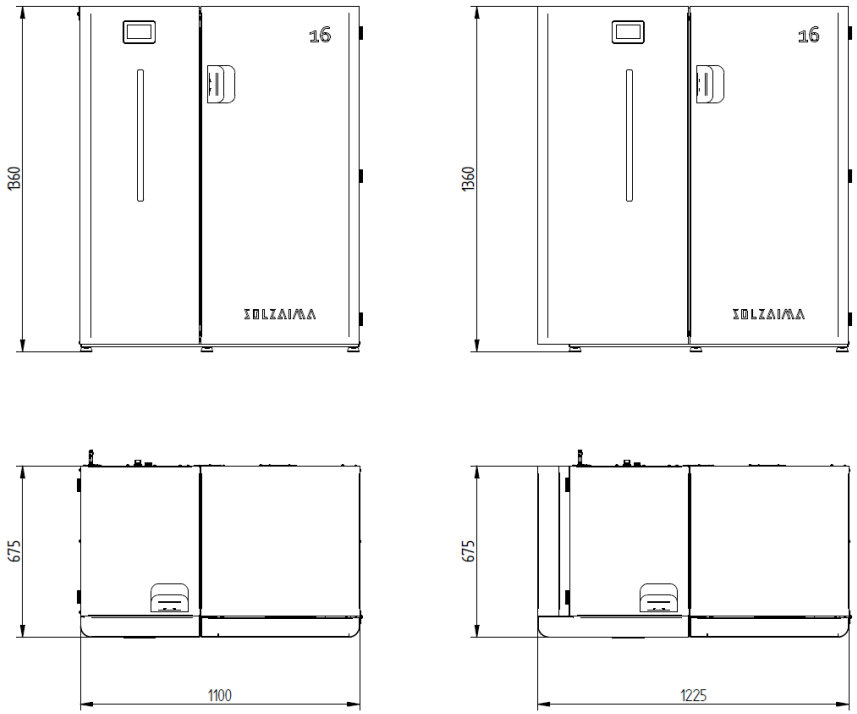


Figure 16 - Boiler dimensions with and without silo extension kit

6. Installation of pipes and fume exhaust systems

- The exhaust pipe must have been designed for this purpose, in compliance to the location requirements and in accordance with any applicable regulations.
- Under rated operating conditions, the flue gas draught must give rise to a depression of 10 Pa for the 32 kW boiler and 12 Pa for the 16 kW and 24 kW boilers, measured 1 metre above the boiler smoke outlet.
- The boiler must not share the chimney with other equipment.
- Pipes remaining outside the area of use must have double insulation in stainless steel, with an internal diameter equal to that of the boiler's fume outlet.
- After installation and during periodic inspections, it is necessary to monitor emissions. For this reason, it is necessary to provide measuring points along the chimney, they must be self-locking and watertight.
- **The smoke exhaust pipe, can generate condensation, in this case it is advisable to establish suitable condensate collection systems.**

6.1. Installation without a chimney

The installation of the pellet boiler when there is no chimney must be done by choosing one of the following options. The flue pipe (with a minimum internal diameter equal to the boiler's flue output) must be at least 0,5 m above the roof.
Insulated double walled stainless steel pipes properly anchored should be used to avoid condensation phenomena.

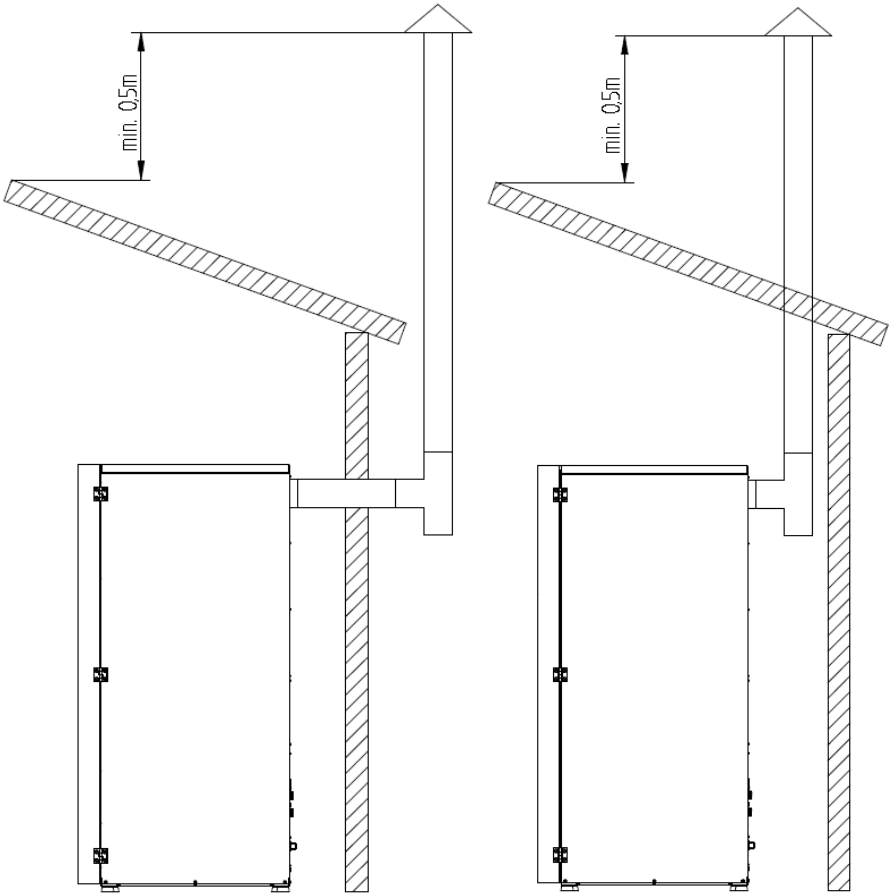


Figure 17 - Side view of the installation without chimney

In the following picture, the requirements for the installation of the flue duct are shown.

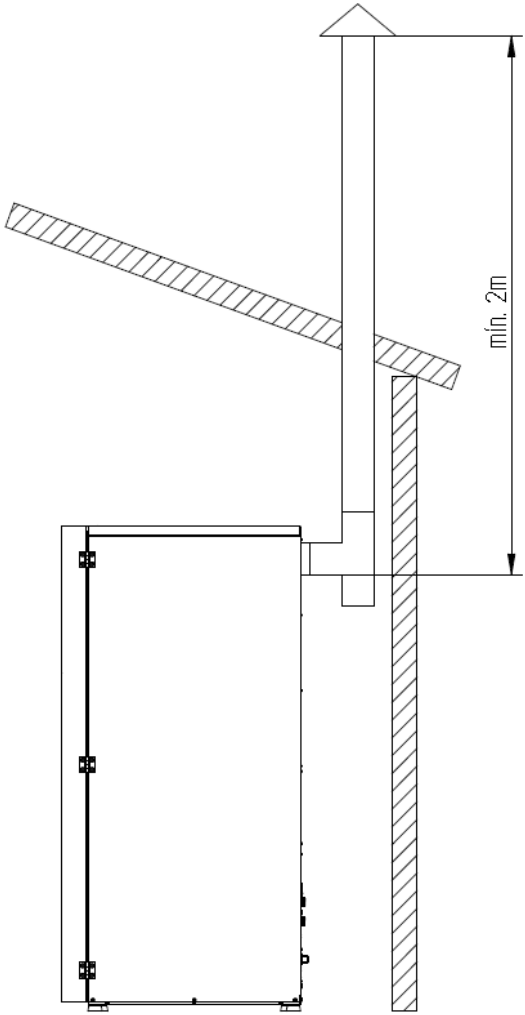


Figure 18 - Example of flue duct installation A

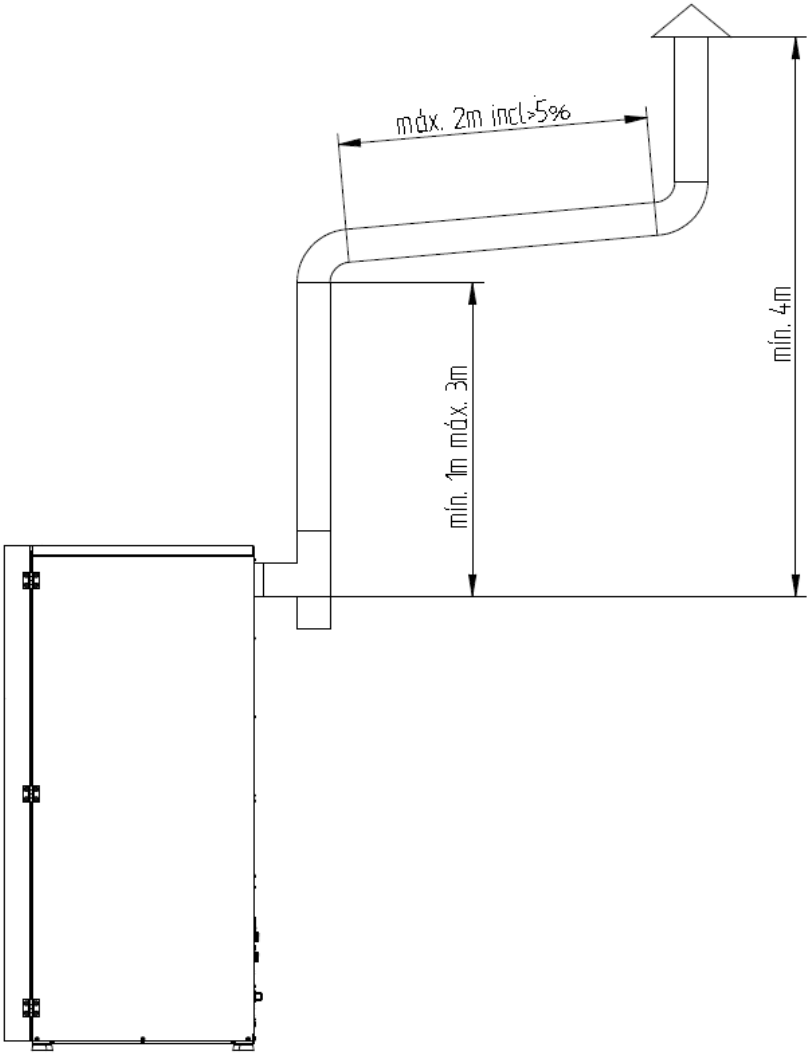


Figure 19 - Example of flue duct installation B

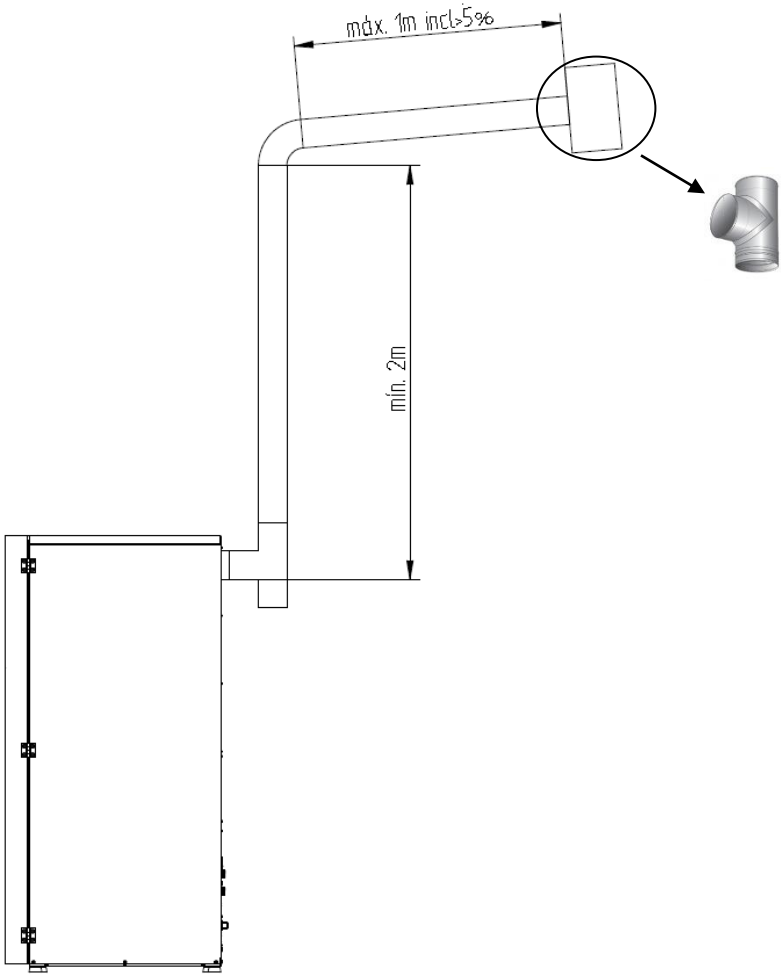


Figure 20 - Example of flue duct installation C

⚠ Failure to comply with the requirements here detailed may prevent the correct operation of the unit. Follow all the instructions presented on the diagrams.

⚠ The boilers operate with the combustion chamber in depression, which is why it is absolutely necessary that they include a fume exhaust pipe to adequately extract combustion gases.

Fume duct material: The tubing must consist of 0,5 mm thick rigid stainless steel, with fastening joints attaching the different sections and accessories.

Insulation: The fume ducts must be double-walled and insulated to make sure that fumes do not cool down going outwards, which would cause an inadequate circulation and condensation that may damage the unit.

Output "T-tube": Always attach a regulator "T-tube" to the output of the boiler.

Windproof terminal: A windproof terminal must always be installed to avoid the backflow of fumes.

Chimney draught: The figures below show three standard diagrams, specifying adequate lengths and diameters. Any other type of installation must guarantee a draught of 10 Pa (0,10 mbars) measured when hot and at the maximum power.

Ventilation: To ensure the boiler's optimum operation, **the installation location should be fitted with an air vent, with a minimum cross-section of 100 cm^2, preferably close to the unit's back panel. The boiler includes a circular pipe (Ø 50mm) that may be routed to the exterior of the house.**

If there is an air extraction system in the home (kitchen extractor), it will be necessary to have a ventilation section that is larger and better sized than the various pieces of equipment that extract air from the home.

Placing the boiler in places where kitchen extractors or gas extractors are installed may affect the proper operation of the boiler.

SZM A PLUS range boilers must not be operated in condensing conditions.

6.2. Installation with chimney

The installation of the pellet boiler brings the flue pipe directly into the chimney. If the size of the chimney is too large, it is recommended to pipe the smoke outlet with a tube with an internal diameter which must be at least equal to that of the boiler's smoke outlet.

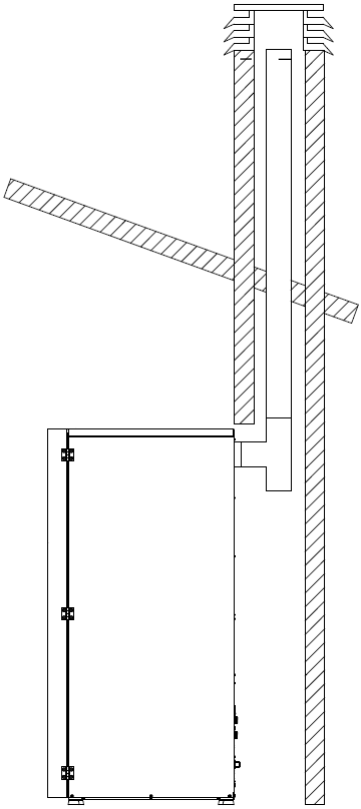


Figure 21 - Side view of the installation with chimney

When atmospheric conditions are so adverse as to cause strong disturbance to the boiler's smoke extraction (in particular very strong winds), it is advisable not to use the boiler.

If the equipment is not to be used for a long period, the user must check that there is no blockage in the flue pipes before lighting it.

6.3. Hydraulic installation

- Chapter 16 shows the possible installation schemes in the context of a central heating installation, with or without domestic water heating system;
- The return temperature regulation valve causes the water to recirculate only through the inside of the boiler until it reaches a temperature of 55ºC, when this temperature is reached the valve opens allowing the hot water from the body to circulate through the installation, but always maintaining a mixture with hot water from the body which guarantees a return temperature that does not create condensate, as the boiler should not operate under conditions of condensation. When the temperature of the water in the circuit has reached 55ºC, the valve opens fully and all the flow is circulated towards the installation. If the boiler loses heat, because it is switched off, or unregulated, or for any other reason, the valve will re-mix the water to maintain the return temperature whenever possible above the desired temperature.

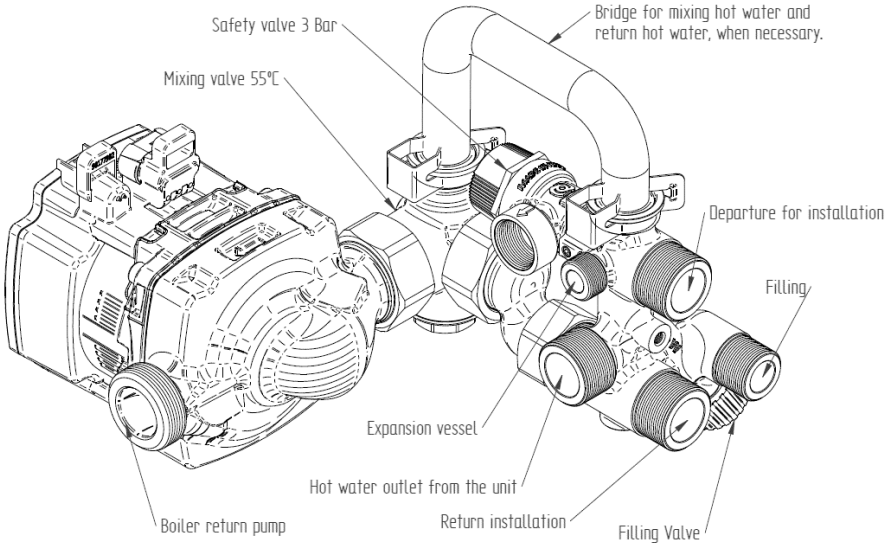


Figure 22 - Hydraulic kit connections

- The pellet boiler incorporates a circulation pump, a 16-litre expansion vessel, a 3-bar safety valve, a filling tap and a return temperature control valve (anti-condensation valve);
- The expansion vessel is 16 litres and is pre-charged to 1 bar, this volume and pressure is selected to protect the machine, according to the installation, you must add, an expansion vessel to protect it;
- The normal operating pressure is between 1 and 1,5 bar;
- To empty the appliance, it has a key on the left side of the body, inside the machine. This key is connected to the outlet which is on the back of the machine. Connect a hose to the rear drain to lead the water to the nearest drain;
- The outlet of the safety valve (3 bar) is led and connected, as is the drain cock to the rear outlet;
- The heat transfer fluid must be water with an anti-corrosion product added, non-toxic and in the quantity recommended by the manufacturer; if there is a risk of freezing in the space where the pellet boiler or fluid pipes are located, the installer must add an anti-freeze to the circulating fluid in the proportion recommended by the manufacturer, in order to prevent freezing at the absolute minimum expected temperature;
- It is very important that the system is balanced in relation to the power of the boiler and dissipating elements, otherwise we recommend the installation of an inertia tank. For this model, the required tank capacity is generally between 400 and 800 litres.
- The exact formula for calculating the required inertia deposit according to the standard, is as follows:

$$Vsp=15Tb \times Qn\ (1-0,3(Qh/Qmin))$$

Legend: Vsp is the volume of the storage tank, in litres.
Tb is the combustion period (autonomy), in hours.
Qn is the rated net power, in kilowatts.
Qh is the heating load, in kilowatts.
Qmin is the minimum net power, in kilowatts.

- Inlets for hydraulic connections.

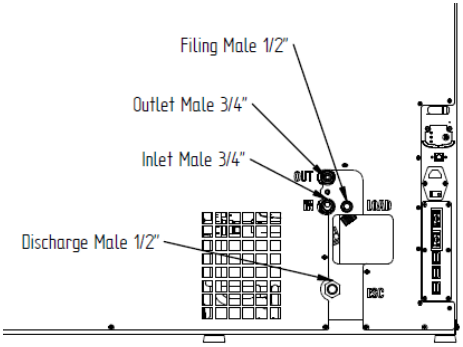


Figure 23 - Hydraulic connections

- It is very important to fill the boiler using the correct connection, as the boiler has an anti-condensation valve, so the water cannot circulate in this direction until it reaches the right temperature. For this reason, use the connection to fill the boiler correctly.

6.4. Electrical installation

- The electrical mains must be single-phase at 230v 50Hz, and a two-pole circuit breaker must be installed between the mains and the boiler.
- The boiler must always be earthed.
- The elements external to the boiler as well as the power supply are carried out from the rear by means of connectors. This facilitates future work and maintenance.
- The room thermostat connection is programmed to make a demand when the contact is closed.
- The "Pump" and "3-way valve" outputs can handle a maximum of 3A.
- The connections are as follows:

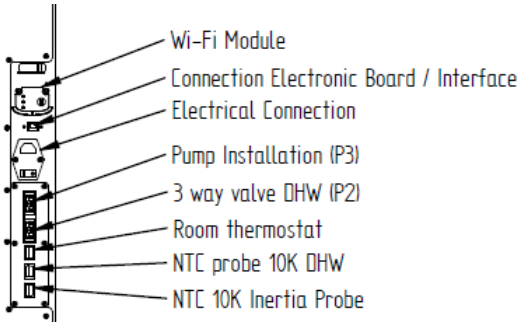


Figure 24 - Electrical connection

- If the installation has a domestic hot water tank and you want the boiler to control it, you will need to order an extra probe (NTC 10K article CO0304000000001) for this purpose.
- If the installation has an inertia tank and you want the boiler to control it, you will have to order an extra probe for this purpose.
- If you purchase the Wi-Fi module, it should be connected to the interface already installed in the machine, and you do not need to apply the Wi-Fi kit interface.

Figure 25 - Interface kit Wi-Fi

NOTE: For SZM A PLUS 16 kW with NS≥01-25-00082 and SZM A PLUS 24 kW with NS≥01-25-102 the Wi-Fi module is already integrated in the machine

- In section 16 you can find the wiring diagram of the electrical board.
- To connect or disconnect a probe to the boiler, always proceed as follows:

1. The boiler must be in the OFF position on the electronic control unit.
2. Disconnect the boiler from the mains supply.
3. Connect or disconnect the probes which are required.
4. Reconnect to the mains.
5. The electronic system will give an error (Er56) as it will have recognised the changes in the hydraulic installation.
6. Clear the error and the system will automatically adapt the operation to the new

configuration.

- On the back of the boiler, you will find a label like the one shown in the figure below, which will facilitate connection and possible maintenance to be carried out in the future.

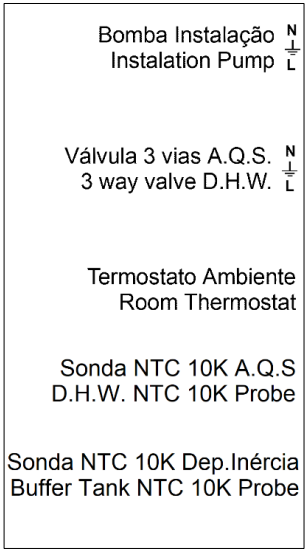


Figure 26 - Connection's label

7. Fuel

The boiler must be exclusively fuelled by pellets. No other fuel may be used.
Use only pellets certified by standard EN 14961-2 grade A1, **6mm in diameter** and a length **between 10-30mm**.

The pellets may have a maximum humidity of 8% their weight. To guarantee a good combustion, the pellets must maintain these characteristics so they should be stored in a dry place.
The use of pellets of varied quality reduces the boiler's efficiency and leads to an inadequate combustion process.
You should always use certified pellets and must not forget to test a sample before buying large bulks.

The physical/chemical properties of the pellets (calibre, friction, density and chemical composition) may vary within specific tolerances and according to each manufacturer. Please note that this may cause alterations to the feeding process and, consequently, the need for different doses (more or less pellets).
The boiler's pellet dosage can be adjusted during the start-up phase and at the power thresholds of± 25% (see section Menu configurations - transient and power operations).

⚠ Warning!

The unit must NOT be used as an incinerator.

8. Use of the pellet-run boiler

Before starting up the unit, please check the following:

- Guarantee that the boiler is properly connected to the power mains by means of the 230 VAC power cable.

Figure 27 - Electric power plug

- Check that the pellet reservoir is full.
- Before each start, make sure that the burner is unobstructed.
- Ensure that the hydraulic circuit has been correctly assembled and is connected to the water.
- Check that there is sufficient air circulation in the room where the installation is to be carried out, otherwise the equipment will not work properly. For this reason, pay attention to whether there are other heating appliances that consume air for their operation (e.g., gas appliances, diesel boilers, etc.), and it is not advisable to operate these appliances at the same time.
- The boiler has a manual reset safety thermostat to prevent excessive temperatures in the boiler body. To reset this thermostat, open the right door and remove the black plastic cover covering the thermostat reset. Press all the way down. To be reset, it must be below 95°C.

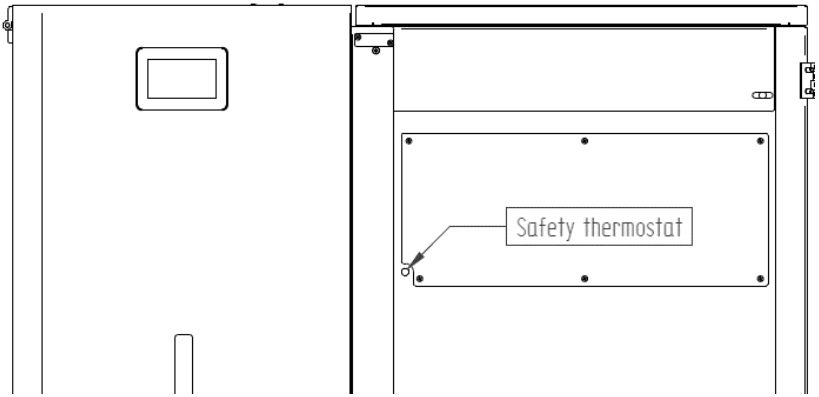


Figure 28 - Temperature safety thermostat

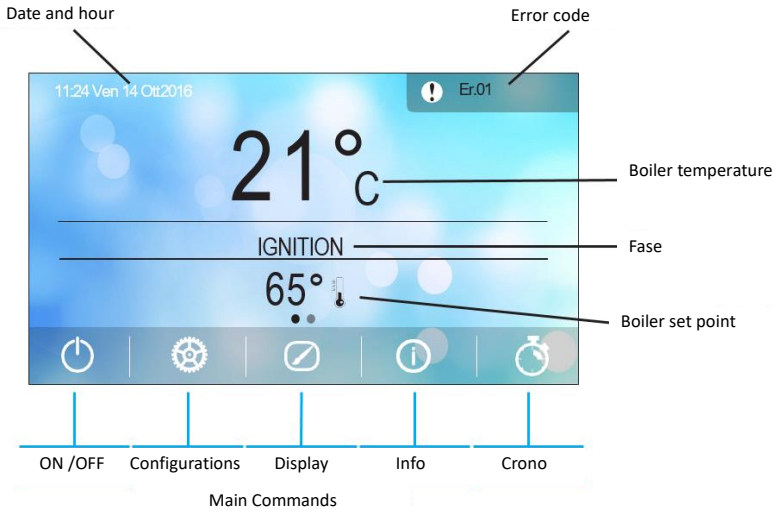
⚠ The boiler's combustion chamber is made of iron sheeting painted with high-temperature paint, which releases fumes during the first burns due to the curing of the paint.

9. Display

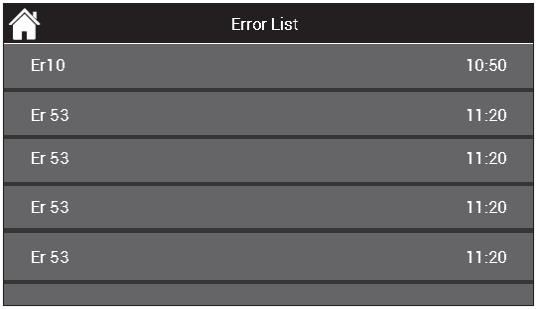
The boiler is controlled using the touchscreen located on the top front of the boiler. This 4.3" colour display allows you to quickly and easily adjust the boiler parameters, view the status of the components, display possible errors and program the operating times.

9.1. Home screen

It is the main screen and on it we can see the main values and give access to the main menus. The date and time are displayed in the top left corner. At the top right the button ⓘ will show errors, if any. In the top centre you can see the current temperature of the boiler, just below the current state of the boiler and below the temperature we have set as a target for the boiler. At the bottom you can see a control bar with 5 buttons. The first to turn the boiler on and off, the second for the configuration, the third for the control panel, the fourth to access directly to an information summary screen and the fifth to access the chrono configuration menu.



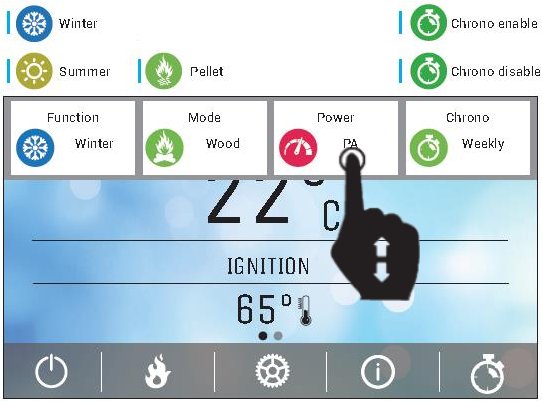
By pressing the button located in the upper right part of the screen, a new screen will open, in which you can see a list with the codes of the errors that have occurred, ordered by dates.
To return to the main menu click on the house design you will find at the top left.



From the main screen, by pressing on it and sliding your finger to the left, you will access a general screen that will show the status of the 8 main electrical components of the boiler. To return to the main screen, press on the screen again and without releasing, slide your finger to the right.

On the screen you can see whether the electrical components that make up the boiler are activated or deactivated.

From the main screen, by clicking on it and sliding your finger without releasing it downwards, a bar will appear showing the main information on how the boiler is configured. To hide the bar again, press on the screen and without releasing, slide your finger upwards.



This top bar is divided into 4 parts:

- The first shows the selection of the operating mode: summer or winter. If you select "summer" mode, the system will only work for DHW but not for central heating, although the thermostat requires it, if you select "winter" mode, the system will give priority to DHW and will run central heating when the chrono and room thermostat requires it.
- The second shows that the fuel being used in this case is always pellets, as our boiler only runs on pellets.
- The third shows the power selected, which can be between 1 and 5 or automatic.
- The fourth shows the chrono option, whether active or reactive.

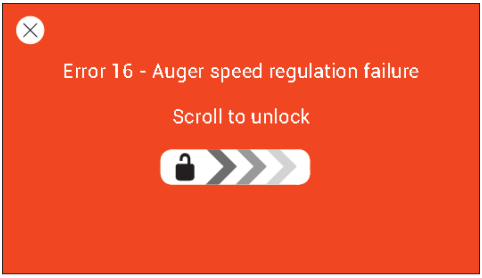
9.2. Viewing and eliminating errors

If any error occurs in the operation of the boiler, a small tab will appear in the top right-hand corner of the screen indicating the error code.

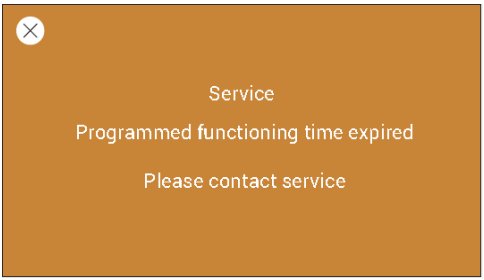
If an error appears, the first thing to do is to correct the cause for which the error occurred (chapter 13), if you are unable to do so, contact the technical assistance representative. With the cause of the error eliminated, press the button to switch the boiler on again and close the error message.

There are two types of errors, blocking and non-blocking:

- When a lock error occurs, it will be necessary to click on the lock and without releasing slide your finger to the right. The boiler may need some time to recover stable temperatures or functions and allow unlocking.

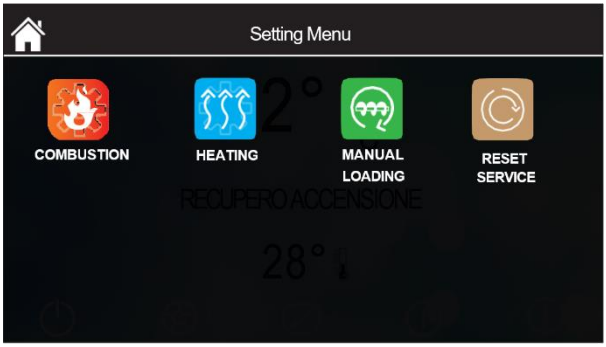


- When the error is not lockable, simply press the X located in the top left corner.



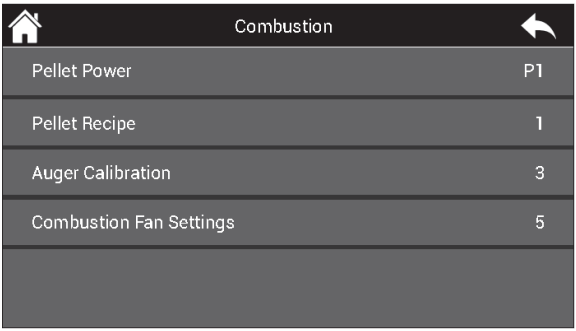
9.3. Settings menu

If in the home screen you press the second button of the bottom bar , configuration, the following window will appear. Here you can select from 4 buttons what you want to do.



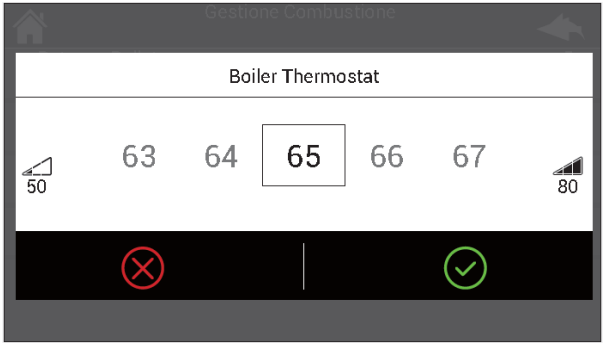
The first button "COMBUSTION" 

, shows the options that can be set that affect combustion: selected power, calibration of the pellet worm motor and calibration of the smoke extractor speed. **Note: These functions allow the quantity of pellets and the rpm of the extractor to be increased or reduced by up to 25% during the start-up and power-up process.**



- The second button "HEATING" 

, serves to set the boiler temperature set, the temperature of the inertia tank and the DHW tank, **note: only applies if the tank probes are connected to the boiler.**



- The third button "MANUAL LODING" 

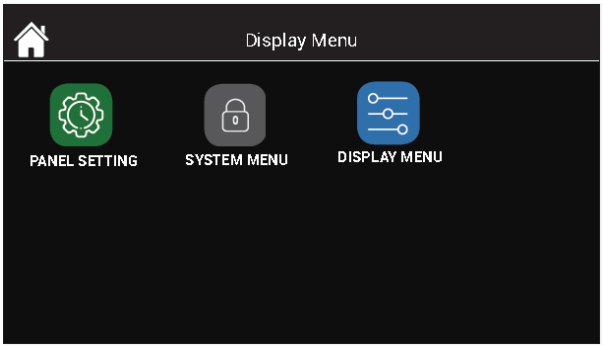
, button enables you to load pellets manually and continuously for 10 minutes. This will be very useful for loading or filling the pellet channel the first time you start the boiler or if, for some reason, the channel is empty.

- The fourth "RESET SERVICE" button 

, resets the operating hours counter until the next cleaning.

9.4. Display menu

By pressing the third button on the lower bar of the main screen  , the following window will appear. In this window you can see all the variables of the control panel.



The first button "PANEL SETTING 

, allows you to enter the general configuration menu, in which you can choose the language and set the date and time (important if you want to use the time programming option).

The second button "SYSTEM MENU" 

, allows entering the advanced configuration menu, and is reserved for the exclusive use of Solzaima authorized technicians. For this reason, this menu is password protected and is not available to the final consumer.

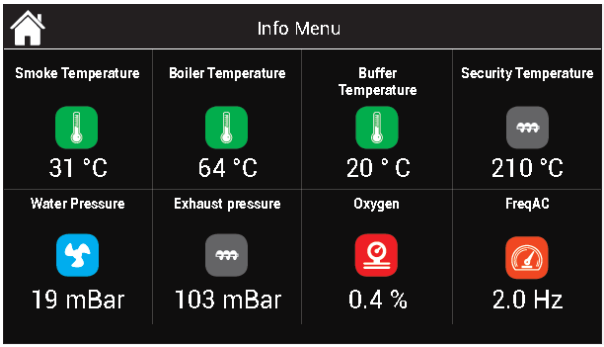
The third button "DISPLAY MENU" 

, allows entering the display configuration menu.

To return to the main screen, click on the house design that is located in the top left.

9.5. Info menu

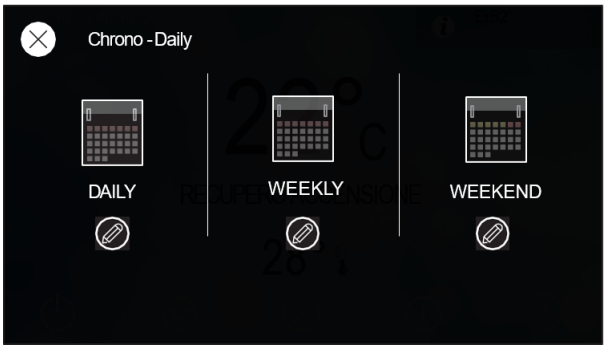
By pressing the fourth button on the lower bar of the main screen, "INFO MENU"  , the following window appears. In this window, it is possible to view all the information in real time, not only for the boiler, but for the entire installation. The information displayed on this screen will depend on the elements installed (inertia tank and DHW tank).



Above each icon appears the name to which it refers and below the icon, the value and the unit of measurement in real time.
In this way it is possible to see in what state the system is individually.

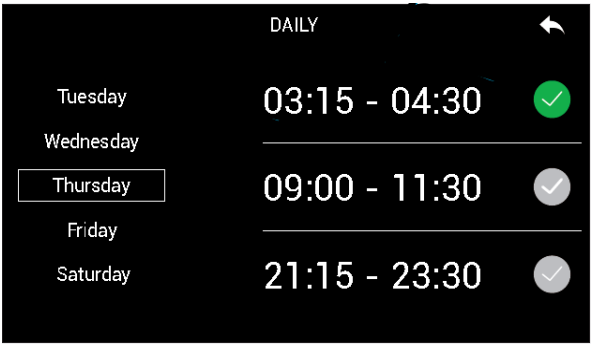
9.6. Chrono menu

If you press the fifth button on the bottom bar of the main screen  , you will enter the "Chrono" configuration menu.

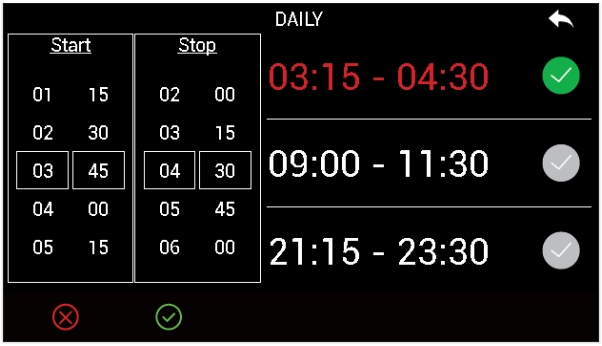


On the first chrono configuration screen you can choose between editing a daily, weekly or weekend programme **(you can only have one option active; they do not work simultaneously).** To do this, click on the icon ⊘ below the option you want to edit.

In this screen on the left, you can select the day of the week for which you wish to schedule.

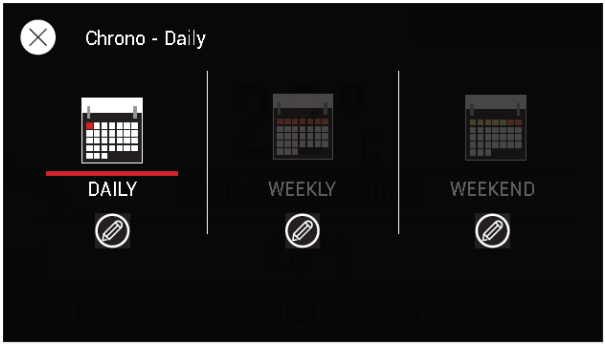


On the right it is possible to select the times at which the boiler should work (maximum 3 starts per day).



You can modify the intervals by clicking on them, activating or deactivating the button ⊘ that changes to green ✓.

To **enable the Chrono mode**, you must go back to the main screen of the chrono menu, double-clicking on the arrow drawing in the upper right-hand part ↩, and click on the button ▦ of the programme you want to enable. This will have a red line.



Notes:

- After configuring the programmes, do not forget to enable them.

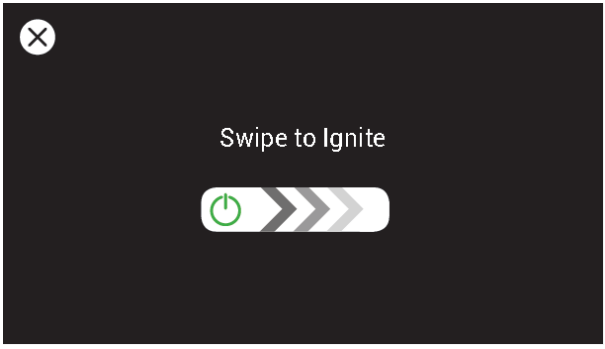
- We can only have one programme active in the Chrono: daily, weekly or weekend (they do not work simultaneously).

- When the chrono is enabled, it is possible to verify that it is active on the display on the main screen.

10. Processes

10.1. Start-up

To start the pellet boiler, press the start/stop button . Press the button and without lifting your finger, slide it to the right to confirm.



The display must indicate "Ignition" and remain so until the ignition phase is complete. The pellets are led through the feed channel to the firing basket (combustion chamber) where they are ignited by the heating element. This process may take between 10 and 15 minutes, depending on whether the pellet auger has been previously loaded or emptied with fuel. Once the ignition phase is complete, the word "On" should appear on the display.

10.2. Stop

The stop command is to press the start/stop button . Press the button and without taking your finger off slide it to the right, this is to confirm. The display should show "**switch off**". The extractor will be active until the set point fume temperature is reached, to ensure that all material is burnt.

10.3. Turn off the unit

You should only switch off the appliance after you have completed the shutdown procedure, make sure that the display indicates "**Off**". If necessary, disconnect the power cable from the mains socket.

11. Filling the pellet reservoir

1 - Open the top left-hand cover by pulling the handle upwards. Follow the movement to avoid abrupt lid movements. The cover remains open at 90º, leaving the top of the pellet silo visible. This has a grid on the top which will help us when loading, firstly because it allows us to support the bag and secondly because it acts as a filter, preventing unwanted things from falling into the silo.

2 - On the front left-hand side, you can see the pellet level rising inside the silo through the pellet level window. We recommend filling it to the maximum and topping it up when you cannot see the pellets through the level window. The boiler has an electronic sensor that will detect when the pellets enter the reserve and will start beeping to alert you to the need to refill the silo. If after 60 minutes the silo has not been recharged, the electronics will stop the firing, leaving the boiler waiting and displaying the pellet shortage error. If this happens, simply reload the silo and unlock it from the screen. Thanks to this, the pellet channel will never be empty.

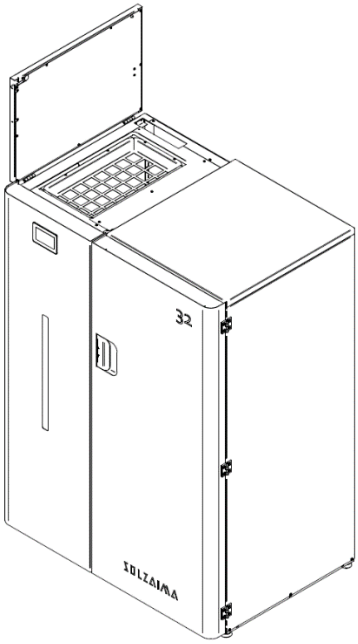


Figure 29 - Refilling the pellet reservoir

12. Maintenance

Solzaima pellet boilers require rigorous maintenance like any other machine of this type. The main precaution to be taken is to regularly clean the ash from the collection drawers. Cleaning should be carried out after firing approximately 1200 kg, which may vary greatly depending on the quality of the pellets used.

Note: It is recommended that before any cleaning, the boiler should be switched off and sufficiently cooled to avoid accidents.

12.1. Removing the ash drawer from the burner

- Open the right-hand door of the boiler to access the inner door. The inner door has an opening and closing lever on the left side. To open the inner door, move this lever downwards. As shown in the image below.

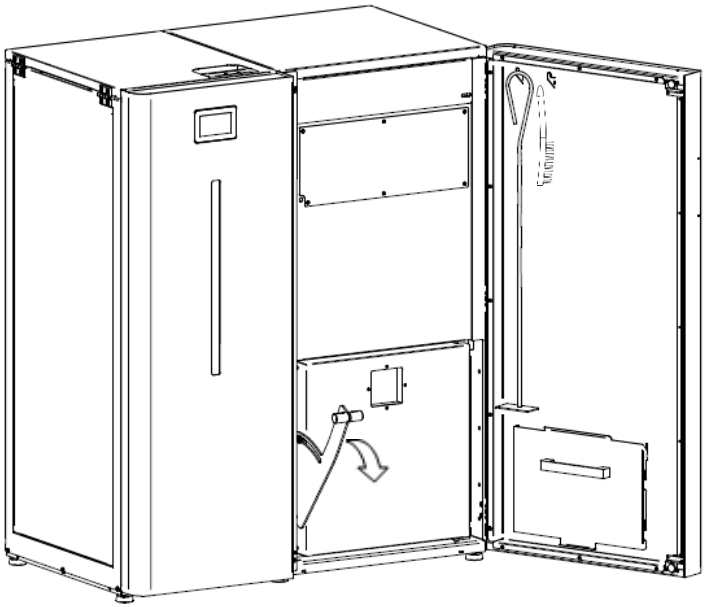


Figure 30 - Door opening

- Once the inner door has been opened and with the help of the lid hanging on the inside of the outer door, remove the ash drawer from the burner.

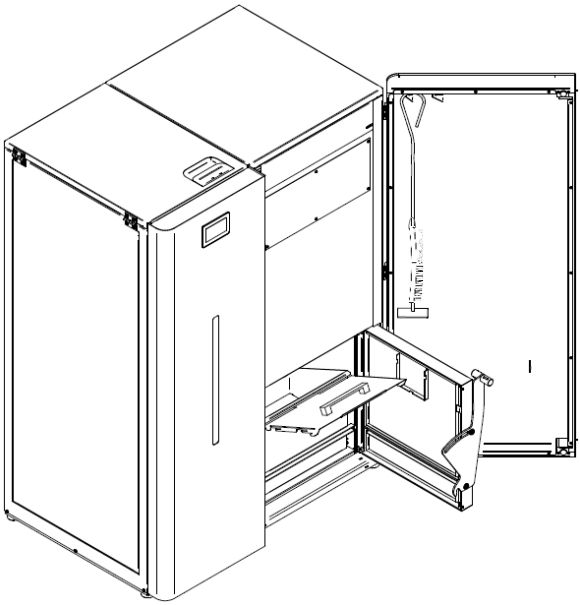
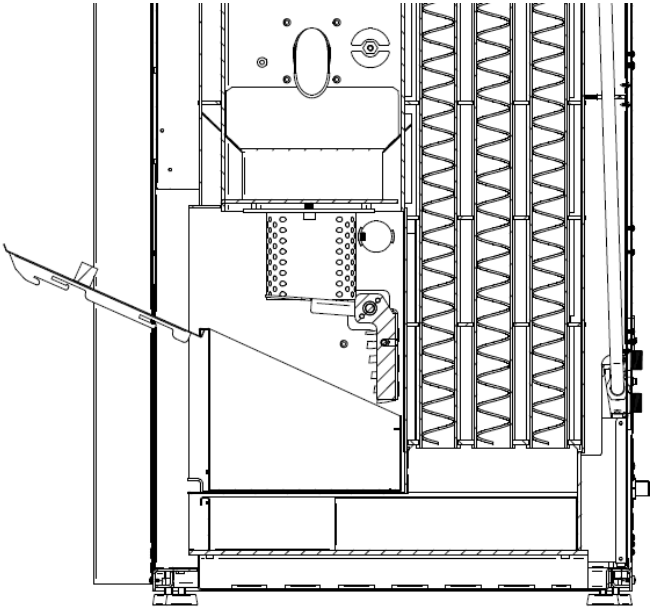


Figure 31 - Removing the ash drawer from the burner



- To do so, move the drawer outwards a little so that it is easier to put the lid in its place, as shown in the cut image.

Figure 32 - Removing the ash drawer from the burner

- Pull a little upwards and then outwards to move the drawer out of its place. See sectional image.

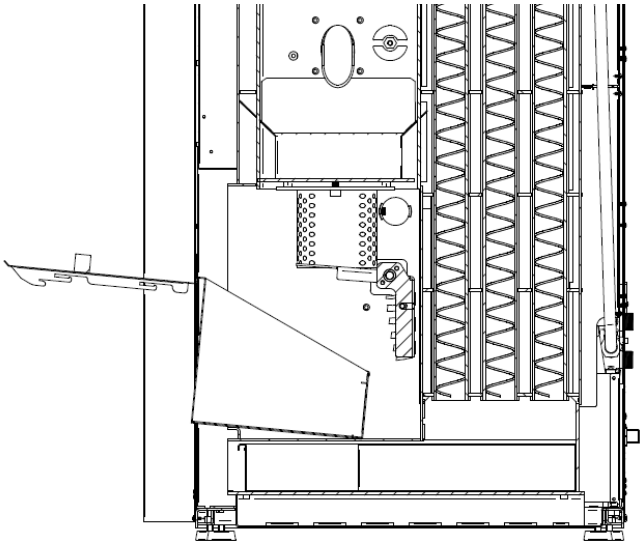


Figure 33 - Removing the ash drawer from the burner

- Insert the flap from the back towards the end first. This way, the flap will protect you from the possible heat that the ashes may release.

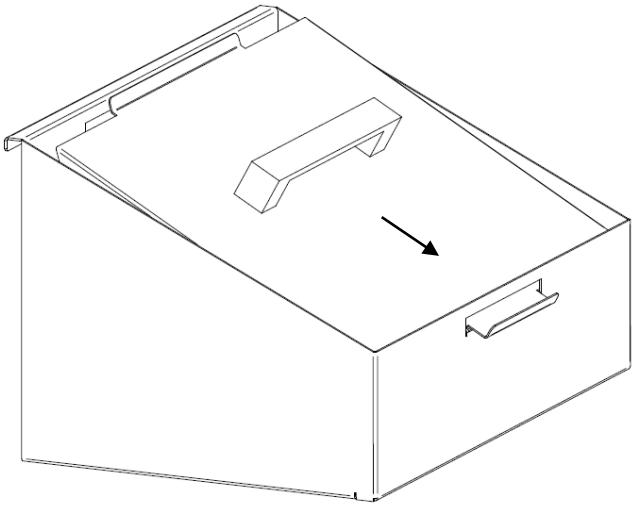


Figure 34 - Removing the ash drawer from the burner

- Give a small downward twist so that the top flap enters through the slot and move the lid towards you. You will soon notice that the lid is fitted onto the drawer. This allows you to take the drawer wherever you want to empty it.

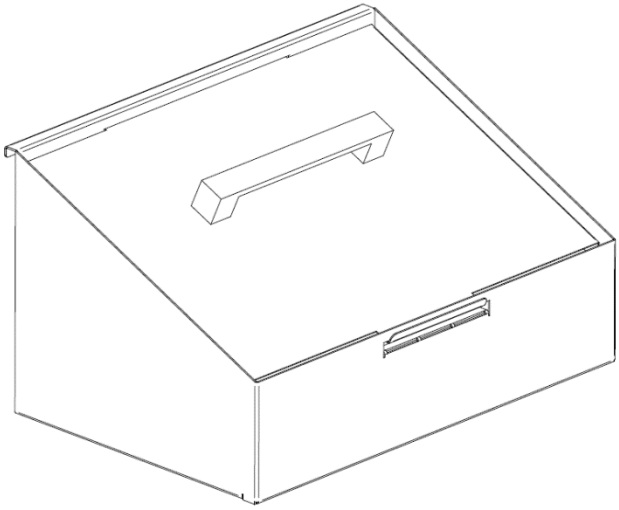


Figure 35 - Removing the ash drawer from the burner

Carry out the operations in the opposite way to place the drawer in its working position, making sure that it fits snugly against the back wall.

12.2. Removing the bottom ash drawer

- With the doors open, as for cleaning the ash drawer of the burner and using the same lid, pull the bottom drawer until it is almost out of the appliance, about 80%, as shown in the following figure.

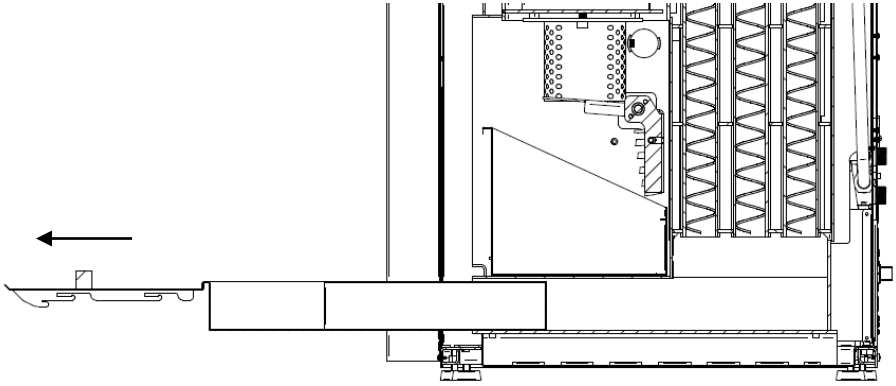


Figure 36 - Removing the ash pan from the turbulators

- Fit the lid onto the drawer by making the tabs on the drawer engage the hooks on the lid. This way you can take the ash drawer wherever you want to empty it.

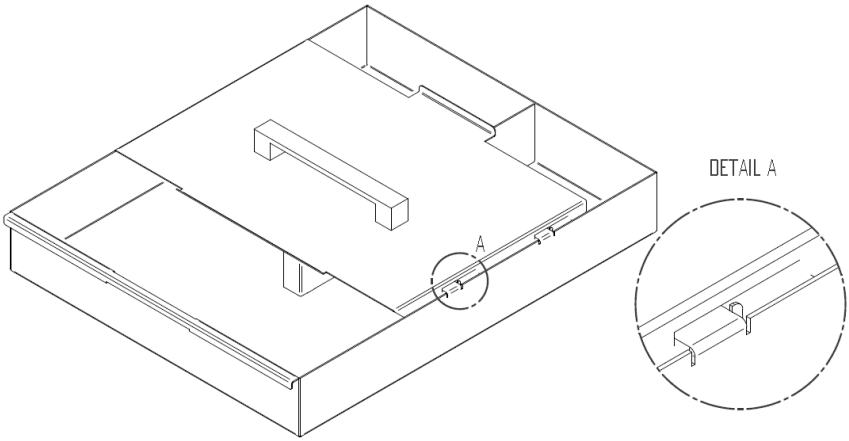


Figure 37 - Removing the ash pan from the turbulators

12.3. Forcing the burner plate clean

The burner plate, performs automatic cleaning each time the customer activates the manual cleaning button, located on the left side of the inner door, until the plate is in the vertical position. The pan only returns to the working position if the door is closed and the machine is not in the "OFF" or "lockout" states, if it is in these states, the pan stays in the back and only returns to the working position when the customer turns on the machine. This ensures that both the pan and the burner itself are as clean as possible.

After this step you will have access to cleaning the plate and also the inside of the burner.
Scrape the pan and burner with a barbed steel brush and make sure that the holes in the pan and also the burner are free from dirt, so that air can enter evenly, ensuring quality combustion.

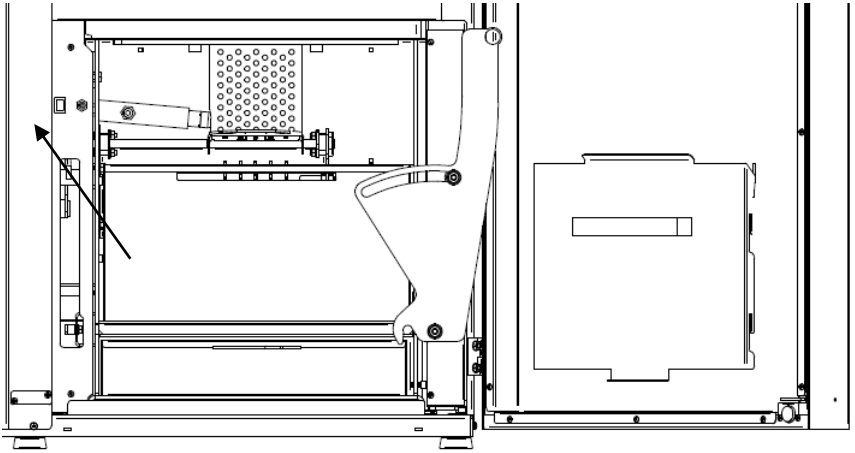


Figure 38 - Cleaning the burner plate

When everything is clean and the drawers are in place, simply close the inner door. The boiler has a limit switch that detects that the door is closed if the unit is not in the "OFF" or "lock" position and thus brings the burner plate to its working position.

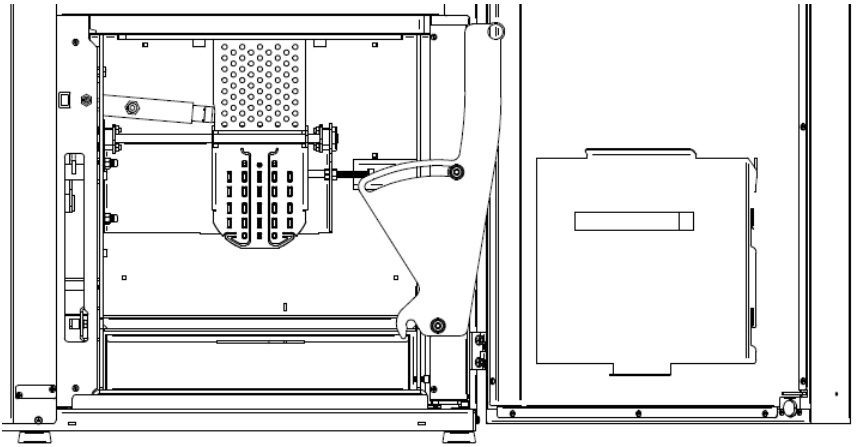


Figure 39 - Cleaning the burner plate

12.4. Annual cleaning

Once a year or after more than 2100 hours of operation, in addition to routine cleaning, a complete cleaning of the boiler must be carried out. This complete cleaning must be carried out by a technician authorised by Solzaima.

To start with the boiler must be completely cold, as the internal parts of the boiler will be dismantled and cleaned and must be cold to avoid unnecessary scratches. As with most cleaning, this will be done from top to bottom. Let's start by removing the cover on the right side of the boiler. To remove this cover, it will be enough to pull it upwards or with the help of a screwdriver make a small lever inserting it between the cover and the side. Once separated from the boiler, keep it in a safe place so that it does not get in the way of the cleaning process or get stained.

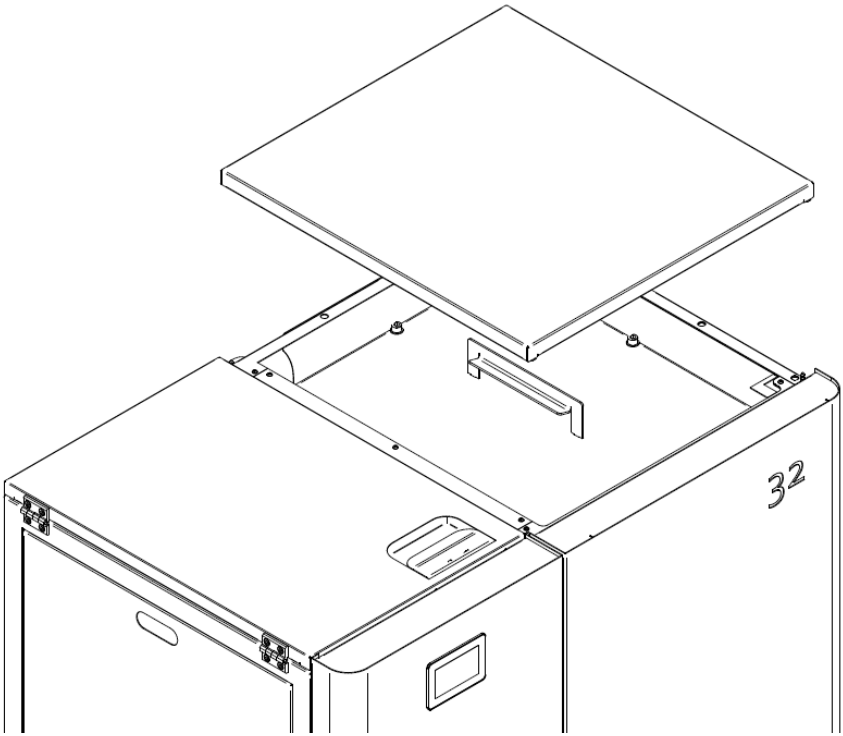


Figure 40 - Removing the outer cover

Removing the outer cover leaves the smokebox cover uncovered. This cover is fixed to the boiler body with 4 Din 912 M10 screws, to remove them it is necessary to use a nº8 screwdriver. It is advisable to loosen all the screws a little before loosening them completely to make the operation easier and so that none of the screws are forced too far.

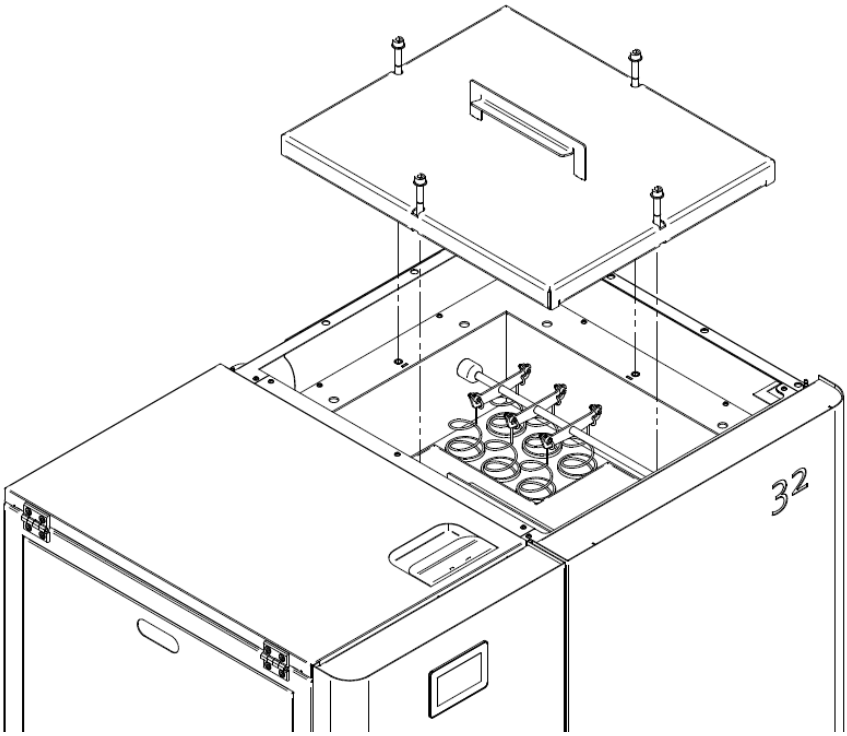


Figure 41 - Removing the top cover

After loosening the 4 screws, remove the lid from the smoke box by pulling the handle in the centre upwards. Put yourself in a comfortable position where you can push hard, as the lid is a heavy piece. Remove it from the body, the lid will have dirt on the bottom, clean it and store it in a safe place.

When the flue box lid is removed, the entire inside of the flue box is visible. The fume extractor inlet, the 6 heat exchanger tubes, the automatic tube cleaning system and the fume box lid can be seen. To remove the cleaning system, loosen the DIN 912 M6x20 screws that secure the inner shaft to the outer shaft and move it towards the outer shaft.

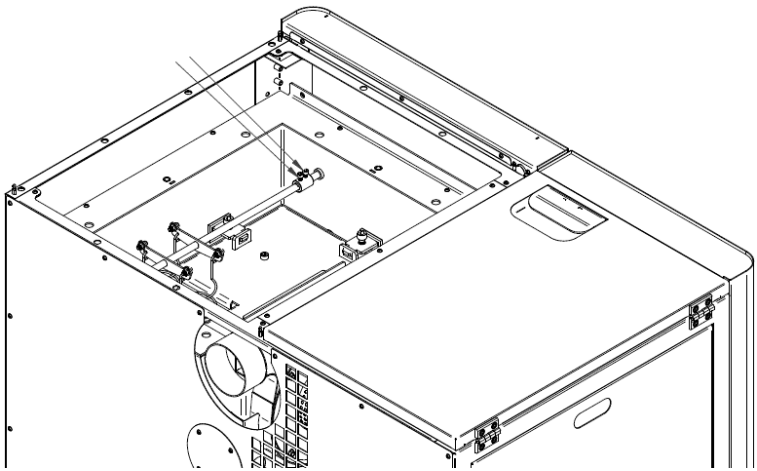


Figure 42 - Inside the fume box

To remove the cleaning spring system, move the shaft out of the welded bracket on the housing and pull the system upwards. The springs are 1m long, so before starting this manoeuvre it is best to climb a ladder that allows you to easily remove the springs without having to bend them.

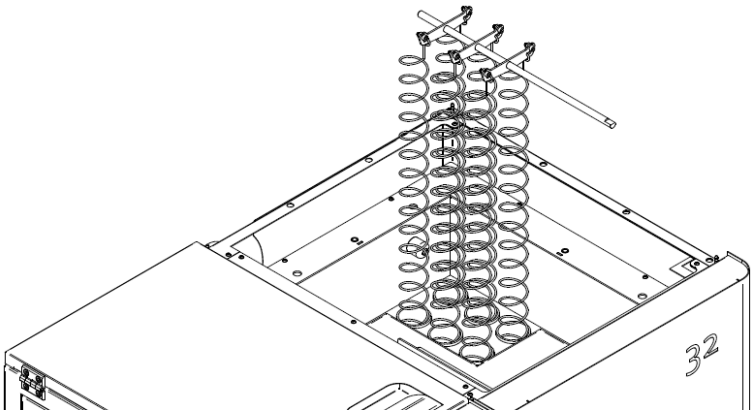


Figure 43 - Removing the cleaning spring system

To be able to remove the inner cover, you must first remove the 4 fixing systems (detail A). Loosen the DIN M10x30mm screws, move the fixing system backwards and remove it by turning it upwards. Do not remove the screw completely so that it is easier to put it back in later.

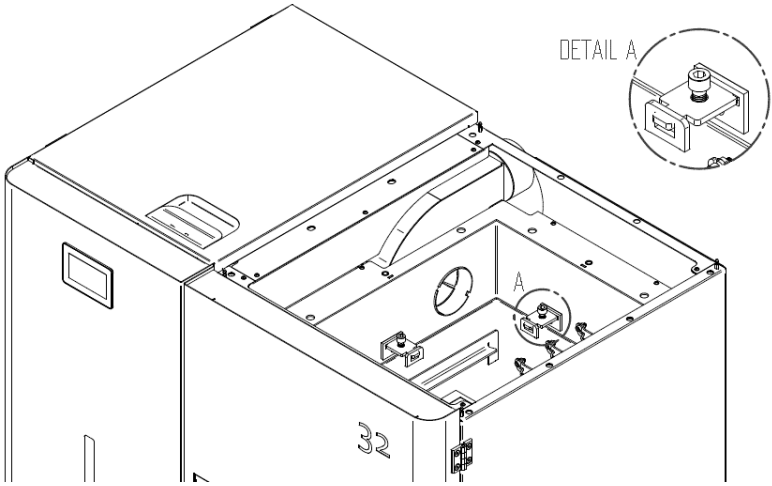


Figure 44 - Removing the inner cover

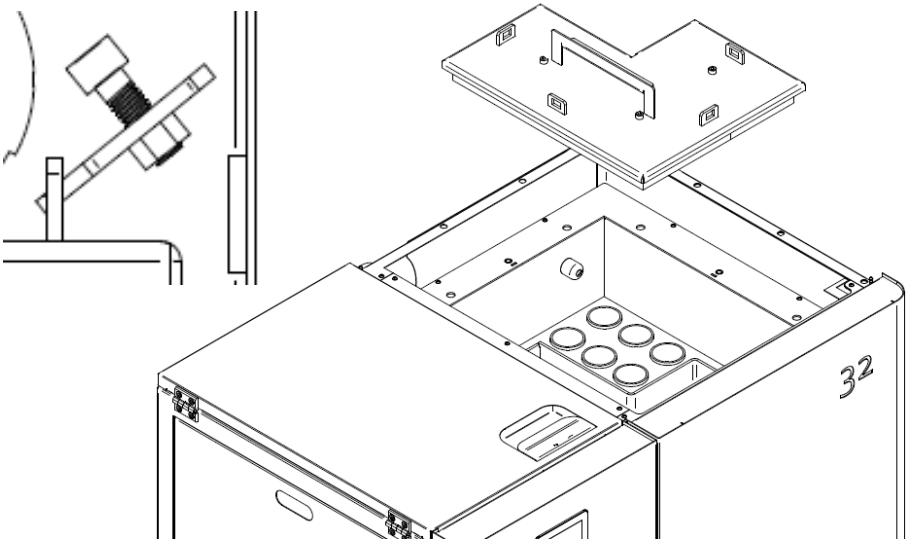


Figure 45 - Removing the inner cover

After this step, you have access to the entire interior of the body. As usual, clean with a wire brush scraping the walls from top to bottom, removing ash and any debris that may be in the combustion chamber or pipes. Be careful not to damage the ceramic paper on the safety valve and the fume probe next to it (marked with arrows in the following figure).

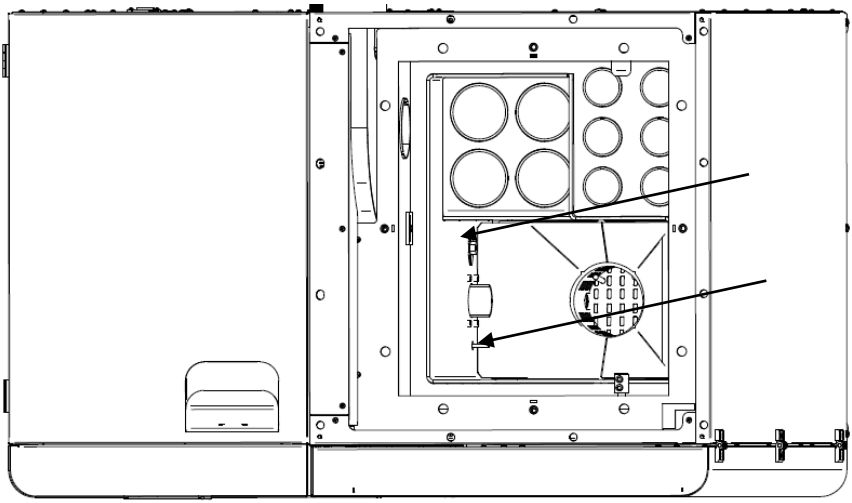


Figure 46 - Inside the body

With the help of a cylindrical brush with a diameter of 50mm, you can clean the inside of the heat exchanger tubes. All dirt will fall into the drawers at the bottom of the machine. Also clean the burner plate and also the cast iron burner as described in the previous chapter.
All the dirt will be in the ash drawers, you must empty them and put them back.

Make sure that the stainless-steel cone is correctly positioned, resting completely on the inner base of the body. Fit the inner cover making sure that it is correctly centred, place the 4 fastening systems and then tighten them with a medium force, sufficient for the cable to be held tight.
Make sure that the springs are centred in relation to the heat exchanger tubes.

Place the outer cover on the body and secure the screws securing it by hand before tightening them alternately so that the force is distributed properly.
Fit the cover by matching the spring clips to the protruding pins and force the cover downwards.

12.5. Cleaning the glass

- The glass can only be cleaned when it is completely cold; to do so, use a suitable product, follow its instructions for use and avoid contact between the product and the painted metal parts to avoid causing undesirable oxidation.

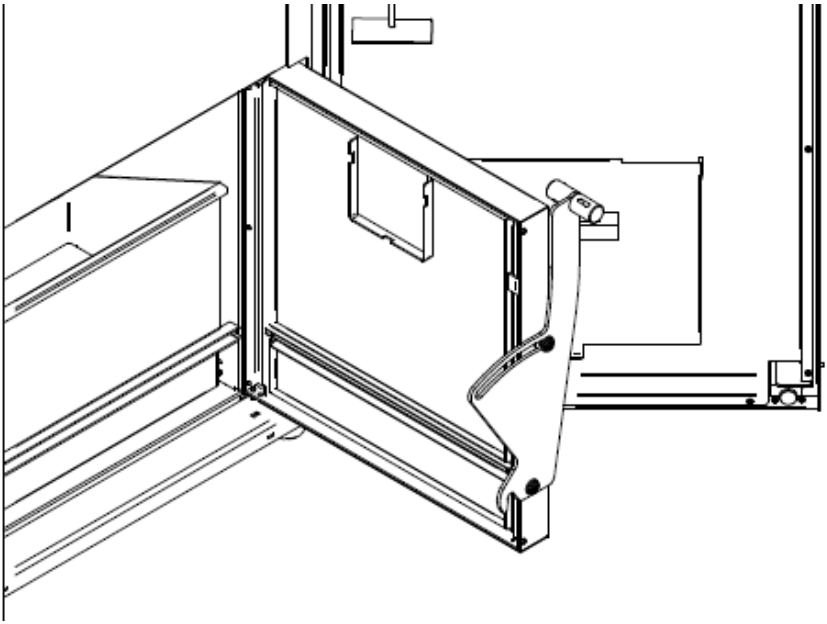


Figure 47 - Cleaning the glass

13. Alarms / failures / recommendation list

Error	Description	Actions
Er01	Alarm thermostat safety	- Check electrical connection. - Check that the pump works. - Bleed the hydraulic circuit. - If the problem persists, contact technical service.
Er02	Alarm smoke pressure switch	- Close door and remove faulty pressure switch error. - Blockage of exhaust pipe or defective extractor.
Er03	Low temperature fume extinguishing (35ºC)	- Empty pellet tank. - Microswitch is not closed.
Er04	Extinguishing due to excess water temperature	- Check that the pump works. - Bleed the hydraulic circuit. - If the problem persists, contact technical service.
Er05	Extinguishing due to high smoke temperature	- Insufficient draft. - Excessive dosing of pellets. - Defective smoke sensor. - If the problem persists, contact technical service.
Er07	Encoder Error. The error may occur due to a lack of signal	- Restart the boiler, if the problem persists, contact technical service.
Er08	Encoder error. The error may occur due to problems with the speed control of the smoke extractor	- Contact your service representative.
Er09	Low water pressure <0,5 Bar	- Check and adjust the pressure in the hydraulic circuit. If the problem persists, contact technical service.
Er10	High water pressure >2,9 Bar	- Check and adjust the pressure in the hydraulic circuit. If the problem persists, contact technical service.
Er11	Clock error. The error occurs due to problems with the internal clock	- Restart the boiler, if the problem persists, contact technical service.
Er12	Ignition fault	- Empty worm channel - reset. - Ignition resistance defective - replace resistance. - Burner incorrectly installed. - Fume temperature does not exceed the set value for activation.
Er15	Power failure	- In the event of a power failure (<10s) the boiler continues to operate normally. - If the system is ON and the power failure occurs for more than 10s and less than 5 min, the boiler restarts after going through standby.
Er16	RS485 communication error	- Restart the boiler, if the problem persists, contact technical service.
Er17	Combustion air regulation not achieved	
Er18	Boiler without pellets	

Er23	Boiler probe or inertia tank probe open	- Check electrical connection. - Restart the boiler, if the problem persists, contact technical service.
Er25	Burner cleaning motor broken	- Motor Clean burner broken or blocked.
Er26	Broken cleaning motor	- Motor Clean burner broken or blocked.
Er39	Differential pressure sensor damaged	- Check electrical connection. - Check for obstructions in the measuring sockets.
Er41	Minimum value of differential sensor not reached during Check-up	- Check electrical connection. - Check for obstructions in the measuring sockets.
Er42	Maximum value of differential sensor has been exceeded	- Check electrical connection.
Er52	Error I2C I/O modules	- Restart the boiler, if the problem persists, contact technical service.
Er56	Modified hydraulic installation	- Restart the boiler, if the problem persists, contact technical service.

Table 3 - List of alarms

Other messages:

Sond	Display the status of the temperature probes. The message appears during the Check Up phase and indicates that the temperature detected by one or more probes is equal to the minimum or maximum value (depending on the probe in question). Check that the probes are not open (detection of the minimum value of the temperature scale) or short-circuited (detection of the maximum value of the temperature scale).
Ignition interlock	Message that appears when the system has been switched off not manually in the Ignition phase (after Pre-charge): the system only switches off when it reaches maximum capacity.
Er06	Thermostat Pellets open
Link Error	Lack of communication between the keyboard and the electronic board.
Cleaning On	The system is performing periodic cleaning.
Cleaning	Message indicating that the boiler has more than 2100 operating hours (parameter T67). Contact your service representative for maintenance.

Table 4 – Other messages

⚠ WARNING

THE MAINTENANCE ANOMALY (THE "SERVICE" MESSAGE APPEARS ON THE DISPLAY) INDICATES THAT THE UNIT HAS EXCEEDED 2100 OPERATING HOURS. THE UNIT MUST BE SERVICED; ONLY THEN HOUR METER CAN BE RESTARTED (TECHNICAL MENU) AND THE WARNING CLEARED. THIS

ANOMALY DOES NOT INFLUENCE THE NORMAL OPERATION OF THE BOILER, IT IS MERELY A WARNING.

⚠ Important notice: any error can only be cleared if the boiler is in "Lock".

⚠ Important notice: the anomalies do not cause the unit to shut down.

⚠ **WARNING**

In case of an emergency, switch the unit off using the standard shutdown procedure.

⚠ **WARNING**

DURING OPERATION THE APPLIANCE WILL BE HOT, SO IT IS NECESSARY TO BE CAREFUL, ESPECIALLY WITH THE FUME OUTLET AND THE INTERNAL DOOR.

14. Maintenance plan and log

To ensure the proper operation of the unit, maintenance operations must be performed, as described in Chapter 12 of this Instruction Manual or in the Maintenance and Cleaning Guide. There are specific maintenance tasks that must be performed by authorised technicians only. Please contact the person responsible for installing the unit. To make sure the warranty remains valid, the maintenance operations performed on this unit must comply with the frequency requirement specified in the manual, and the service technician must fill and sign the maintenance log.

Customer data:

Name:	
Address:	
Telephone:	
Model:	
Serial Number:	

Company/SAT:
Technical:
Dates:
Service hours of boiler:
Quantity of pellets burned:

Task	Check	Obs.
Clean burner and plate		
Clean smoke circuit and turbulators		
Vacuum pellet tank sawdust		
Check pressure of the expansion vessel		
Check safety valve 3 bar		
Check the fluid on the hydraulic circuit		
Clean the smoke extractor		
Check and clean the inspection T		
Clean chimney		
check the tightening of the screws		
Check engine cap pellet hopper		

Signature/stamp

Company/SAT:
Technical:
Dates:
Service hours of boiler:
Quantity of pellets burned:

Task	Check	Obs.
Clean burner and plate		
Clean smoke circuit and turbulators		
Vacuum pellet tank sawdust		
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Check safety valve 3 bar		
Check the fluid on the hydraulic circuit		
Clean the smoke extractor		
Check and clean the inspection T		
Clean chimney		
check the tightening of the screws		
Check engine cap pellet hopper		

Signature/stamp

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Technical:
Dates:
Service hours of boiler:
Quantity of pellets burned:

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Signature/stamp

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Quantity of pellets burned:

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Signature/stamp

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Quantity of pellets burned:

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Dates:
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Check and clean the inspection T		
Clean chimney		
check the tightening of the screws		
Check engine cap pellet hopper		

Signature/stamp

15. Maintenance guide label

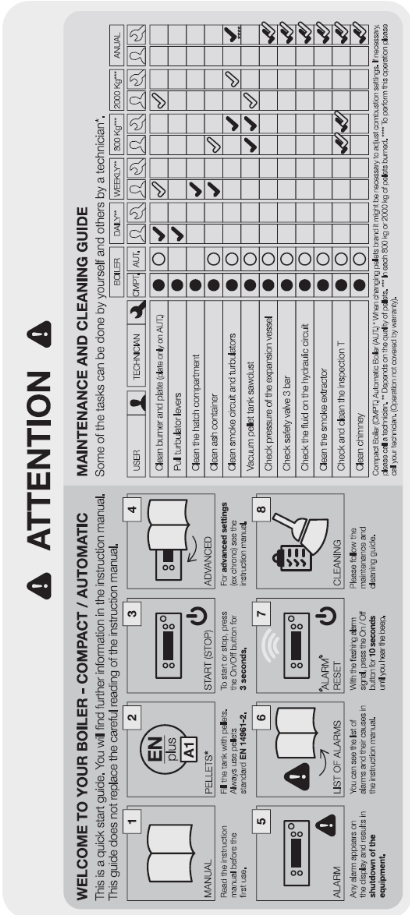


Figure 48 - Maintenance label

Note: The safety warnings sticker label is attached from factory to the unit's pellet lid, in the Portuguese language. Attached to the manual you will find other language versions of the sticker labels (Spanish, English, French and Italian). If necessary, remove the Portuguese language label and replace it with the label in your country's language.

16. Installation diagrams

16.1. Simple connection only the central heating radiators

Figure 49 - Simple connection only the central heating radiators

Notes:

- **TA** the boiler can be used, with the application of a generic external control (chronothermostat) or another type of control provided that it is voltage-free (dry contact). Note: The external control normally comes with a manual. Note: The external control comes with a manual as standard. The thermostat must have a 1 to 2°C hysteresis;
- The parameter for operation of the room thermostat in this hydraulic scheme is **A01= 04**;
- The first activation must be done manually on the display;
- **S1** boiler temperature probe;
- **P1** pump incorporated in the boiler.

16.2. Connection to central heating radiators and sanitary water combined with solar panel

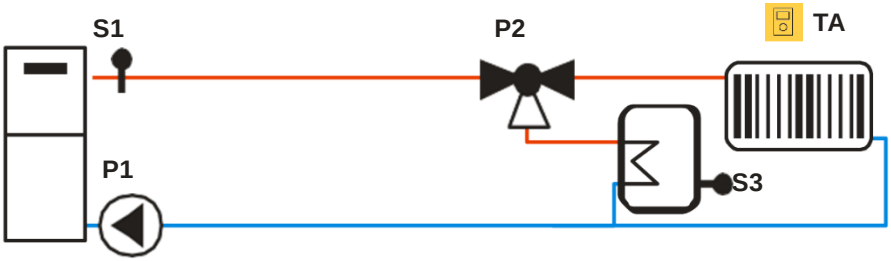


Figure 50 - Connection to central heating radiators and sanitary water combined with solar panel

Notes:

- **TA** the boiler can be used, with the application of a generic external control (chronothermostat) or another type of control provided that it is voltage-free (dry contact). Note: The external control normally comes with a manual. The thermostat must have a 1 to 2°C hysteresis;
- The parameter for operation of the room thermostat in this hydraulic scheme is **A01= 04**;
- The first activation must be done manually on the display (put the boiler in standby);
- **S1** boiler temperature probe;
- **P1** pump incorporated into the boiler;
- **P2** 3-way motorised valve.

To connect the **S3** domestic hot water probe to the boiler, always proceed as follows:

1. The boiler must be in the Off position.
2. Disconnect the boiler from the mains supply.
3. Connect the S3 probe at the rear of the boiler.
4. Reconnect the mains supply.
5. The electronics will give an error (**Er56**) because it will have recognised the changes in the hydraulic installation.
6. Unlock the error and the electronic system will automatically recognise the new configuration.

16.3. Connection to central heating radiators, with inertia tank and installation pump

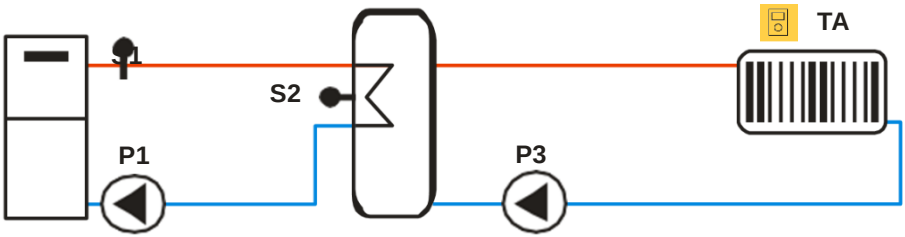


Figure 51 - Connection to central heating radiators in combination with another boiler, storage heaters, domestic hot water and in combination with a solar panel

Approximate calculation of the inertia tank: Pellet boilers are recommended to have an inertia tank of 20l per kW.

Notes:

- **TA** the boiler can be used, with the application of a generic external control (chronothermostat) or another type of control provided that it is voltage-free (dry contact). Note: The external control normally comes with a manual. The thermostat must have a 1 to 2°C hysteresis;
- The parameter for operation of the room thermostat in this hydraulic scheme is **A01= 03**;
- The first activation has to be done manually on the display;
- **S1** boiler temperature probe;
- **P1** pump incorporated in the boiler;
- **P3** installation pump.

To connect the S2 probe of the inertia tank to the boiler, proceed as follows:

1. The boiler must be in the Off position.
2. Disconnect the boiler from the mains supply.
3. Connect the S2 probe at the rear of the boiler.
4. Reconnect the mains supply.
5. The electronics will give an error (**Er56**) because it will have recognised the changes in the hydraulic installation.
6. Unlock the error and the electronic system will automatically recognise the new configuration.

16.4. Combined heating connection, hot water with inertia tank and domestic hot water

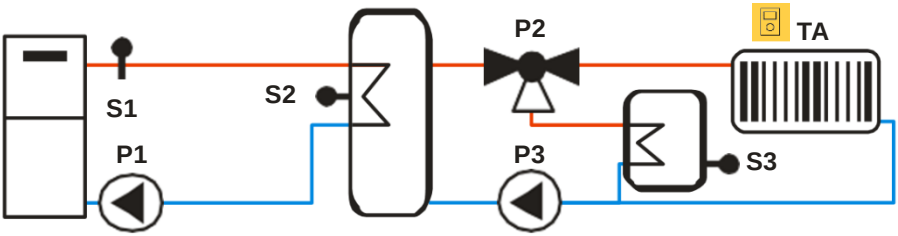


Figure 52 - Connection for underfloor heating, together with another boiler, domestic hot water and combination with solar panel

Approximate calculation of the inertia tank: Pellet boilers are recommended to have an inertia tank of 20l per kW.

Notes:

- **TA** the boiler can be used, with the application of a generic external control (chronothermostat) or another type of control provided that it is voltage-free (dry contact). Note: The external control normally comes with a manual. The thermostat must have a 1 to 2°C hysteresis;
- The parameter for operation of the room thermostat in this hydraulic scheme is **A01= 03**;
- The first activation has to be done manually on the display;
- **S1** boiler temperature probe;
- **P1** pump incorporated in the boiler;
- **P2** 3-way motorised valve;
- **P3** installation pump.

To connect the inertia tank probe S2 to the boiler and S3 domestic hot water to the boiler, proceed as follows:

1. The boiler must be in the Off position.
2. Disconnect the boiler from the mains supply.
3. Connect probe S2 and S3 at the rear of the boiler.
4. Reconnect to the mains supply.
5. The electronics will give an error (Er56) because it will have recognised the changes in the hydraulic installation.
6. Unlock the error and the electronics will automatically recognise the new configuration.

17. Electrical connection diagram

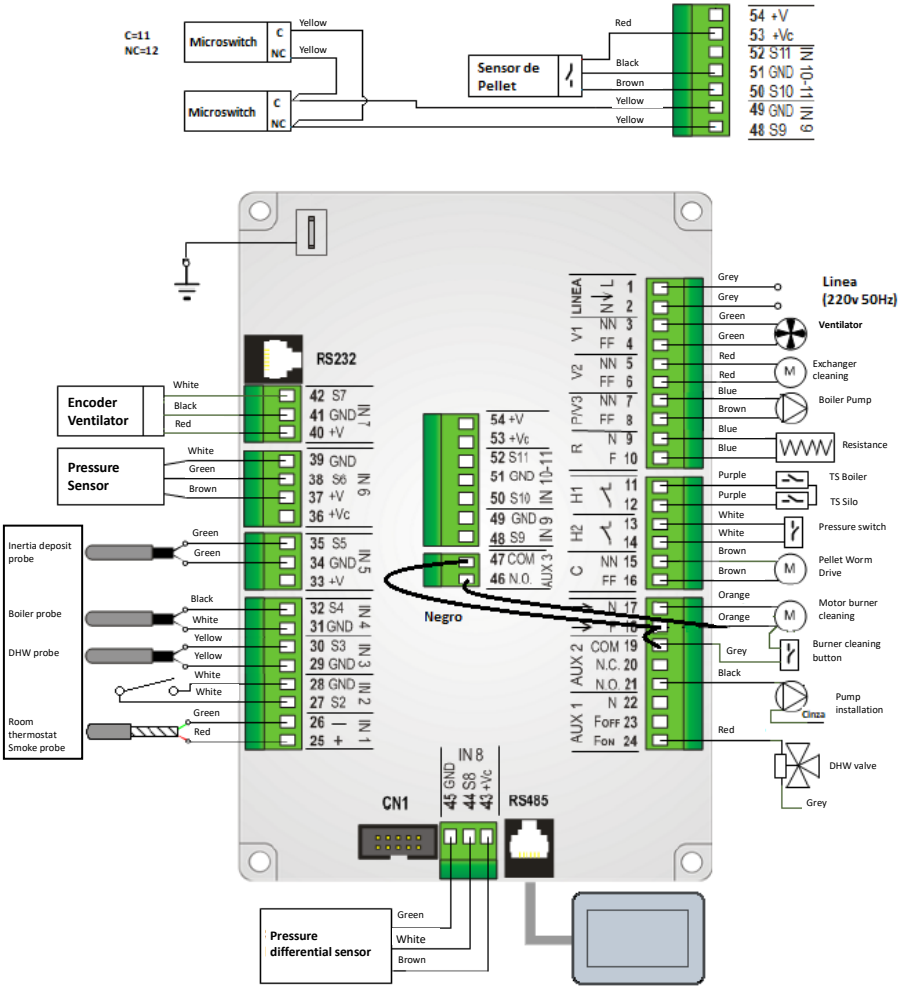


Figure 53 - Electrical diagram

18. Circulator pump operation

UPM3 pump with Hybrid 25-70 130mm

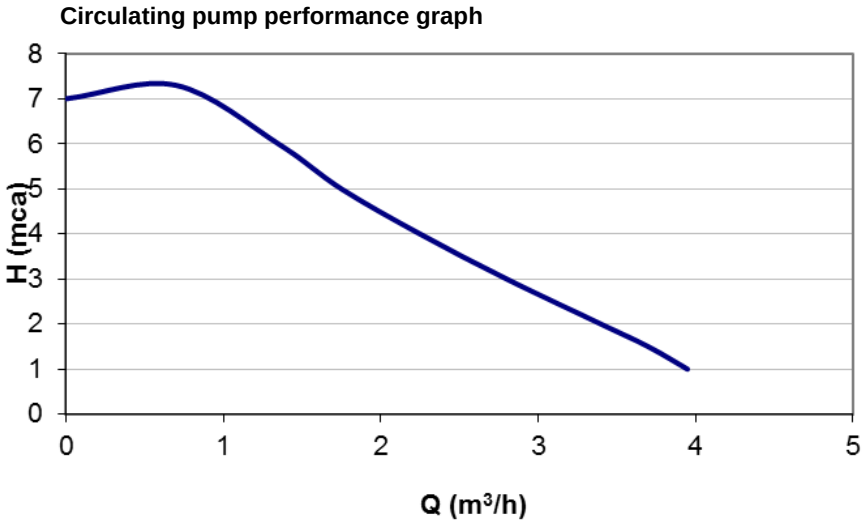


Figure 54 - Pump performance graph

User interface

The user interface is designed with a single button, one red/green LED and four yellow LEDs.

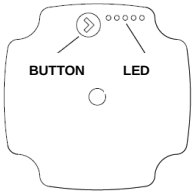


Figure 55 - User interface

When the pump is running, LED 1 is green. The 4 yellow LEDs indicate the current performance of the pump as shown in the table below.

LED active	Performance (%)
LED green	0 (Standby)
LED green + 1 LED yellow	0-25
LED green + 2 LED yellow	25 - 50
LED green + 3 LED yellow	50-75
LED green + 4 LED yellow	75-100

Table 5 - Performance of the pump

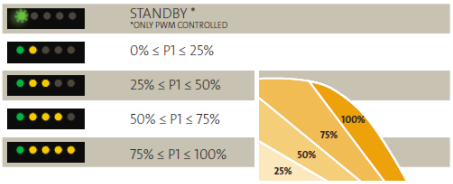


Figure 56 - Performance of the pump

Note: the pump is configured as standard at full capacity (75-100%).

Changing the pump configuration

Can be chosen between the view of the performance of pump and the view of settings, just press the button once.

If you need to change the pump performance, you must press the button for 2 seconds, after this action the LEDs start blinking, then you must press the button until the desired setting (see Table 5), after 10 seconds the display automatically switches to the view of performance with alteration saved.

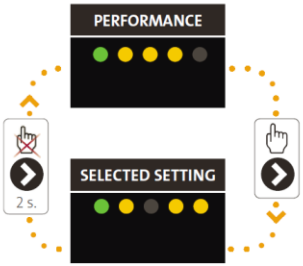


Figure 57 - Pump settings

Maximum manometric height (m)	Configuration
2-4	
3-5	
4-6	
5-7	

Table 6 - Pump settings

Alarms

If the pump detects one or more errors, the LED 1 changes from green to red when the alarm is activated the yellow LED indicates the type of alarm (see Table 6), if we have several alarms at the same time, the yellow LED indicates the alarm with higher priority, the priority sequence is defined on table as follows:

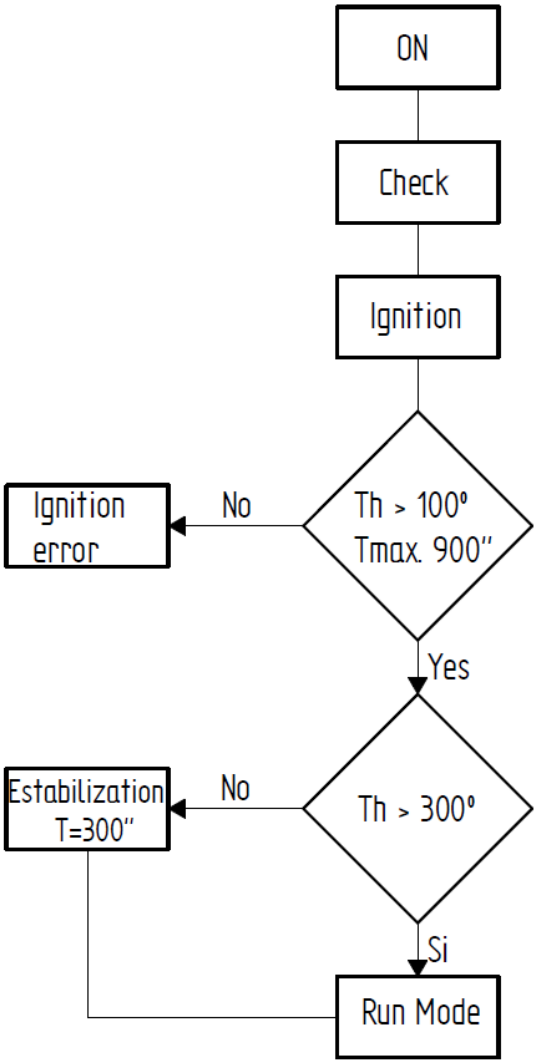
Display	Priority	Alarm	Action
LED 1 red + LED 5 yellow 	1	Rotor is blocked	Wait or deblock the shaft
1 LED red + LED yellow 4 	2	Supply voltage too low	Control the supply voltage.
1 LED red + LED yellow 3 	3	Electrical error	Control the supply voltage or replace the pump.

Table 7 - List of alarms

19. Annexes

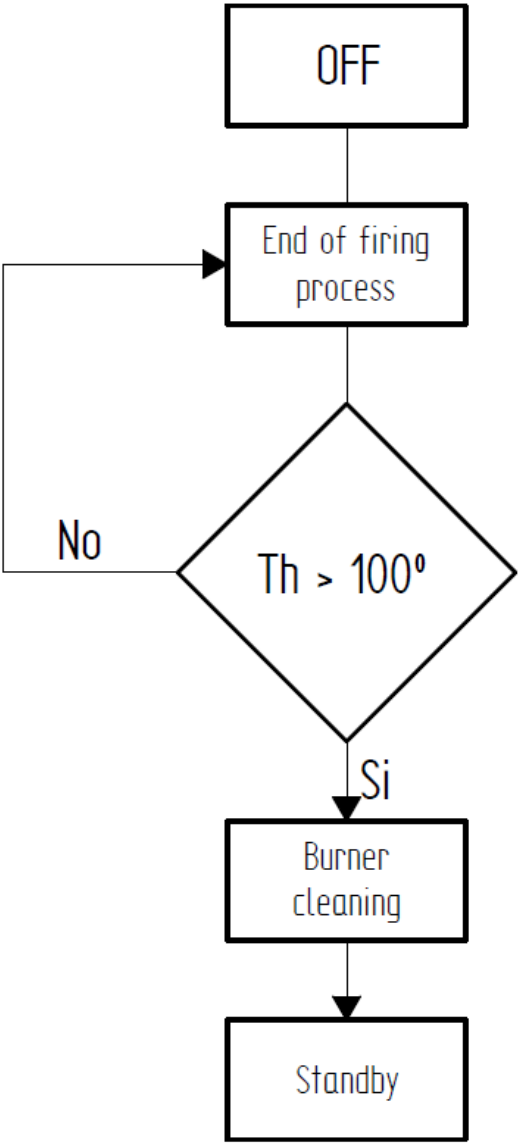
19.1. Function flow diagrams

- **Flow chart 1 – Normal activation**



Note: The first time you will have to activate it manually by pressing the on/off button  , and also after an error has occurred.

- **Flow chart 2 – Disconnecting the machine**



Note (only for the water version): The circulator is switched off below 40 °C water temperature.

20. Life cycle of a pellet boiler

About 90% of the materials used in the manufacture of these units are recyclable, thus helping to reduce environmental impact and contributing to the sustainable development of the Planet. End-of-life units should be returned to authorised waste processing systems. We advise you to contact your local authorities for instructions.

21. Sustainability

Solzaima designs and manufactures biomass solutions and biomass-fuelled equipment as a primary energy source. This is our contribution for the sustainability of our planet – an economically viable and environmentally-friendly alternative, following environmental best management practices to ensure an efficient carbon cycle management.

Solzaima makes all efforts to learn and to know the national forest park while efficiently responding to energy demands, taking permanent care to maintain its biodiversity and natural wealth that are essential for the quality of life on our planet.

SOLZAIMA is a member of the Portuguese Sociedade Ponto Verde, which manages packaging waste from products that the company places on the market, so you can take the packaging waste from your unit, such as plastic and cardboard, to your nearest recycling point.

SOLZAIMA is a member of Amb3E, the entity responsible for collecting waste electrical and electronic equipment (WEEE). Thus, end-of-life units with forced ventilation systems should be transported to an appropriate WEEE-processing location. When you disassemble your equipment, you can take its electrical components to your nearest WEEE collection point.

22. Glossary

Ampere (A): SI unit of measurement of electric current

bar: unit of pressure equal to exactly 100,000 Pa. This pressure is very close to standard atmospheric pressure.

cal (Calorie): equal to the amount of heat required to increase the temperature of one gram of water by one degree centigrade.

Circuit breaker: Electromechanical device that protects a given electrical appliance.

cm (centimetres): unit of measurement.

CO (carbon monoxide): Lightly flammable, colourless, odourless and very dangerous gas, due to its toxicity.

CO_2 (carbon dioxide): Gas needed by plants for photosynthesis on the one hand, and emitted into the atmosphere on the other, contributing to the greenhouse effect.

CO emissions: emission of carbon monoxide gas into the atmosphere.

CO Emissions (13% O_2): carbon monoxide content corrected to 13% of O2.

Combustion: a process that releases energy. Combustion is basically a chemical reaction that requires three items in order to take place: fuel, oxidant and ignition temperature.

Creosote: chemical compound created by combustion. This compound is sometimes deposited on the glass and flue of an insert fire.

Differential switch: protects people and property against grounding failures, preventing electric shocks and fires.

Energy efficiency: capacity to generate large quantities of heat with the least amount of energy possible, causing the least environmental impact and reducing the energy budget.

Fuel: anything that can undergo combustion, in this case wood.

Glass ceramics: highly resistant ceramic material produced through controlled crystallisation of vitreous materials. Used widely in industrial applications.

Heat-resistant: resistant to high temperatures and thermal shock.

kcal (Kilocalorie): multiple units of measurement of calories. Equivalent to 1000 calories.

kW (Kilowatt): unit of measurement equal to 1,000 watts.

mA (milliampere): unit of measurement of electric current.

mm (millimetres): unit of measurement.

Net heating value: also known as specific combustion heat. It represents the amount of heat released when a certain amount of fuel is completely burned. Calorific

value is expressed in calories (or kilocalories) per unit of weight of fuel.

Oxidiser: chemical substance that feeds combustion (essentially oxygen) and is essential for it to take place.

Pa (Pascal): standard IS unit of pressure and tension. This unit is named after Blaise Pascal, eminent French mathematician, physicist and philosopher.

Performance: expressed as a percentage of "useful energy" that can be extracted from a given system, taking into account the "total energy" of the fuel used.

Ignition temperature: temperature above which the fuel can enter into combustion.

Plumb: vertically above the installation.

Power output: a manufacturer's recommendation from tests on the equipment with firewood loads within a reasonable operating range. This power output range will present different firewood consumptions per hour.

Rated net heating value: heating capacity, i.e., the heat energy the unit transfers from energy present in the firewood – measured for a standard load of firewood over a given period of time.

Rated power: Electric power consumed by an energy source. Measured in watts.

W (Watt): IS unit of power.

23. Warranty

23.1. Model-specific conditions

This model requires that the unit is subject to start-up for the warranty to be to activated. The start-up service can only be performed by technical services authorised by the manufacturer. This is mandatory before the unit reaches 100 service hours. The final user is responsible for any expenses related to the start-up service.

23.2. Warranty general conditions

1. Social name and address of the producer and Object

Solzaima, S.A.
Rua dos Outarelos, 111
3750-362 Belazaima do Chão

This document does not substantiate the provision by Solzaima S.A. of a voluntary warranty on its produced and marketed products (from now on mentioned as "Product (s)"), but rather a guide, intended to be enlightening for the effective activation of the legal warranty that benefits consumers (from now on mentioned as "Warranty"). This document does not affect the legal rights of warranty, emerging from the purchase agreement whose purpose is the Product(s).

2. Product identification on which rests the warranty

The activation of the warranty presupposes prior and correct identification of the product object towards Solzaima, SA, being promoted by providing the Product ´s packing data indicated in the purchase invoice or in the product characteristics plate (model and serial number).

3. Product warranty terms

3.1 Solzaima, S.A., responds to the Buyer, for the lack of conformity of the Product with the respective contract of sale, within the following periods:

3.1.1 A period of 24 months from the date of delivery of the good, in the case of domestic use of the product, save the provisions of the following number regarding the intensive use;

3.1.2 A term of 6 months from the date of delivery of the goods, in the case of professional, or industrial, or intensive use of the products - Solzaima means

by professional, industrial or intensive use of all products installed in industrial spaces, commercial, or whose use exceeds 1500 hours per calendar year;

3.2 A functional test of the product must be performed before finishing the installation (plaster, masonry, coatings, paintings, among others);

3.3 No equipment can be replaced after the 1st Burn without the express authorization of the producer;

3.4 Any product must be repaired on the site of installation without causing serious inconvenience to the parties, save, if this proves impossible, or disproportionate;

3.5 In order to exercise its rights, and provided that the term indicated in 3.1 is not exceeded, the Buyer must report in writing to Solzaima, S.A., the lack of conformity of the Product within a maximum period of:

3.5.1 60 (sixty) days after the date on which it has detected it in the case of domestic use of the product;

3.5.2 Thirty (30) days from the date of its detection, in the case of professional use of the Product.

3.6 In the pellet range equipment's, the commissioning service is required to activate the warranty. It must be registered up to 3 months after the date of invoice, or, 100 hours of work of the product (whichever occurs first);

3.7 During the Warranty period referred to in paragraph 3.1 (and for this to remain valid), repairs to the Product must be performed exclusively by the Official Technical Services of the Brand. All services provided under this Guarantee will be performed Monday through Friday within the working time and calendar legally established in each region.

3.8 All requests for assistance must be submitted to the Solzaima, S.A. Customer support service, by means of a proper form present on the Website www.solzaima.co.uk, or, e-mail: support.cliente@solzaima.pt. At the time of the technical assistance to the Product, the Buyer must present, as proof of the Product Warranty, the purchase invoice of the same or another document demonstrating its

acquisition. In any case, the document proving the acquisition of the Product must contain the identification of the Product (as mentioned in point 2 above) and its date of acquisition. Alternatively, and in order to validate the Product Warranty, the PSR - document certifying the commissioning of the machine (when applicable)).

3.9 The Product will have to be installed by a qualified professional for the purpose, in accordance with the regulations in force in each geographical area, for the installation of these Products and complying with all the regulations in force, especially regarding chimneys, as well as other applicable regulations for aspects such as water supply, electricity and / or other related to the equipment or sector and as described in the instruction manual.

A product installation that does not conform to the manufacturer's specifications and / or does not comply with the legal regulations on this subject will not give rise to the application of this Warranty. Whenever a product is installed outdoors, it must be protected against weather effects such as rain and wind. In these cases, it may be necessary to protect the appliance by means of a cabinet, or a properly ventilated protective caseAppliances should not be installed in places that contain chemicals in their atmosphere, in saline or high humidity environments, as mixing them with air may produce rapid corrosion in the combustion chamber. In this type of environment, it is especially recommended that the appliance be protected with anti-corrosion products for this purpose, especially during times of operation. As a suggestion it is indicated the application of graphite greases indicated for high temperatures with function of lubrication and anti-corrosion protection.

3.10 In equipment belonging to the pellet family, in addition to the daily and weekly maintenance contained in the instruction manual, it is also obligatory to carry out the cleaning inside and in the respective chimney for the evacuation of fumes. These tasks should be carried out every 600-800 kg of pellets consumed, in the case of stoves (air and water) and compact boilers, and every 2000-3000 kg of pellets consumed in the case of automatic boilers. In the event that these quantities are not consumed, at least one systematic preventive maintenance must be carried out annually.

3.11 It is the Buyer's responsibility to ensure that periodic maintenance is carried out, as indicated in the instruction and handling manuals accompanying the Product.

Whenever requested, it must be proved by submitting the technical report of the entity responsible for it, or alternatively by registering them in the instruction manual in the dedicated section.

3.12 In order to avoid damage to the equipment caused by overpressure, safety elements such as pressure relief valves and / or thermal discharge valves, if applicable, as well as an expansion vessel fitted to the installation, shall be ensured at the time of installation and its correct functioning must be ensured. It should be noted that: the valves referenced must have a value equal to or less than the pressure supported by the equipment; there shall be no cut-off valve between the equipment and its safety valve; provision should be made for a systematic preventive maintenance plan to attest to the correct functioning of the said safety features; irrespective of the type of appliance, all safety valves shall be channelled to drained sewage to prevent damage to the dwelling by water discharges. Product Warranty does not include damages caused by non-channelling of water discharged by said valve.

3.13 In order to avoid damage to the equipment and attached pipes by galvanic corrosion, it is advisable to use dielectric separators in the connection of the equipment to metal pipes whose characteristics of the materials applied to this type of corrosion. Product Warranty does not include damages caused by non-use of such dielectric separators.

3.14 The water or thermofluid used in the heating system (hydro stoves, boilers, central heating stoves, among others) must comply with the legal requirements in force, as well as guarantee the following physical and chemical characteristics: absence of solid particles in suspension; low level of conductivity; residual hardness of 5 to 7 degrees; neutral pH, close to 7; low concentration of chlorides and iron; and absence of air inlets by depression or others. In case the installation enhances automatic water make-up, it should consider upstream a preventive treatment system composed of filtration, decalcification and preventive dosing of polyphosphates (scale and corrosion), as well as a degassing step, if necessary. If in any circumstance any of these indicators show values that are not recommended, the Warranty will cease to have effect. It is also compulsory to place a non-return valve between the automatic filling valve and the mains water supply, and that said supply always has constant pressure, even with a lack of electricity, not depending on lift pumps, autoclaves, or

others.

3.15 Except as expressly provided by law, a warranty intervention does not renew the warranty period of the Product. The rights arising from the Warranty are not transferable to the purchaser of the Product.

3.16 The equipment must be installed in accessible places and without risk to the technician. The means necessary for access to them shall be made available by the Buyer, and the Buyer shall be responsible for any charges arising therefrom.

3.17 The Warranty is valid for the Products and equipment sold by Solzaima SA solely and exclusively within the geographical and territorial zone of the country where the Product was sold by Solzaima.

4. Circumstances that exclude the application of the Warranty

Excluded from the Warranty, being the total cost of the repair borne by the Buyer, the following cases:

4.1. Products with more than 2000 operating hours;

4.2. Refurbished and resold products.

4.3. Maintenance operations, Product settings, commissioning, cleaning, elimination of errors or anomalies that are not related to deficiencies of equipment components and replacement of the batteries

4.4. Components in direct contact with fire such as: vermiculite supports, deflector or protective plates, vermiculite, sealing lanyards, burners, ash drawers, wood chips, smoke registers, ash grates, whose wear is directly related to the conditions of use. Degradation of the paint, as well as corrosion due to degradation of the paint, due to overloading of fuel, use of an open drawer or excessive drainage of the installation chimney (the chimney must respect the drawing recommended in the Product Technical Data Sheet). Glass breakage due to improper handling or other reason not related to Product deficiency. In the pellet family, the ignitors are aware part, so they are only guaranteed for 6 months, or 1000 ignitions (whichever comes first);

4.5. Wear considered components, such as bearings and bushes;

4.6. Deficiencies of components external to the Product that may affect its correct functioning, as well as material or other damages (e.g. tiles, roofing, waterproofing, pipes, or personal injury) caused by improper use of materials in the installation or by non-execution of the product installation in accordance with the rules for the installation, applicable regulations or rules of good art, in particular when the application of suitable piping to the temperature in use, expansion vessels, non-return valves, safety valves , anti-condensation valves, among others;

4.7. Products whose operation has been affected by failures or deficiencies of external components or by poor sizing;

4.8. Defects caused by the use of accessories or replacement components other than those determined by Solzaima, S.A.;

4.9. Defects arising from non-compliance with the installation, use and operation instructions or applications not conforming to the intended use of the Product, or from abnormal climatic factors, unusual operating conditions, overload or maintenance or cleaning performed improperly;

4.10. The Products that have been modified or manipulated by people outside the Official Technical Services of the brand and consequently without the explicit authorization of Solzaima, SA.;

4.11. Damage caused by external agents (rodents, birds, spiders, etc.), atmospheric and / or geological phenomena (earthquakes, storms, frost, hailstorms, thunderstorms, etc.), humid or saline aggressive environments such as proximity of the sea or river, as well as those derived from excessive water pressure, inadequate power supply (voltage with variations greater than 10%, with a nominal value of 230V, or, neutral voltage greater than 5V, or absence of earth protection); pressure or supply of inadequate circuits, acts of vandalism, urban confrontation and armed conflict of any kind, as well as derivatives;

4.12. Failure to use the fuel recommended by the manufacturer is a condition of exclusion from the Warranty;

Explanatory note: In the case of pellet appliances the used fuel must be certified by EN 14961-2 grade A1. Also, before buying large quantity you should test the fuel to see how it behaves. In wood equipment, this moisture content must be of less than 20%.

4.13. The appearance of condensation, either by poor installation or by the use of non-virgin fuels (such as pallets or wood impregnated with paints or varnishes, salt or other components), which may contribute to the accelerated degradation of equipment and especially to your combustion chamber;

4.14. All Products, Components or damaged components in transportation or installation;

4.15. Cleaning operations carried out on the appliance or its components due to condensation, fuel quality, bad settings or other circumstances of the installation location. Also excluded from the Warranty are interventions for the descalsification of the Product (the removal of limestone or other materials deposited inside the apparatus and produced by the quality of the water supply). Also excluded from this warranty are air bleeding interventions of the circuit or unblocking of circulating pumps.

4.16. The installation of the equipment supplied by Solzaima, S.A. should contemplate the possibility of their easy removal, as well as points of access to the mechanical, hydraulic and electronic components of the equipment and the installation. When the installation does not allow immediate and safe access to the equipment, the additional cost of access and security will always be borne by the Buyer. The cost of disassembling and assembling boxes of plasterboard or masonry walls, insulation or other elements such as chimneys and hydraulic connections that prevent free access to the Product (if the Product is installed inside a carton of plasterboard, masonry or other dedicated space must comply with the dimensions and characteristics indicated in the instruction manual and use accompanying the appliance).

4.17. Interventions of information or clarification at home about the use of its heating system, programming and / or reprogramming of control and regulating elements, such as thermostats, regulators, programmers, etc.;

4.18. Interventions for the adjustment of fuel receipes in pellet devices, cleaning, detection of water leaks in pipes external to the apparatus, damage caused due to the need to clean the gas evacuation machinery or flues;

4.19. Urgency interventions not included in the provision of Warranty i.e., weekend and holiday interventions because they are special interventions not included in the Guarantee coverage and which therefore have an additional cost, will be carried out exclusively on request expressed by the Buyer and upon the availability of the Producer.

5. Warranty Inclusion

Solzaima, S.A. will correct without any charge to the Buyer the defects covered by the Warranty through the repair of the Product. The replaced Products or Components shall become the property of Solzaima, S.A.

6. Responsibility of Solzaima, S.A

Notwithstanding legally established, Solzaima, S.A., liability in respect of warranty is limited to that established in the present warranty conditions.

7. Cost of Services performed outside the scope of the warranty

The interventions carried out outside the scope of the warranty are subject to the application of the current tariff.

8. Warranty Services performed out of scope Warranty

The interventions carried out outside the scope of the Warranty and carried out by the official technical assistance service of Solzaima have a 6-month guarantee.

9. Warranty Spare Parts provided by Solzaima

The parts supplied by Solzaima, as part of the commercial sale of spare parts, i.e., not incorporated in the equipment, have no guarantee.

10. Replaced Parts under the of Scope Technical Service

From the moment they are removed from the equipment, the Parts used are considered as waste. Solzaima as a producer of waste in the scope of its activity is obliged by the legislation in force to deliver them to a licensed entity that performs the proper waste management operations under the law and therefore is prevented

from giving them another destination, whatever. Therefore, the customer will be able to see the used parts resulting from the assistance, but cannot keep them in their possession.

11. Administrative expenses

In the case of invoices for services rendered, they are not processed in any stipulated period with default interest at the maximum legal rate in force.

12. Competent court

For the resolution of any dispute arising from the purchase and sale agreement having as object the products covered by the warranty, the contracting parties attribute exclusive jurisdiction to the courts of the district of Águeda, with express waiver of any other.