SOLZAIMA

SOLUÇÕES DE AQUECIMENTO A BIOMASSA

Instruction Manual

English

Insert Fireplaces

Models

Urano Eco 60 | Urano Eco 70 | Iaco Eco 80 | Iaco Eco 90 | Siena Eco 60 | Hera Eco 60 | Orion Eco 70 | Loki Eco 70 | Rialto Eco 80 | Juno Eco 80 | Rialto Eco 90 | Juno Eco 90 | Star Eco 60 | Vénus Eco 70

Read these instructions carefully before installing, using and servicing the unit. The instruction manual is an integral part of the product.

Mod. 1040-C

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

* All our products fulfil the requirements of the European Regulation (Reg UE 305/2011) and have been certified with the CE conformity trademark;

* SOLZAIMA disclaims responsibility for damages to the unit if it is installed by non-qualified personnel;

* SOLZAIMA disclaims responsibility for damages to the unit if the rules for installation and use described in this manual are not followed;

* All local regulations, including those referring to national and European standards, should be complied with when installing the unit;

* Our Insert Fires have been tested according to standards EN 16510-2-1:2022;

* Technical support is normally provided by SOLZAIMA, except in exceptional cases to be determined by the installer or support technician;

* Whenever you need assistance, you should contact your unit's supplier or installer. You should provide its serial number, which is on the identification plate located on the bottom of the unit, as well as on the label on the back cover of this manual.

Contacts for technical support:
www.solzaima.pt
apoio.cliente@solzaima.pt
Address: Rua da Cova da Areia (E.M. 605), 695;
3750-071 Aguada de Cima
Águeda - Portugal

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1. Solzaima

Solzaima vision has always been clean, renewable and more economical energy. For this reason, we have been manufacturing biomass heating equipment and solutions for more than 45 years.

Fruit of the persistence and the unconditional support of its network of partners, Solzaima is today leader in the production of biomass heating, whose best examples are the central heating inserts and its range of pellet stoves.

We annually equip more than 20.000 homes with biomass heating solutions. It signals that consumer are aware of the most environmentally friendly and economical solutions.

Solzaima has ISO9001: 2015 Quality Certification and ISO14001: 2015 Environmental Certification.

2. Technical specifications

Insert fireplaces are designed to heat their surroundings and are perfect for those who already own a fireplace and intend on refurbishing it or simply making it more efficient and cost-effective - such is the case of wall-mounted fireplaces or, as they are commonly known, "cassettes".

* Technical specifications across the range:
    * CE certified
    * Average reloading time: ≤ 45 minutes
    * Fuel: Dry firewood
    * Voltage: 230 V (except *Urano Eco/Iaco Eco*)
    * Frequency: 50 Hz (except *Urano Eco/Iaco Eco*)
    * Power: 38W (except *Urano Eco/Iaco Eco*)
    * Type of Equipment: intermittent use

Table 1 - Technical specifications

Specifications	Siena/Hera Eco 60	Orion/Loki Eco 70	Rialto/Juno Eco 80	Rialto/Juno Eco 90	Un
Weight	85 / 88	105 / 109	116 / 122	124 / 128	kg
Height	557	557	557	557	mm
Width	594	694	794	894	mm
Depth	473	473	473	473	mm
Diameter of the fume discharge pipe	150	180	200	200	mm
Maximum heated volume	182	214	241	270	m³
Nominal heat output	8	9,4	10,6	11,9	kW
Firewood consumption	2,4	2,8	3,1	3,5	kg / h
Recommended length firewood	400	500	500	500	mm
Maximum length of firewood	440	540	640	740	mm
Efficiency nominal	81,8	81,3	80,9	80,4	%
Gas temperature	267	287	306	326	°C
CO emissions (13% O_2)	0,11	0,11	0,11	0,1	%
CO_2 emissions	9,3	9,5	9,8	10,0	%
Particulate emissions (13% de O_2)	40	40	40	40	mg/Nm³
OGC (13% de O_2)	80	80	80	80	mg/Nm³
NO_X (13% de O_2)	200	200	200	200	mg/Nm³
Wood humidity	20	20	20	20	%
Front safety distance	150	150	150	150	cm

Table 2 - Technical specifications

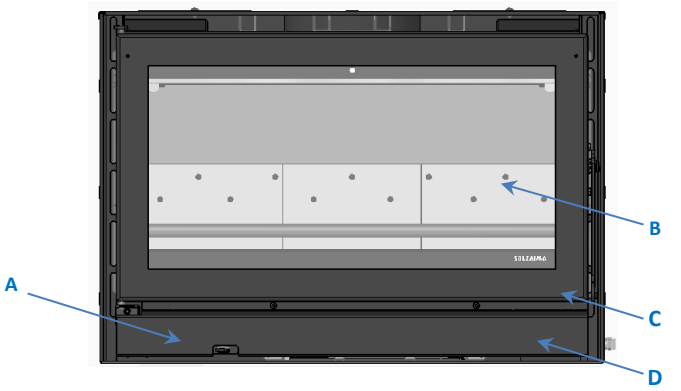
Specifications	Urano / Urano Vitro Eco 60	Urano / Urano Vitro Eco 70	Iaco / Iaco Vitro Eco 80	Iaco / Iaco Vitro Eco 90	Un
Weight	84 / 86	105 / 104	120 / 122	137 / 136	kg
Height	511	577	643	717	mm
Width	592	694	791	894	mm
Depth	475	473	473	473	mm
Diameter of the fume discharge pipe	150	180	200	200	mm
Maximum heated volume	168	195	223	250	m³
Nominal heat output	7,4	8,6	9,8	11,0	kW
Firewood consumption	2,5	2,9	3,3	3,7	kg / h
Recommended length firewood	300	400	500	500	mm
Maximum length of firewood	440	540	640	740	mm
Efficiency nominal	80,9	80,8	80,6	80,4	%
Gas temperature	300	316	331	346	°C
CO emissions (13% O_2)	0,100	0,100	0,100	0,100	%
CO_2 emissions	9,98	10,5	10,9	11,4	%
Particulate emissions (13% de O_2)	40	40	40	40	mg/Nm³
OGC (13% de O_2)	80	80	80	80	mg/Nm³
NO_X (13% de O_2)	200	200	200	200	mg/Nm³
Wood humidity	20	20	20	20	%
Front safety distance	150	150	150	150	cm

Table 3 - Technical specifications

Specifications	Star Eco 60	Vénus Eco 70	Un
Weight	107	119	kg
Height	572	574	mm
Width	598	698	mm
Depth	489	487	mm
Diameter of the fume discharge pipe	150	180	mm
Maximum heated volume	182	214	m³
Nominal heat output	8	9,4	kW
Firewood consumption	2,4	2,8	kg / h
Recommended length firewood	400	500	mm
Maximum length of firewood	440	540	mm
Efficiency nominal	81,8	81,3	%
Gas temperature	267	287	°C
CO emissions (13% O_2)	0,11	0,11	%
CO_2 emissions	9,3	9,5	%
Particulate emissions (13% de O_2)	40	40	mg/Nm³
OGC (13% de O_2)	80	80	mg/Nm³
NO_X (13% de O_2)	200	200	mg/Nm³
Wood humidity	20	20	%
Front safety distance	150	150	cm

3. Your unit

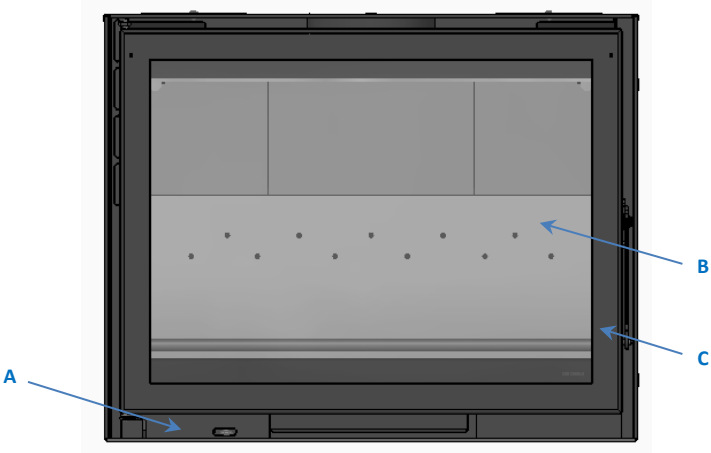
3.1. Range with ventilation



Legend:

A – Combustion air intake damper
B – Vermiculite panels
C – Door handle
D – Forced ventilation

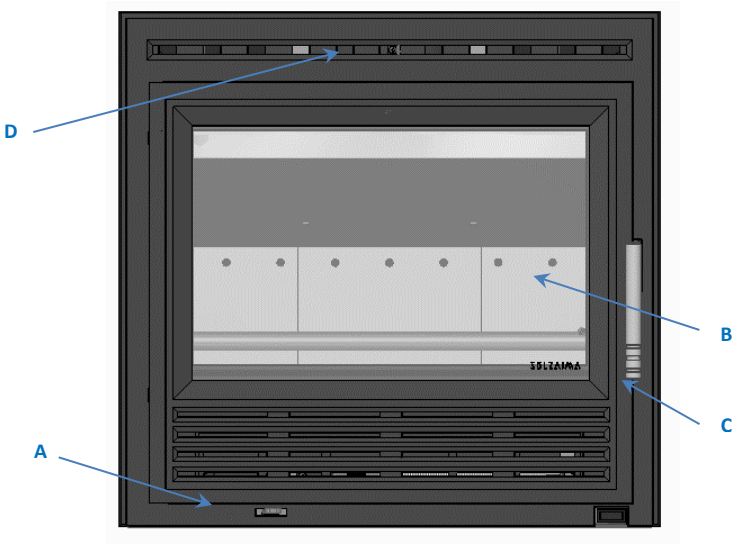
3.2. Range without ventilation



Legend:

A – Combustion air intake damper
B – Vermiculite panels
C – Door handle

3.3. Range with die-cast front with ventilation



Legend:

A – Combustion air intake damper
B – Vermiculite panels
C – Door handle
D – Hot air outlet register

4. Components

* Our insert fireplaces are built entirely of top-quality carbon steel plate, with a thickness of 3 mm (0,118 inches) in the combustion chamber and 1,5mm (0,019 inches) in the casing. Other parts, such as the door and ash drawer, use 1,5 mm (0,019 inches) and 2 mm (0,078 inches) plates.

* Heat-resistant ceramic glass. Can handle temperatures of up 750°C (1382°F) in continuous use.

* The combustion chamber is coated with a heat-resistant material known as vermiculite, a hydro silicate that can withstand temperatures in the order of 1100°C (2012°F). Its insulating properties allow the unit to take better advantage of the heat, improve efficiency and provide greater protection for the steel plate forming the combustion chamber walls, thus prolonging the life of the equipment.

* Heat-resistant paint for temperature peaks up to 900°C (1652°F) and operating temperatures in the order of 600°C (1112°F);

* The ash grate is made from a 5mm (0,19 inches) thick steel plate.

5. Installation

*Attention: **all** regulations and standards must be complied with when installing this equipment.*

5.1. Combustion air and gas circulation

* This type of fireplace should be installed in a well-ventilated area. Any air intake grilles should be placed in locations that are not liable to become blocked.

* Additional air inlets may be needed if the fireplace is used in simultaneous with other devises that require an air supply. The installer should evaluate the situation according to the overall air flow requirements.

* Use of this unit at the same time as other heating devices that require an air supply may necessitate additional air inlets. The installer should assess the situation in light of total air flow requirements.

* Under normal operating conditions, the combustion gas flow should create a draught of -12 Pa one metre above the throat of the flue. For proper installation, at least 2 metres (78,7 inches) of metal flue tube with the same diameter as the unit's smoke outlet should be fitted vertically above the unit. After this section, sections of tubing with a maximum angle of 45° may be used. Figure 1 and Figure 2 illustrate correct and incorrect angles for installing a bend.

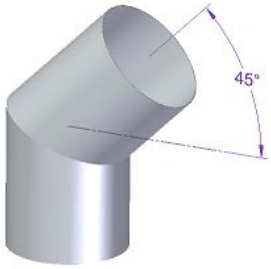


Figure 1 - Correct angle for bends

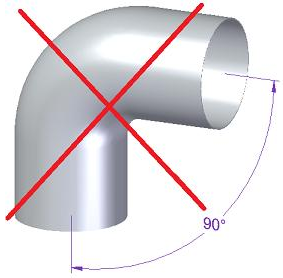


Figure 2 - Incorrect angle for bends

* A single-walled tube installed on the outside of a building results in the condensation of water vapour in the combustion gases. We therefore recommend the use of a double – walked insulated pipe.

* The pipe joints must be tightly sealed so that possible cracks do not allow air to enter.

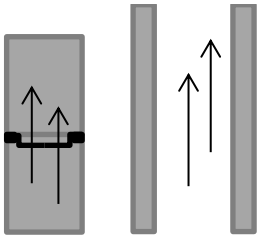


Figure 3 - Correct sealing

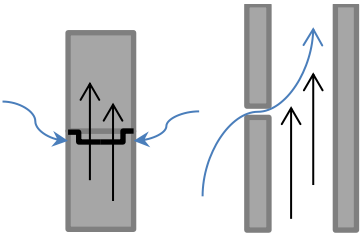


Figure 4 - Incorrect sealing

* The pipe connections must not allow bottlenecks (reductions) and the internal walls must be perfectly smooth and free of obstacles; the hats must be placed in such a way that they do not hinder the draught.

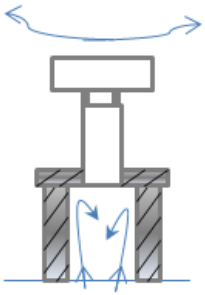


Figure 5 - Incorrect

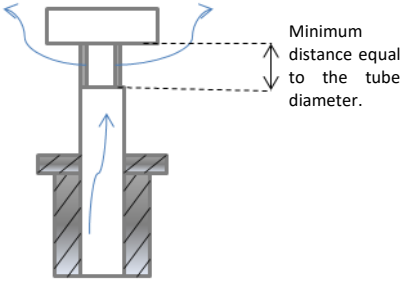


Figure 6 - Correct

* The flue outlet should allow for good air circulation and be placed at least 1 m (39,37 inches) above the top of any obstacle located within a distance of 3 m (9,8 feet).

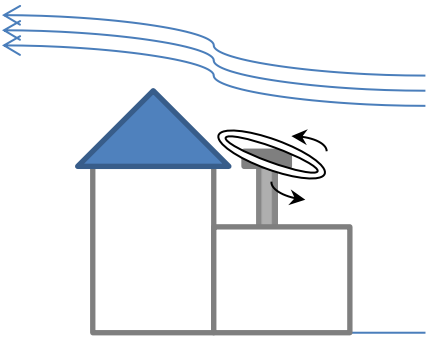


Figure 7 - Incorrect

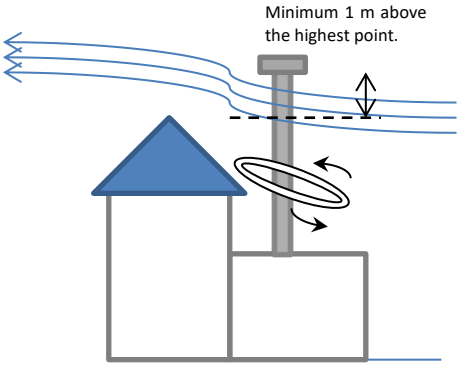


Figure 8 - Correct

* The same flue should not be used for more than one unit or open fireplace. With shared chimneys, each flue should reach its outlet independently and these should be at the same level to ensure that the air circulation expels the gases;

* Brick chimneys should not be too wide, as the smoke will cool as it disperses, reducing the draft. In case of draft problems, a revolving chimney cowl can be installed.

5.2. Installation Location Requirements

* The unit should stand on a masonry hearth made of refractory bricks or another type of non-combustible material;

* It is recommended for insert fires to be insulated with insulating material with a thickness of 40 mm (1,57 inches) and a density of 70 kg/m^3 (4,37 lb/ft^3). All units should be installed at least 400 mm (15,7 inches) from combustible materials.

* Combustible materials should not be installed close to the walls of the unit.

* The floor on which the unit will stand must be able to support a permanent load of 1kg/cm² (14,22 psi). If the load capacity of the floor is insufficient, a solid plate can be used to distribute the load over an area larger than the unit's base.

* The building's air intake grilles should not be obstructed.

* It must be ensured that the structure in the building has the appropriate dimensions for the installation of the intended equipment;

* There should be a gap of around 5 mm (0,19 inches) between the unit and ornamental stones, to allow room for the metal to expand. These should also be installed so as to allow the unit to be removed without causing damage, if the need arises;

* If the chimney is made of brick, it should not be too wide as the smoke spreads and cools it, thus affecting the extraction. If it is difficult to draw a smoke, the chimney can be fitted with a turntable or a metal tube inside the chimney to improve the draught;

* Ensure that the opening in the wall is of an appropriate size to house the unit.

* Materials/objects placed next to the unit should be able to withstand the heat radiated from the glass of the door(s), so should not be combustible.

* Refractory cement or other refractory material should be applied on the chimney walls.

* The use of wood finishings may increase the risk of fire. Therefore, we recommend the use of adequate insulation or that would not be used at all.

5.3. Forced ventilation

* The devices that are equipped with forced ventilation incorporate one tangential fan with power of 38 W and a min and max air flow of about 60 m^3/h and 165 m^3/h respectively, connected in parallel with a thermostat, according to the following diagram:

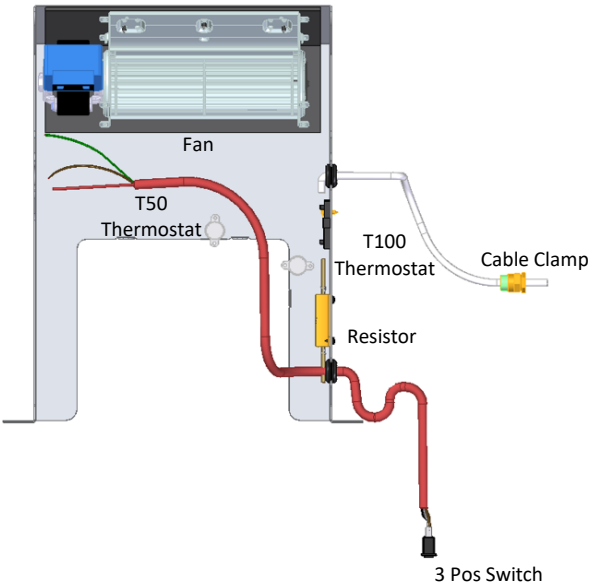


Figure 9 - Ventilation Kit

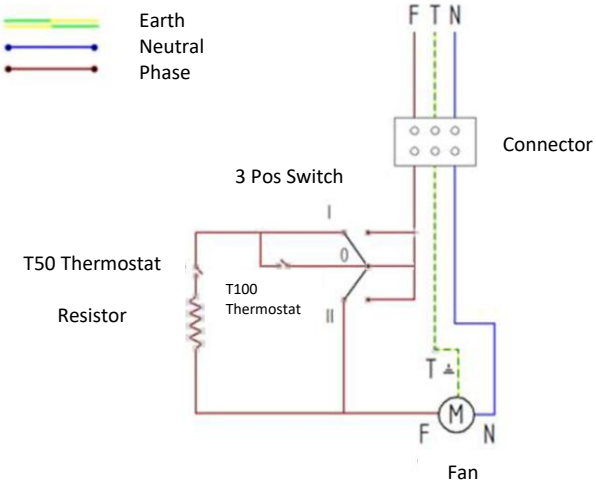


Figure 10 - Electrical diagram

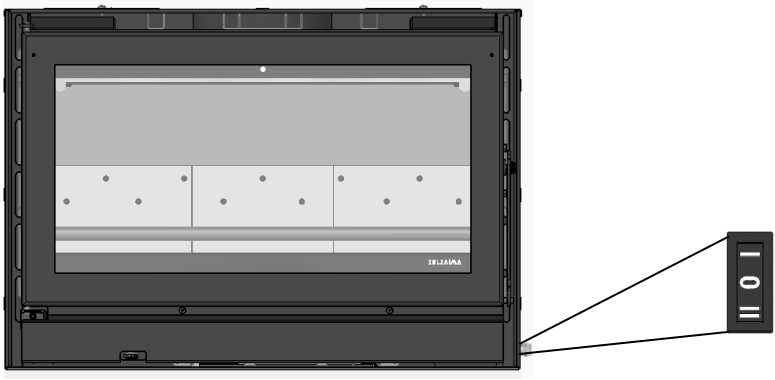


Figure **11 - 3**

Position I Tangential fan automatically turns on with air flow of 60 m^3/h when the T50 thermostat reaches 50 °C.

Position 0 Tangential fan automatically turns on with air flow of 60 m^3/h when the T100 thermostat reaches 100 °C.

Position II Tangential fan is activated manually with air flow of 165 m^3/h.

Position Switch

Attention: all three wires in the power feed cable – ground, neutral and phase – should be connected. We take no responsibility for any damage resulting from non-compliance with this warning.

* The electrical components should always be connected to the power supply.

* The cable used for the electrical connection should be silicon-coated and heat-resistant to 180°C (356°F). If the power feed cable is damaged, it should only be replaced by a qualified technician.

*** You should take care to not lay the cable where it may be crushed.**

* The electrical installation should incorporate means to switch the unit off, with a minimum separation of 3 mm (0,118 inches) between the contacts, pursuant to the applicable legislation in force[1].

6. Instructions for use

*Attention: **all** regulations and standards must be complied with when installing this unit.*

6.1. Fuel

* Only firewood should be used in this type of unit. It may not be used as an incinerator, nor should other materials such as coal, painted wood, varnishes, thinners, liquid fuels, glues or plastics be used. Also avoid burning common combustible materials such as cardboard and straw.

* The firewood should have a low water content (less than 20%) in order to ensure efficient combustion and avoid creosote build-up in the smoke duct and on the glass. See Table 4, which lists some of the types of wood that can be used in these units.

6.2. Power

* The power of your unit indicates its heating capacity, the energy your unit transfers from the firewood to your home (usually measured in kW) and is directly related to the amount of firewood that you place in it.

* The rated output is the measure of a standard load of firewood when tested in laboratories during a certain amount of time.

* The power output is a manufacturer's recommendation from tests to the equipment with firewood loads within a reasonable operation range. This power output range will present different firewood consumptions per hour.

[1] We recommend the use of a 30 mA differential switch and a 0.5 A circuit breaker for the unit's electrical installation.

Table 4 - List of types of firewood that may be used in SOLZAIMA fires, their geographical distribution and calorific value/reactions

Common Name	Scientific Name	Distribution	Characteristics				
			Smoke	Heat	Lighting	Combustion Speed	Hardness
Pine	Pinus	Europe, except Finland; Northern Sweden and Norway.	Little	High	Easy	Fast	Soft
Cork Oak (+)	Quercus suber	Southern Europe	Little	Very High	Easy	Regular	Hard
Eucalyptus	Eucalyptus	Mediterranean Region	Lot	Regular	Difficult	Slow	Hard
Holm Oak (+)	Quercus ilex	Southern Europe	Little	Very High	Difficult	Slow	Hard
Olive tree	Olea	Mediterranean Region	Little	Very High	Difficult	Slow	Hard
Oak	Quercus	*Across Europe*	Little	High	Difficult	Slow	Hard
Ash	Fraxinus	*Across Europe*	Regular	High	Difficult	Slow	Hard
Birch	Bétula	*Across Europe*	Little	Very High	Easy	Fast	Soft
Beech	Fagus	*Europe, except Iberian Peninsula and Northern Europe, including United Kingdom.*	Little	High	Difficult	Slow	Hard
Elm	Ulmos	*Across Europe*	Regular	High	Difficult	Slow	Hard
Maple	Acer	*Across Europe*	Little	Regular	Regular	Slow	Soft
Poplar	Populus	*Across Europe*	Little	High	Easy	Fast	Soft
Chestnut	Castanea	*Across Europe*	Regular	High	Difficult	Slow	Hard

6.3. Energy efficiency and performance ratings

* Implementing solutions that seek to achieve greater energy efficiency allows for substantial reductions in energy needs, and thus reduces our current dependence on fossil fuels and other non-renewable sources of energy. Energy efficiency enables you to make large savings from both an economic and an environmental point of view.

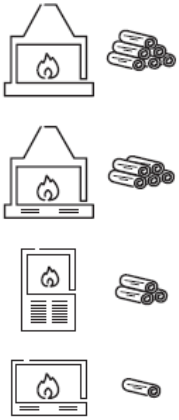
* Solzaima's commitment to equipment efficiency means that most of our products have an efficiency equal to or greater than 70%.

* A 70% efficiency rate means that 70% of the energy contained in the firewood is used to warm your home or, in other words, you are able to produce the same amount of energy with much less firewood.

* A Solzaima 5kW insert with an efficiency rate of 75%, will consume approximately 1,6 kg (3,5 pounds) of firewood per hour to warm a 35 m^2 (389 sq. ft) room.

* Typically, a traditional fireplace has an efficiency rate of approximately 10%, which means it will consume about 12 kg (26,5 pounds) of firewood to produce the same 5kw necessary to warm the same 35 m^2 (389 sq. ft) room.

FIREWOOD CONSUMED IN 1 HOUR TO WARM APPROXIMATELY 35 m2 (389 SQ FT) WITH A 5kW UNIT	
	A traditional fireplace with an efficiency rate of 10% consumes 12 kg (26,5 pounds) of firewood
	A fireplace equipped with a simple insert and providing an efficiency rate of 30% consumes 4 kg (8,8 pounds) of firewood

	An insert with an efficiency rate of 50% consumes 2,4 kg (5,3 pounds) of firewood
	A Solzaima insert with an efficiency rate of 75% consumes only 1,6 kg (3,5 pounds) of firewood

6.4. Additional combustion air intakes and outtakes

6.4.1. Air intake for combustion

* The cold air intake can be carried out from below the unit, so the unit will draw cold air from the room where it is installed, see Figure 12.

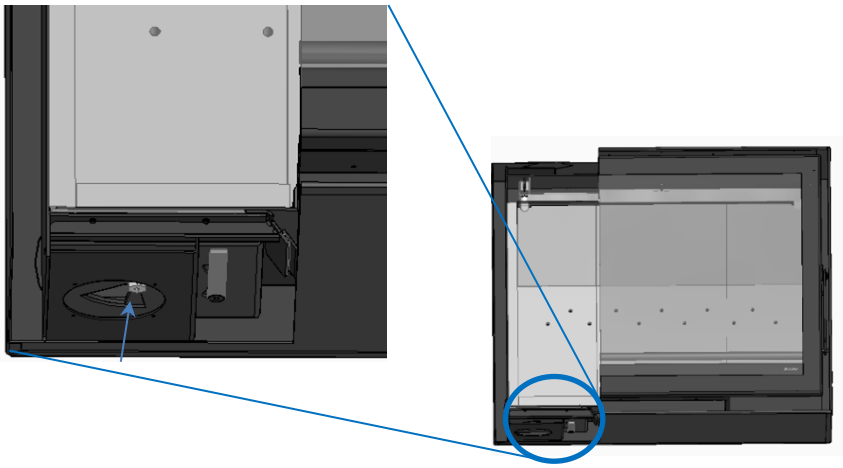
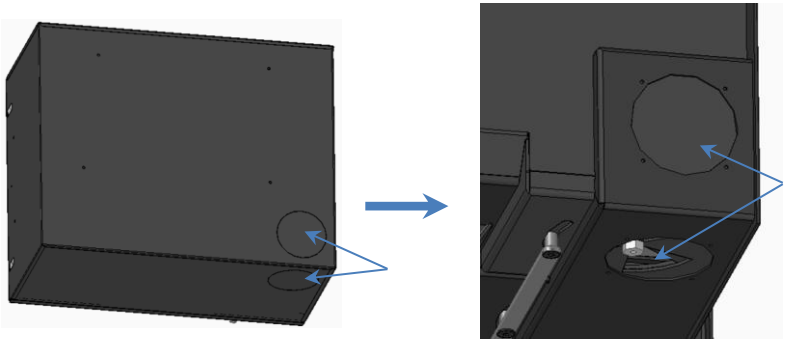


Figure 12 - 3 Air intake for combustion

* The unit also comes with a covered combustion air intake on the back. If you want to make the installation to the outside air, you will have to break the micro-junctions of the covers and make the connection to one of the air inlets options, from the back or the bottom, if you choose the back, you will have to change the cover, passing it downwards, see Figure 13.

* Note: If installing in external air, you must purchase an adaptor according to the air inlet diameter of the equipment.



Breaking the micro-junctions

Outside air connection

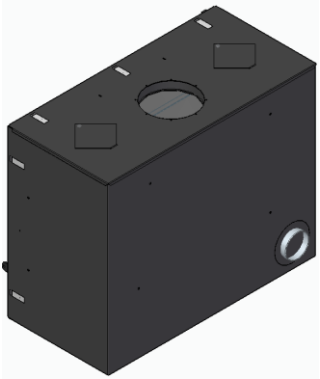


Figure 13 - Outside air connection

* If you want to install it outside the house, you must purchase the outside air intake kit.

* For Ø80mm air inlet kit - PA1090G035 (only for Urano Eco 60, Siena Eco 60, Hera Eco 60 and Star Eco 60 models). For Ø100mm air inlet kit - PA1090G057.

* To make this connection, you must use the flexible hose from the air intake of the unit to the outside of the house.

6.4.2. Additional outlets

* In the upper part of these equipment's there are 2 exits (corresponding to a diameter of 100 mm each), Figure 14, which can be used by removing the covers and adapting ducts for conducting the hot air to other rooms.

* If the warm air duct always runs upwards, there is no need for a forced system. If it is for distributing the heat, you should install an aspirator to force the air to circulate. In this case, it should be installed as plumb over the unit as possible, so the thermostat can detect the rising heat immediately.

* An air outlet grille should be placed in each room and all the ducts should be well insulated.

* If you are interested in this form of heating, we recommend you contact a specialised installer.

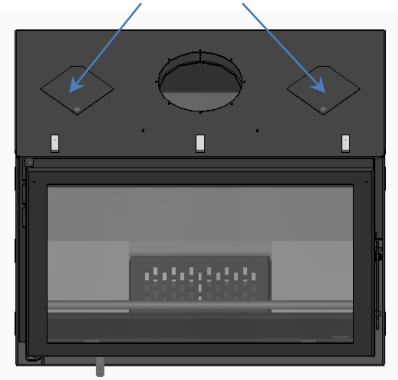


Figure 14 - Outside air connection

6.5. Controls

6.5.1. Combustion air control

* This controls the amount of combustion air "primary air" and "secondary air" entering the insert, thus controlling combustion. It is located in the lower left corner of the door.

* To open - Pull the regulator with the key that comes in the equipment, during the lighting phase and greater wood consumption, see Figure 15.

* To close - Push the regulator to close the primary air, thus increasing efficiency and reducing wood consumption.

* This also creates a cleaning effect on the glass, helping to keep the glass cleaner for longer, see Figure 15.

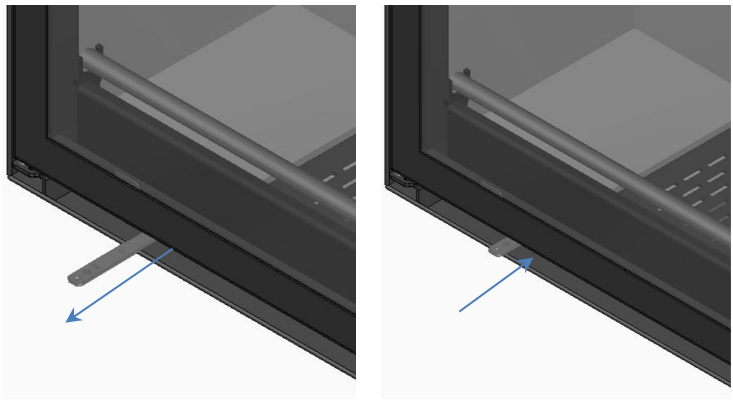
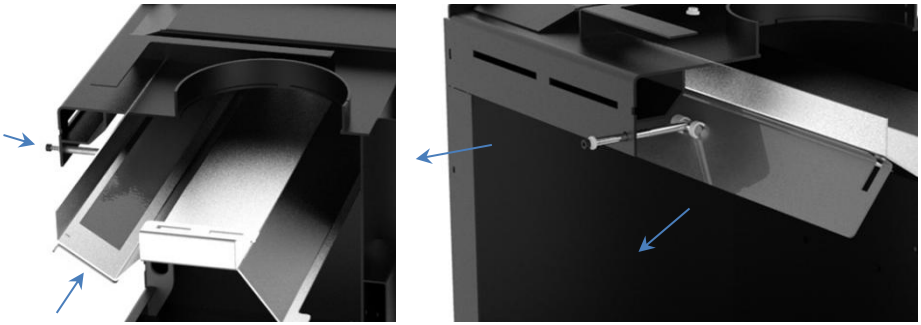


Figure 15 - Combustion air controller

6.5.2. Smoke flap regulation control

* It controls the passage/exit of smoke when the door is opened, that is, when the equipment is in operation and you want to refill the equipment with more firewood, when you open the door the flap will open automatically, Figure 16. This will allow a greater and easier passage of smoke through the chimney, avoiding the return of smoke from the equipment into the room.



Closed door Open door

Figure 16 – Automatic Smoke flap

* Note: if the installation has a poor draft, it is possible to adjust the flap stop in order to facilitate the passage of smoke through the chimney, Figure 17. This operation must be carried out by a specialised technician.

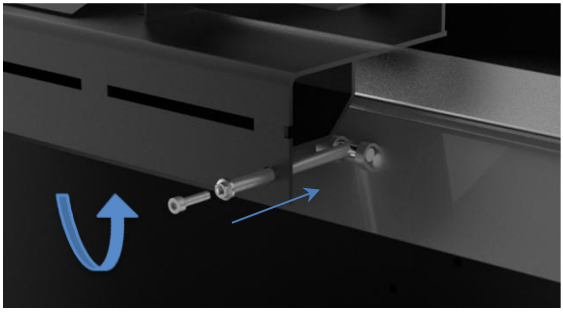


Figure 17 – Smoke flap regulation

7. The first use

* Ask the installer to light the unit to ensure that all is functioning correctly.

* The insert's paint is cured by the heat when it is first used, which may give rise to additional smoke. If this happens, you should ventilate the room by opening external windows and doors.

8. Normal use

Ignition period

a) Open the combustion air regulator;

(b) Place pine cones (preferably) or firelighters on the ash grid at the base of the combustion chamber;

c) Place firewood of small size, stacked horizontally;

d) The ignition period ends when the fireplace structure has reached a stationary temperature. You must then regulate the combustion air intake.

Refuelling period

a) Fully open the combustion air control;

b) Open the door slowly;

c) Use the poker to place the coals evenly on the bottom of the ash grid and the vermiculite plates;

d) Put new wood on the coals;

e) Close the door and leave it to burn until the insert is very hot and the embers are glowing;

f) Adjust the combustion air control so as to close off the primary air;

* You should check that there is sufficient ventilation in the room where the fireplace is installed, otherwise it will not work properly. For this reason, you should check if there are any other heating devices which consume air during operation (e.g., gas-fired equipment, braziers, etc). We recommend against using these devices all at once.

* The air for combustion is drawn from the surrounding room, consuming oxygen. You should check that ventilation grilles and other devices for allowing air to enter from outside remain unobstructed.

* You should only open the door during reloading. Normal conditions of use require the door to remain closed.

* Reload before the previous load has burnt completely, in order to make it easier for the combustion to continue.

* When reloading with firewood, open the door slightly and wait a little while to allow a good draft, and only then open the door completely.

* Using the fireplace is not recommended when weather conditions are so bad that the draught is seriously affected (particularly when there are very strong winds).

9. Optional accessories

* The wood inserts allow a selection of the frame with the design that best suits the space where the equipment will be installed.

* The following frames are available:

a) in the colour of the equipment with 3 or 4 sides (width 4.4 cm (0,4 inch) or 7.4 cm (2,9 inch)).

b) in the colour of the equipment with 4 sides - quadripartite (width 4.4 cm (0,4 inch)).

Figure 18 – 3-sided frames

Figure 19 – 4-sided frames

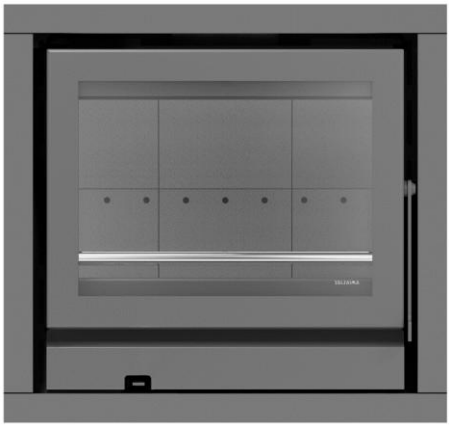


Figure 20 – 4-sided frame - quadripartite

10. Safety

* The ventilators should always be connected to the power supply. You should take care to not lay the cable where it may be crushed.

* The exposed metal parts reach high temperatures: 100°C (212°F) on the door and 60°C (140°F) on the frame. The door handle does **not** reach temperatures above 45°C (113°F). Do not touch the hotter areas.

* You should use a glove or other protection if you have to touch the unit when it is in operation.

*** In case of fire in the flue, immediately close the door of the unit and the combustion air intake damper;**

* If there is a power cut, resulting in the ventilators cutting out when the unit is in operation, close the combustion air intake and do not load the unit with any more firewood. Keep the door closed.

11. Cleaning and maintenance

* You should remove ash from the drawer on a regular basis (after the unit is switched off), so that the combustion air can enter through the ash grate unobstructed;

Figure 21 – Cleaning the ash drawer

* The door glass should be cleaned with a suitable product, by following the instructions for use and not allowing the product to come into contact with the sealing ring and painted metal parts, which could trigger oxidation. The sealing ring is glued, so should not be moistened with water or cleaning products. If it becomes detached, it can be reattached with contact glue after cleaning the groove with fine sandpaper;

* We advise you to clean the flue and flue throat (at the exit of the unit) at least once a year, removing the baffle plate to do so, Figure 22 and Figure 23.

Figure 22 – First baffle plate

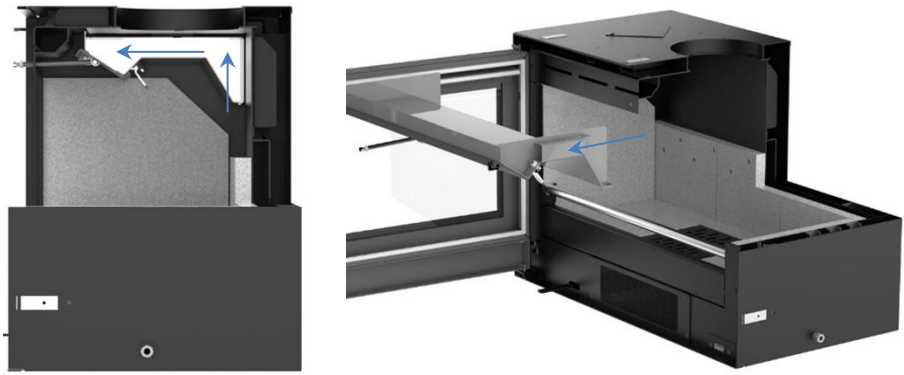


Figure 23 – Second baffle plate

* If you do not use the unit for a prolonged period, check to make sure that the flue pipes are clear before lighting it.

* The fireplace should be cleaned using a dry cloth.

12. Troubleshooting

Table 5 - Identification of possible problems and their solutions

Problem	Solution
Glass gets dirty quickly	. Check moisture of firewood . Check smoke outlet obstructions/Installation (insufficient draft)
	. Increase burn intensity by opening the combustion air inlet regulator slightly
Excessive draft	. Check whether the combustion air inlets are at maximum. If so, readjust in order to obtain a lower firing intensity. . If necessary, fit a draft stabiliser . Contact the installer
Weak draft, causing smoke to be expelled into the room	. Check for possible obstruction of the flue . Clean the flue . Check that the smoke outlet pipe is up to the top of the chimney . Check that the pipe is correctly sealed in relation to the chimney . Check that the cap is the right one and that it has sufficient opening . There may be exceptional weather conditions
Weak fire	. Check moisture of firewood . Adjust the air controls for greater firing intensity . Check the air intake in the room
Problems associated with the weather	. Contact the installer
Ventilation working but flow is weak	. Clean all dust, ash or other residue that may have accumulated in the ventilator grilles

13. Insert’s end of life

* Around 90% of the materials used in the manufacture of these units is recyclable, thus helping to reduce environmental impact and contributing to the sustainable development of the planet.

* End-of-life units should be taken to licensed waste operators. We advise you to contact your local council for collection.

14. Sustainability

* Solzaima designs solutions and equipment "moved" by biomass as their 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 cares about being up to date with and assessing the existing forest area while efficiently responding to energetic demands, with a constant watch on biodiversity and natural wealth, critical aspects to the quality of life in our planet.

* The management of packaging waste and end-of-life equipment must be carried out in accordance with the local regulations and legislation of the country in which the equipment was purchased.

15. Glossary

* **cal (calorie):** equal to the amount of heat required to increase the temperature of one gram of water by one degree centigrade.
* **Groove:** housing for the sealing ring.
* **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 on the one hand for photosynthesis, and emitted into the atmosphere on the other, contributing to the greenhouse effect.
* **Combustion:** a process that releases energy. Combustion is basically a chemical reaction that requires three things in order to take place: fuel, oxidant and ignition temperature.
* **Oxidant:** chemical substance that feeds combustion (essentially oxygen) and is essential for it to take place.
* **Fuel:** anything that can undergo combustion, in this case wood.
* **Creosote:** chemical compound created by combustion. This compound is sometimes deposited on the glass and flue of an insert fire.
* **Circuit breaker:** Electromechanical device that protects a given electrical appliance.
* **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.
* **CO Emissions:** emission of carbon monoxide gas into the atmosphere.
* **CO Emissions (13% O_2):** carbon monoxide content corrected for 13% of O_2.
* **Differential Switch:** protects people and property against earthing failures, preventing electric shocks and fires.
* **kcal (Kilocalorie):** multiple unit of measurement of calories. Equivalent to 1000 calories.
* **kW (Kilowatt):** Unit of measurement equal to 1000 watts.
* **mm (millimetres):** unit of measurement.
* **mA (milliampere):** unit of measurement of electric current.
* **Pa (Pascal):** standard SI unit of pressure and tension. This unit is named after Blaise Pascal, eminent French mathematician, physicist and philosopher.
* **Calorific Value:** also known as specific combustion heat. Represents the quantity of heat released when a certain quantity of fuel is completely burned. Calorific value is expressed in calories (or kilocalories) per unit of weight of fuel.
* **Rated output:** Electric power consumed by an energy source. Measured in watts.

* **Nominal heat output:** heating capacity, e.g., 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.
* **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.
* **Plumb:** vertically above the installation.
* **Efficiency:** 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.
* **Heat-resistant:** resistant to high temperatures and thermal shock.
* **Ceramic glass:** Highly resistant ceramic material produced through controlled crystallisation of vitreous materials. Used widely in industrial applications.
* **W (Watt):** SI unit of power.

16. Warranty

16.1. 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.

To activate the warranty, it is necessary to send the completed start-up form to the following email: apoio.cliente@solzaima.pt.

16.2. Warranty general conditions

1. Social name and address of the producer and Object

Solzaima, S.A.
Rua da Cova da Areia (E.M. 605), 695
3750-071 Aguada de Cima

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 36 months from the date of delivery of the goods, in the case of domestic use of the product;

3.1.2 A period 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 understands by professional, or industrial, or intensive use, all products installed in industrial or commercial spaces, 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 To exercise your rights, and provided that the period indicated in 3.1 has not passed, the Buyer must report in writing to Solzaima, S.A. the lack of conformity of the Product within a maximum period of 30 (thirty) days from the date on which it has been detected;

3.6 In the range of pellets equipment, a start-up service is required to activate the warranty. This must be registered within 3 months of the invoice date, or 100 hours of product work (whichever comes 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: apoio.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 case Appliances 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 channeled to drained sewage to prevent damage to the dwelling by water discharges. Product Warranty does not include damages caused by non-channeling 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 inserts, 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 e.g., 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.

17. Parameters listed on the specification plate and in the technical data sheet.

P_{part} - P_{nom}	**Potência Parcial-Nominal /** Potencia Partial-Nominal / Parcial-Nominal output power / Puissance Partielle-Nominale / Potenza Parziale-Nominale
P_{Wpart} - P_{wnom}	**Potência água Parcial-Nominal /** Potencia agua Partial-Nominal / Water Parcial-Nominal output power / Puissance eau Partiellle-Nominale / Potenza acqua Parziale-Nominale
P_{SHpart} - P_{SHnom}	Potência aquecimento espaço Parcial-Nominal / Potencia calefacción del espacio Partial-Nominal / Space heat output power Parcial-Nominal / Puissance de chauffage de l'espace Partielle-Nominale / Potenza di riscaldamento dello spazio Parziale-Nominale
η_{part} - η_{nom}	**Eficiência Parcial-Nominal /** Eficiencia Parcial-Nominal / Partial-Nominal efficiency / Efficacité Partiel-Nominal / Efficienza Parziale-Nominale
η_s	**Eficiência Sazonal /** Eficiencia Estacional / Seasonal Efficiency / Rendement Saisonnière / Efficienza Stagionale
CO_{part} - CO_{nom} **(13%O_2)**	**Emissões CO(13%O2) Parcial-Nominal /** Emisiones CO(13%O2) Parcial-Nominal / Emissions CO(13%O2) Partial-Nominal / Émissions CO(13%O2) Partiel-Nominal / Emissioni CO(13%O2) Parziale-Nominale
NO_{xpart} - NO_{xnom} **(13%O_2)**	**Emissões NOx(13%O2) Parcial-Nominal /** Emisiones NOx(13%O2) Parcial-Nominal / Emissions NOx(13%O2) Partial-Nominal / Émissions NOx(13%O2) Partiel-Nominal / Emissioni NOx(13%O2) Parziale-Nominale
OGC_{part} - OGC_{nom} **(13%O_2)**	**Emissões OGC(13%O2) Parcial-Nominal /** Emisiones OGC(13%O2) Parcial-Nominal / Emissions OGC(13%O2) Partial-Nominal / Émissions OGC(13%O2) Partiel-Nominal / Emissioni OGC(13%O2) Parziale-Nominale
PM_{part} - PM_{nom} **(13%O_2)**	**Emissões PM(13%O2) Parcial-Nominal /** Emisiones PM(13%O2) Parcial-Nominal / Emissions PM(13%O2) Partial-Nominal / Émissions PM(13%O2) Partiel-Nominal / Emissioni PM(13%O2) Parziale-Nominale
T_{spart} - T_{snom}	**Temp. Fumos Parcial-Nominal** / Temp. Humos Partial-Nominal / Smoke temp. Parcial-Nominal / Temp. Fumées Partiel-Nominal / Temp. Fumi Parziale-Nominale
T_{class}	**Designação Chaminé segundo norma chaminés /** Designación de chimeneas según normas de chimeneas / Chimney designation according to chimney standards / Désignation des cheminées selon les normes de cheminée / Designazione del camino secondo le norme sui camini
d_{out}	**Diâmetro da chaminé /** Diámetro de chimenea / Flue pipe / Diamètre de cheminée / Diametro del camino
p_{part} - p_{nom}	**Tiragem recomendada Parcial-Nominal /** Tiro recomendado Parcial-Nominal / Recommended draught Partial-Nominal. / Tirage conseillé Partiel-Nominal / Tiraggio consigliato Parziale-Nominale
$\phi_{f,g\ part}$ - $\phi_{f,g\ nom}$	**Caudal mássico Parcial-Nominal /** Masa de humos Parcial-Nominal / Mass flow Partial-Nominal / Débit massique Partiel-Nominal / Flusso di massa Parziale-Nominale
E	**Tensão /** Tensión / Voltage / Tension / Tensione
f	**Frequência /** Frecuencia / Frequency / Fréquence / Frequenza

el_{SB}	**Potência elétrica Standby /** Energía eléctrica Standby / Standby electric power / Puissance électrique Standby / Energia elettrica Standby
el_{max}	**Potência elétrica nominal /** Energía eléctrica nominal / Nominal electric power / Puissance électrique nominal / Energia elettrica nominal
el_{min}	**Potência elétrica Pparcial /** Energía eléctrica parcial / Parcial electric power / Puissance électrique partiel / Energia elettrica parziale
W_{max}	**Energia elétrica máxima /** Energía eléctrica máxima / Nominal electric power / Puissance électrique nominal / Energia elettrica máximo
p_W	**Pressão máx. /** Pressione máx. / Pressure máx. / Pression máx. / Pressione máx.
d_R d_S d_P d_C d_F d_L d_B	**Distância mínima a materiais combustíveis (trás - d_R/laterais-d_S/frente-d_P/topo-d_C/Frontal ao Pavimento-d_F/lateral frontal-d_L/pavimento-d_B)** Distancia mínima a materiales combustibles (detrás/laterales/frente/topo/frente piso/lado fronta/pisol) Minimum distance to combustible materials (rear/side/front/top/front to floor/front side/bottom) Distance minimale aux matériaux combustibles (derrière/côté/avanta/haut/sol/face avant) Distanza minima da materiali combustibili (dietro/lato/anteriore/sotto/pavimento/lato anteriore)
s	**Isolamento requerido /** Aislamiento requerido / Isolation Required / Isolation requise / Isolamento Richiesto
V_h	**A perda de ar em repouso, se especificada /** Pérdida de aliento en reposo, si se especifica / Shortness of breath at rest, if specified / Essoufflement au repos, si spécifié / Mancanza di respiro a riposo, se specificato
L, H, W	**Dimensões do equipamento /** Dimensiones del equipo / Dimensions from the appliance / Dimensions de l'équipement / Dimensioni dell'attrezzatura
Le, He, We	**Dimensões com embalagem /** Dimensiones con embalaje / Dimensions with packing / Dimensions avec l'emballage / Dimensioni con imballaggio
m	**Peso líquido /** Peso neto / Net weight / Poids net / Peso netto

Always read the instruction manual and keep it for future reference.

SOLZAIMA

SOLUÇÕES DE AQUECIMENTO A BIOMASSA

APPROVED PRODUCT