SOLUÇÕES DE AQUECIMENTO A BIOMASSA

Pellet Storage Unit

for

Automatic Wood Pellet Boilers

(18kW, 24 kW and 30 kW models)

Instruction Manual

English

Read these instructions carefully before installing, using and servicing the unit.

This instruction manual is an integral part of the product.

Mod. 455-E

Contents

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1. Introduction

Solzaima's automatic wood pellet boiler has an internal tank with a capacity of 45kg of wood pellets. Solzaima's optional storage unit allows you to increase by about 200kg the amount of wood pellets available, significantly increasing the autonomy of the boiler.

The optional storage unit set includes:

- Storage unit;
- Casters for moving the storage unit;
- Worm drive channel to transport the pellets into the boiler's internal tank;
- Electric power enginer to rotate the worm drive screw;
- Circuit board with wiring included;
- pellet level sensor of the storage unit

Together with the storage unit a connection kit to the boiler is provided and it includes:

- Instruction manual;
- Storage unit instruction manual;
- Flexible hose with metal bracket to connect the storage unit to the boiler;
- Cable to connect the storage unit level sensor and Pellet level sensors for the boiler's internal tank to the circuit board;
- Cable for electrical connection of the deposit;
- Ramp to put inside the boiler's tank;
- Parts for the rear and lateral fixation of the storage unit to the boiler;
- Screws for attaching the level sensors to the tank of the boiler.

Description of operation

When the level sensors of the boiler's internal tank ceases to detect pellets (the sensor lights go off) the electric power engine of the storage unit is triggered, by rotating the worm drive screw of the storage unit. Thus the pellets are transported from the storage unit to the boiler's internal tank. The electric power engine will run continuously until the sensors in the boiler's tank detect pellets again (sensor lights turn on). When this happens, the electric power engine stops.

Thus, the storage unit system will be triggered each time the pellets level in the boiler's tank is low, preventing the boiler's flame is extinguished due to the lack of pellets.

In the storage unit, there is also a sensor that detects the level of pellets. When the pellets level is low, the sensor will cease to detect the pellets (the sensor light goes off) and will appear on the display a message of troubleshooting. After 40 seconds will appear on the boiler's display na alarm signal (code A15) and the boiler shuts down. The electric power engine keeps running, fueling the boiler's internal tank until the sensors detect pellets.

To restart the boiler, you will have to refill the storage unit with pellets (at least until the level sensor detects pellets) and reset the error (see automatic boiler instruction manual).

The wood pellet storage unit can be installed on either the left or right side of the boiler. By default, it is configured to be installed on the right side of the boiler.

⚠ **For greater ease you should proceed to the assembly and adjustment of the storage unit before installing the boiler.**

2. Adjusting the height of the boiler

With the boiler placed in its final position, and before starting the installation of the storage unit, you should level the boiler and put it at the same height of the storage unit. To do so, you should place the storage unit beside the boiler (left or right) and adjust the leveling feet of this until it is aligned with the storage unit by the upper zone, as shown in the following pictures.

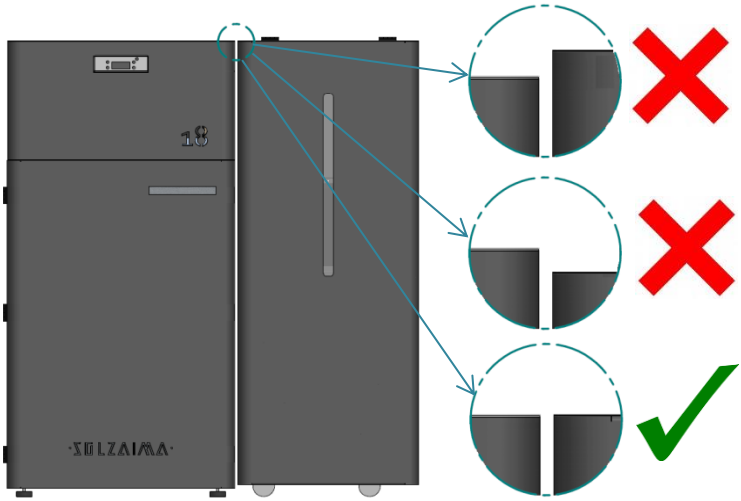


Figure 1 – Adjusting the height of the boiler

3. Adjusting the sensor's response time and sensitivity

You can adjust the pellet level sensor's **sensitivity**. The higher the sensitivity, the better the sensors will detect the pellets in their proximity to send an electric signal to the control circuit board.

a) b)

Figure 2 – Difference between a level sensor with low sensitivity (a) and high sensitivity one (b)

To set the sensor to the required sensitivity rotate the knob (Figure 3-a) clockwise to increase the sensitivity or counter clockwise to decrease it (Figure 3-b).

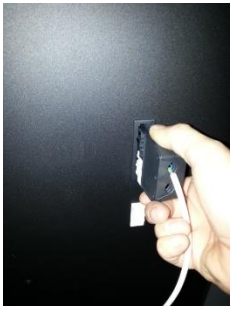
a)

Increased sensitivity Decreased sensitivity

b)

Figure 3 – Adjusting the level sensor sensitivity

1 – To adjust the sensitivity must connect the tank to the boiler using the cable Kit.



a)

b)

d)

e)

Figure 4 – Connecting the sensors to the circuit board

2 – Next, you should remove the storage unit's level sensor. By default, it comes installed on the left side of the storage unit (the storage unit is set up by default to

be installed on the right side of the boiler). To do this, loosen the screws of the part that supports the sensor and remove the set.

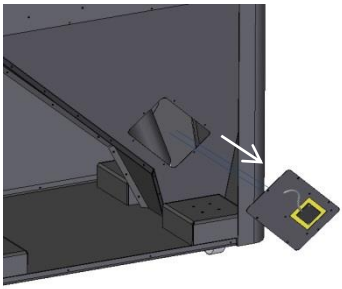


Figure 5 – Removing the storage unit's level sensor

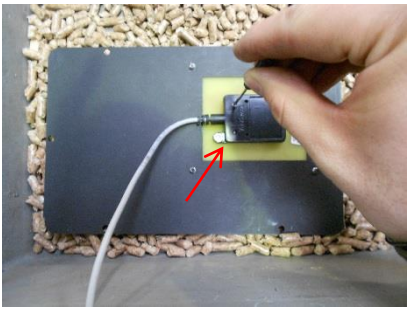
3 – With the sensors already connected to the circuit board, you must connect the boiler to the mains.

4 – You should put some pellets in a container, and next to the boiler, perform the sensitivity adjustment, as described in the following steps:

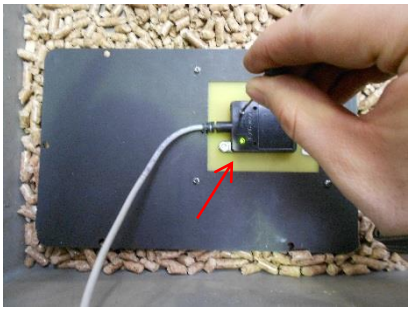
- put the sensor over the pellets;

Figure 6 – Placement of the sensor over the pellets

- Rotate the adjustment knob counter clockwise so that the lights go out (if they are not already out) -



a)



b)

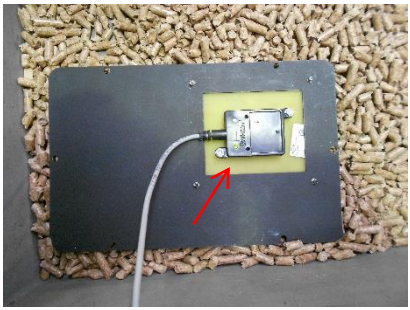
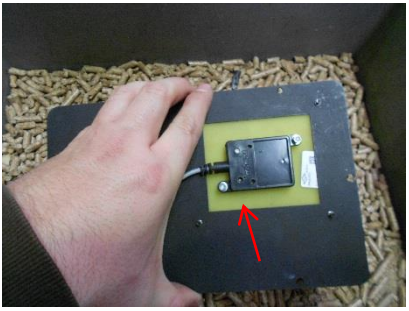


Figure 7 – Adjustment of the sensor sensitivity

- Then, with the light of the sensor on, you should move the sensor away from the pellets and check that the light go out (Figure 8-a) and re-approach and check that the light come on when approaching the pellets (Figure 8-b)



a)

b)

Figure 8 – Adjustment of the sensors sensitivity

- If the light do not go out when moving the sensor away from the pellets or do not come on when approaching, re-adjust the sensitivity of the sensor and repeat the test.

- You shall perform the sensitivity adjustment for both the boiler's tank level sensors and for the storage unit's level sensor.

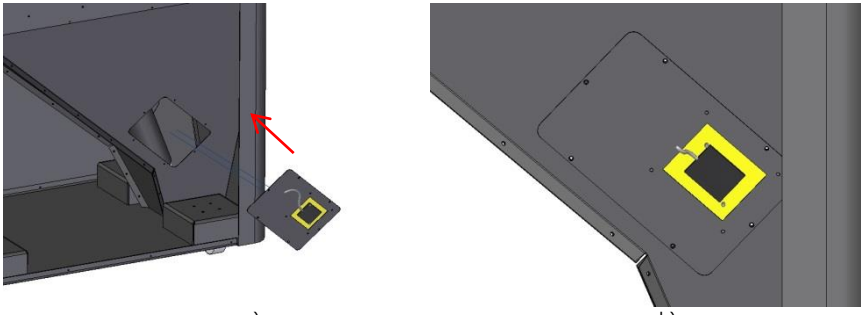
You can also adjust the sensor's **response time**, to set the time the sensor waits before sending the signal to the circuit board upon detecting the pellets. This setting can be made directly on the storage unit electronic circuit board, on the upper right corner, using the same procedure used for adjusting the sensitivity – rotate clockwise to increase the response time and counter clockwise to decrease the response time.

⚠ **The response time should be set to the minimum value**

4. Installing the storage unit on the right side of the boiler

The level sensor of the storage unit must always be installed **on the side closest to the boiler.**

1 – If you want to install the **storage unit on the right side** of the boiler you must install the level sensor on the left side of the storage unit, in the same place where he comes assembled by default. Before, you should disconnect the plug of the cable connected to the circuit board, to facilitate the assembly. To fasten it, you should use the screws previously removed, and put it in the position shown in Figure 9-b.



a) b)

Figure 9 – Installing the sensor level in the storage unit

2 – Then, you should install the ramp to drop the pellets in the boiler's internal tank. For this, you should start by removing the right side cover of the boiler's tank – removing the 4 screw securing it (Figure 10).

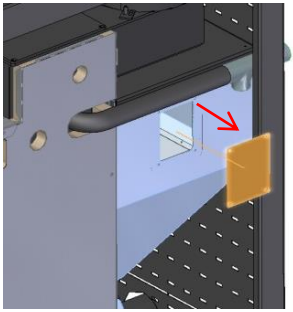
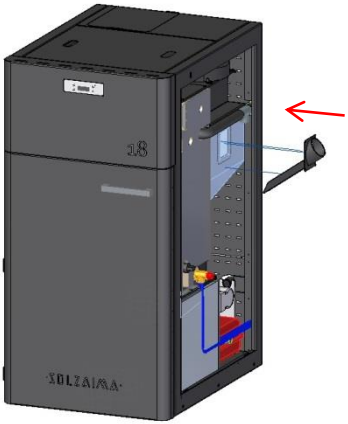


Figure 10 – Removing the lateral cover of the boiler's tank

3 – To assemble the ramp to drop the pellets you should insert it in the tank, as shown in the following pictures, and fasten it with the screws previously removed.



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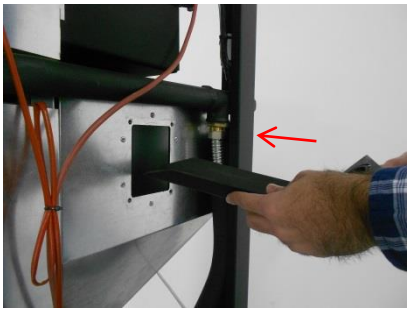

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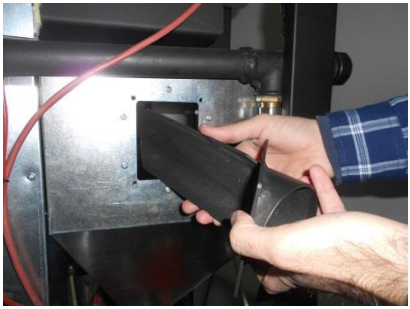

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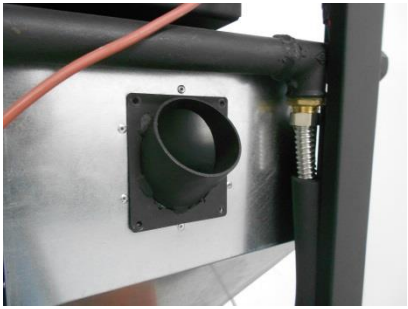
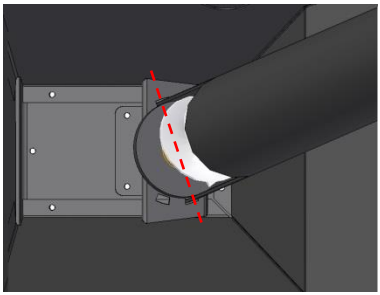


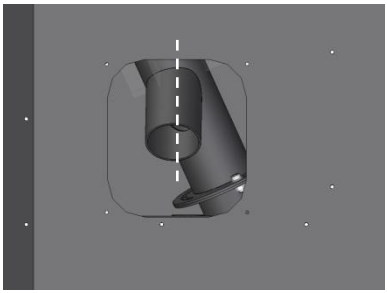
d)

Figure 11 – Assembly of the ramp to drop the pellets in the boiler's tank

4 – Before proceeding with the assembly of the storage unit, you should check if the worm drive channel is properly docked in its base. To do this, open the lid of the storage unit and check if the docking is in accordance with Figure 12-a. Also, check if the pellet's output tube is in line with the opening of the storage unit (Figure 12-b).



a)

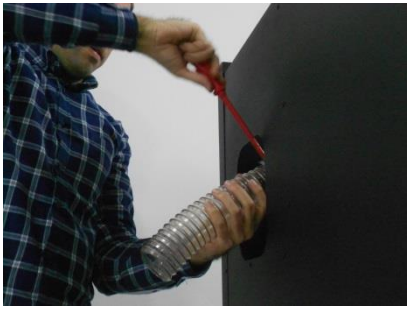


b)

Figure 12 – Worm drive channel for storage unit installation on the right side

5 – Place the flexible hose on the storage unit's pellet output tube and attach it using the metal bracket provided. The flexible hose must make a downward curve (Figure 13-c).

a)



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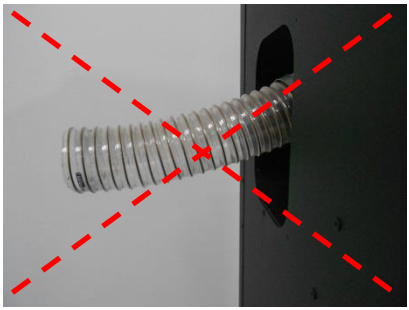
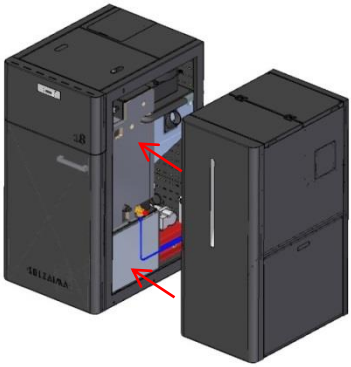


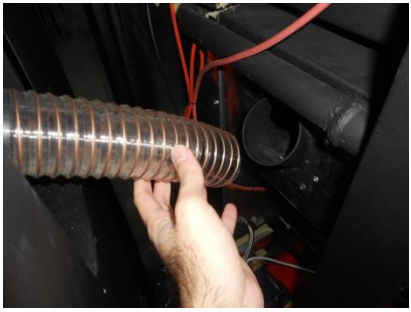
d)

Figure 13 – Installing the flexible hose

6 – Then, you should approach the storage unit to the boiler and insert the flexible hose into the ramp to drop the pellets (Figure 14 – b e c). The storage unit must be at a spacing of 1 cm to the side of the boiler and must be aligned with this by the rear.



a)



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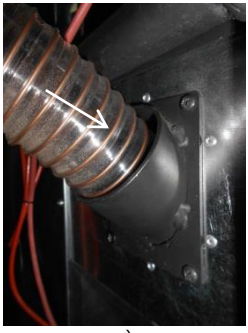


c)

Figure 14 – Placing the storage unit next to the boiler (a); connecting the storage unit to the boiler's pellet tank (b e c)

7 – To make the fixing of the storage unit to the boiler you will have to remove the upper lids of the storage unit. Remove the 2 screws at the back (Figure 15-a); open the front lid and remove the 3 screws that secure the lids to the central bar (Figure 15-c).

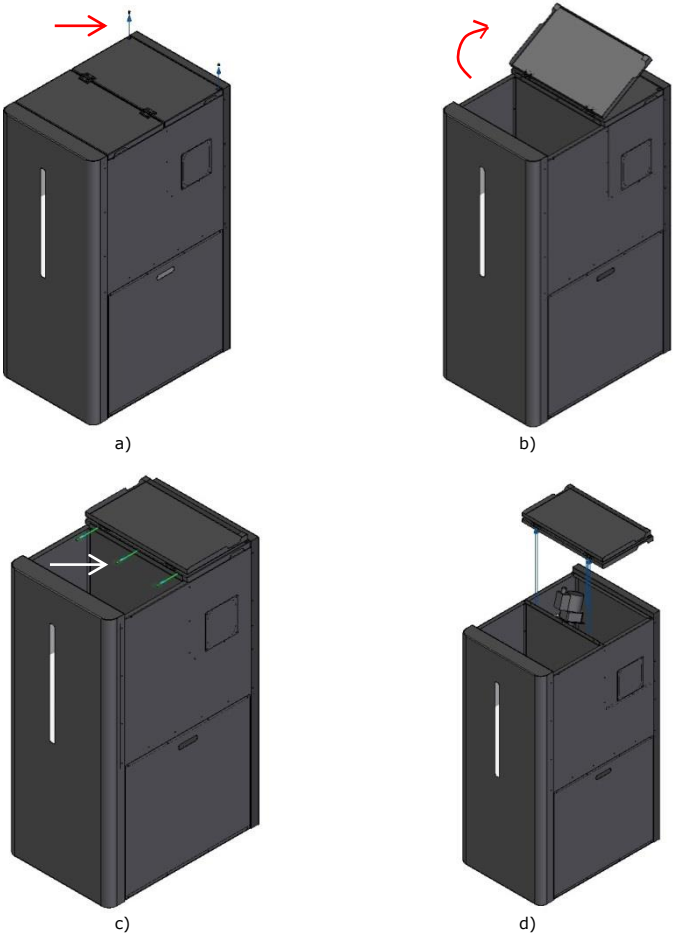
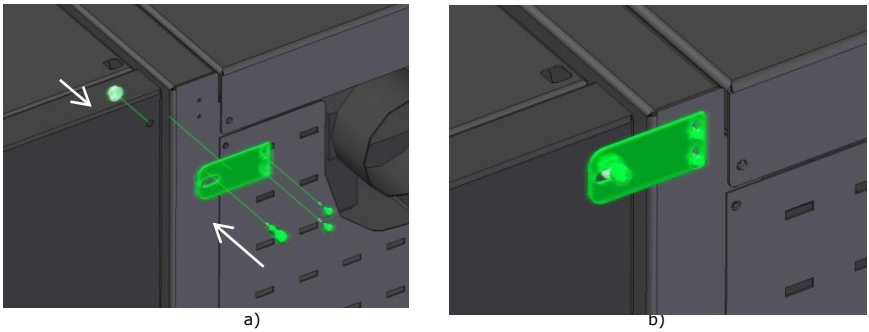


Figure 15 – Removing the upper lids

8 – After removing the lids you should secure the storage unit to the boiler assembling, at the back, the provided part, and secure it with the screws, as shown in the following figures.



a) b)

Figure 16 – Attaching and securing the storage unit to the boiler – Rear view

9 – The adjoining sides of the storage unit and the boiler should be secured in place using the screw and the mounting bracket provided.

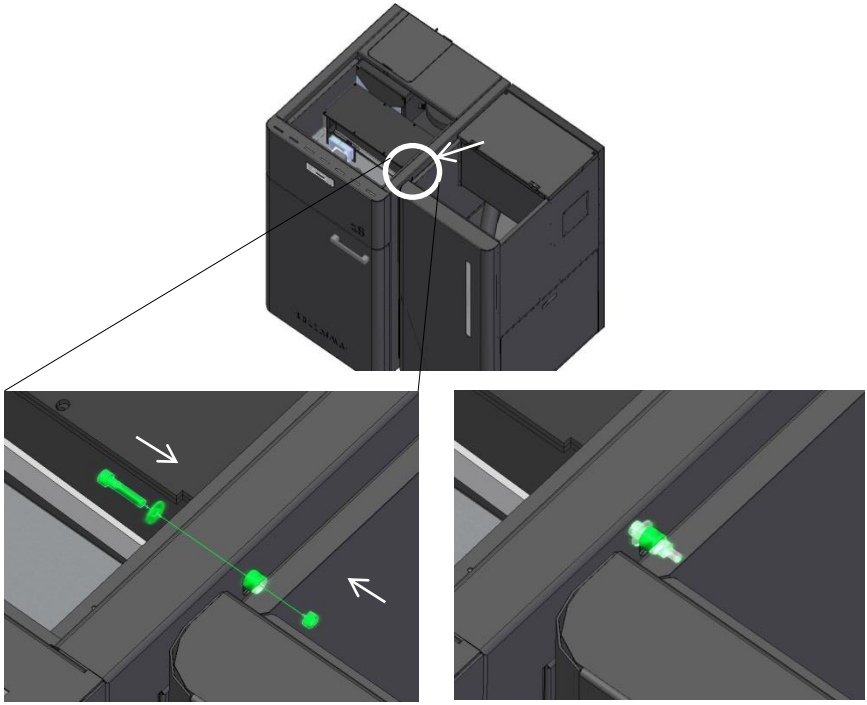


Figura 17 – Attaching and securing the storage unit to the boiler – Side view

10 - Finally, you should place the upper lids and re-attach the screws.

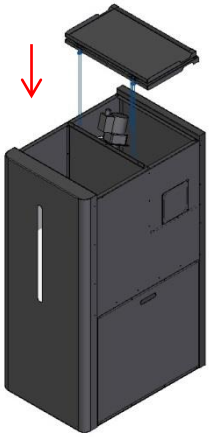


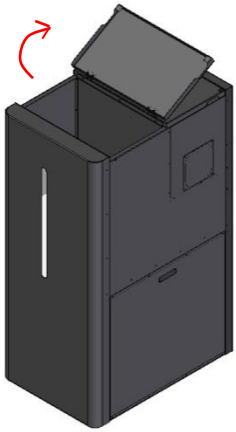
Figura 18 – Replacing the upper lids

5. Installing the storage unit on the left side of the boiler

The storage unit is set up by default to te installed on the right side of the boiler. If you wish to install it on the left side, please follow these steps.

1 – First, remove the upper lids by loosening and removing the two retaining screws on the rear (Figure 19-a). Then, open the front lid and remove the 3 scres (Figure 19-c) that hold the lids in place.

a)



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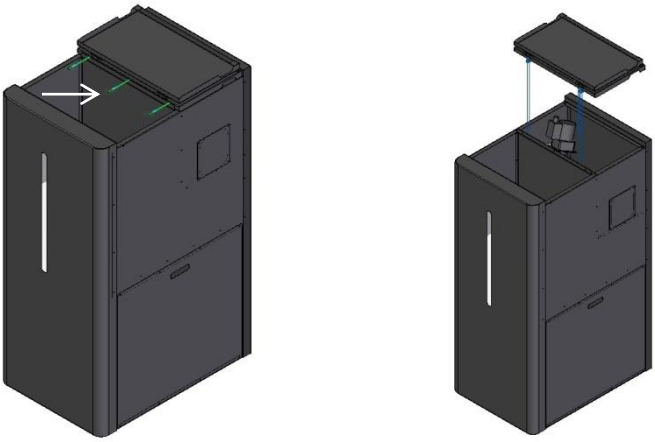
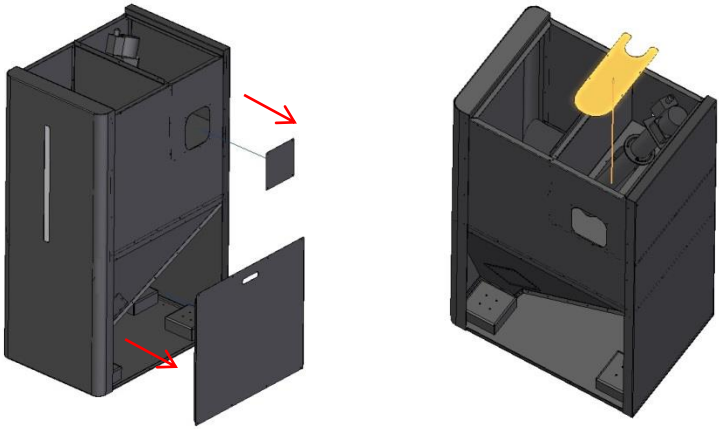


c) d)

Figure 19 – Removing the upper lids

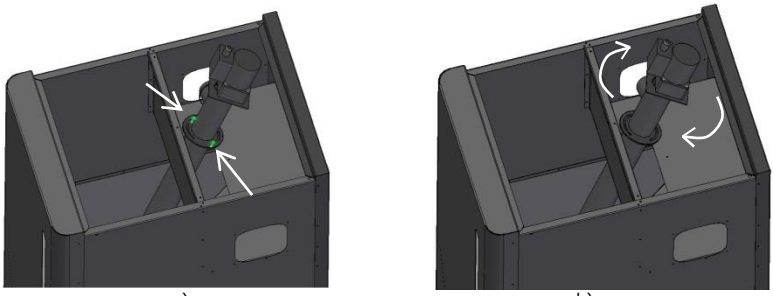
2 – Next, remove both side lids (Figure 20-a) and the retainer that holds the worm drive screw channel in place, inside the storage unit (Figure 20-b)



a) b)

Figure 20 – Removing the side lids and plate

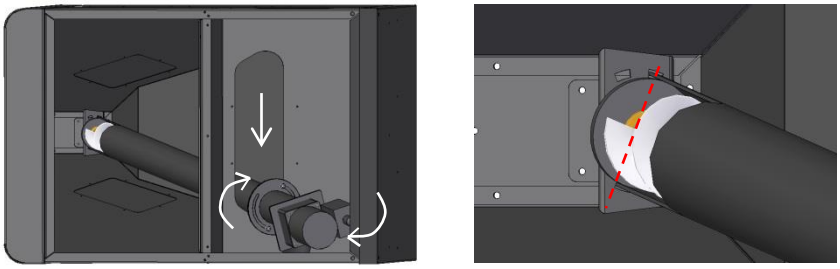
3 – To place the pellets' output on the right side of the storage unit, loosen both screws shown in Figure 21-a (you don't need to remove them completely), and rotate the channel upper assembly (including the drive's assembly) clockwise. Once the procedure is completed, retighten the two screws.



a) b)

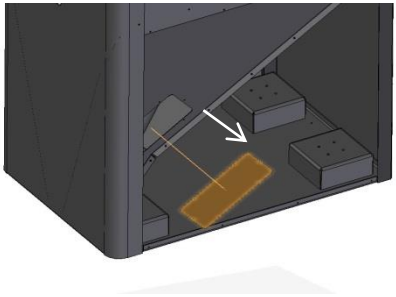
Figure 21 – Worm drive set rotation

4 – Afterwards, you must slide the worm drive channel to the right side of the storage unit (Figure 22-a), by lifting it up and rotating it clockwise so that it fits the base aligned diagonally with the holes (Figure 22-b).



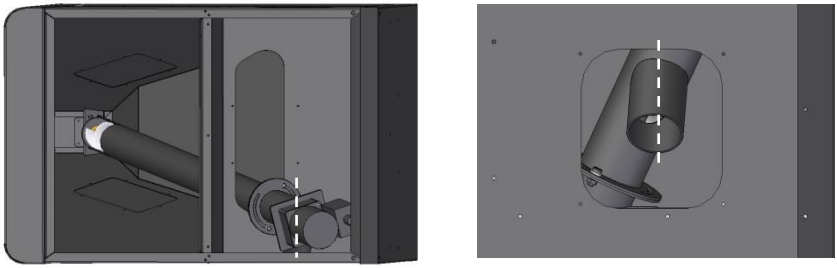
a) b)

You should remove the lower side lid of the storage unit to access the worm drive channel retainer to facilitate its placement at the base.



c)

When the procedure is complete, the pellet output should be perpendicular to the side panel of the storage unit.

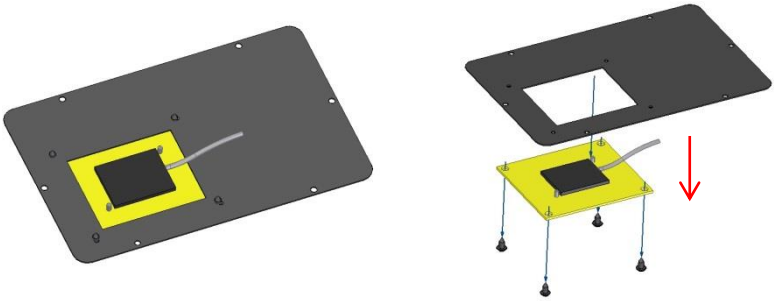


d) e)

Figure 22 – Sliding the channel to the right side

5 – The level sensor must be assembled on the right side of the storage unit (on the closest side to the boiler). For this, you must change the position of the sensor in the mounting plate in which it is fixed:

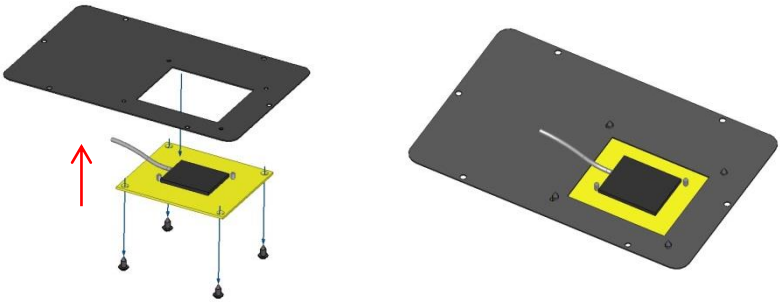
- remove the level sensor of the mounting plate, by removing the 4 screws that secure it;



a) b)

Figure 23 – Removing the level sensor from the mounting plate

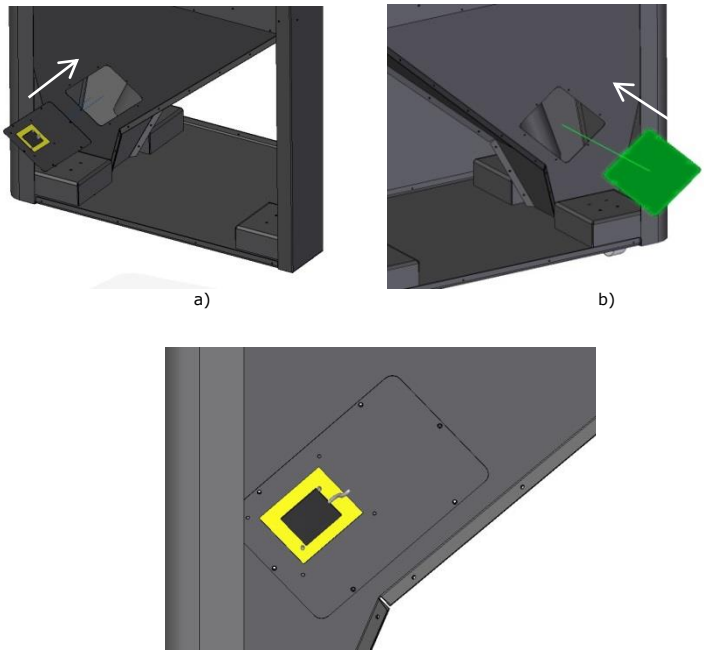
- To assemble the sensor on the opposite side of the mounting plate you should mount it as shown in the following figure:



a) b)

Figure 24 – Assembling the level sensor on the mounting part

- Finally, you can mount the two mounting plates at the bottom of the storage unit, putting the plate with the level sensor on the right side and the plate without level sensor on the left side. The level sensor must be assembled as shown in Figure 25-c.

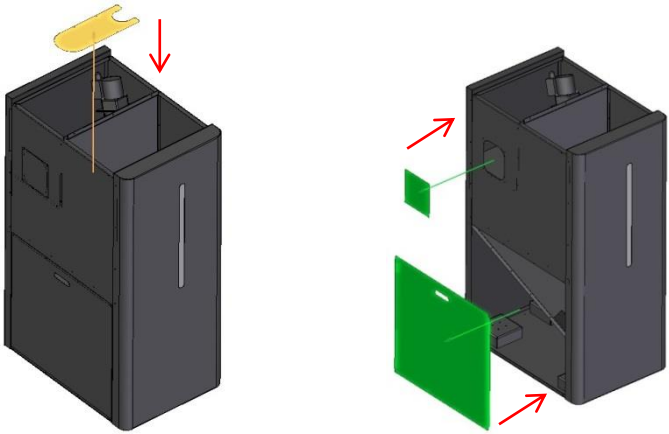


a) b)

c)

Figure 25 – Installing the pellet level sensor on the storage unit (storage unit on the left side of the boiler)

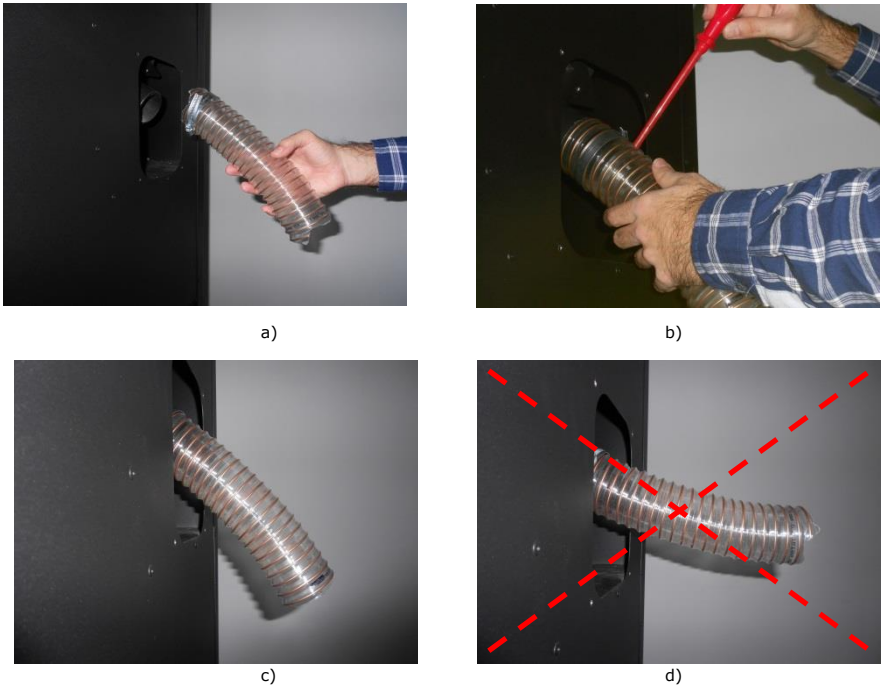
6 – Replace the worm drive channel retainer inside the storage unit (Figure 26-a). The side lids should now be attached to the left of the storage unit (Figure 26-b).



a) b)

Figure 26 – Installing the worm drive channel retainer and side lids

7 – You should place the flexible hose on the storage unit's output tube and attach it using the metal bracket provided. The flexible hose must make a downwards curve (Figure 27-c).

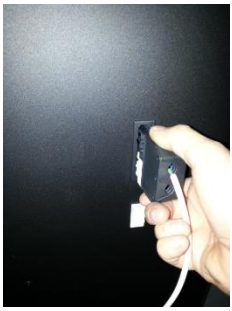


a) b)

c) d)

Figure 27 – Installing the flexible hose

8 – To adjust the sensitivity must connect the tank to the boiler using the cable Kit.



a)

b)

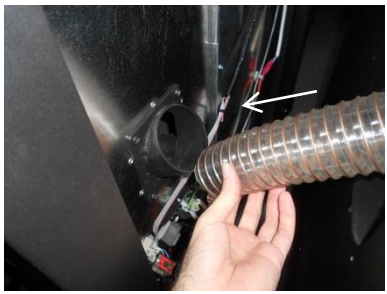
d)

e)

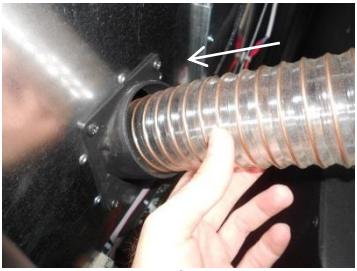
Figure 28 – Connecting the level sensor to the boiler

9 – Then, you should approach the storage unit to the boiler and insert the flexible hose into the ramp to drop the pellets (Figura 29 – b e c). The storage unit must be at a spacing of 1 cm to the side of the boiler and must be aligned with this by the rear.

a)



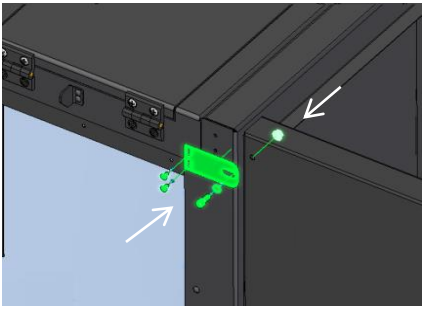
b)



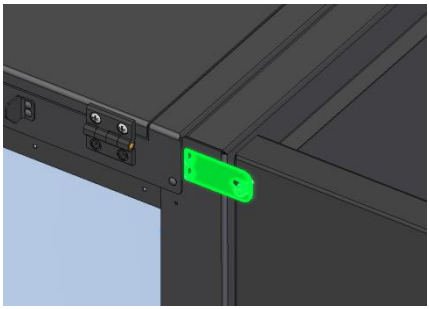
c)

Figura 29 – Placing the storage unit next to the boiler (a); connecting the storage unit to the boiler's pellet tank (b e c)

10 - Then, you should secure the storage unit to the boiler assembling, at the back, the provided part, and secure it with the screws, as shown in the following figures.



a)



b)

Figure 30 – Securing the storage unit to the boiler in the back

11 – The adjoining sides of the storage unit and the boiler should be secured in place using the screw and the mounting bracket provided.

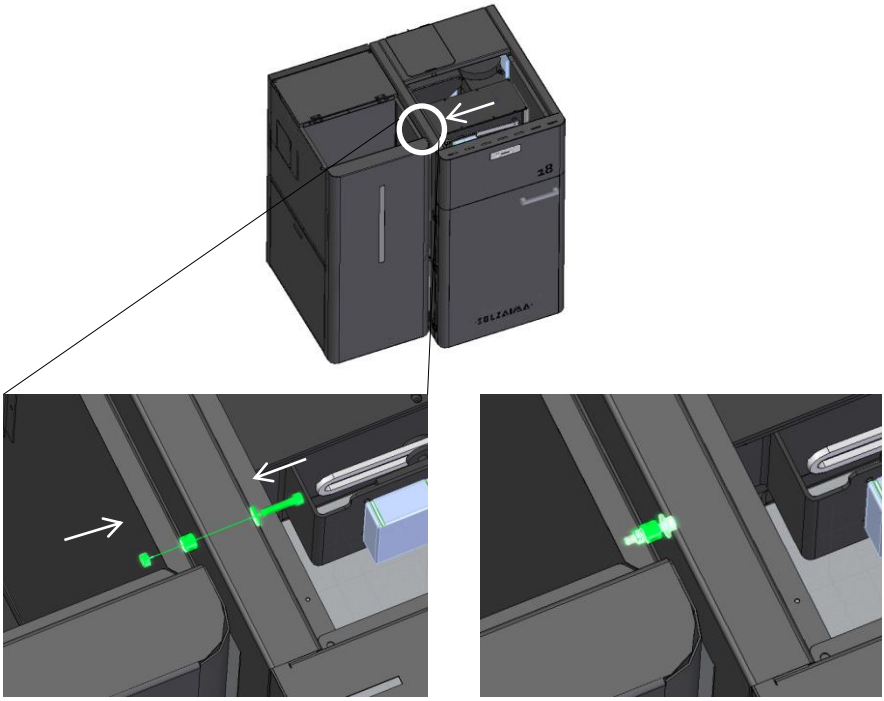


Figure 31 – Attaching and securing the storage unit to the boiler, on the side

12 – Finally, you should place the upper lids and re-attach the screws.

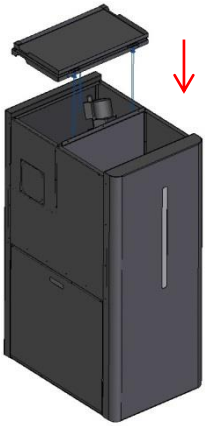
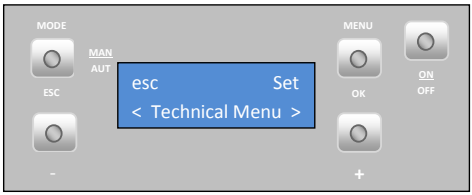


Figure 32 – Placing the upper lids

6. Enabling the pellet level sensor

At the end of the storage unit's installation it is necessary to activate the pellet level sensor in the boiler's display. For this, you should enter the *technical menu*. (Password only provided to authorized technical personnel)



Within this menu, you should enter the *General Settings*, and in the *Pellet Level Sensor* menu you should press *Set*, and then the keys "+" and "-" until it shows *On* on the display.

When the storage unit runs out of pellets, the level sensor sends a signal and an alarm appears in the boiler's display (A15 code). You should refill the storage unit with pellets, *reset* the alarm and restart the boiler.

7. Boiler startup

With the storage unit properly fixed to the boiler (right or left side) you should carry out the hydraulic connections and the connection of the boiler to the fumes outlet.

After making the connections, you should introduce some pellets inside the storage unit and start the operation of the boiler. You must observe the pellets falling from the storage unit to the boiler's internal tank and check if the level sensors work properly.

If the sensors do not work properly, you should remove them and re--adjust the sensitivity.

You must observe the boiler working for a time period corresponding to **3 or 4 charges of pellets** and check if the pellet level does not rises above the level of the sensors.

8. Annex

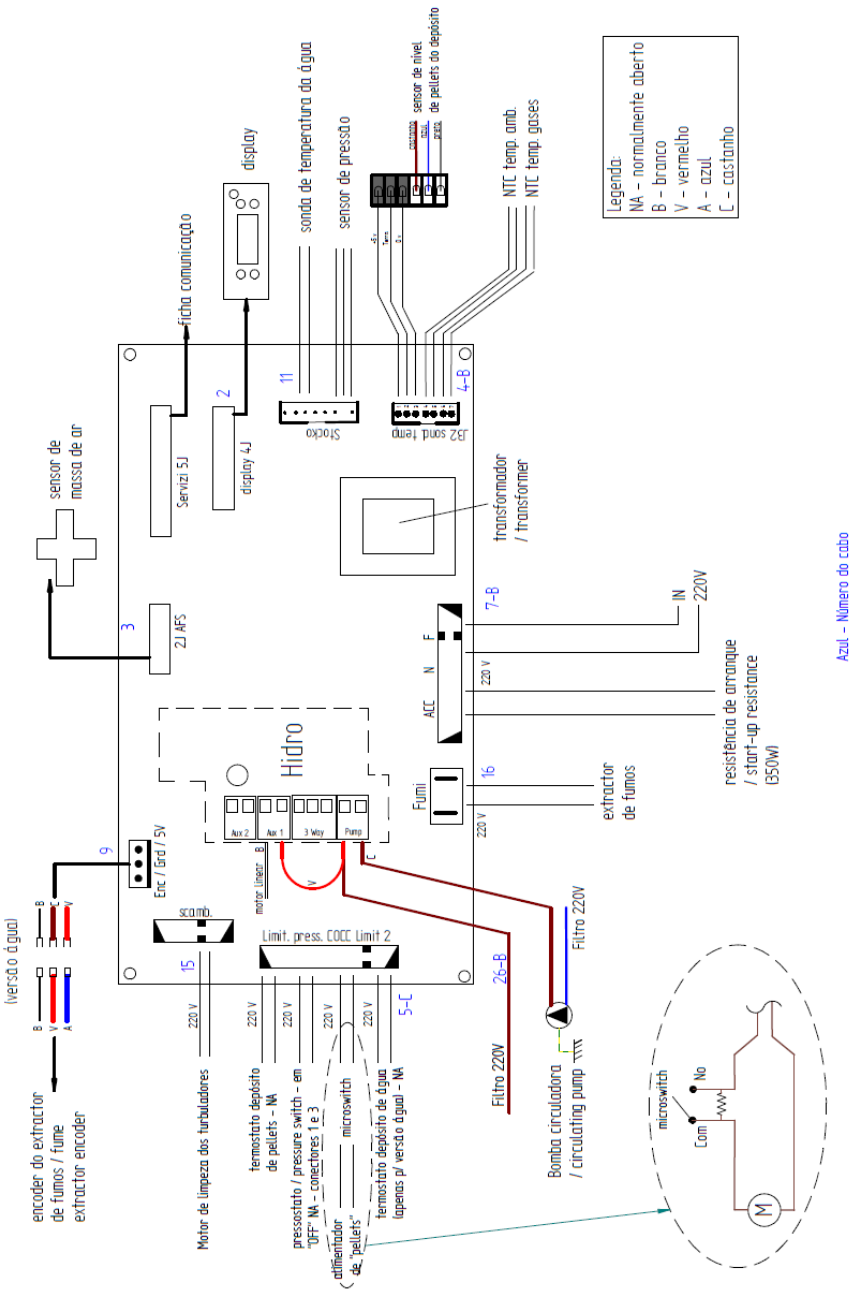


Figure 33 – Electronic board

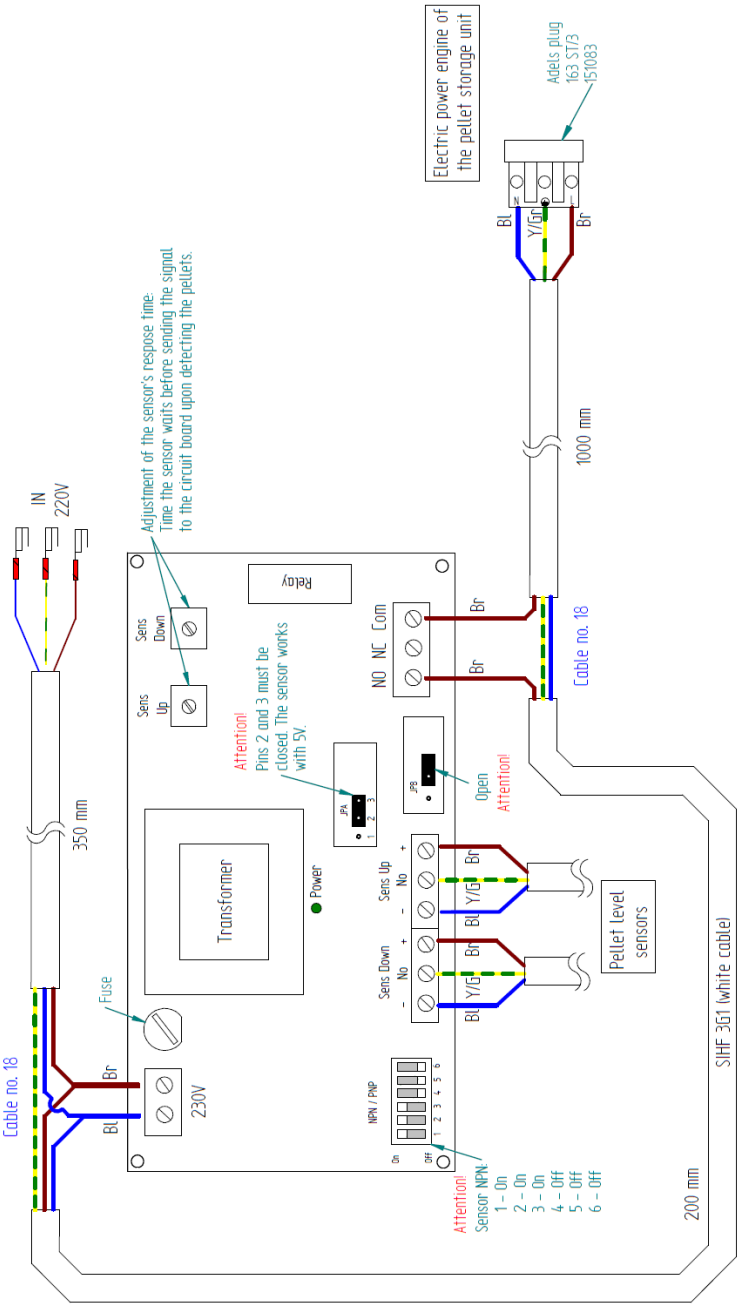


Figure 34 – Electronic board of the storage unit

9. Warranty

All SOLZAIMA wood pellet boilers are provided with a 2 (two) year warranty from the date of the invoice. In order for your warranty to remain valid, you must keep the invoice or proof of purchase throughout the warranty period.

The warranty applies only to defects in materials or manufacture.

Exclusions:

The warranty does not cover acrylic cracks.

The installer shall take full responsibility for any problems and/or defects resulting from the installation process;

Any costs incurred resulting from moves, transport, labour, packaging, disassembly and depreciation of the unit performed during warranty operations shall be the client's responsibility;

Any malfunction caused by mechanical or electrical parts not supplied by SOLZAIMA, not mentioned in the user manual provided with the unit, is not covered by this warranty;

The installation of the unit near medium/low voltage power lines with surges above 230V±5% may cause damage to their electrical components. Therefore, SOLZAIMA recommends that a main line voltage stabilizer is connected to the unit.

Note:

In general, SOLZAIMA recommends the use of a UPS or a surge protector to ensure correct operation of all electrical components.

SOLZAIMA takes no responsibility for any damages caused by fuel sources other than pellets certified by the standard EN 14961-2 grade A1.

Please read your Instruction Manual and retain it for future reference

APPROVED PRODUCT

SOLZAIMA

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