TEK Biomasse®
HEATING

Installation Manual

NEOTEK VISION

Pellet fireplace insert

WiKEY

2Ways2+

TEK Biomasse® 2025/NG01
EN250130

VITOR MONTEIRO
GRUPO

Index

1. GENERAL CONSIDERATIONS

TEK Biomasse ® is a registered trademark, whose air conditioning equipment is manufactured by Vitor Monteiro Lda., and tested in accordance with European reference safety standards.

1.1. Symbology

The following graphic symbols are used in this manual:

☞ - Tips and useful information,

 - Danger, important information to avoid accidents.

Attention: the symbols indicate important information in order to make the manual more lucid. However, this does not relieve the user of the obligation to comply with requirements that are not marked with a graphic symbol.

This manual is divided into two parts: one for the user and one for the installer. Both parts contain important and significant information for safety issues, therefore, the user should read both parts of the manual. We are not responsible for any damage caused by failure to follow these instructions.

1.2. Use

This equipment is a stove intended for domestic heating and is reserved for indoor installation. It must not be operated by anyone unfamiliar with this manual as well as by children, the elderly and others whose physical, mental and intellectual capacities are impaired.

Failure to observe these rules can cause property damage, threat to human life and health and domestic animals.

1.3. Packaging of documentation

This manual, as well as any other applicable documentation, must be stored diligently so that it is available at all times. In case of moving or selling the equipment, the documentation must be attached and forwarded to the new user/owner.

2. SECURITY WARNINGS

The instructions contained in this manual must be followed, both by the Technician (Installer, Maintenance) and by the User. Some of the warnings, if not followed, void the warranty contract.

2.1. Installer Technician and Maintenance Manager

Installation of the stove is exclusively reserved for specialized technicians.

The responsibility for installing the equipment cannot be considered the responsibility of Vitor Monteiro, Lda.

In case of necessity of works in the place of installation of the stove, these are the responsibility of the user and whose responsibility falls on the same. The works, before being carried out, must be approved by the user.

The technical responsibility for the installation rests with the installer, who is asked to carry out the chimney checks, air intake and the correct implementation of the proposed installation solutions.

Installation of the equipment must comply with all national and European regulations, standards and laws.

The equipment must be installed on a surface capable of supporting its weight.

Confirm that the chimney design and air intake are in accordance with the installed equipment.

 Do not make electrical connections with temporary and/or non-insulated cables.

Check that the equipment ground connection is effective.

Before starting the unpacking and assembling or disassembling of the stove, the Technician must take the safety measures prescribed by law, with special attention to those mentioned below:

- Ensure that the equipment installation site complies with all national and European regulations/laws;
- Ensure the use of all personal protective equipment;
- Make sure that the workplace is in a safe condition to perform the installation;
- To perform the installation, the installer must be in full psychophysical conditions;
- No work should be carried out under adverse conditions.

 During maintenance operations, the technician must carefully observe the following instructions:

- Maintenance should only be carried out by qualified personnel, at least once a year;
- Check that the stove is cold before carrying out any type of work;
- Disconnect the equipment from the electrical current before starting maintenance work;
- Use personal protective equipment and/or other means of protection;
- All electrical and mechanical components guarantee the correct functioning of the stove, so they can only be replaced by original components purchased at the brand's technical assistance;
- The equipment must be taken out of service if any safety component is defective or out of calibration.

 On water models, the installer must inform the user of the following:

- In case of water leaks, it is necessary to turn off the water supply and immediately notify technical support.
- System pressure operation must be checked periodically.

2.2. User

Before using for the first time, the user must read the instruction manual in its entirety and bear in mind the following:

- Immediately disconnect the equipment from the power supply in the event of a breakdown or malfunction;
- The power plug must be easily accessible;
- When in normal operation, never disconnect the appliance from the electrical supply;
- If you are not going to use the stove for a long period of time, disconnect the power and remove the pellets from the silo;
- After a more or less prolonged period of stoppage, regular maintenance should be carried out on the stove;
- The stove must not be switched on without having carried out daily maintenance and/or inspection;

This stove does not work with wood, use only 100% wood pellets as fuel according to the manufacturer's recommendations. See point 5.1- Fuel .

-  This equipment is not an incinerator do not use foreign substances as fuel;
- It is forbidden to operate the equipment with the door open or with broken glass, or even to open the door with the equipment in operation;
- The equipment lights up automatically, so you should not use any product to light the stove, especially flammable liquids;
- When in operation, the fireplace has very hot surfaces, so you should not approach or touch them, with special emphasis on the glass and door, chimney, among other elements;

During the first lighting of your equipment, it is possible that some odors may be released resulting from the natural drying of paints and putties. Avoid prolonged exposure to these odors. It is advised:

- Air the space;
- Do not touch surfaces when they are hot to avoid damaging the coating.

- When in operation, the stove has very hot surfaces, so you should not approach or touch them, with special emphasis on the glass, door, chimney and other elements;
- It is forbidden to place clothes to dry or other objects on the equipment or in its proximity that impede the free circulation of air;
- Clean the equipment only when it is completely cold and turned off;
- The ash compartment must not be opened while the stove is in operation. Wait for it to stop and cool down completely to clean the ash.

 **Children: -** Do not let children play near the stove or touch it.

- The equipment extinguishes by itself, so do not use water or to put out the fire in the brazier;
- Periodically clean the chimney as described in the instruction manual.

3. LEGAL GUARANTEE

The manufacturer guarantees the product, with the exception of elements subject to normal use, listed below, in compliance with Directive CEE199/44/EC from the date of purchase attested by:

- Invoice with date of purchase;
- Installation compliance certificate issued by the installer.
-

Exclusions:

The warranty does not cover damage or malfunctions arising from the following causes:

- Damage caused during transport or handling;
- Failure of components resulting from improper use or negligence, lack of maintenance, installation in violation of current regulations and laws.
- Use of poor quality pellets or any other similar product in disregard of the provisions of Point 5 ;
- Malfunctions resulting from poorly executed repair attempts;
- Forced use of equipment after failure alarm;
- Chimney malfunction;
- Damage caused by tampering with the equipment, atmospheric agents, natural disasters, vandalism, electric shocks, fires, failures resulting from the electrical or hydraulic network.

The following items subject to normal wear and tear are not covered by the warranty:

- Vermiculite;
- Door glass;
- Fiber sealing packages;
- Painting;
- The brazier (burner) in cast iron;
- The ignition resistance.

4. REPLACEMENT PARTS

In maintenance operations, only **original parts may be used**. For this purpose, consult the technical assistance service.

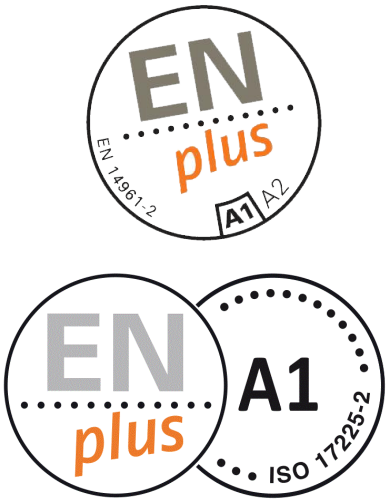
Do not wait until the complete failure of the components, therefore, it is recommended that they be replaced when necessary in the periodic maintenance actions.

The manufacturer will guarantee replacement parts for the legally prescribed period.

5. FUEL

100% pressed pine wood pellets certified according to the EN PLUS A1 standard are the only fuel allowed for use in this boiler.

☞ The pellets used must be certified and in accordance with the EN Plus 14961 or ISO 17225-2 standard.



5.1. Fuel characteristics

Pellets are produced by pressing wood chips and sawdust. They are obtained without the addition of any foreign substance, such as adhesives, lacquers or synthetic substances.

Pressing through a matrix of holes and the heat produced by friction and pressure, activates natural wood binders that in this way ensure the shape of the pellets even without the addition of binders.

The production and consumption of pellets is based on the rational use of renewable energy with zero impact on the $CO_{2\ cycle}$, which respects environmental protection standards.

This is the only fuel indicated for this equipment.

Yield and power vary depending on the quality of pellets used.

☞ For correct operation you must use pellets according to the characteristics below.

Technical Fuel Information (Pellets)	
Diameter	6mm
Length	10 to 30 mm
Density in the bag	min. 650 kg/m ^{3}
Humidity	Max. 10%
Max. from the ashes	Max. 1,5%
Max. from the dust	Max. 2,3%

Calorific value of various fuels:

Wood Pellets	4.9 kWh /kg
wood chip	± 850 kW.h /m ^{3}
soft woods	±1500 kW.h /m ^{3}
hard woods	±2000 kW.h /m ^{3}
Coal	7 kW.h /kg
Naphtha	7.5 - 8 kW.h /kg
Natural gas	9.5 - 10.2 kW.h /m ^{3}
liquid gas	12.8 kWh /kg

The stove is equipped with a silo (deposit) for pellets with a capacity for 1 bag of 15 kg.

The pellet supply must only be carried out through the drawer that gives access to the loading compartment located at the top. This must only be opened to load the pellets. It is not recommended to supply pellets with the stove in operation.

Place the pellets in the drawer and push back with a small squeegee.

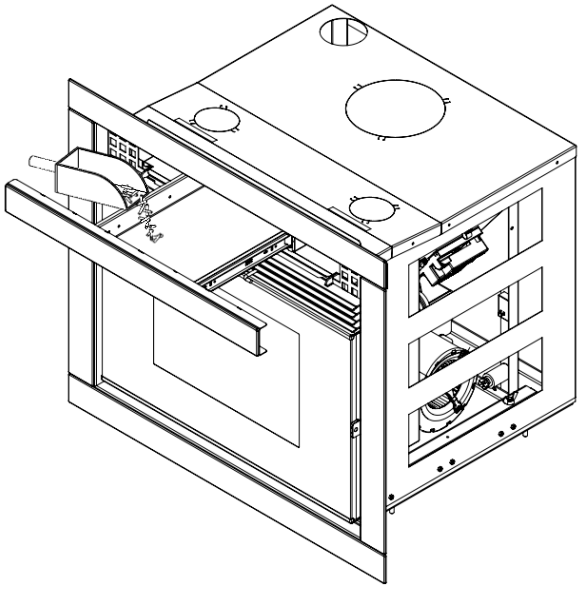


Figure 1- Pellet loading drawer

5.2. Pellet storage

The operation of the stove largely depends on the quality and conservation conditions of the pellets, for this reason they must be stored in a dry place where temperatures are not too low.

Poor packaging of the pellets can lead to the breakdown of particles and create sawdust. Sawdust is responsible for the malfunction of the power system and can block it.

☞ We recommend storing a few bags of pellets in a warm and dry place, because cold pellets (5º.C) and/or damp reduce the calorific value of the fuel and cause more dirt, requiring more rigorous maintenance and cleaning.

6. UNLOADING AND TRANSPORT

The stove must be transported vertically without rocking during the entire transport process.

The stove's brazier as well as other components can come loose causing damage to the product.

The stove's packaging must not be impacted or hit by other objects or equipment, under penalty of causing damage that will compromise the stove's future operation.

Make sure that the means of transport used has a capacity greater than the weight of the stove.

7. INSTALLATION MANUAL

To obtain the best performance from the stove and uniform heating of the room, you must comply with some essential rules.

Improper installation will compromise the safety and proper functioning of the stove.

When installing the equipment, all national and local regulations, as well as European standards, must be observed.

7.1. Leveling the stove

The stove must be leveled using a bubble water level and using the rubber adjustment feet.

7.2. Installation constraints

It must be safeguarded that no mechanical exhaust fans or collective ventilation ducts are installed at the installation site.

In any case, it must be safeguarded that the installation site is not in a depression, preventing the simultaneous operation of the systems mentioned above, since this will compromise the normal functioning of the stove and possible release of dangerous fumes. Check point 8- Models and technical characteristics for more information.

7.3. Installation location

The following figure shows the minimum distances (in centimeters) from combustible surfaces that must be observed when installing the stove. In the case of non-flammable walls/objects these distances can be reduced by half.

The floor protection to support the stove must guarantee fire resistance in accordance with European standards. Never place the stove directly on wood, carpet or other combustible materials.

During installation, structures, coverings, beams, etc., must be protected from combustible or flammable material and which are exposed to excessive heat, either from the stove or the chimney, particularly when crossing partitions and false ceilings. In these cases, appropriate thermal insulation should be used, namely vermiculite.

Check point 8 - Models and technical characteristics for more information.

The manufacturer will not be responsible for changes in the properties of the materials surrounding the fireplace and chimney.

7.4. Air intake

The heat generated by the stove results from the heat produced by the chemical reaction of combustion of the pellets in the combustion chamber.

For this combustion to occur under the best conditions, it is necessary to safeguard the correct amount of oxidizing agent (oxygen present in the air).

During operation, the stove absorbs a quantity of air from the place where it is located, it enters the combustion chamber through an air inlet located at the back of the stove, which can be channeled to the outside.

In the air intake, you should not use bends or tubes with a section less than 50mm, nor a maximum length greater than 800mm .

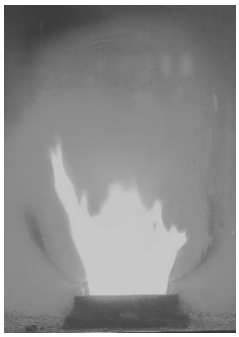
You must also safeguard that this admission will never be obstructed from the outside and that it is at least 20 cm from the ground.

Outside, you should put protection against rain and wind.

Safeguard the requirements relating to ventilation and air supply referred to in point 7.2 - Installation constraints.

7.5. Installation constraints

In the following figure you will find several examples that will help you to check the stability and correctness of the flame.

	**Correct combustion** Bright flame with light yellow color and minimum amount of pellets in the brazier.
	**Incorrect combustion** Flame too bright Too much oxidizer. Too many glowing pellets come out of the brazier. Correct the amount of air (from 0 to +5) correct the feeder if necessary (from 0 to -5). If not, contact technical support.
	**Incorrect combustion** Flame too dark yellow, wobbling, with too many unburned pellets in the brazier. Check that the door or ash bin is closed. Otherwise, correct the amount of air (from 0 to +5) correct the feeder if necessary (from 0 to -5). If not, contact technical support.

7.6. Smoke evacuation duct

The smoke discharge from the stove is with positive pressure in relation to the surrounding environment, so it is essential to guarantee the tightness of the various chimney joints. The smoke evacuation duct must be independent from other equipment.

To guarantee the correct extraction of the smoke, it is mandatory that the first section of the chimney be vertical with a height of not less than 1.5 meters.

The horizontal sections must not exceed 1.5 meters in length, with a slope of at least 5%.

The chimney outlet must comply with EN 1856-2 for built-in masonry chimneys and EN 1856-1 for insulated outdoor chimneys. It must be in 0.5mm thick 316 stainless steel, with dimensions respecting what is indicated in the characteristics of the equipment, regarding the smoke outlet.

The smoke duct must have a diameter of 80 mm, with male/female joints fitted with a high-temperature silicone gasket (>200ºC) with inverted installation (male downwards) to prevent condensation from flowing out of the chimney.

For chimneys over 5 meters high, their section must change to a diameter of 100 mm after 5 meters. The dimensioning of the smoke duct must be done considering 0 Pa.

The piping used outdoors must be in double-walled stainless steel, in order to avoid condensation and corrosion of the same, resulting from the thermal shock.

It is forbidden to install dampers, butterflies or valves that strangle the chimney's draft capacity.

The fume exhaust capacity depends on several factors, including the height of the chimney. Depending on these factors, it may be necessary to make adjustments to the stove's operating parameters. Excess draft when it is not possible to correct it by changing parameters such as air intake and pellet loading, it will imply the installation of an air intake valve to the chimney.

If necessary, contact the technical assistance service.

7.6.1. Basic requirements

The chimney must be made of stainless steel duct and must rise 50 cm above the highest point of the building's roof.

7.6.2. Installation

See point 7.7.3- Smoke duct.

7.7. Assembly scheme

The NEOTEK Vision fireplace allows installation with or without ducted hot air distribution.

Bear in mind that in an installation with hot air distribution it will always be necessary to add an extra fan for distribution.

7.7.1. Without hot air ducting

When installing the stove without hot air distribution, the upper air outlets must be closed.

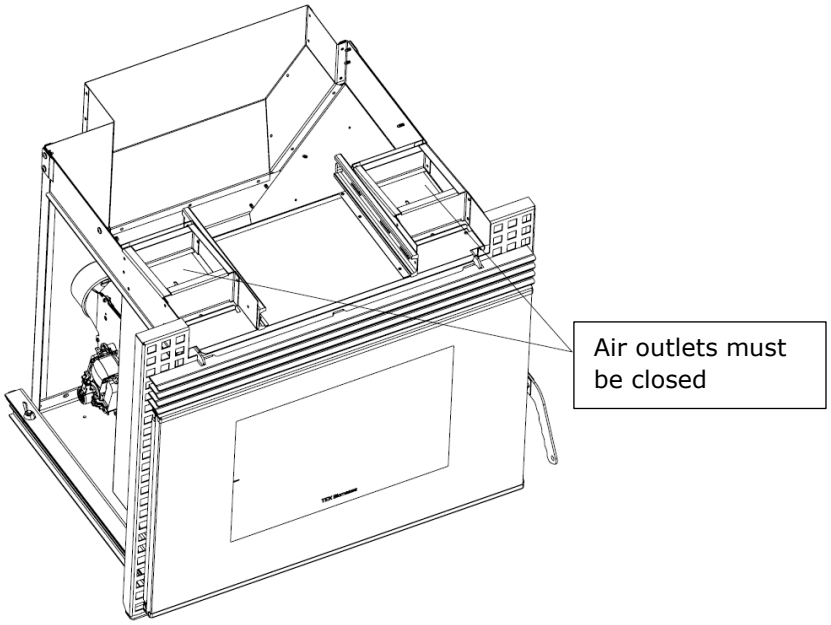


Figure 2- Closed hot air outlets

The stove must be installed on a flat base or on the mounting structure as shown in the images below.

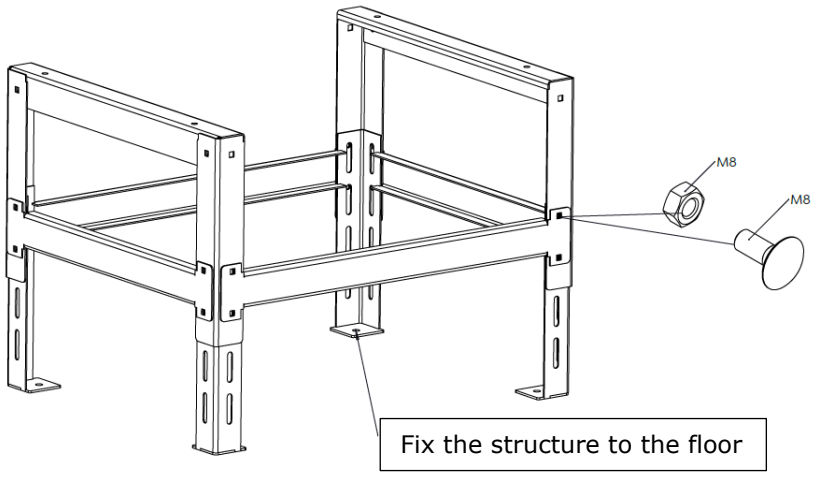


Figure 3- Settlement structure

Start by separating the stove from its base.

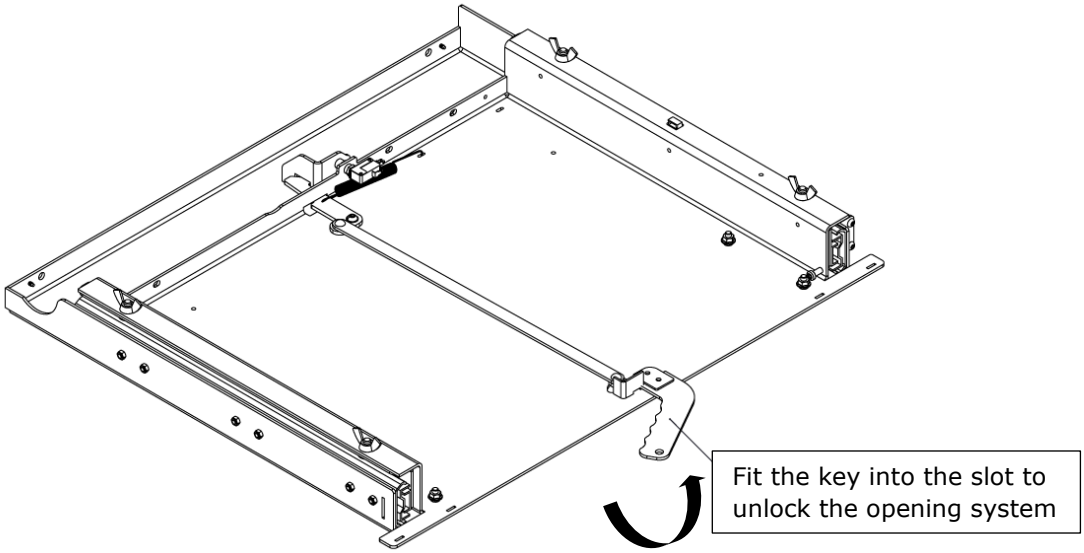


Figure 4- Fireplace opening system

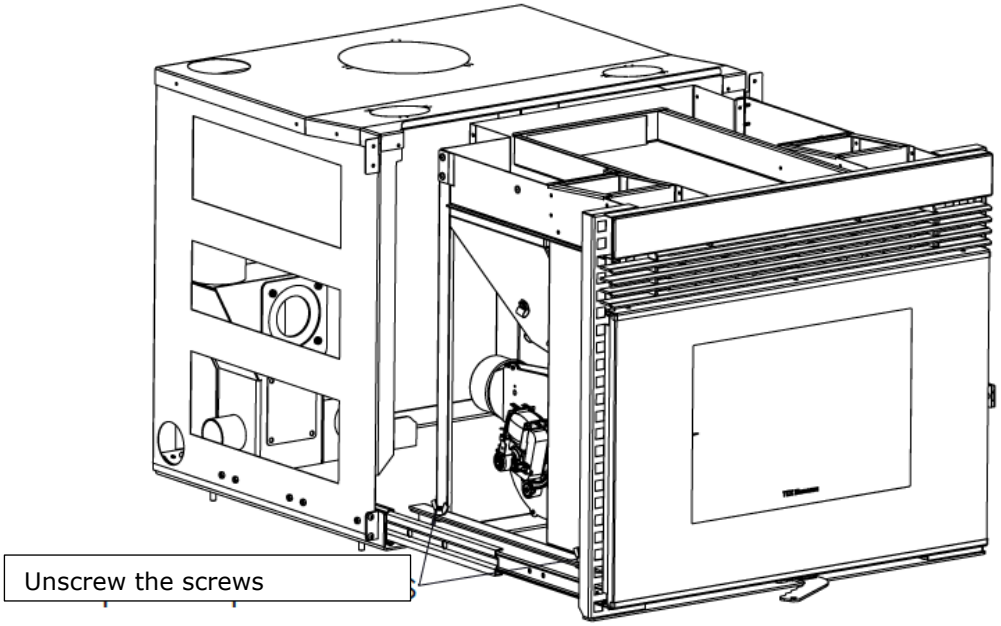


Figure 5- To open, place the key, activate the opening system and pull the stove

Install and **screw** the base of the stove to the flat floor or to the laying structure, install the 80mm diameter tube that comes with the equipment and connect the air intake to the outside if you want a watertight installation.

Note that, for chimneys with a height greater than 5 meters, the outlet diameter must be increased to at least 100mm, as referred to in point 7.6- Smoke evacuation duct**.**

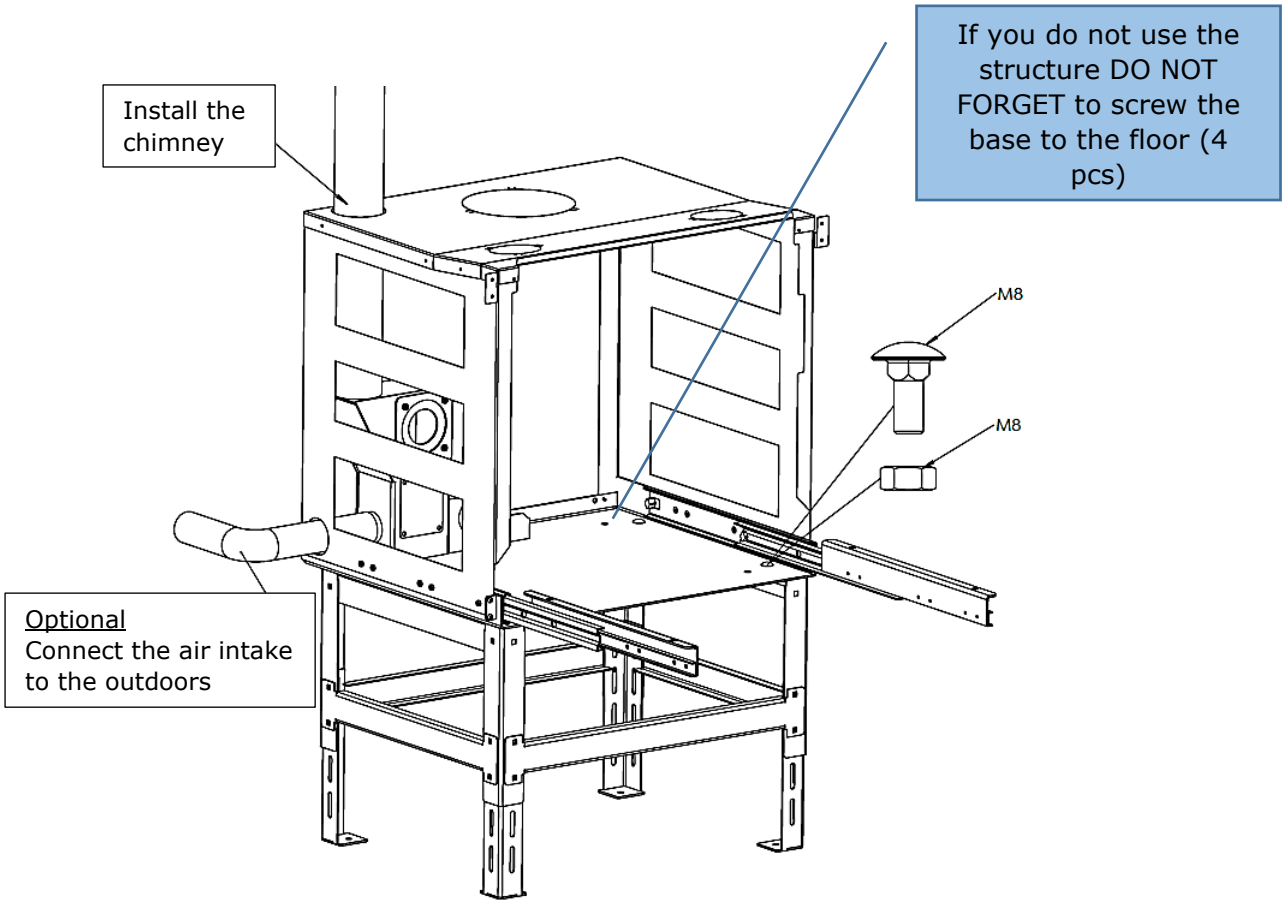


Figure 6- Fixing the base to the laying structure

Adjust the rim to the base of the equipment. Screws for tightening the frame to the base and to the plasterboard are provided, the latter being optional.

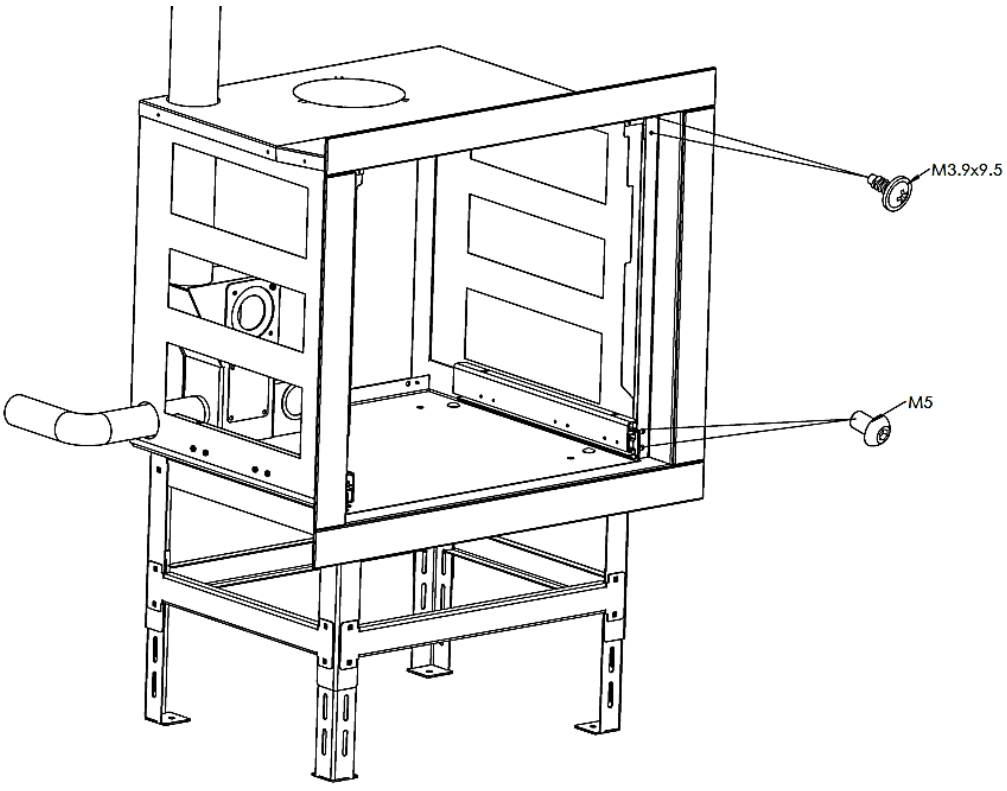


Figure 7- After removing the stove, assemble the frame

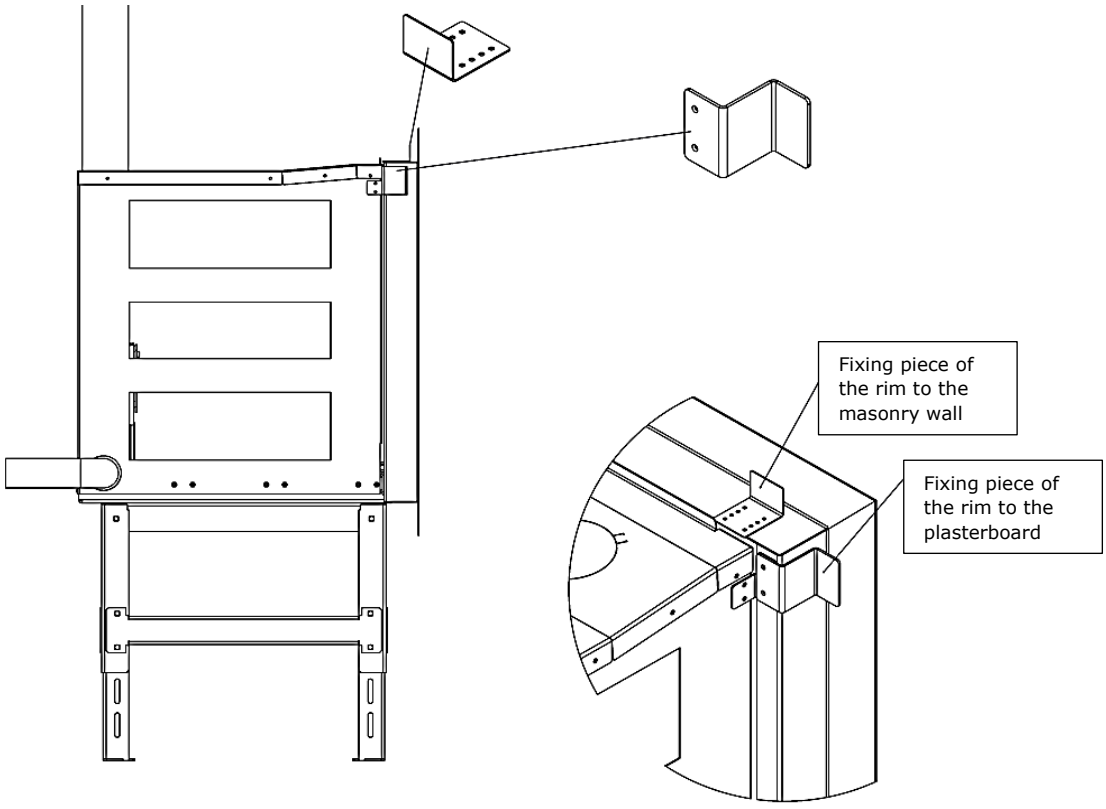


Figure 8- Fixing the frame to the wall

Having all the basic components, chimney, air intake, frame and frame installed and adjusted, you can mount the fireplace on the slides. Pull the slides out until they are fully extracted.

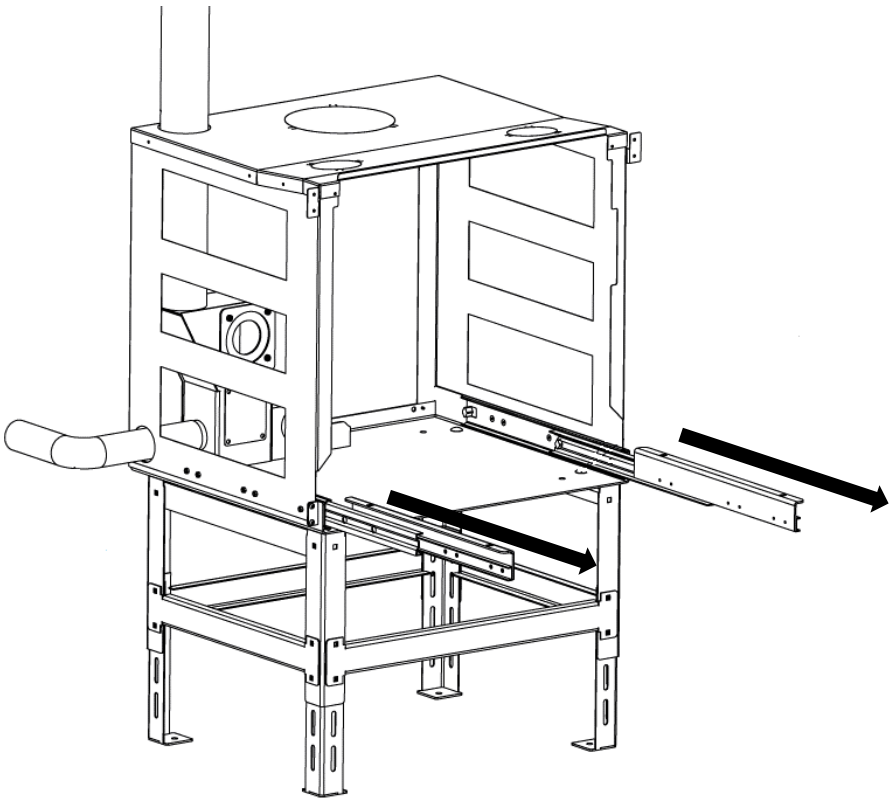


Figure 9– Advance the slides

Place the appliance on the slides as dismantled and shown in Figure 5- To open, place the key, activate the opening system and pull the stove on page 12

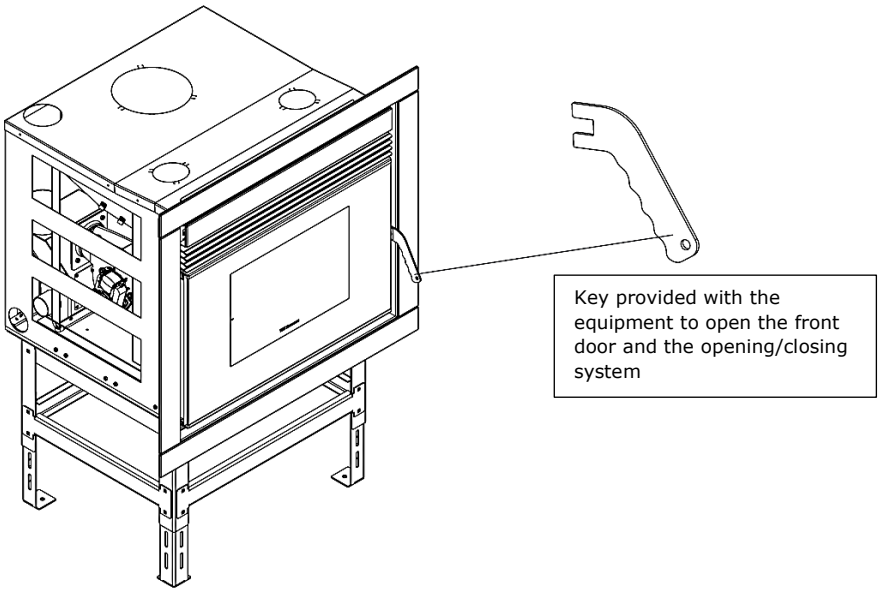


Figure 10- Put the stove back in place and close

Note: When closing, check that the closing system has been properly locked.

7.7.2. With hot air distribution

For hot air ducting, it is **mandatory** to use a hot air distribution fan (optional accessory) installed according to the diagram below.

The distribution of hot air without an additional fan is not allowed. The installation of the stove for hot air distribution without an additional fan, can cause damage to the equipment and for this reason violates the warranty terms.

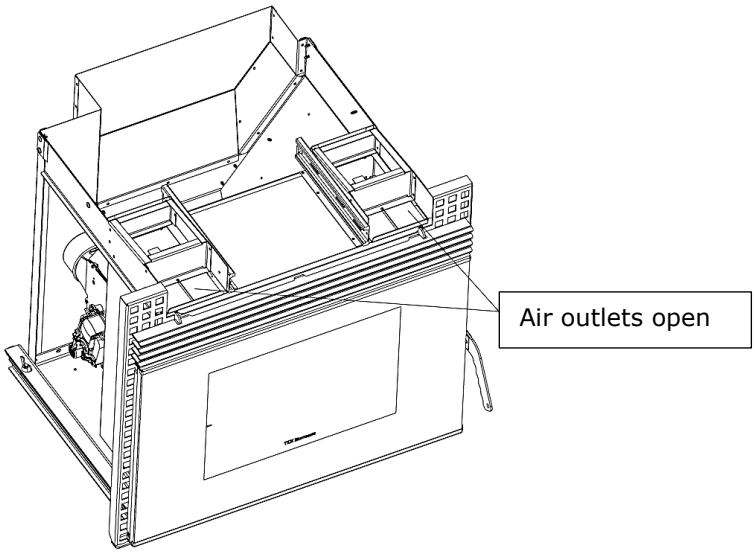


Figure 11- Open hot air outlets

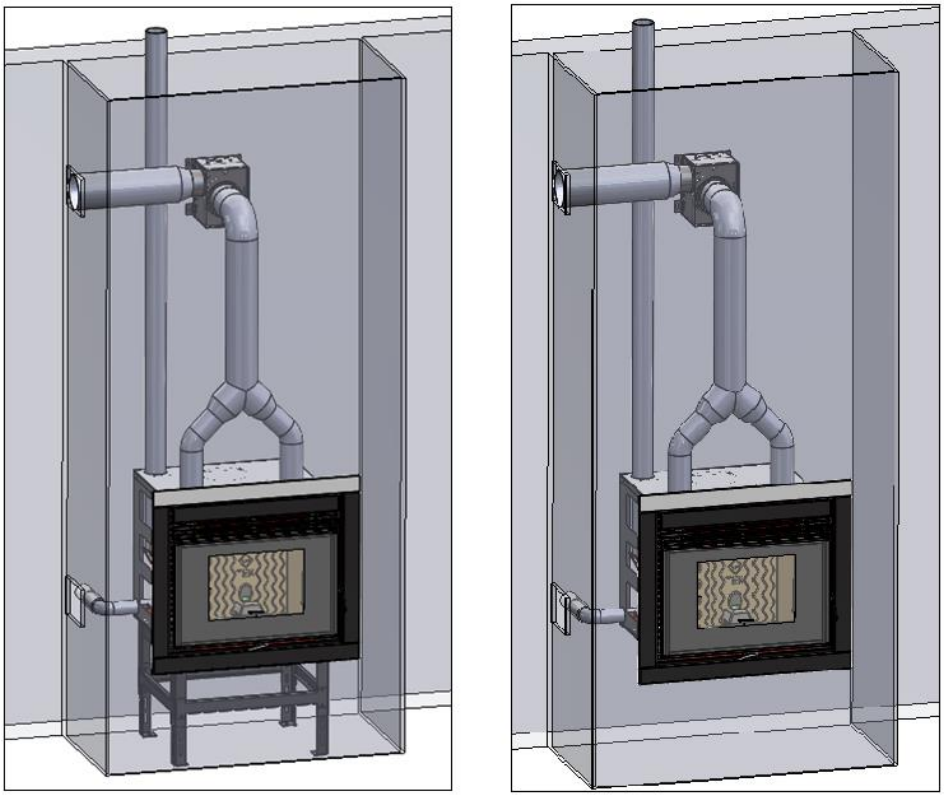


Figure 12- Illustrative image of assembly with and without structure

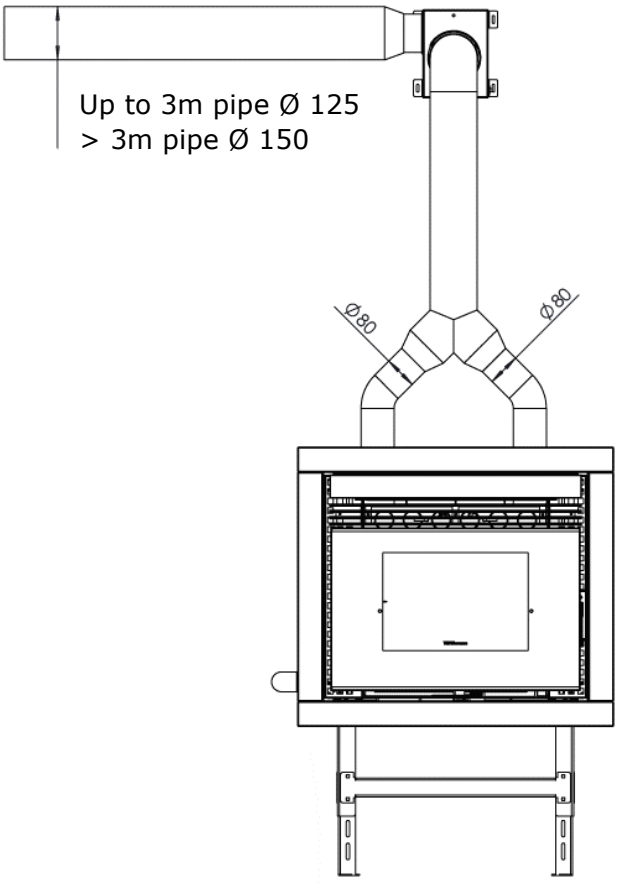


Figure 13- Ventilation duct standards

In the fireplace compartment (fireplace box), the use of combustible materials is not allowed, namely wood and its derivatives, plastics or plastic-based insulation.

The use of rock wool is also prohibited, except when it is enclosed in two plasterboard sheets.

☞The use of mineral wool or other similar material that is not properly insulated will release fibers and contaminate breathing air.

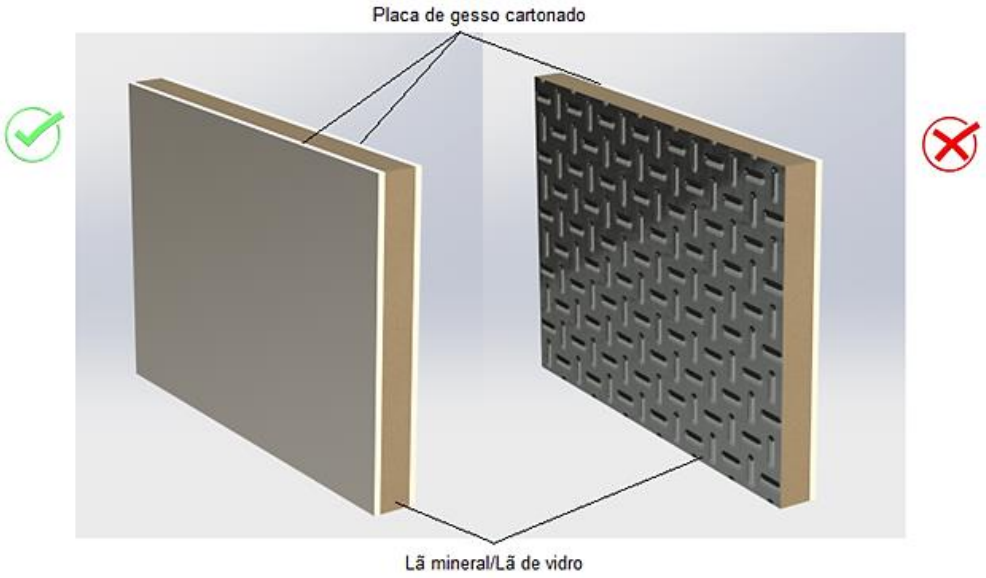


Figure 14- Plasterboard board

It is mandatory to install grilles in the masonry/plasterboard box for cooling the stove and air circulation for the intake. Arrange grates in the upper and lower area as shown below on both sides of the chimney box.

The lower grilles allow air intake for combustion (left side) and room fan (right side). The upper grilles allow decompression of the fireplace box and heat to escape from the inside of the fireplace.

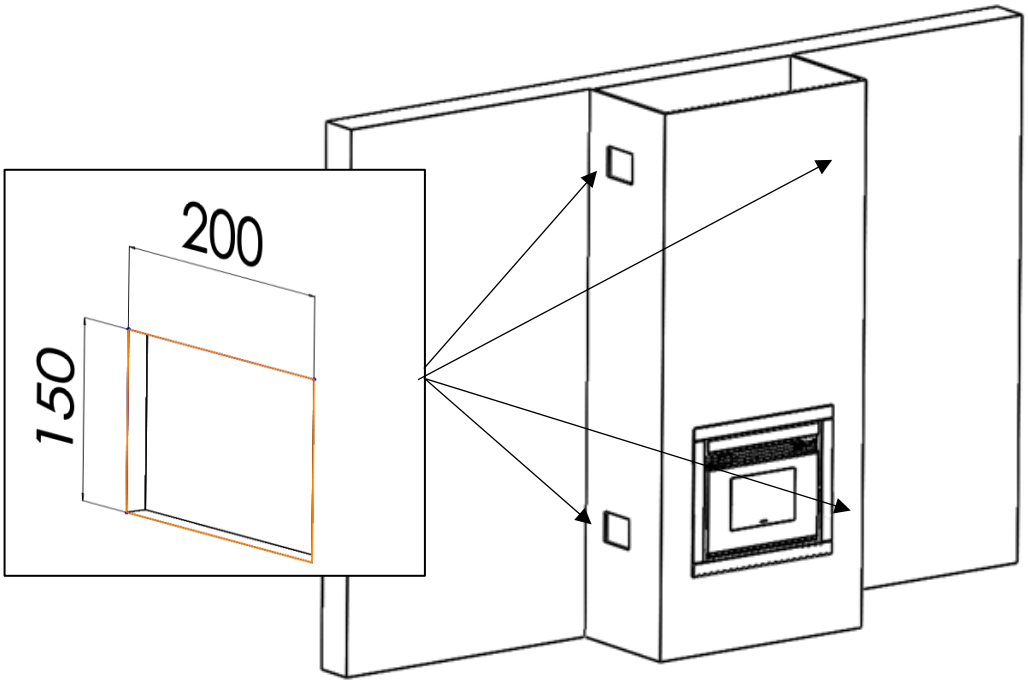


Figure 15- Norms of the gratings that must be installed in the masonry box for cooling the stove. Minimum dimensions 200X150

7.7.3. Smoke duct

Ensure that your smoke duct reaches the top of the masonry chimney so that there is no return of smoke by the action of the ambient fan inside the fireplace.

Above the level of the fireplace, place a fireproof plasterboard to prevent smoke from returning through the chimney.

Whenever the smoke duct exceeds 5m in height, its section must be increased to Ø100.

It is recommended to use a double-walled smoke duct in the outdoor area.

Installation diagram without air distribution.

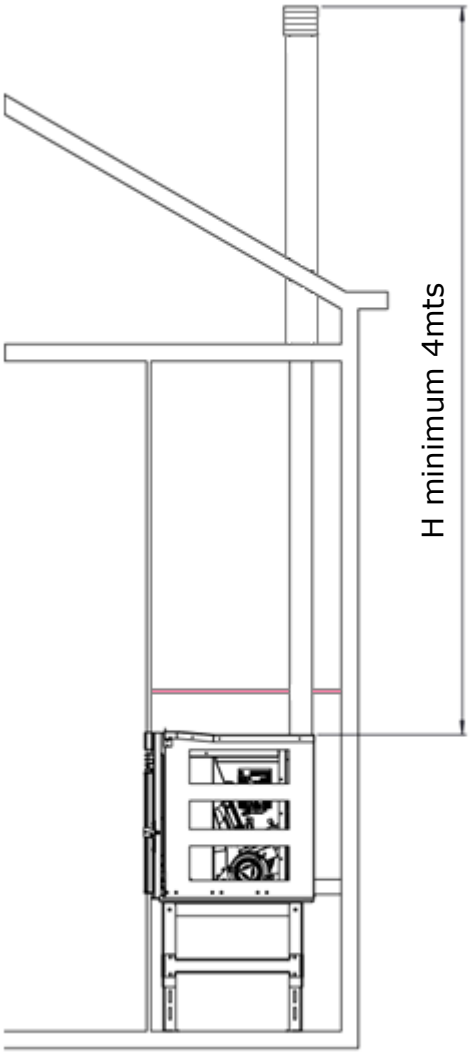


Figure 16- Smoke exhaust duct requirements

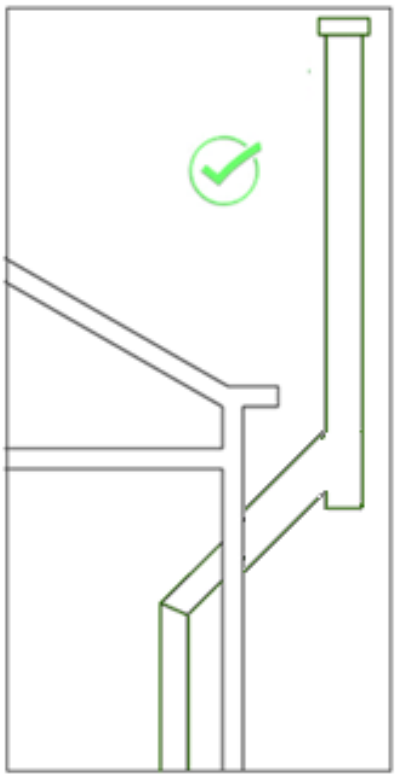


Figure 17- Standard for vertical installation

☞ Horizontal smoke outlets ending on the wall are not allowed.

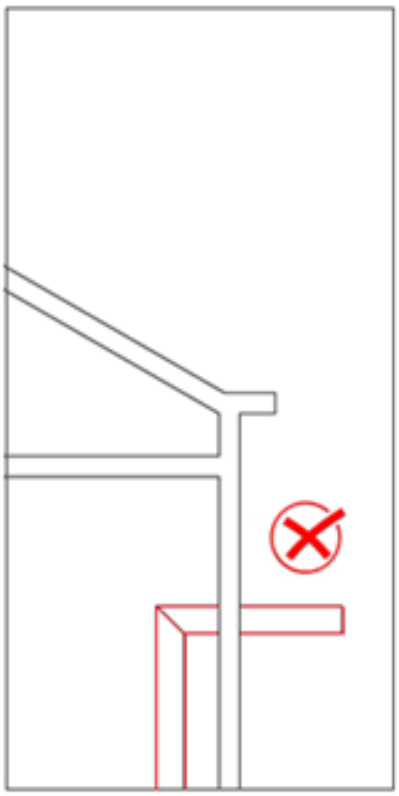


Figure 18- Incorrect installation

7.8. WIKEY panel installation

The WiKEY panel is supplied with 1 RJ45 cable, 1 plate with 2 welded M5 studs and 2 nuts to apply to plasterboard as shown in the images below.

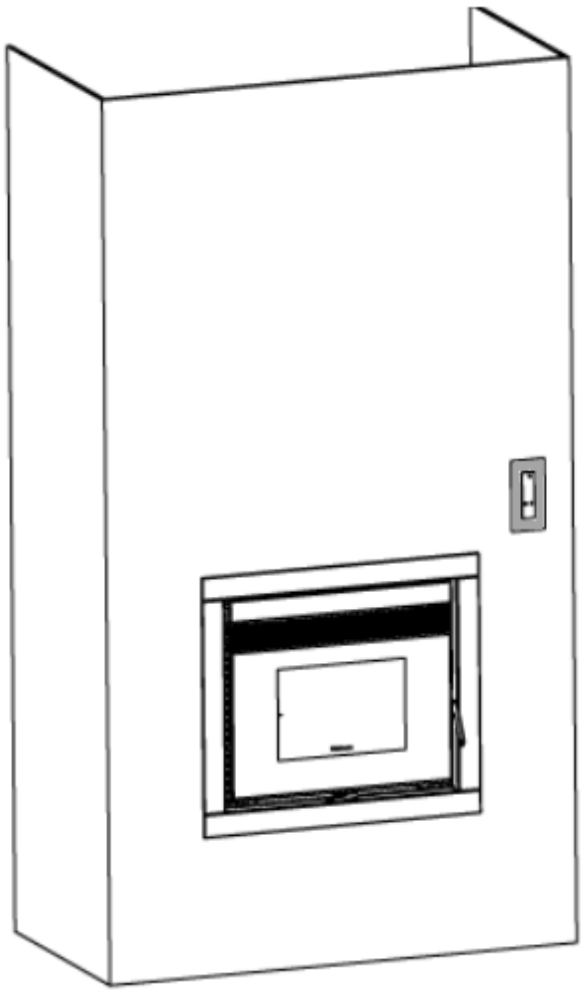


Figure 19- Overview

The WiKEY panel is supplied with an RJ45 cable that allows you to connect the WiKEY panel to the motherboard on the stove, which is located on the right side.

☞Do not forget to leave enough slack in the cord so that the stove can be pulled forward for maintenance and cleaning operations.

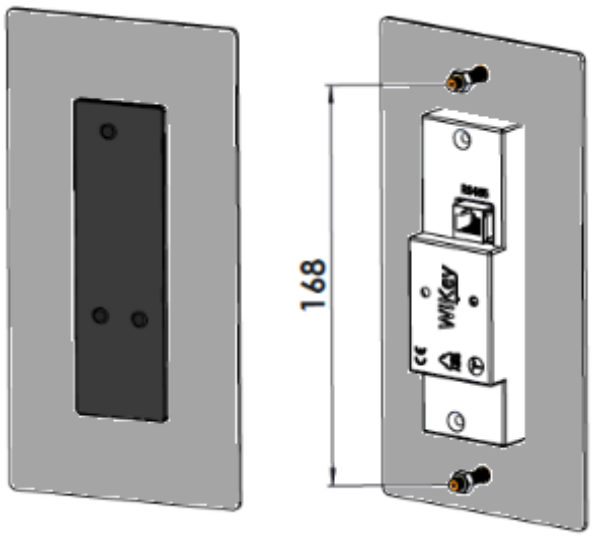


Figure 20- Front and rear view of the WiKEY panel

Connect the WiKEY panel via the supplied RJ45 cable.

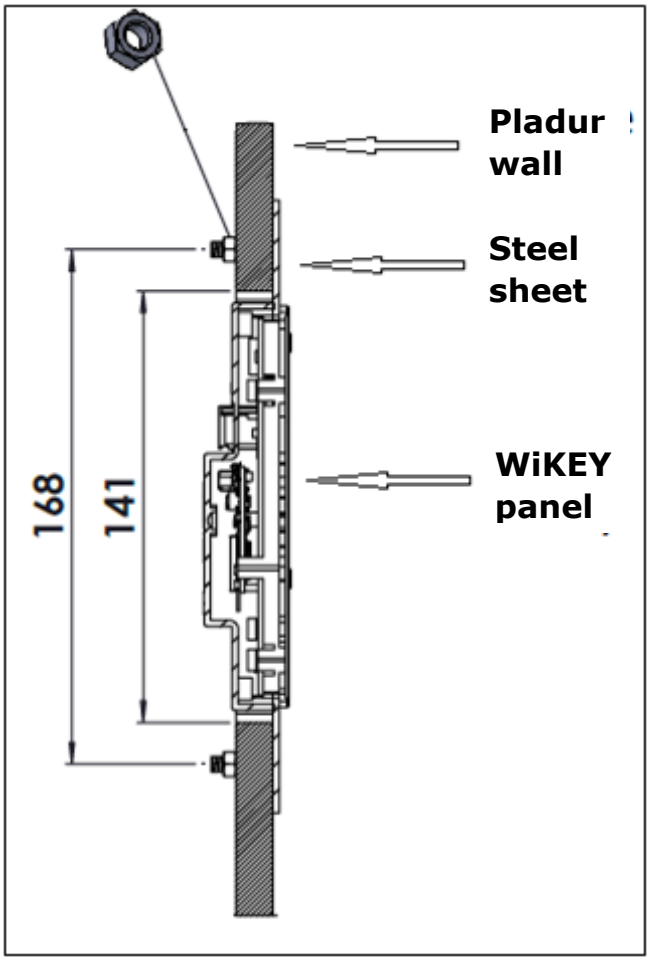


Figure 21- Schematic in section

7.9. Electrical installation

Installation must be carried out by qualified personnel according to EN 10683. Ensure that the electrical installation is earthed.

☞With the switch off, connect the cable to the wall socket and plug.

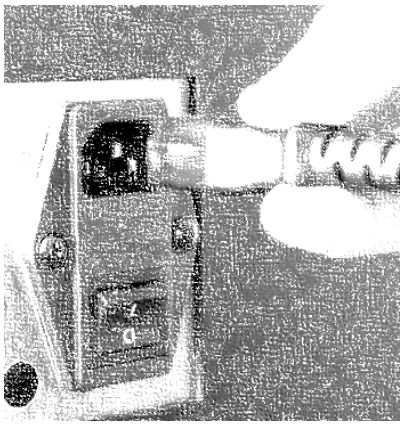


Figure 22

Turn on the switch to electrically supply the stove.

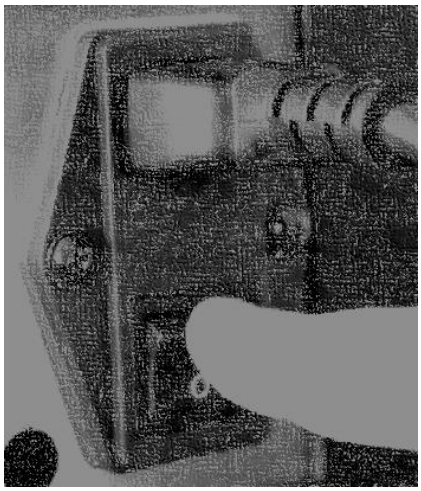


Figure 23

7.10. Maintenance

When installing the equipment, the space required for the maintenance and cleaning of the equipment and respective connection and smoke evacuation ducts must be taken into account.

7.11. Other information

7.11.1. Calculation of thermal power and average hourly consumption

The calculation of the thermal power required for heating a given space can be performed using a very simple method, since, on average, the heating power required for a properly insulated room is approximately 40 W/m^3.

If we want to heat a space with 100m ^{3} then we have:

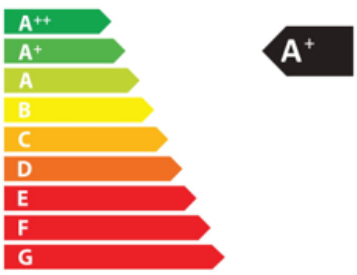
100m ^{3} x 40W/m ^{3} = 4000 W, that is, 4 kW.

For this main heating requirement, a 6.5 kW appliance will therefore suffice.

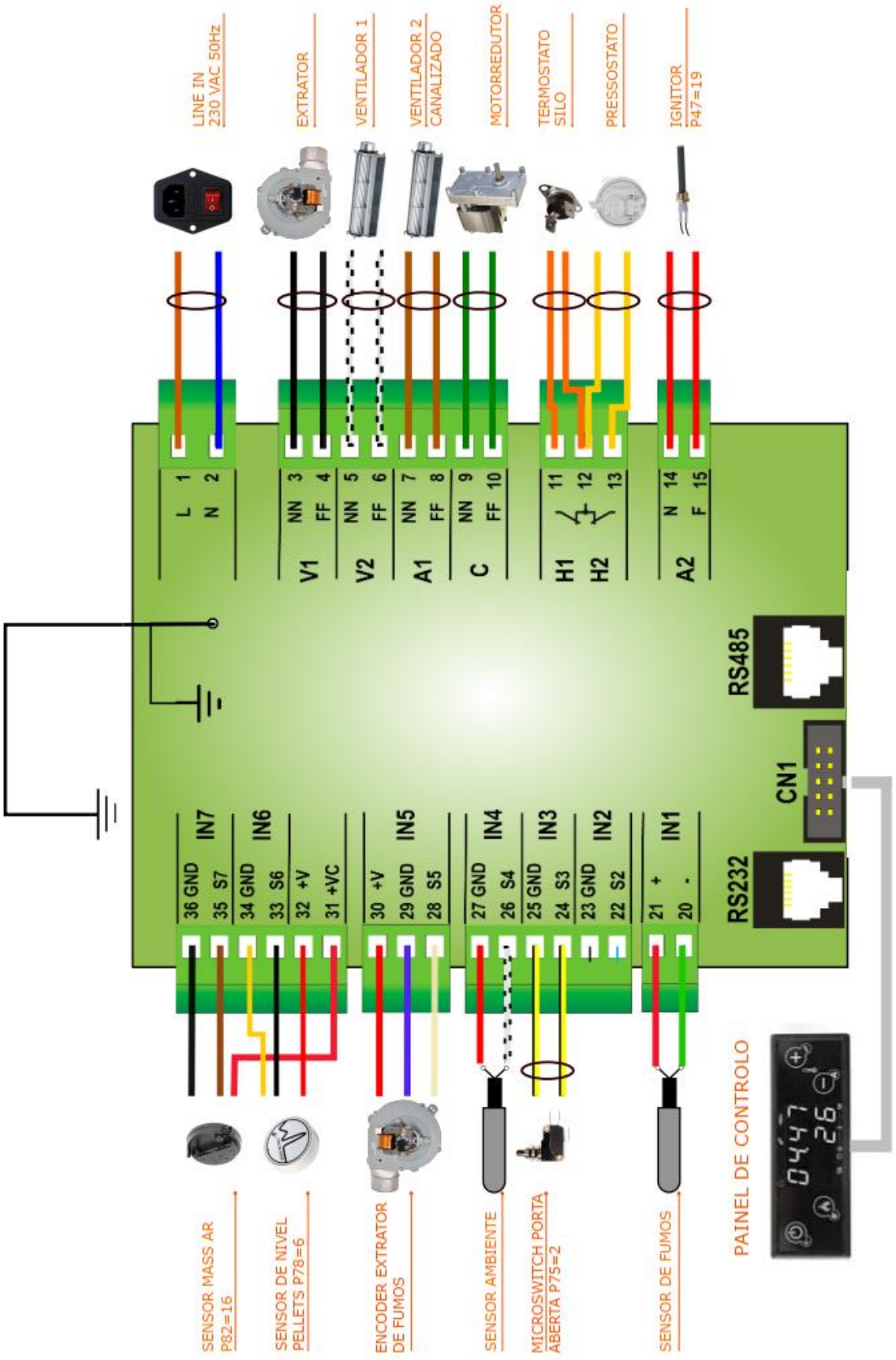
8. MODELS AND TECHNICAL CHARACTERISTICS

Models			Neotek	
			Pot. Term. Nominal	Pot. Term. Reduced
Weight	kg		92	
Height	mm		600	
Width	mm		693	
Depth	mm		601 (548 recessed)	
Heating volume	m^3		240	
Thermal power	kW		7,9	7,9
Pellet consumption	kg/h		1,98	1,98
Autonomy	H		6,50	6,50
Performance	%		86	86
% CO to 13% O_2	ppm		0,01	0,01
Mass flow of smoke	g/s		7,52	7,52
Minimum chimney draft	Pa		12	12
Smoke temperature	ºC		142	142
Absorbed electrical power	W		150*	150*
Auger	V	230	230	50
Pellet deposit capacity	kg		13	
Smoke outlet diameter (male)	mm		80	

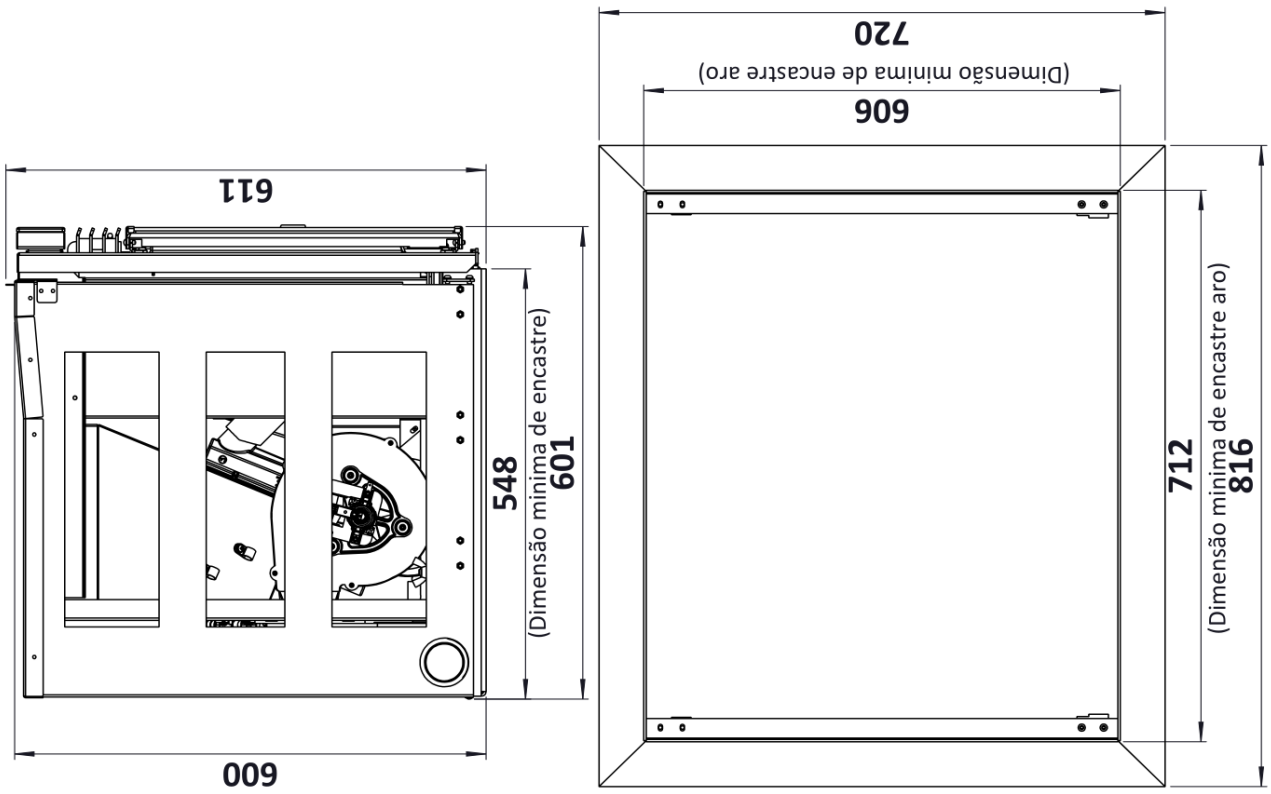
***Only on ignition**

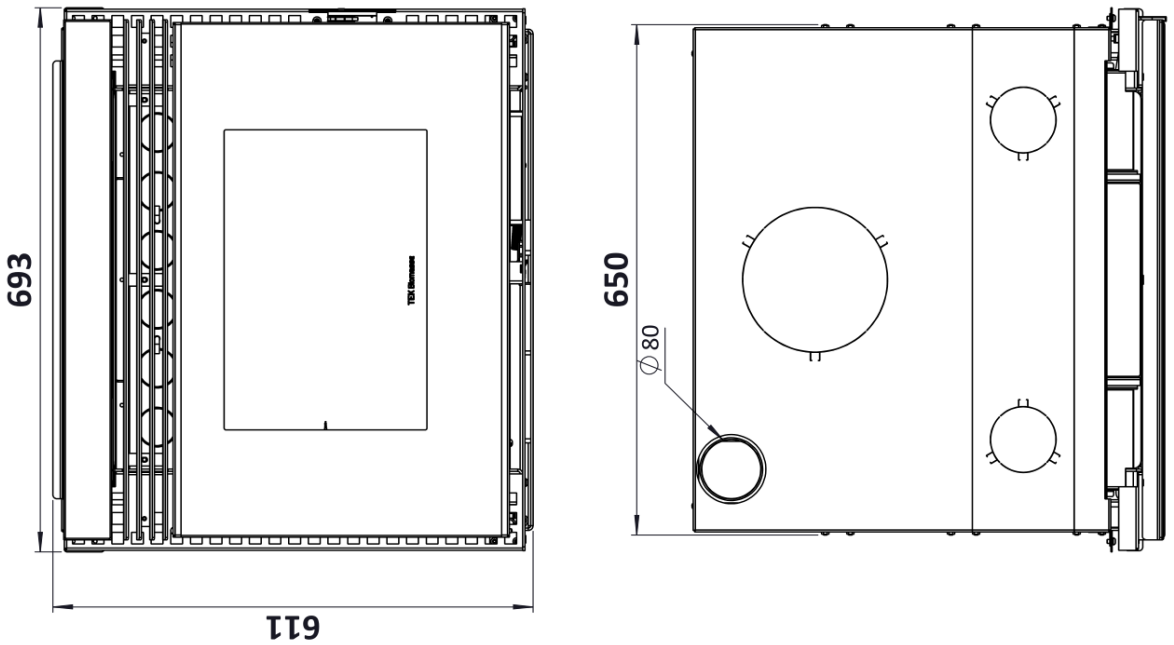


9. ELECTRICAL SCHEMATICS



10. DIMENSIONS





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