

TERMODİNAMİK®

HEATING SYSTEMS

PELLET STOVE HYBRID

INSTALLATION AND USAGE MANUAL

(22 kW)



www.termodinamik.com.tr

Not: Cep telefonunuza yükleyeceğiniz karekod tarayıcı ile kodu okutarak, web içeriğimize hızla ulaşabilirsiniz.



FOREWORD

Dear Customer;

First of all, thank you for choosing our product. We hope you will get complete satisfaction from Hot Air Blow Pellet Stove.

We would like you to use your device with maximum efficiency, therefore please read this instruction book carefully before you start using the product and save it to refer to in the future.

This manual will help you to operate your device safely and efficiently. For this reason you should pay attention to these:

- *Please read this instruction book carefully before you install and operate the product.*
- *Follow the instructions and the rules on safe usage.*

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PELLET AND PELLET STOVE

Pellets are small particles typically created by compressing an original material. Pellets are made from dried and densified sawdust, shavings or wood powder. Pelletisation is currently the most economic and saving way to convert biomass into a fuel with high energy density and consistent quality.

Wood pellets are providing numerous benefits for individual, public and private players using this unique fuel in heating appliances and large scale boilers. Pellets benefits are :

- The pellet contains about 7-12% moisture. The calorie is higher than the firewood because of humidity is low.
- It is a sustainable and renewable resource.
- It has the cleanest combustion system among the solid fuel systems and the ash ratio after combustion is 0,2%.
- Transport and storage of pellet are relatively easy compared to other fuels.
- Thanks to its homogenous structure, the thermal stability ensures that the system is continuously operative when it is approached and reduces the emission values of the exhaust gas.
- Due to the fact that it is a source of fuel, the C (carbon) load to nature is almost "0".
- Due to the fact that it is totally indigenous production, energy dependency is reduced and it has a price structure which is not dependent on exchange.

Comparisons of pellet fuel with other fuels are given in the following table:

SPECIFICATIONS	PELLET	COAL	WOOD
Thermal Value (kcal/kg)	> 4.200	5.000 - 7.000	3.500 – 5.000
Amount of ash (%)	< 2	15 – 25	20 – 45
Moisture (%)	< 10	20 – 40	10 – 30
CO₂ Emission	0.5	1.78	1.66
Efficiency of Device	%93	%75	%80

The general working principle of hot air blowing pellet stoves that allows individual ambient heating is as follows: The pellet stove has a fuel reservoir called a bunker, which holds about 15 kg of pellets. The pellets are automatically transported to the combustion chamber by an auger and start to burn together in contact with the fire. The fuel supply system is commanded by the measured values of the heat output, which can be monitored in an external cell. The combustion air is delivered to the combustion chamber directly by means of an exhaust fan, at a rate that ensures maximum efficiency by providing an excellent air / fuel mixture.

In light of this information, we have been working as **THERMODYNAMIC HEATING SYSTEMS**, a pioneer in the domestic heating sector since 1992. As a result of our research efforts, hot air blowing and water based fully automatic pellet stoves have been driven to the market to provide the best service for you. Hot-blowing and water-based thermodynamic pellet boilers with pellet fuel that a renewable and sustainable environment friendly, successfully passed all tests we performed in our laboratory environment and achieved value of efficiency up to 93%.

The fully automatic control panel on the pellet stove in your hand is programmed according to the power of your stove; fuel waiting and feed times, chimney suction fan speed, center temperature blower fan speed is adjusted according to the need to maximize comfort conditions.



WARNINGS



DANGER !

This symbol warns you against the risk of error.



NOTE !

This symbol warns you about the risk of material loss and environmental pollution.



The first run of the product must be done by a **THERMODYNAMIC** authorized service and the warranty period of the product will start after the first start of the device. After the product is first introduced, the authorized service will tell you in detail the information on how to use the product.



This guide is intended to inform you of our valuable users and to ensure that the product can be used in a healthy manner and that the necessary interventions can be performed if necessary. Your users should read this manual carefully and use the product in accordance with the instructions. Failure to read this manual; users, building residents and tertiary residents. Misuse will result in the out of warranty.



When you reach the pellet stove, first check visually. During the delivery of the product if you detect damages that have occurred during transportation of product, you must notify the damage to the shipping company in order to correct the damage and keep a record of the damage or do not take delivery of the product. If you receive the product while it is damaged, you will accept it.



Maintenance and cleaning must be carried out by the user or the authorized service as specified in the user manual and instructions. Failure to perform timely maintenance can result in product failure, shortened life span, increased fuel consumption, and a number of failures that can lead to out of warranty.



Quality pellet fuel should be preferred in order to provide heat efficiency and extend the life of the device. Absolutely moist or wet pellets, sawdust, wood, coal etc. fuels should not be used.



THERMODYNAMICS can not be held responsible for accidents that may occur if the user manual of product is not read or using the spare parts that supply from except for our factory ,and interfere to pellet stove except for authorized service.



The product should be used by the trained personnel or used by the person who get information from trained personnel about the use of the product.



When the product is in operation , door of product should never be opened, always be sure that the covers are completely closed.



The pellet should not be loaded manually from the front door of the stove. Smoke and flame during front loading can cause damage to our users and people around them.



When interfering with the product, it is absolutely necessary to disconnect the device. When the intervention to the product is completed, the plug must be reinserted and the electronic control panel must be checked to see if it is open.

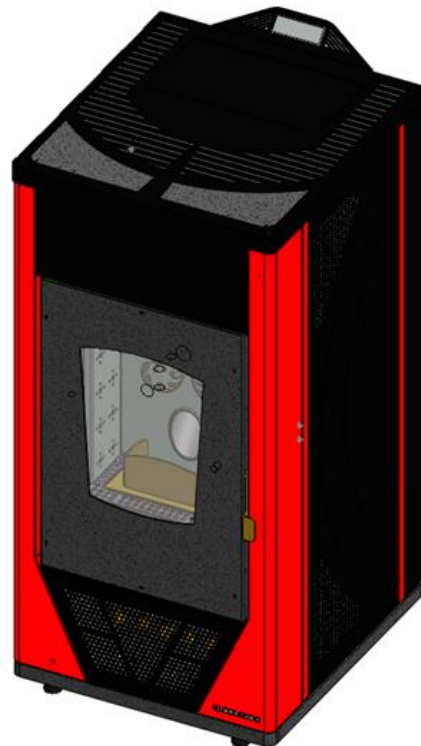
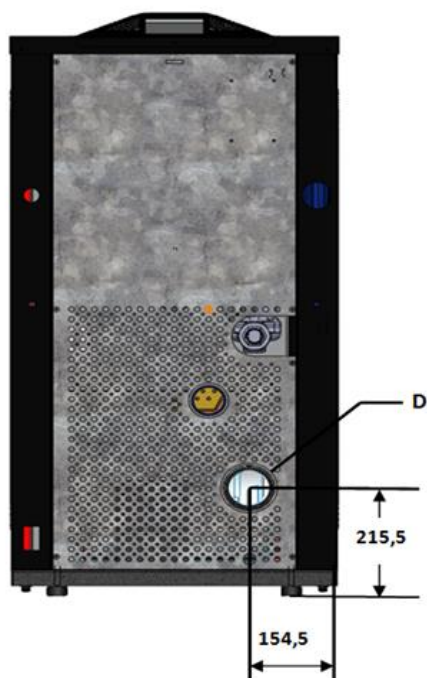
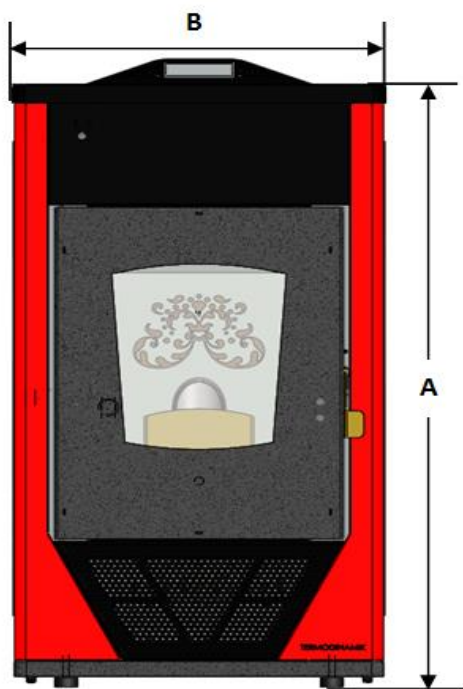


The product is out of warranty when there is a malfunction due to power failure or voltage irregularity. In order to avoid such failures, we recommend that you take regulatory measures related to the installation and use **uninterruptible power supply (UPS)** against power cuts.

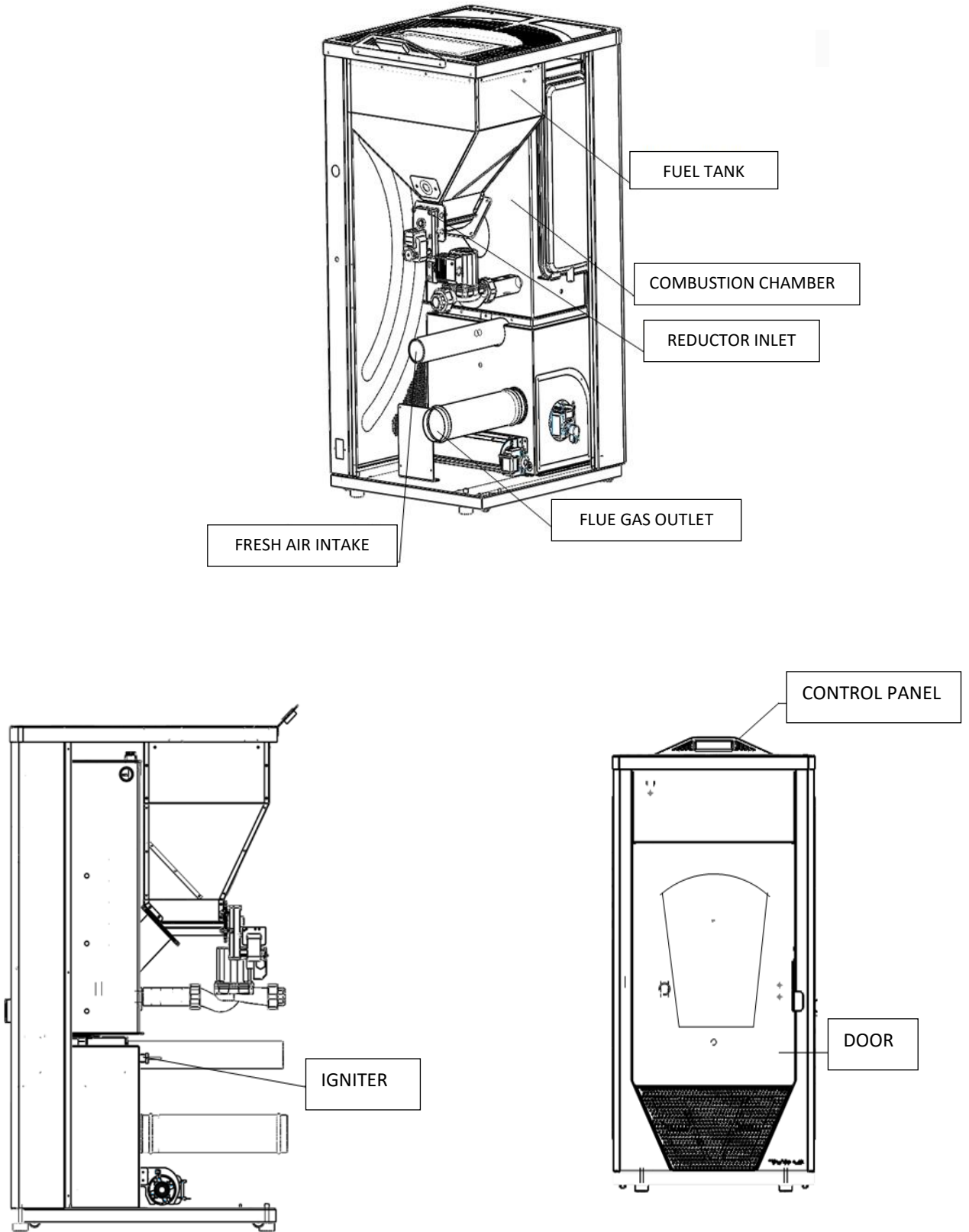


There should be absolutely no foreign object in your fuel. Foreign objects may cause the fuel supply unit to become stuck. Defects resulting from foreign objects that may come from your fuel are not covered by the warranty.

PELLET STOVE AND TECHNICAL SPECIFICATIONS



MODEL	Pellet Stove Hybrid 22 kW
Type	Hybrid
Capacity (kW)	22
Weight (kg)	
Capacity of Fuel Tank (kg)	20
Average Pellet Consumption Per Hour (kg)	
Efficiency (%)	93
Length (A) (mm)	1120
Width (B) (mm)	630
Depth (C) (mm)	600
Diameter of Flue (D) (mm)	80



FUEL

At **THERMODYNAMIC** Pellet Stoves ;

- 6 mm diameter
- Length of 5 mm-30 mm
- Made of peeled wood bark
- Humidity of %10-12
- No chemicals and additives were used in its manufacture
- Applicable of "**DIN-PLUS Norm**" or "**Ö-Norm M 7135**" pellets should be used.

The fuel you use in your stove should not contain sulfur in wet and high places. Sulfur and moisture can create sulfuric acid, causing to pierce the body of the stove.

FUEL LOADING

When lighting your stove for the first time , or any time you have run out of pellets,you will need to fill the hopper.Pellets are fed from the hopper to the burn pot by an auger. A high torque motor that is capable of doing serious harm to fingers drives the auger and for this reason in THERMODYNAMIC pellet stoves a protective grille inside the hopper is placed.



Do not let the pellet accumulate on the bottom of the chamber !



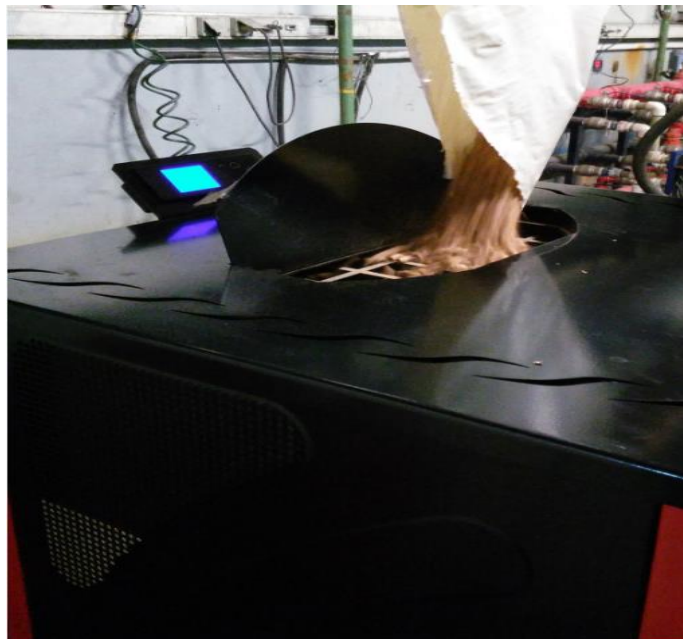
Do not leave the remaining pellets on the stove, the pellets may catch fire !



Do not fill the chamber excessively !

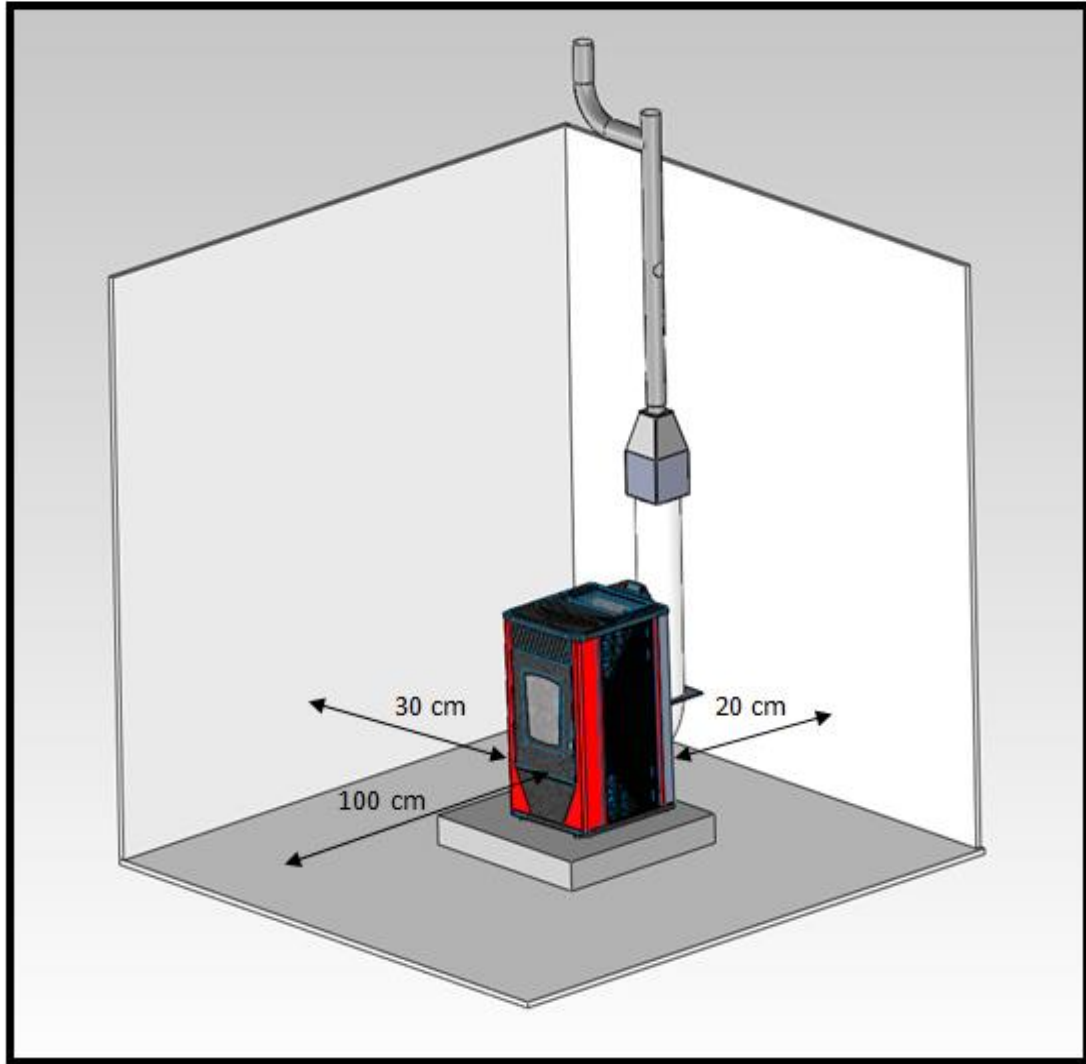


Unburned pellets in the grill should be cleaned to ensure better combustion !

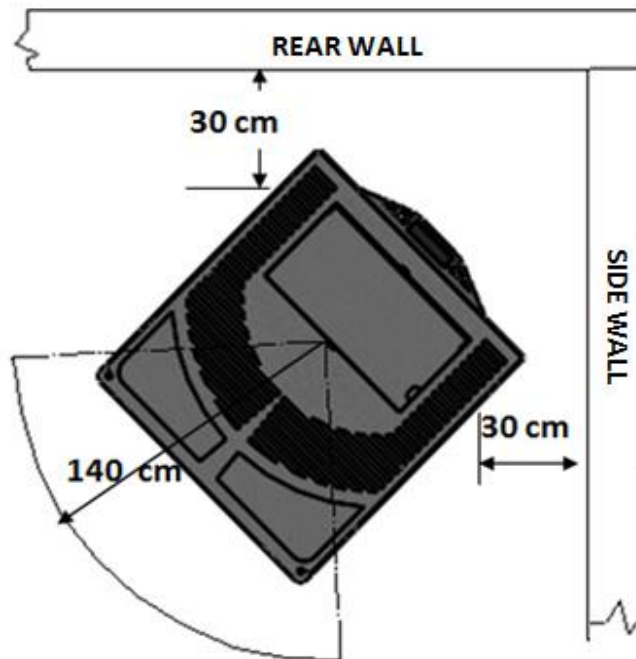
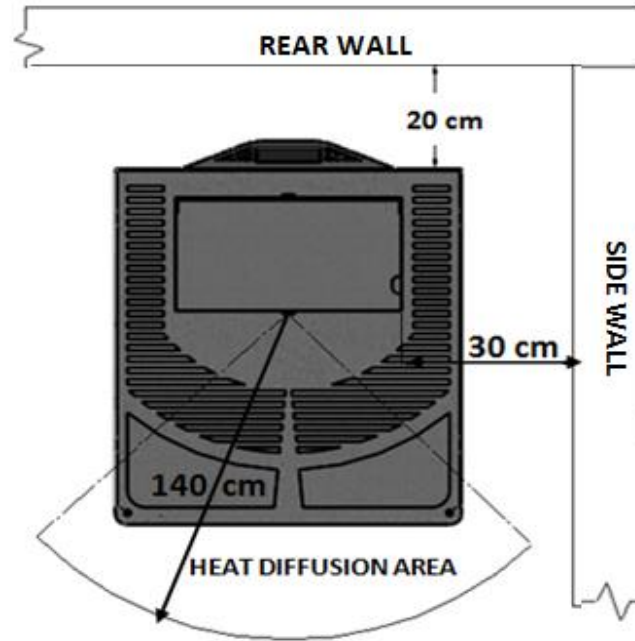


ASSEMBLY INSTRUCTIONS

- Installation of the product should be done by authorized persons.
- Safety distance must be strictly observed when installing the pellet stove. The distance from the rear wall must be at least 20 cm, and side walls must be at least 30 cm. The flame monitoring lid should be 140 cm away from the windscreen radiation area and products such as combustible material, plastic or furniture should be kept away.
- Before installing the pellet stove, it is necessary to determine whether the carrying capacity of the foundation for the pellet stoves. Appropriate precautions should be taken in case of insufficient carrying capacity. If the ground on which the furnace is to be installed is combustible or heat sensitive, place the product on the floor protection plate.
- Care must be taken to ensure that the ventilation conditions for the product are appropriate.
- Pellet stoves should not be operated with existing multiple chimney systems. There should also be no places such as an extractor head, skylight, ventilation.
- The chimney can be dispensed directly at short distances according to the location of the pellet stove, or can be applied to the existing pit short distances.
- The pellet stoves should not be installed in places such as bathrooms, coals, pantry etc. since they are designed according to the interior and give heat to the surroundings.
- The service will be provided by the service for proper operation of the moving parts during installation. Moving parts work in enclosed enclosures. When you open the covers or covers, you should never approach the limbs to the moving parts, otherwise you may be damaged. **THERMODYNAMICS** will not accept any liability for improper interference during operation of moving parts if the end result is damaged.



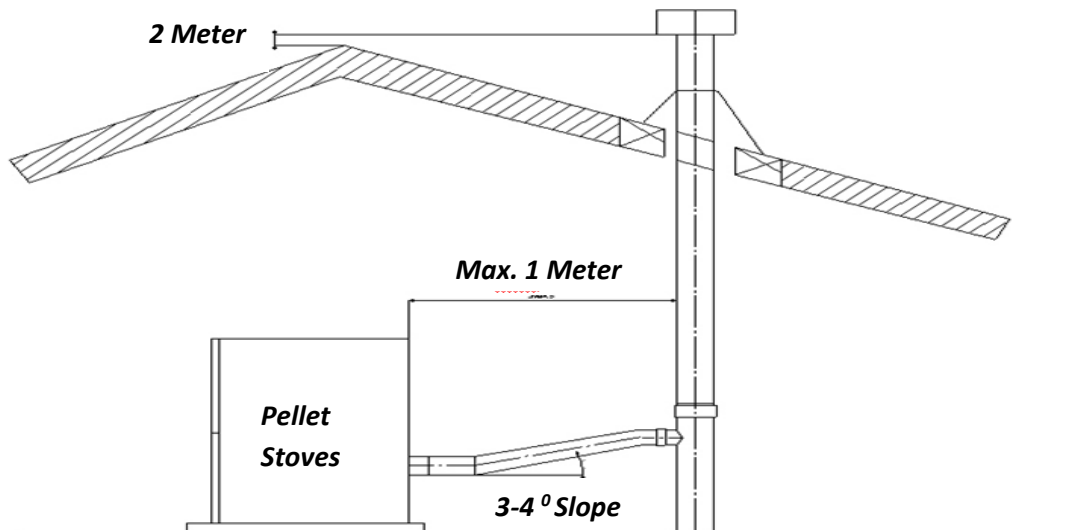
ASSEMBLY OF PELLET STOVE



Minimum Safety Distance

FLUE CONNECTION

- The chimney connection must be made by an authorized expert.
- Hazardous gases may emerge during combustion of the fuel. For this reason, the connection of the chimney connection must be ensured.
- Chimney connections must not pass through the bedroom or the children's room.
- The diameter of the chimney must be the same as the outlet of the chimney.
- Chimney section should never be narrowed.
- Sharp corners should be avoided at the chimney connections and at least pipe and elbow should be used.
- The chimney connection pipe should be connected to the bass with a rising slope of **3-4 °**.
- The horizontal distance of the device should be **at most 1 meter**.
- Chimney connections must not pass through places where flammable and explosive materials are present.
- The chimney connection pipe should be kept away from the fixtures to be deformed by heat. If there is a need to install the chimney connection in such a way that human and domestic animals can reach and be damaged from heat, absolutely thermal insulation should be done.
- The chimney must be raised **two meters** above the roof top.
- The chimney should be removed **at least 1 meter** above the neighboring buildings. The bottom of the chimney should be the soot cleaning door, this should be so that it does not get air from the bottom when it is closed, and it should also prevent it from going out in the same atmosphere.



PELLET STOVE OPERATING INSTRUCTIONS

- Put on the stick of the pellet stove and open the key. When the stove is opened for the first time, it makes CHECK-UP and goes to OFF position.



Do not perform any operation until OFF is displayed on the screen !

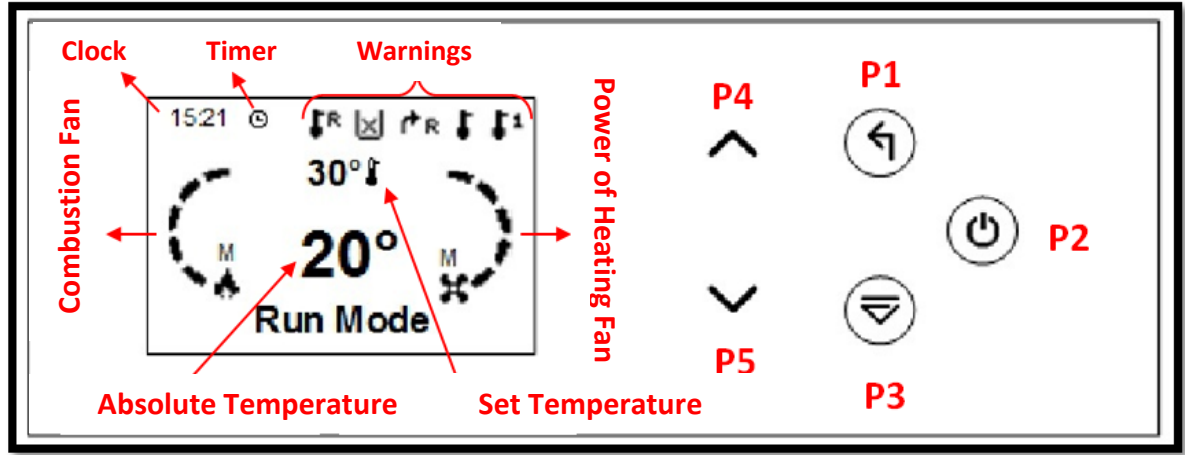


- After loading the fuel, press and hold the ON-OFF button for 3 seconds to operate the stove. The stove starts to work. Stove in order; **CHECK UP-IGNITION-STABILIZATION-RUN MODE.** (Press and hold for 3 seconds, the stove starts to work automatically in the above order.)








If the stove does not come out, empty the pellet in the grate, otherwise the grate will overflow. If it is not for the second time, call the service.

ELECTRONIC CONTROL PANNEL



BUTTONS

BUTTON	BUTTON FUNCTION
P1	Exit Menu / Submenu
P2	Ignition and Extinguishing (Push for 3 seconds.) Reset Errors (Push for 3 seconds.) Activation chrono
P3	Enter in User Menu 1 / Submenu Enter in User Menu 2 / (Push for 3 seconds.) Save data
P4	Enter in Visualizations Menu (Increase)
P5	Enter in Visualizations Menu, Decrease

WARNINGS	FUNCTION	WARNINGS	FUNCTION
	External Chrono reached		Local Room Thermostat Reached
	Lack of pellet		Remote Room Thermostat Reached
	Direction of Air Flow		

ALARMS

INSTRUCTIONS	SYSTEM STATE	CODE
Error Safety High Voltage 1: signalled also with the system Off	Block	Er01
Error Safety High Voltage 2: signalled only if the Combustion Fan is On	Block	Er02
Extinguishing for exhaust under temperature	Block	Er03
Extinguishing for exhaust over temperature	Block	Er05
Encoder fan error: no Encoder signal	Block	Er07
Encoder fan error: Combustion Fan regulation failed	Block	Er08
Failed ignition	Block	Er12
Lack of voltage supply	Block	Er15
Run out of pellet	Block	Er18
Open door error	Block	Er44
Service error. It notifies that the planned hours of functioning is reached. It is necessary to call for service.	Block	SERVICE



Reset the panel to fix the error. If the error continues, call the service.

USER MENU


Press the SET key on the panel to access the user menu. The following menu will appear on the screen.



Use the up  and down  keys to switch between menus.

Use the SET  key to enter and record the desired menu.

Use the ESC  key to exit.

Use the ON-OFF  button to switch on / off the panel and pellet stove.

➤ COMBUSTION MANAGEMENT

Press the SET key to enter the combustion management menu. Use the up and down keys to enter and change the burning speed with the SET button. For example: 1 – 2 – 3 – 4 – 5 – A (A=Automatic Combustion). Use the SET key to record.



➤ HEATING MANAGEMENT

Press the SET key to enter the heating power menu. Use the up or down keys to change the burning speed. For example: 1 – 2 – 3 – 4 – 5 – A (A= Automatic Combustion). Use the SET key to record.



➤ ROOM THERMOSTAT

Press the SET key to enter the heating power menu. Press the SET key to enter the room thermostat menu. Use the up and down keys to change the temperature value. (Max 40 Min 10) can be set. Use the SET key to record.

➤ CHRONO

From Menu Customize, you can access the Timer Program by selecting the Timer menu with the UP button.(Daily-Weekly-Weekend)

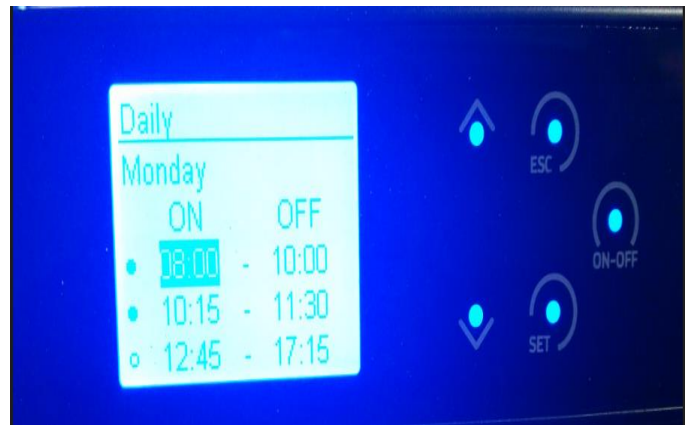
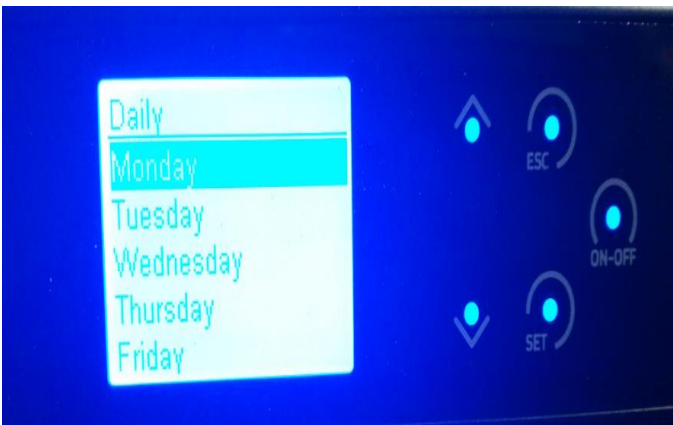
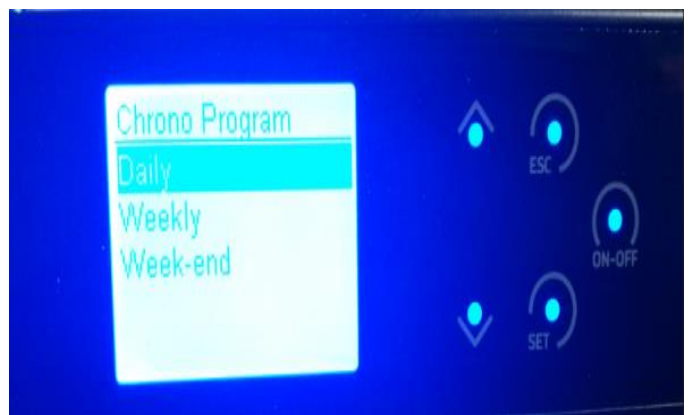
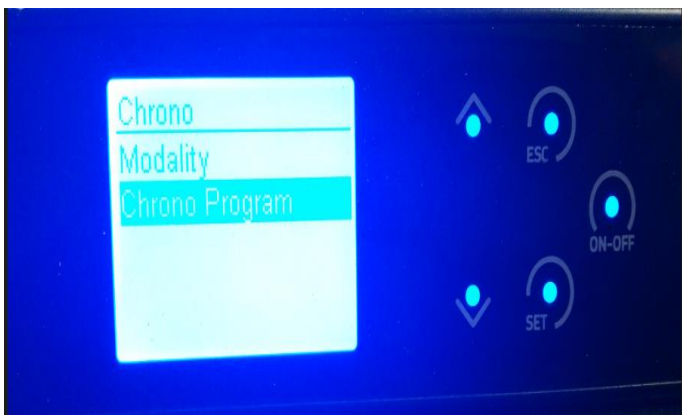
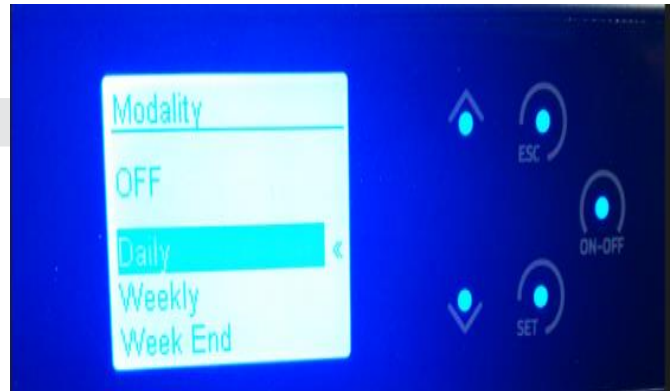
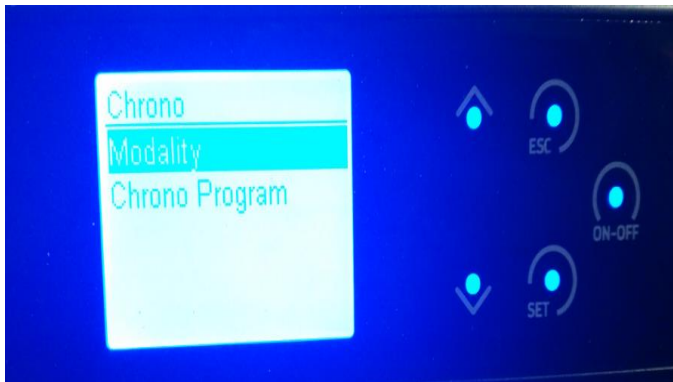


➤ DAILY

It allows you to schedule separate times for each day. Select the day of the week to program and set the ignition and extinguishing times.

Programs around midnight

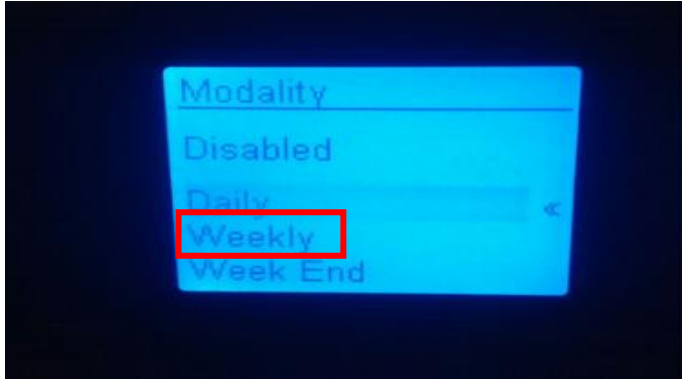
- Set the clock On of the previous day at the desired time: Ex. 20.30
- Set the clock of OFF of the previous day at: 23:59
- Set the clock On of the following day at 00:00
- Set the clock of OFF of the following day at the desired time: Ex. 6:30
- The system turns on at 20.30 on Tuesday and turns off at 6.30 on Wednesday



- Enter the desired time setting with the SET button, set the time with the up and down keys and save the time with the SET key.

➤ WEEKLY

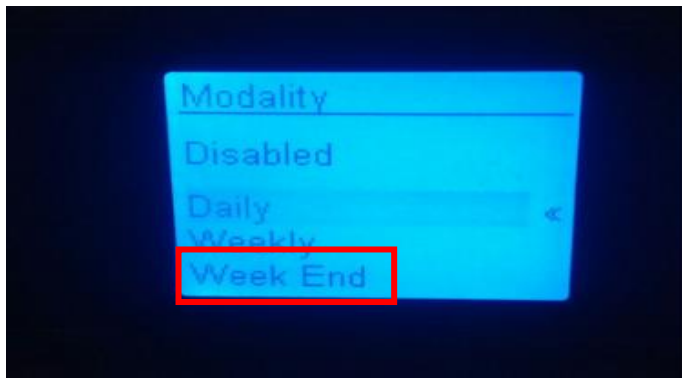
The programs are the same for all days of the week.



- Enter the desired time setting with the SET button, set the time with the up and down keys and save the time with the SET key.

➤ WEEKEND

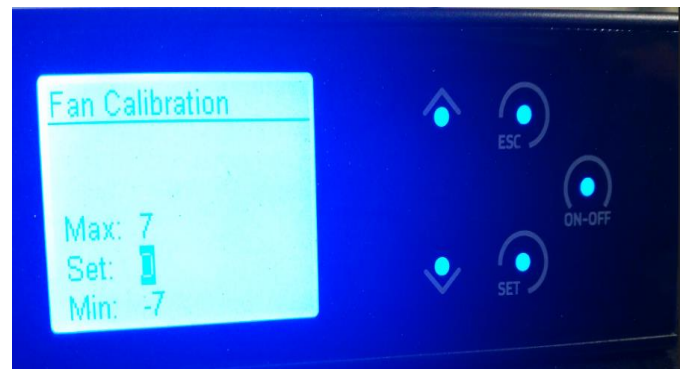
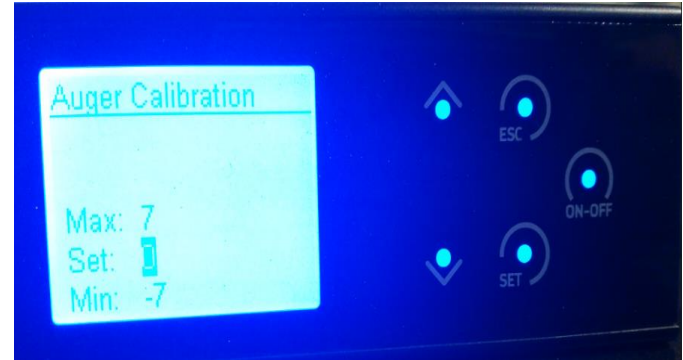
Choose between 'Monday-Friday' and 'Saturday-Sunday', then set the on / off times.
(With this menu the stove works at set times 'Monday-Friday' and 'Saturday-Sunday'.)



- Enter the desired time setting with the SET button, set the time with the up and down keys and save the time with the SET key.

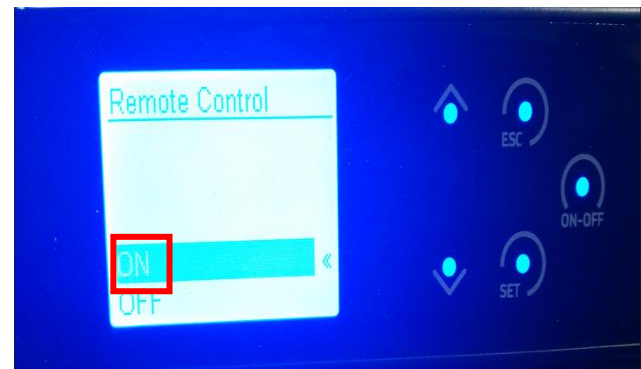
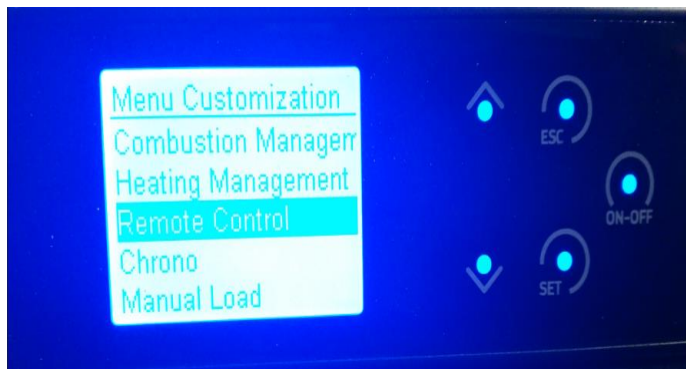
➤ **CALIBRATION**

Touch the SET key to enter the sub menu in the combustion management menu. Auger and fan calibration menus will appear. Use the SET key to set the speed of the screw pellet loading. On the displayed screen (+ 7 ... 0 ... -7), use the up and down keys to slow down the pellet loading speed or to set the acceleration values. Registration and departure will occur at the same time. Use the SET key to set the chimney fan speed. Use ESC key for back-out.



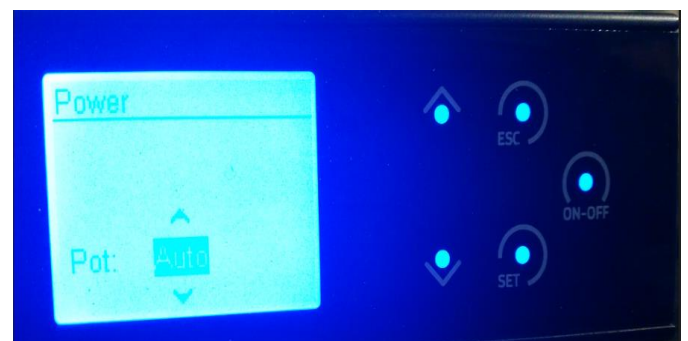
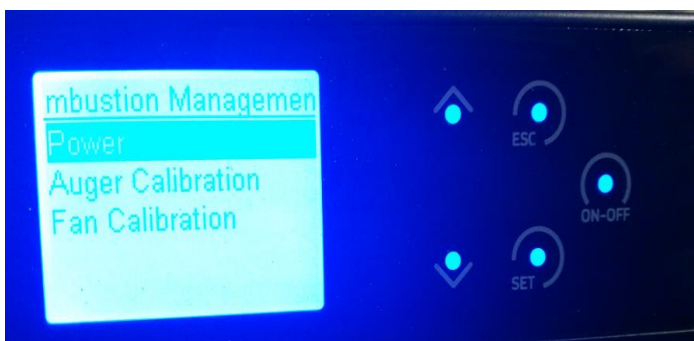
➤ REMOTE CONTROL

If the stove is not running automatically, the +, - keys of the remote control are not active. The ON / OFF buttons continue to work. If the stove is taken into manual operation, the +, - keys adjust the operating level, the stove operates steadily at the set stage, it does not work settings that must be done according to the room temperature. Press ON to activate the remote control, OFF to deactivate the remote control. Press SET button to save your selection.



Automatically switch to manual operation:

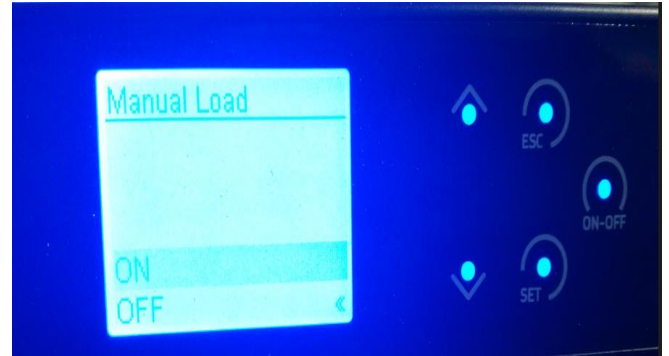
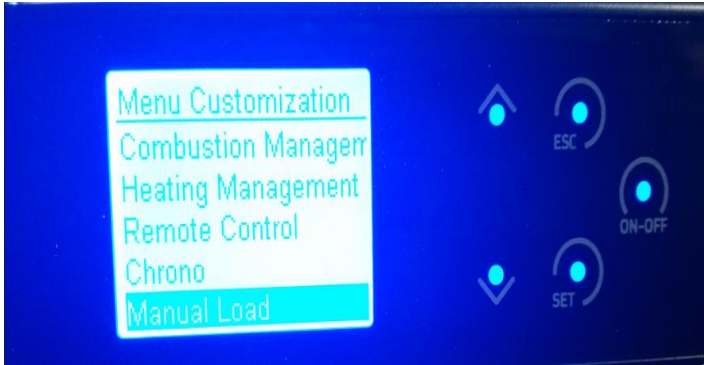
1. Press and release the SET key.
2. Select Combustion Management.
3. Select the Power.
4. Press the up or down key.
5. Press SET.
6. Press ESC.
7. You will see that the letter A on the Flame is back to M's.
8. Your controller's + and - keys are active.



➤ **MANUAL LOAD**

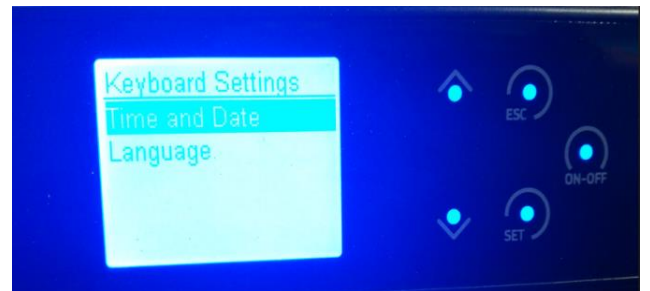
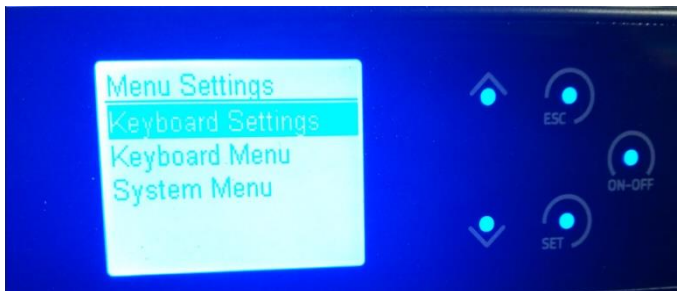
By touching the down key, the submenu is entered. When the button is turned to the open position, the pellet will be loaded manually. Pellet loading is stopped by selecting the off position. Use ESC key for back-out.

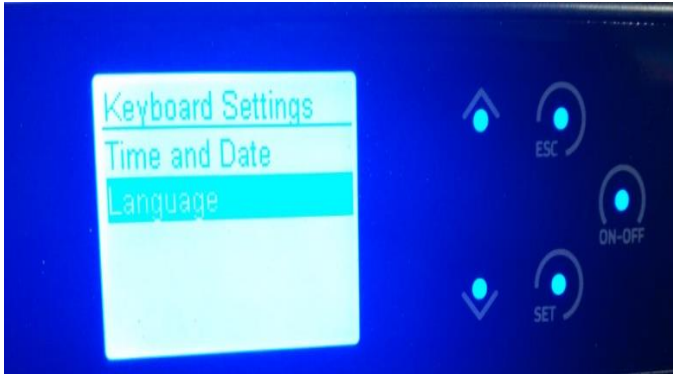
This procedure is only used to fill the pot and speed up the ignition in the first combustion phase when the unit is in the off position. Perform this operation when the fuel tank is completely empty !



➤ **LANGUAGE, DATE AND TIME ADJUSTMENT**

Press SET button for a long time to enter Menu Settings. Press SET button to enter INPUT SETTINGS. Set date and date with SET button and make settings. Sample; English menu is selected. Use ESC key for back-out.

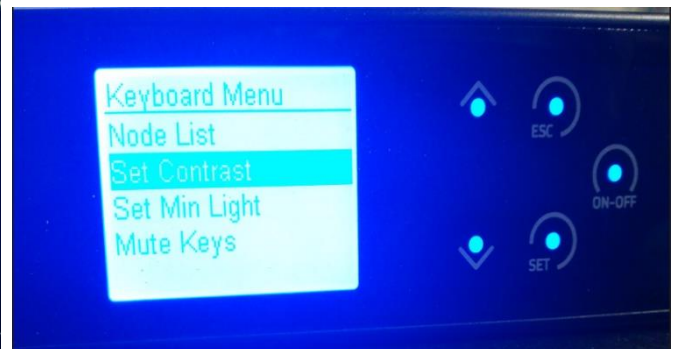




- Use the up and down arrows to move the time and date settings to the digit you want to change and then press the SET key to activate it.

➤ SET CONTRAST

Use the SET button to enter the menu for the screen sharpness setting (contrast). After setting the desired values with the up and down keys, record with the SET key. Use ESC key for back-out.



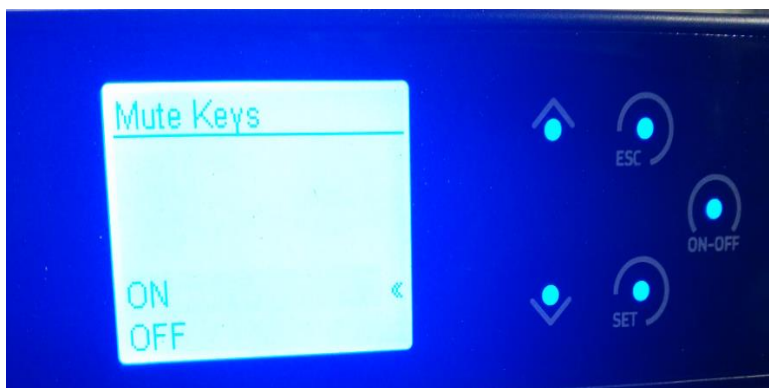
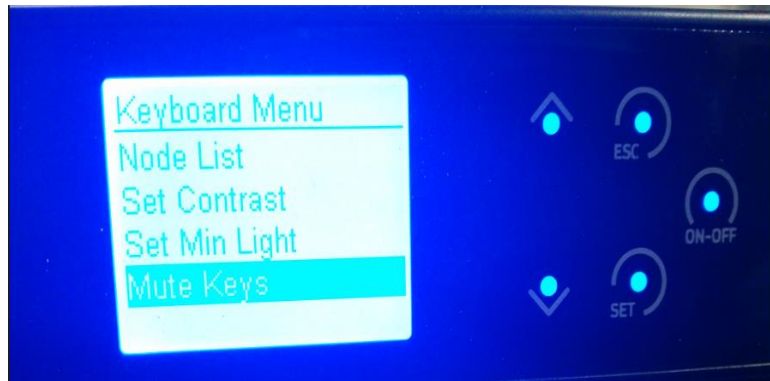
➤ SET MIN LIGHT

Use the SET button to enter the menu for minimum light setting of the display. After setting the desired values with the up and down keys, record with the SET key. Use ESC key for back-out.



➤ MUTE KEYS

Use the SET button to enter the menu for the volume setting of the panel keypad. To turn on the buzzer sounds, select ON and save with the SET button. To turn off key tones, scroll to OFF and press the SET button. Use ESC key for back-out.



➤ **BOYLER THERMOSTAT**

The boiler allows us to adjust the water temperature. You can enter the heating management menu by touching the SET key. You can enter the Boiler Thermostat menu by pressing the SET key. Use the up and down keys to change the heating value. (max 80 min 50). Use the SET key to register.

➤ **SYSTEM (PARAMETERS) MENU**

THIS MENU IS IN AUTHORIZED SERVICE. NOT USED!

The diagram illustrates the wiring for the control panel, which is a green PCB with various connectors and components. The panel is labeled with H1, H2, H3, and H4 at the corners, indicating mounting holes. The dimensions are given as H1-H4 = H2-H3 = 114 mm and H1-H2 = H3-H4 = 98 mm.

Connections and Components:

- Input IN6:** Connected to pins 26 (GND), 27 (S6), 28 (GND), 29 (S7), 30 (+V), and 31 (+Vc).
- Sensore Pressione Pressure Sensor:** Connected to pins 26 (GND) and 29 (S7).
- Input IN5:** Connected to pins 24 (GND) and 25 (S5).
- Encoder:** Connected to pins 21 (+V), 22 (GND), and 23 (S4).
- Probe:** Connected to pins 15 (+), 16 (-), 17 (GND), 18 (S2), 19 (GND), and 20 (S3).
- RS232:** Connected to pins 37 and 36.
- USB Programmer:** Connected to the USB port.
- LINE (230V 50 Hz):** Connected to pins 1 and 2.
- Ventola Comburente Combustion Fan:** Connected to pins 3 (V1), 4 (V2), 5 (V3), 6 (V4), 7 (V5), 8 (V6), 9 (V7), and 10 (V8).
- Uscita V2 V2 Output:** Connected to pin 3.
- Uscita R R Output:** Connected to pin 7.
- Coclea Auger:** Connected to pin 10.
- AT1 Termosilato Sicurezza HV1 Safety Thermostat:** Connected to pins 11 and 12.
- AT2 Pressostato HV2 Pressureswitch:** Connected to pins 13 and 14.
- Uscita Aux1 Aux1 Output:** Connected to pins 33 (VDD), 34 (GND), and 35 (VDD).

CLEANING AND MAINTENANCE

Maintenance is necessary to ensure the correct operation of your stove over time. Failure to do so may make the stove unsafe.

CLEANING THE GLASS

- Clean the pellet stoves with a clean fabric as shown in Picture 1.
- Clean the window **every day**.



Picture 1

CLEANING THE ASH TRAY

- After opening the door of the pellet stoves, you can empty the drawer after the ash has cooled down as shown in Picture 2 and Picture 3, or you can remove it with a cold ash vacuum cleaner.
- Clean the ash tray **everyday**.



Picture 2



Picture 3



Picture 4

CLEANING THE GRATE

- Once you open the pellet's door, remove **grate** of the stove as shown in picture 5, and after the ash in the stove has cooled down, put it in the ashtray or pull it off with a cold ash vacuum cleaner.
- Do the cleaning **every day** to prevent the fuel from solidifying and accumulating in the stove.



Picture 5



Picture 6

CLEANING THE SHEET OF GRATE

- Remove the ash emptying sheet of the pellet stove as shown in Figure 8 and use a clean fabric or vacuum cleaner.
- Clean the ash emptying sheet **every day**.



Picture 7



Picture 8

CLEANING THE FIREBOX

- Clean the pellet firebox with the vacuum cleaner as shown in Picture 9 after removing the grate.
- You should clean the firebox before burning the stove **every day**.



Picture 9

CLEANING THE PELLET FLUX PIPE

- Use a wire brush to clean the pellet flow tube as shown in Figure 10.
- Clean the pellet flux pipe once a week to prevent clogging of the pipe.



Picture 10

CLEANING THE MIRROR

- Clean the mirror of pellet stove with a clean fabric.
- Remove the pellet stove mirror as shown in Fig. 12 and clean the back of the mirror using the vacuum cleaner.
- Clean the pellet stove mirror and the rear part **every day**.



Picture 11



Picture 12



Cleaning and maintenance of the pellet sole should be done when the sole is not in working condition and it is cold.



It is important for the safety of the person that the socket is pulled out in order to avoid possible electric shocks during maintenance and cleaning. After all the maintenance and cleaning processes have finished, the socket of the sobabe can be reinstalled.

CLEANING THE FLUE FAN

Since the chimney fan is exposed to the smoke coming out of the burning pellet, the fan blades may be covered with a layer of the pitch appearance over time.

Contact **THERMODYNAMICS** when any abnormal sound is heard in the flue fan or when vibration is felt. Flue fan cleaning will be done by the service.

CLEANING THE FLUE

The flue should be cleaned **once a year** and the flue should be checked if there is any problem in the flue draught.

PROBLEMS, REASONS AND SOLUTIONS

PROBLEM	REASON	SOLUTION
No light or image on screen	The main switch is off.	Turn on the main switch.
	Blowing of fuse	Replace the fuse.
	There may not be electricity at the socket.	Check the socket.
The stove does not start to burn.	The measured temperature may be greater than the desired temperature.	Change the temperature setting.
	The room thermostat may be closed.	Open the room thermostat.
Extreme Temperature Error	Low air flow	Check that the ventilation holes are not closed.
	Pump malfunction	Check the pump.
	Temperature sensor malfunction	Call the service.
	Malfunction with control panel	Call the service.
Extinguishing	Pellet finishing in fuel tank	Fill the fuel tank with pellet.
	Peletin kalitesiz yada rutubetli olması	Yüksek kaliteli pelet kullanınız.
	Defective flue temperature sensor	Call the service.
	Defective chimney suction fan	Call the service.
Yetersiz Fan Draught	Inadequate flue draught	Check the flue.
	Clogged flue	Check the flue.
	The weather is very windy.	-
Ignition Failure	Pellet is damp in poor quality.	Use high quality pellets.
	Ambient temperature too low.	Try again.
	Failure of the igniter.	Call the service.
	Defective flue temperature sensor.	Call the service.

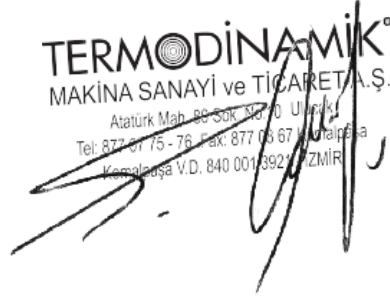
PRODUCER INFORMATION

PRODUCER

TITLE : **TERMODİNAMİK MAKİNA SANAYİ TİC.A.Ş.**
ADRESS :
PHONE :
FAX :

COMPANY EXECUTIVE

SIGN-SEAL



PRODUCT

TYPE OF PRODUCT :
MARK : **TERMODİNAMİK**
MODEL : **PELLET STOVE HYBRID**
BANDEROLE AND SERIAL NUMBER :
DATE AND PLACE OF DELIVERY :

SELLER COMPANY

TITLE :
ADRESS :
PHONE AND FAX :
INVOICE DATE AND NUMBER :
DATE-SIGN-SEAL :



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