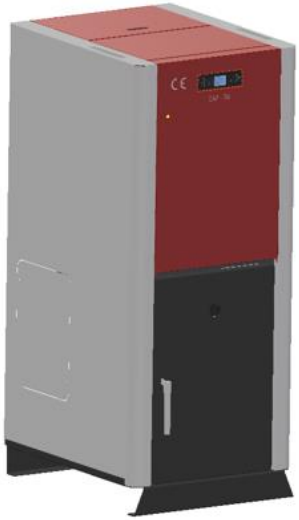
INSTRUCTION MANUAL



ECO - EKP

CONTENTS

INTRODUCTION

Dear Sir/Madam

We thank you for choosing our product. Before using it, we ask you to read this manual carefully. This manual is an integral part of the product. We ask you to keep it for the entire lifetime of the product. If you lose it, you can request a copy from your dealer or download it from www.enrad-ks.com

Hereby declares, under its sole responsibility, that: The pellet hydro boilers mentioned below are conforming to EU Regulation 305/2011 and harmonized with **EU standard EN 303-5:2012.**

ENRAD wooden pellet boilers ECO-EKP constructed and complies with safety regulations:

- 2014/35/EC - Low Voltage Directive
- 2014/30/EC - Electromagnetic Compatibility Directive
- 2006/42/EC – Machine Safety Directive
- 2014/68/EC – Pressure Equipment Directive

This manual is addressed to:

• USER-those who will use the product at home
• INSTALLER-the technician who will install the product
Before any operation on a boiler, the user should be ready TO READ THIS INSTRUCTIONS FOR USE.

Please keep:

• The warranty certificate accompanying the product
• The purchase receipt given to you by the retailer
• The declaration of conformity given to you by the installer.

The warranty conditions are given in the warranty certificate accompanying the product.

General information

After unpacking the product, check the condition and completeness of the contents.
In the event of error, contact the retailer where the purchase was made, providing them with a copy of the warranty and the sales receipt.

It is imperative to comply with all European, national and local regulations (norms) in effect in the country where the product is installed.

The boiler is packed on EURO pallets. When transporting the boiler, it must be firmly secured to avoid overturning or damage. For the installation, and for anything not specifically indicated in the manual, observe local regulations.

This pellet boilers intended for central heating and cannot be used for other purposes.
The diagrams provided in this manual are for illustration purposes only: they do not always strictly refer to your specific model, and are not binding in any way.

First ignition

Should be made by an authorized technician as it is required by UNI 10683, and is Recommended in all countries to ensure:

• Checking the installation documents (declaration of conformity) and the quality of the installation itself.

• Providing explanations to the end user and issuing the complementary documentation (first ignition -commissioning certificate)

If the appliance is not commissioned by an authorized technician, ENRAD will not provide warranty service. Seethe warranty booklet for details.

The above terms do not affect the dealer's legal responsibility for the legal warranty.

The warranty do not covers problems resulting from improper installation or calibration.

Basic principles of work

The ENRAD pellet boiler is a special heat exchanger intended exclusively for domestic use and only for the wood pellet burning of 6 mm diameter and 5-40 mm length.

During operation, the unit with an integrated heat exchanger (boiler) produces hot water, which is transferred to a central heating system. The integrated pump will start when the water temperature in the boiler (50 ° C) is reached.

For normal operation it is only necessary to start the boiler and choose the desired power or temperature. By installing the room thermostat it is possible to automatically start and stop the boiler.

The pellet automatically falls into the burner and is inflated with an electric heater.

Depending on the set performance, the gear motor will automatically add the required amount of pellets.

1. SAFETY INFORMATION

Warning

ENRAD Pellet boilers are designed in accordance with all safety measures in EN 303-5:2012. Taking care of each component of the boiler, it is ensured that the user and installer are protected from any accident. The manufacturer is not liable for any consequences (injuries to humans, animals or property damage) resulting from non-compliance with this Instruction.

The mass of the boiler ranges from 200-400 kg. Therefore, caution is needed when unloading, moving and installing the boiler, so that no physical injuries occur.

Before starting the burning, the boiler must be obliged to connect to the central heating installation!

Do not install the boiler in areas subject to the risk of fire.

Do not ignite or boost the flame with fluid sprays or a flame torch.

Prior to any operation on the boiler, it is necessary to switch off the boiler first (the switch must be in position 0) and remove the electric cable from the socket. Special attention must be paid to electrical connections.

All parts of the boiler must be replaced by original parts exclusively from the manufacturer (if you do not incorporate the original parts you will lose the warranty!)

Children and infirm persons are not allowed to handle the product.
Do not touch the boiler with wet or moist parts of the body and ensure that the product is always connected to a properly grounded outlet.

During normal boiler operation, the fire door must always be closed.
The pellet container lid must always be closed.

Never touch hot surfaces, use gloves when working with the boiler.
Do not open the door for ash cleaning during operation
The cleaning door should only be opened during regular cleaning and maintenance.
Do not clean the hearth with a vacuum cleaner while is hot.
Never do not exclude the boiler with electric networks during working boiler.

If the heating system is overheated and the temperature in the system does not drop, switch off the boiler and call an authorized service center.
The boiler must not be placed in rooms where there are gas boilers, wood boilers or to rooms and flats that are vented through aerial installations or warm air heaters by means of a fan (air conditioner, kitchen sockets).
Do not block the aeration vents or flue.

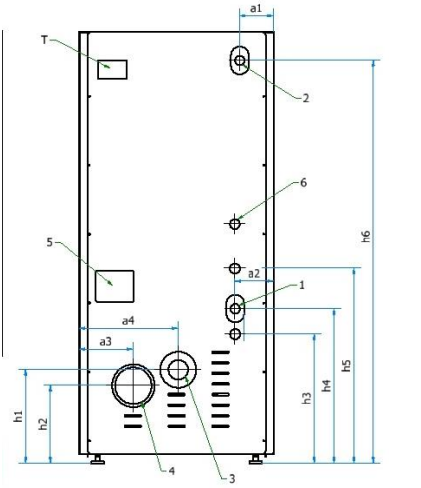
Smoke gases can cause poisoning! Switch off the boiler by pressing the I / O button for 3 seconds, ventilate the room where the boiler is located, leave the room and close the door.
In case of fire in the room or in the chimney, Switch off the boiler by pressing the I / O button for 3 seconds, and never open the fire door. For extinguishing, It is also necessary to provide suitable fire extinguishers and / or call firefighters.
All boilers are pre-delivery test examined, as well as all the initial parameters are set at the factory.

1.1 SAFETY DEVICES

The motherboard intervenes directly and sends the alarm up to the complete cooling of the boiler in case the operating conditions deviate from the given safety conditions;
Fuse protects the boiler from sever voltage changes (max.6, 3A and 250 V);
The pellet tank temperature sensor in case of overheating of the tank (max.110 ° C) the sensor automatically blocks the pellet dosing and the alarm sounds.
Water temperature sensor In case of raising water temperature in the boiler (max.110 ° C), the sensor automatically blocks the pellet dosing and reports the alarm.
Flue gas temperature sensor In case of raising flue gas temperature (max.240 ° C) the sensor automatically returns the boiler to normal temperature values.
Room temperature sensor in case of room temperature higher than the set, the sensor automatically returns the boiler to normal temperature values.
Primary combustion airflow sensor If the chimney is insufficient (or too large), this sensor automatically regulates the primary air flow to achieve optimal fuel combustion in the combustion chamber.

2. TECHNICAL DATA

The central body of the ENRAD boiler, and the supporting structure are made in accordance with EN 303-5:2012, materials, design and construction.



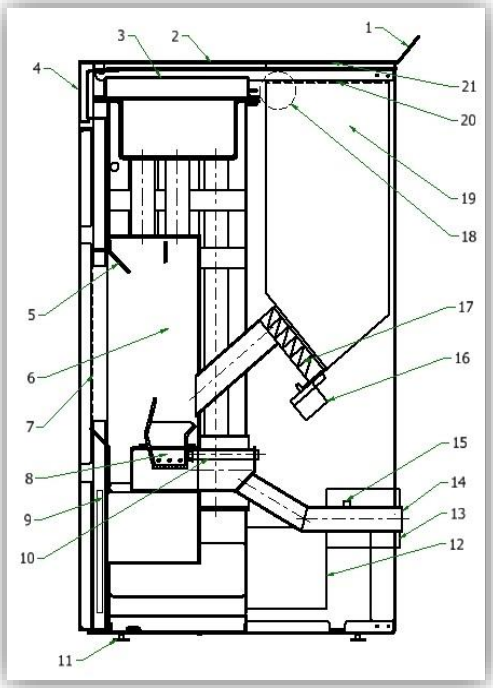
Pos.		ECO - EKP 20	ECO-EKP 26	ECO – EKP 30	ECO – EKP 36	ECO – EKP 46
A	*mm*	570	570	590	590	610
B	*mm*	670	680	695	755	795
H	*mm*	1170	1220	1320	1420	1470
a1	*mm*	110	100	120	120	130
a2	*mm*	140	130	120	120	130
a3	*mm*	170	160	160	160	170
a4	*mm*	290	280	300	300	310
h1	*mm*	250	250	300	300	300
h2	*mm*	260	260	310	310	310
h3	*mm*	280	280	500	500	500
h4	*mm*	330	330	520	520	520
h5	*mm*	450	450	640	640	640
h6	*mm*	1050	1080	1100	1200	1250
1	Return water tube	1”		*5/4”*		
2	Hot water tube	1”		*5/4”*		
3	Air intake tube	*Ø50*		*Ø60*		
4	Chimney	*Ø80*		*Ø100*		
5	Switch					
6	Room thermostat					

2.1 TECHNICAL SHEET

MODEL- ECO EKP		20	26	30	36	46
Nominal Heating output	kW	20	26	30	36	46
Pellet Consumption	kg/h	1.5-4.5	2.2-5.8	1.6-6.4	1.8-7.8	2.1-9.8
Efficiency	%	92	92	91	92	91
Chimney	Ø mm	80	80	100	100	100
Inlet Air tube	Ø mm	50	50	60	60	60
Working pressure - max	bar	2	2	2	2	2
Water content	lit	36	50	50	54	64
Flue gas temperature (max)	°C	<145	<145	<160	<160	<160
Pellet tank capacity	kg	40	45	45	75	78
Autonomy	h	8-24	7-20	8-25	10-40	8-35
Electric power supply	V/Hz	230/50	230/50	230/50	230/50	230/50
Rated electrical power	W	140+350	140+350	140+100+350	140+100+350	140+100+350
Dimensions EKP a*b*h	mm	570/670/1170	570/680/1220	590/755/1315	590/755/1415	610/796/1465
Heated area	m3	400	520	600	720	920
Weight	kg	205 / 215	225 / 235	242 / 252	257 / 267	286 / 298

*Heating area calculation is made for: 45 kcal*h/m3 (52 w*h/m3)

LEGEND



1. Display
2. Cleaning hatch cover
3. Flue gas cover
4. Upper decorative sheet
5. Plate in the boiler
6. Combustion Chamber
7. Metallic Door
8. Burning pot
9. Lower cleaning door
10. Eclectic heating element for igniting pellet
11. The feet to lift the boiler (positioning)
12. Centrifugal fan for extracting the combustion fumes
13. Fumes outlet (Chimney)
14. Air inlet tube
15. Sensor for mass of smoke
16. Screw gear-motor
17. Screw for conveying the pellets to the combusting chamber
18. Place for fan (ECO-EKPV)
19. Pellet tank
20. Tank grid
21. Pellet container cover

3. UNPACKING

PREPARATION AND UNPACKING

The unpackaging materials are neither toxic nor noxious and do not require special disposal.
The user is responsible for storing, disposing of and recycling them in a regulatory fashion.
Always move the boiler in an upright position with suitable equipment and in observance of safety regulations.

PACKAGING

The delivery consists of two packages:
• One (1) with the structure of the boiler
• One (2) with the exhaust pipe to be connected to the fume motor.

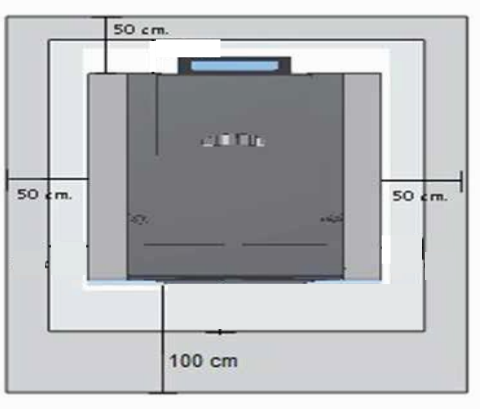
In the boiler package you will find:
- Warranty certificate;
- This manual;
- Power cable;
- Removable handle for moving the tabulators-cleaning

4. INSTALLATION

RECOMMENDATIONS

The installation position must be chosen according to the room, to the smoke extraction system, to the chimney flue. Check with local authorities whether there are any restrictive regulations in force regarding the combustion air inlet, the smoke outlet system, the flue or the chimney cap.

The boiler cannot be installed in the bedroom.
Appropriate minimum volume of space where the boiler will be installed

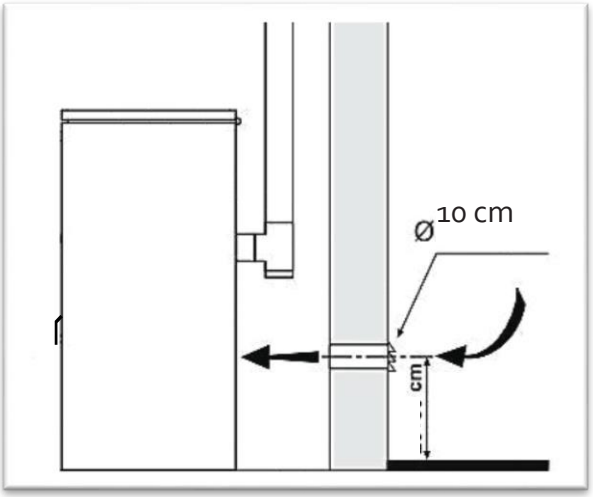


The adjacent walls of the boiler must be made of bricks or concrete, or non-combustible materials or insulated materials.
The boiler must be installed respecting the minimum dimensions provided, while always controlling the safety distance from the walls, furniture and floor should be made of non-flammable materials.

CONNECTION TO OUTDOOR AIR

The boiler must always be equipped with external air to allow for normal combustion in the combustion chamber, if necessary, install a fresh air opening for 100 cm2 or 10 x 10 cm square.• The air supply can also be connected to another room in such a way as to ensure a constant presence of air.

- The presence of other devices near the boiler must not create a lower pressure than the outside air pressure.
- In adjacent rooms, fixed air vents must be constructed in the manner described above.

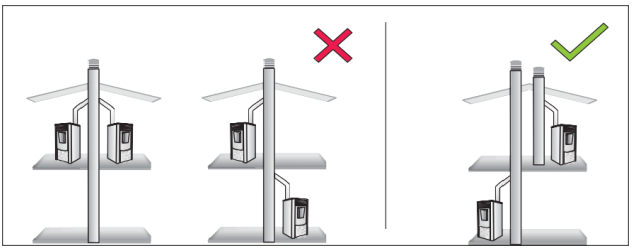


For the correct and safe supply of air, the standards must comply with EN 10683.

Note, opening windows can create a whirl-worm that could disable it combustion air enters the boiler.

CONNECTION TO CHIMNEY

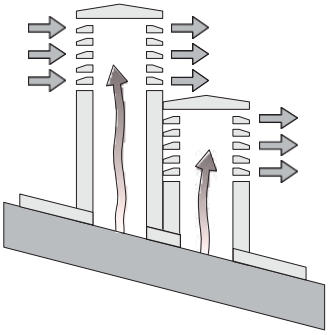
The boiler must be connected to the chimney. The chimney should be calculated and made according to
EN 13384-1. The chimney must be thermally insulated to prevent condensation.
The vacuum in the chimney should be at least 5 Pa and maximum 20 Pa.

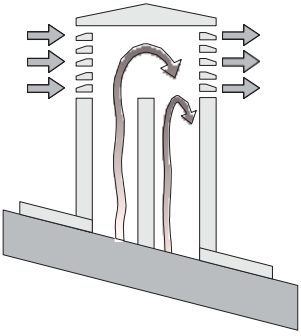


TOP OF CHIMNEY

The top of the chimney must meet the following conditions:

- It must have the same diameter and inner shape of the chimney.
- Must have a useful output gap of not less than the double diameter of the flue pipes.
- The top of the chimney on the roof must be covered with bricks and / or crepe, and must always be well insulated.
- It must be built to protect it from rain, snow, and other things that might burst into the chimney, and that the smoke outlet is not dull due to the glass.
- The top of the chimney must be so positioned that it guarantees unobstructed passage of smoke and must be away from drainage systems. In the case of multiple chimneys of different heights, they must be separated as shown in Figure 6.
- The top of the chimney must be resistant to the glass.
- Any construction or other obstacles that are beyond the top of the chimney should not be near the chimney





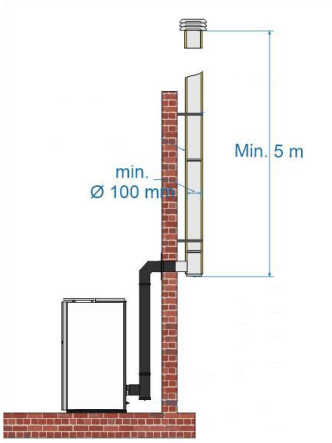
SMOKE FLUE

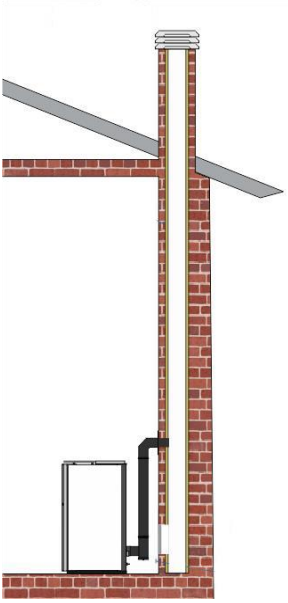
The smoke drainage system must only be used for one boiler.

The smoke extract from the boiler must be connected to the outside environment via a steel or black tube without any obstructions. The pipes must be hermetically sealed, and it is necessary to use materials that can withstand up to 300 ° C.

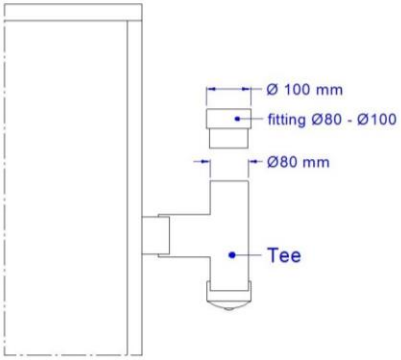
If the flue pipe does not connect to the chimney, it must be placed vertically and the minimum length is
1.5 m.

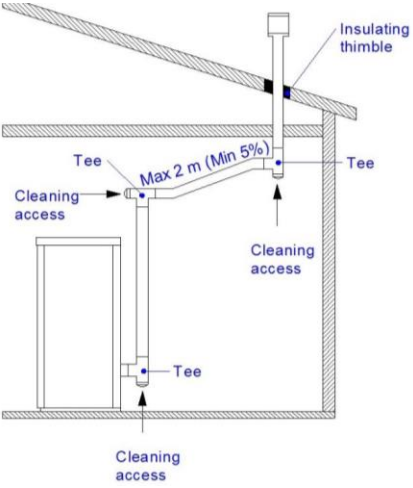
All parts of the flue pipe must be inspected. If the pipe is fixed, it must have an opening for inspection and cleaning.
Boiler spacing as in table



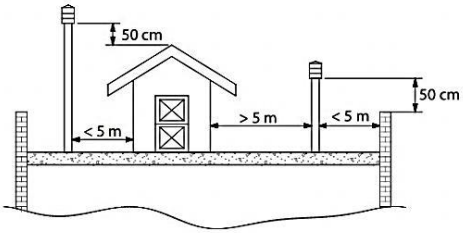


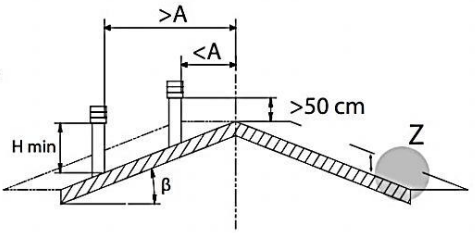
Chimney





Roof type





Z=ZONA REFLUKSA

Roof tilt	The gap between the ridge roof and the chimney	Minimum chimney height (measured from the roof surface)
ß	**A, m**	**H *min*, m**
15°	< 1,85	0,5 m above the ridge of the roof
	> 1,85	1m from the roof
30°	< 1,5	0,5 m above the ridge of the roof
	> 1,5	1m from the roof
45°	< 1,3	0,5 m above the ridge of the roof
	> 1.3	1m from the roof
60°	< 1.2	0,5 m above the ridge of the roof
	> 1,2	1m from the roof

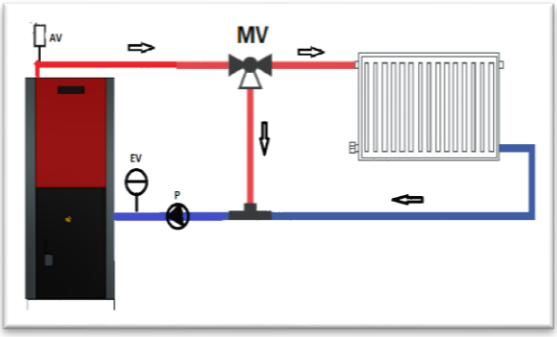
5. CONNECTION TO THE CENTRAL HEATING SYSTEM

Before starting the boiler, the boiler must be connected to the central heating system and the boiler must be filled with water. Continuous circulation of water through the boiler must be enabled. The boiler must be well ventilated before the start of operation.

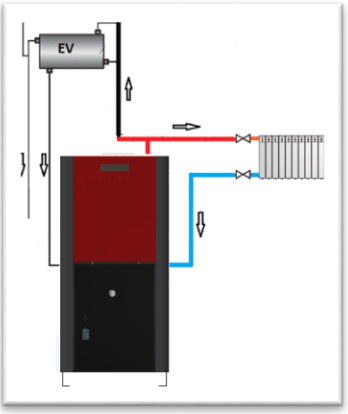
The pipe installation must be carried out according to the applicable technical regulations and **DIN 4751-part1** for open systems or **DIN 4751-part2** for closed systems, respecting the rules of the profession, and only professionally qualified personnel.

Orientation scheme of installation:

Closed heating system installation



Opened heating system installation



6. USER INTERFACE

The console displays information on the working status of the boiler. By accessing the menu you can gain access to different views and change the various available settings based on the access level. Depending on the operating mode, the various positions on the display can gain different meanings.

Figure 2 is an example of the display when the boiler is either ON or OFF.

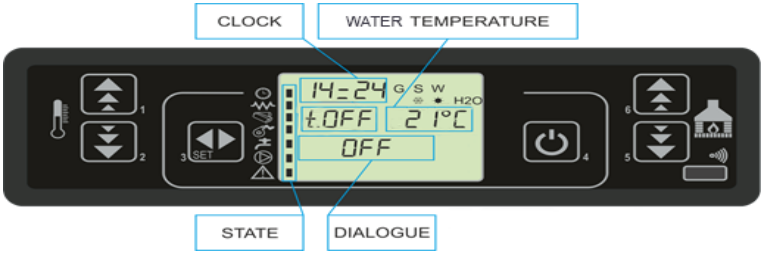


Fig. 2

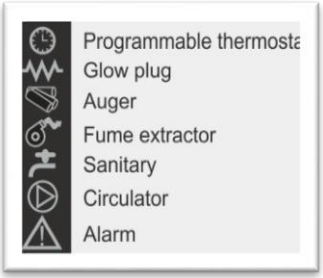


Fig. 3

Figure 3 demonstrates the meanings of the status symbols on the left of the display.
The activation of one of the symbols in the "status" area on the display indicates the activation of the corresponding device according to the list.

What are the buttons for?

Button	*Description*	*Mode W*	*Action*
1	Increase temperature (1)	PROGRAMMING	Adjust/increase the value in the selected menu
		ON/OFF	Increase the temperature value of the water/room thermostat
2	Decrease Temperature (2)	PROGRAMMING	Adjust/decrease the value in the selected menu
		ON/OFF	Decrease the temperature value of the water/room thermostat
3	Menu	-	Accesses the menu
		MENU	Accesses the submenu level
		PROGRAMMING	Sets the value and moves to the next menu
4	ON/OFF unlock	ON	Hold for 2 seconds to switch the boiler on when in off mode, or off when in on mode
		LOCK	Unlocks the boiler and puts it into off mode
		MENU/ PROGRAMMING	Brings you to the next menu level, any adjustments made will be saved
5	Decrease power	ON/OFF	Adjust the power produced by the boiler
		MENU	Takes you to the next menu level
		PROGRAMMING	Takes you to the next submenu, any adjustments made will be saved
6	Increase power	ON/OFF	Adjust the speed of the exchanger
		MENU	Takes you back to the previous menu level
		PROGRAMMING	Takes you to the previous submenu, any adjustments made will be saved

(1) First select SET water temperature.
(2) First select SET ambient temperature.

7. OPERATING MODE (USER)

Igniting the boiler

When the boiler is connected to the power supply, press switch button located on the back of the boiler to position 1 (figure 72.a.). The following figure appears on the display:

Fig. 22

To keep the boiler on, press and hold the button 4 for a few seconds, and immediately we get a message on the Display - START (Figure 23) - we started the boiler.

Fig. 23

Immediately afterwards, we get the LIGHTER WAIT message (Figure 24) - the lighter is lit and then appears the LOAD PELLET message (Figure 25) - the pellet is started. The following message is FIRE WAIT (Fig. 26) - We wait for the pellets to ignite and when the flue gas temperature of 45ºC is reached the message FLAME LIGHT (Fig. 27) appears.

Fig. 24

Fig. 25

Fig.26

Fig.27

After this message and when steady flame is established, the boiler goes into the working regime and receives the message WORK (Figure 28), then the boiler continues the stable process.

Fig.28

Ignition failure

After the time expires for up to 20 minutes, if the smoke temperature does not reach the minimum permissible value of 45ºC, the boiler goes to the alarm state, see section 10. ALARMS.

Boiler in operation

If the ignition phase is positively completed, ie if the flue gas temperature reaches 45ºC in less than 20 minutes, the boiler switches to WORK mode, which is the normal mode of operation.

Setting the room and water temperature in the Boiler

To adjust the room temperature and water in the Boiler, it is enough to press the buttons 1 or 2. The display shows the current state of the set temperature (TSET).

The boiler is factory-set to the temperature of the water in the boiler 65ºC and to the room temperature of 20ºC.

By pressing the button 1, the SET TEMP WATER message is received (Figure 29) i.e. Set water temperature value in the boiler. Then, by pressing button 1 we increase the value of the temperature, then by pressing the button 2 we decrease the temperature value, thus adjusting the desired water temperature value in the boiler. We recommend that the you cannot adjusted the water temperature below 50 - 55ºC due to boiler condensation, or over 75ºC.

Fig.29

By pressing the button 2, the SET TEMP ROOM message is received (Figure 30) ie. Set room temperature value. Then, by pressing 1, we increase the value of the temperature by pressing the button 2 we decrease, thus adjusting the desired room temperature value. The room temperature can be adjusted in the range of 7ºC to 40ºC. We recommend the room temperature to be 22ºC.

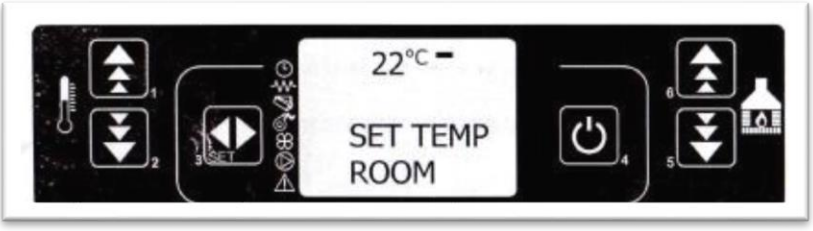


Fig.30

The temperature of the room or water in the boiler reaches the set temperature.

When the temperature of the room or water in the boiler has reached the set value (TSET), the thermal power is automatically transferred to the minimum value, the boiler is switched to a cost-effective operating mode, which saves fuel, and the message WORK MODULATE appears on the display as shown in figure 31:

Fig. 31

If after this, the temperature of the room or water in the boiler reaches a value of 4 ºC higher than the set (TSET + 4ºC), the STAND-BY mode is activated, and the boiler is temporarily extinguished. It resumes when the following conditions are met:

T room < (TSET - 4ºC)

Setting the power of the boiler

When the boiler after the ignition phase goes into the normal operation phase (WORK phase) it is possible to adjust the output power of the boiler or the heating intensity. By pressing the buttons 5 and 6, the SET OUTPUT message is received. Adjust the output of the boiler (fig. 32). Pressing button 6 increases, and with button 5 we reduce the power of the boiler. Level 1 is minimal and level 5 is the maximum power.

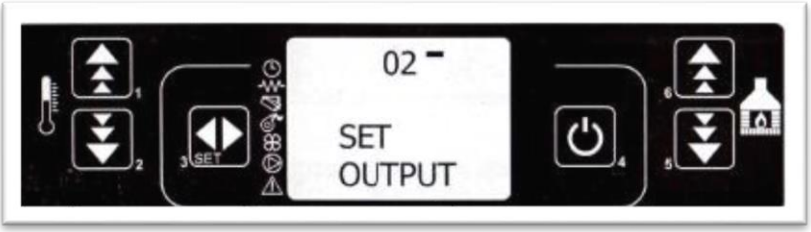


Fig. 32

Cleaning the boiler

During normal operation in the operating mode, at intervals that are set for 30 minutes, the "CLEANING BOILER" mode is activated, the duration of which is 60 seconds. Then the pellet is stopped and the burner is cleaned from unburned pellets, which is followed by a message on the CLEANING FIRE-POT display.

Switching off the boiler

To switch off the boiler it is enough to keep the button 4 pressed for about 2-4 seconds.
The pellet stops immediately and the smoke engine is switched to a higher speed. The display shows the message: CLEANING FINAL (Figure 33). This is followed by a LITTLE CLEANING phase that lasts from 10 to 20 minutes.

Fig. 33

The smoke engine activity ends after the expiration of 10 minutes from the switching off the boiler and after the smoke temperature has been lowered to below 70ºC. When the boiler is turned off, the message on the display appears as in Figure 34.

Fig. 34

Re-ignition of the boiler

It is not possible to turn on the boiler again before the flue gas temperature drops below 45ºC or until the boiler cools down.

THE APPEARANCE OF Light
Attention should be paid to form-shape, color and character of the fire.
The shape of the fire should be "lively", elongated and wide.
The color of the fire should be yellow, light yellow to yellowish.
The fire character should be "alive".

8. MENU

Pressing the button3 (MENU) opens the menu.
It is divided into different items and levels that allow access to settings and card schedules.
Menu items that grant access only to technical programming are button-protected.

User-Menu

The following overview briefly describes the menu structure by retaining in this paragraph only the selections available to the user. Taster 3 accesses the Menu and then accesses the next submenu with the same button, and at the end, Button 3 sets the value and moves to the next menu item. Taster 6 switches to the previous submenu at the set settings are memorized. The 5 button moves to the next submenu and the set settings are memorized. The 4 button moves to the higher menu level, the set settings are memorized.

Menu 01 - Setting the clock

This menu adjusts the current time and date on the display. The electronic card is equipped with lithium battery that allows the internal clock to work for more than 3/5 years. To adjust the time, you need to access the time and date setting menu. Press the button SET and the button5to enter Menu 01 as shown in Figure 35:

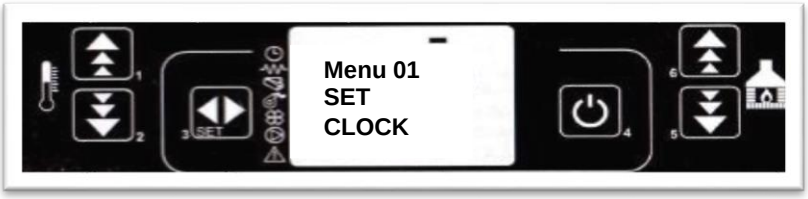


Fig. 35

Press the button SET and the buttons 1 or 2 to set the correct day to the week (MONDAY, TUESDAY ...) (Figure 36) Press the Button SET and the buttons 1 and 2 to set the hours on the timekeeper (Figure 37).

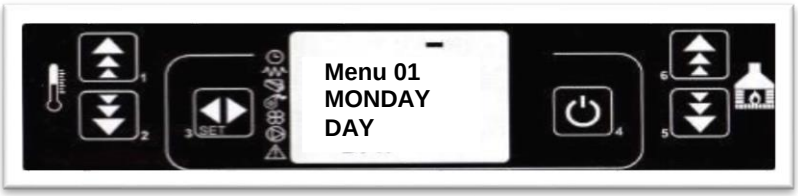


Fig. 36

Fig. 37

Press the Button SET and the buttons 1 and 2 to set the minute (Figure 38). Press the button SET and the buttons 1 and 2 to set the month of the year (Figure 39). Press the button SET and the buttons 1 and 2 to set the day in a month (Figure 40). Press the Button SET and the buttons 1 and 2 to set the year (Figure 41).
When this setting is completed, press the button 4 to return to the Home Menu.

Fig. 38

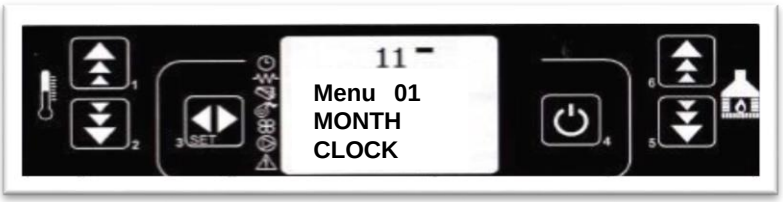


Fig. 39

Fig. 40

Fig. 41

Menu 02 - Programming the Boiler operation

There are three types of boiler programming:

- Daily programming;
- Weekly programming;
- Weekend programming;

DAILY PROGRAMING

Allows you to adjust the daily functions of the Chrono thermostat. The boiler can be switched on and off if desired, and it is regulated by programs, with the notice that it is necessary to have enough time between the switch off and the new ignition to cool the boiler. It is necessary that the time and date are set correctly (Menu 01). This function depends on the function of turning the boiler on and off, so make sure you set the correct time.
First press the button SET and the button5 to enter the menu 02 as shown in Figure 42:

Fig. 42

Press the button SET as shown in Figure 43*:*

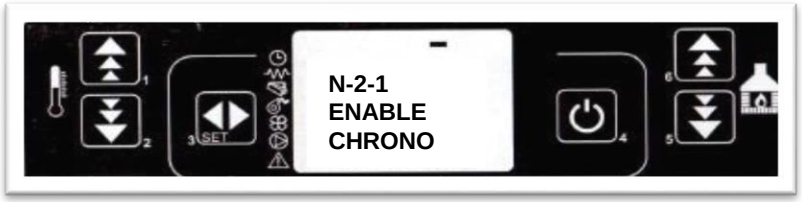


Fig. 43

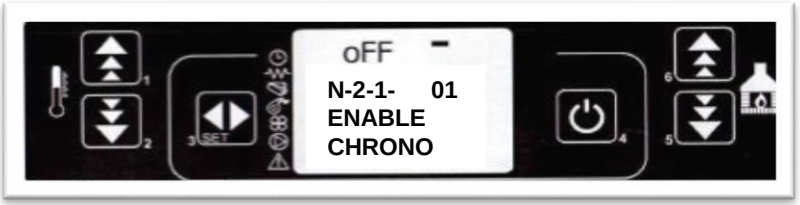


Fig.44

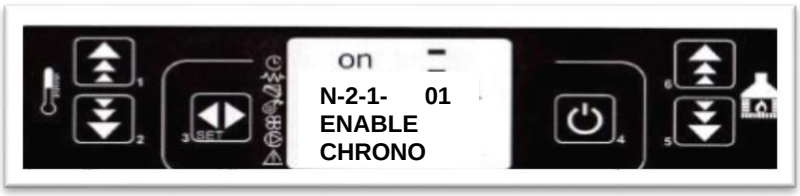


Fig. 45

Press the button 4 and then the button 5, the display then shows as shown in Figure 46:

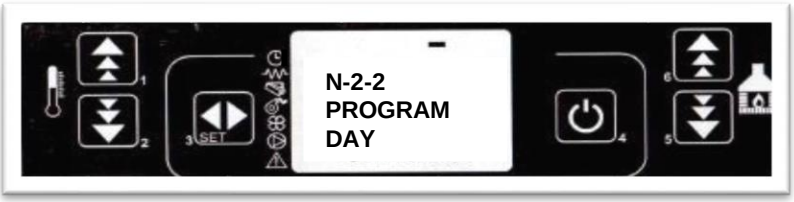


Fig.46

Press the button SET twice and the display will look like in Figure 47. With the buttons 1 or 2, we set the first Start of the boiler during the day. Pressing the button SET will display as shown in Figure 48 and the buttons 1 or 2 will be adjusted for the first time the boiler is turned off.

Fig. 47

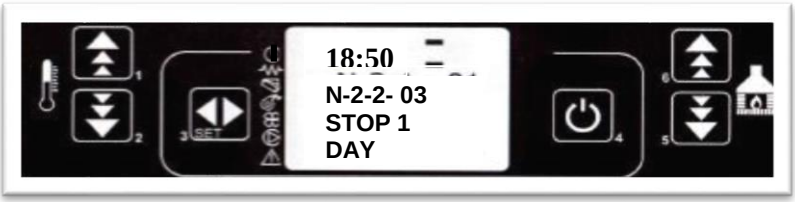


Fig. 48

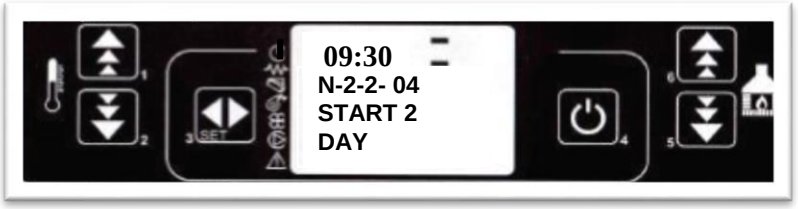


Fig. 49

Pressing the button SET changes to setting another program. With Taster 1 we set the ignition time (fig. 49). Press the button SET and set the boiler stoppage time (Figure 50). After finishing the adjustment with the button 4, we return to the basic menu, and the indicator will show that programming is active.

Fig. 50

WEEKLY PROGRAMING

The remote programmer has 4 independent programs (4 times off and on). For each day of the week alone, these 4 programs can be combined individually, ie whether some of them will be active or not (OFF or ON). Be careful to carefully adjust the programs to avoid overlapping the ignition and shutdown times.

Attention: carefully carry out programming, generally avoiding overlapping of the activation time and / or deactivation of the same day in different programs.

The programming process is as follows:
The first four steps in programming are the same as when setting the day program (figures 42-45). Press button 4 and then twice button 5 and the display will look as shown in Figure 51.

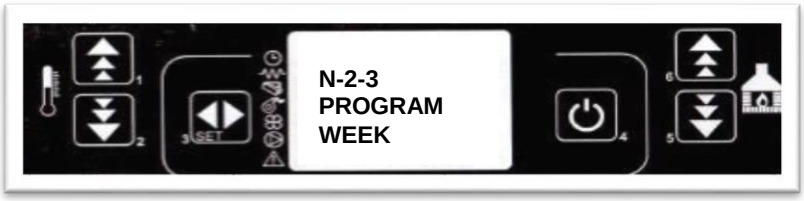


Fig. 51

Press the button SET and then press 1 and activate the weekly programming (On) as shown in Figure 52.

Fig. 52

Press the button SET and then press the button 1 to set the start time of the kiln in the first program, as shown in Figure 53. The same procedure is repeated to switch off the boiler at the first program as displayed in figure 54.

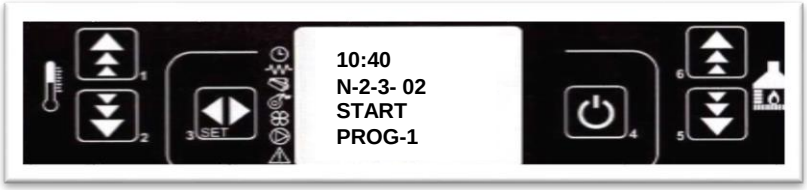


Fig. 53

Fig. 54

Press the button SET and with the button 1 activate (ON) or deactivate (OFF) program 1 for the corresponding day of the week beginning from Monday to Sunday as shown in Fig. 55 and 56. Day-to-day switching is done by pressing the button SET.

Fig. 55

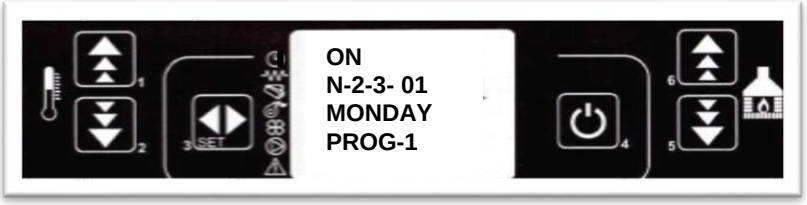


Fig. 56

By pressing the SET button, it switches to the setting of another program and its activation for each day of the week individually (in the same way as it was done for program 1). The same procedure should be done for the other two programs (programs 3 and 4). The indicator that the programming is activated will be shown on the display.

PROGRAM WEEK-END

Weekend programming allows you to program, turn on and off the boiler (twice a day) during the weekend (Saturday and Sunday). **Activate weekend programming only if day and week programming are deactivated.**
The first four steps in programming are the same as for day programming (Figures 42-45). Press button 4, then three times button 5 and the display will look as shown in Figure 57.

Fig. 57

By pressing the button SET, we activate the WEEK-END program as shown in Figure 58.

Fig. 58

Fig. 59

By pressing the button SET and then by pressing 1, we set the time for the first firing of the boiler as shown in figure 59. By pressing the button SET again and with the button 1, we adjust switching off time of the boiler, and the display will look as in Figure 60.

Fig. 60

The same procedure is for programming the second weekend program of figures 61 and 62.

Fig. 61

Fig. 62

After these settings, we return to the main menu by pressing the button 4.

SUGESTION: in order to avoid confusion and unwanted ignition and shut down operations, activate only one program if you do not know exactly what you want to achieve.

Deactivate the daily program if you want to include this week. The weekend program always keeps inactive if used weekly in programs 1, 2, 3, and 4.
Activate programming for the weekend only after deactivating weekly programming.

Menu 03 - Choose the language

Allows you to select the available language for the dialog.

Level 1	Level 2	Set by pressing the SET button
Menu 03 - choose the Language		
	Menu 03-01 – Italian	Set
	Menu 03-02 – French	Set
	Menu 03-03 – English	Set
	Menu 03-04 – German	Set

Menu 04 - stand-by mode

Activate the "STANDBY" mode which switches off the boiler once the room temperature has exceeded the SET temperature for longer than the amount of time 2 minutes.
After the shutdown has been completed in cases as such, reigniting can occur only when the following conditions have been met:
TSET < (T room – 4ºC).

Menu 05 - alarm mode

When "OFF" disables the sound.

Menu 06 – initial charging

It allows you to preload the pellets when the boiler is off and cold for an amount of time equal to 90". Start with the P1 button and stop with the P4 button.

Menu 07 - Boiler status

Visualize the instant status of the boiler reporting the status of the various devices connected to it.

Menu 08 – Technical Adjustment

Only for professional technicians.

9. CAUSES

There is a power outage (black out)

After a power outage, based on the state in which the boiler was before the black out, the following scenarios could take place:

previous state	*length of black out*	*new state*
off	any	off
lighting	<30 sec	lighting
pellet load	<30 sec	pellet load
await fire	<30 sec	await fire
working	<30 sec	working
clean ashpan	<30 sec	clean ash pan
off	<30 sec	off

In all cases in which the duration of the blackout is greater than T=30 sec, the boiler will shut down, as illustrated in the figure 63.

Fig. 63

In the case of lighting failure, the NO LIGHT (or OFF) alarm message will be visible as illustrated in figure 64.

Fig. 64

Press P4 to bring the boiler back to standard condition.

If there is a power outage, when the boiler turns back on, i twill go into the FINAL CLEANING state (as illustrated in figure 65) and will wait for the flue temperature to drop to a normal programed temperature.

Fig. 65

10. ALARMS

In the case of a functioning irregularity, the control board intervenes and signals the problem operating differently based on the type of alarm. The following alarms could sound:

Origin of the alarm	Display
Flue gas temperature probe	ALARM FLUE PROBE
Flue gas over-temperature	ALARM HOT TEMP
Ignition failure	ALARM NO FIRE
Shut down during working mode	ALARM NO FIRE
Power supply failure	COOL FIRE (refer to par. 9)
Auger safety pressure switch	ALARM DEP FAIL
General safety thermostat	ALARM SIC FAIL
Exhaust malfunction	ALARM FAN FAIL
Water pressure outside the allowed values	ALARM PRES.

Every alarm causes the boiler to immediately shut down

State of alarm occurs after reaching the 30 sec and it is possible to reset it by pressing the P4 button.

FLUE GAS TEMPERATURE PROBE ALARM

This alarm sounds when the flue gas temperature probe malfunctions or is disconnected. In such cases the boiler will shut down, as illustrated in figure 66 (or PROBE EXAHUST).

Fig. 66

Flue gas over-temperature alarm

This alarm sounds when the flue gas temperature probe measures a temperature that is higher than 250°C. The display will portray the message illustrated in figure 67 (or HOT EXHAUST).
In such case the boiler will immediately shut down.

Fig. 67

Ignition failure alarm

This alarm sounds when the lighting phase fails, as illustrated in figure 68.

Fig .68

In such cases the boiler will immediately begin to shut down.

Shut down during working mode alarm

If the flame goes out during working mode and the flue temperature drops below the minimum working threshold (TEMP 45°C), the alarm sounds as illustrated in figure 69.

Fig. 69

In such cases the boiler will immediately begin to shut down.

Pressure switch for auger safety alarm

If the pressure switch measures the air pressure lower than the threshold, it intervenes in order to stop the auger (when the auger is working) and, it allows the control board to acquire this change in state. On the display, the message “Alarm Depress” will appear and the system will stop.

Fig. 70

General thermostat alarm

If a general safety thermostat measures a temperature higher than the threshold, it intervenes in order to stop the auger (when it is working) and, at the same time, through the Al1 clip in CN4, it allows the control board to acquire this change in state. On the display, the message **ALARM safety Thermal** will appear and the system will stop.

Fig .71

This is an additional safety mechanical device. In order to return to normal operation, wait for the boiler to cool (smoke engine). This cooling lasts for twenty minutes. Then restore the function of the safety thermostat that blocked the boiler operation (unscrewing the plastic cover and pressing the thermostat knob until you hear a soft metal sound) located on the back of the boiler (Figure71.) and then press the button 4 for 2 - 3 seconds until the boiler returns to its ON position. Upper thermostat blocks the boiler operation when the boiling water in the boiler is heated to 88 ° C and the bottom when the worm gear housing is heated to 80 ° C. NOTE: If any of these two last alarms are activated, check that the chamber is not clogged with ash or that the chimney is not partially clogged.

Fig. 71
(safety thermostat and switch plug)

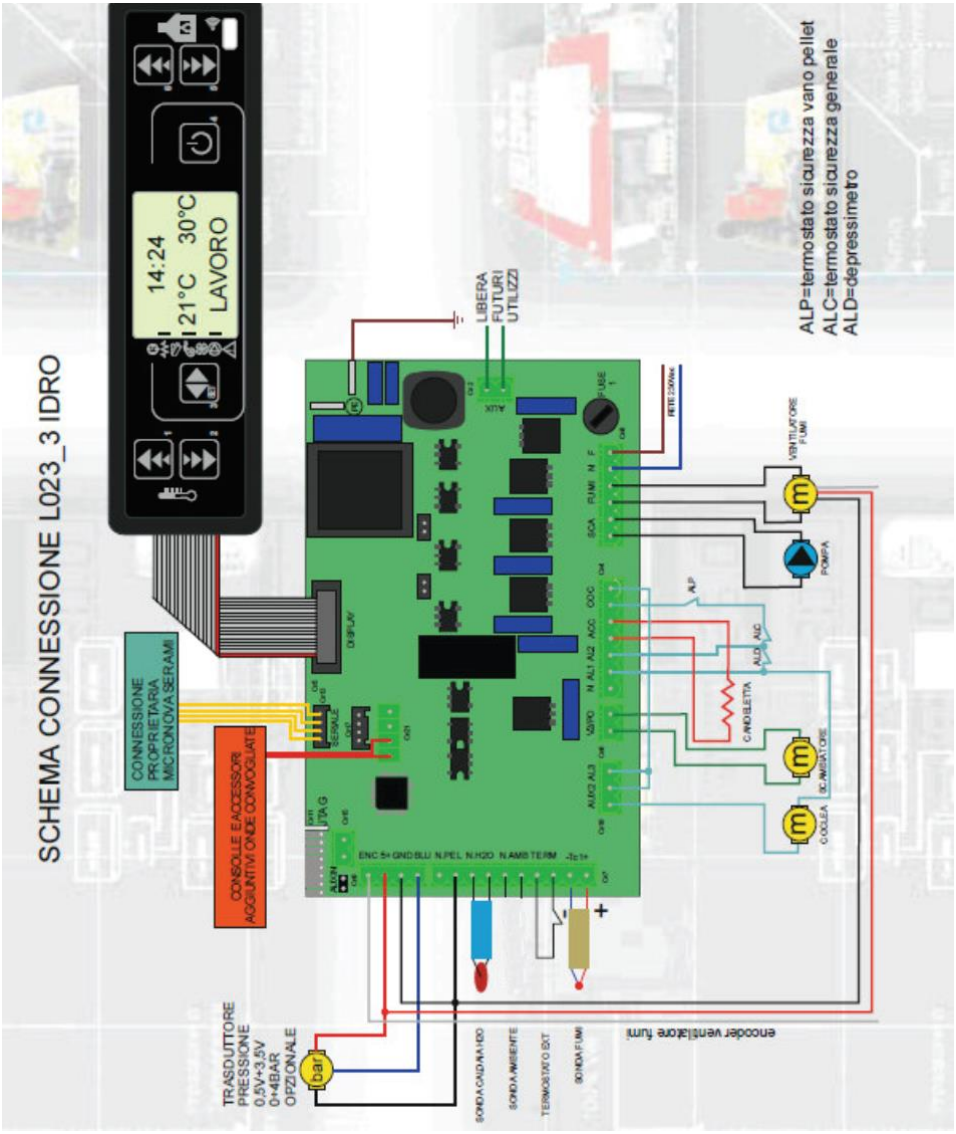
Exhaust malfunction alarm

If the fume exhaust fails, the boiler will stop and the message **ALARM FAN FAIL** will appear on the display as illustrated in the following figure.
The boiler will immediately begin to shut down.

Fig. 72

11. ELECTIRAL CONNECTIONS

Here, as follows, is a typical circuit board wiring diagrams.



12. PELLET

The pellets used must be certified according to EN 14961-2, Ö-Norm M 7135, DIN 51731 or ENplus-A1.

QUALITY OF PELLET

The boiler is designed to use precast wood (pellets) as a fuel.
The recommended characteristics of the pellet to be fired in the boiler are:

– Caloric value 4.8-5.2 kwh / kg
– Diameter of pellet d = 6 mm.
– Percentage moisture <10%
– Length l = 5 - 40 mm.
– Percentage of dust = <1.0%

Proper operation of the boiler depends on the type and quality of the fuel pellet, since the heat obtained from different types of products can be of different intensity. Special attention is paid to the quality of wooden pellets. Poor pellets may cause irregular fire work.
When the pellet is of poor quality, the boiler must often be cleaned.
The boiler maker does not bear any responsibility for operating the boiler if you use a non-standard pellet.

13. MAINTENANCE AND CLEANING

Never clean and maintain the boiler while the boiler is not completely cold and switched off!
Maintaining masters, in addition to security measures, must:

- Always use safety devices, personal protective equipment, and use adequate tools.
- To disconnect the power supply before you do any business.
- Do not leave the appliance in operation if any of the safety devices are defective, incorrectly adjusted or not working.
- Always use original spare parts and clean the boiler before starting the boiler.
- Make sure there is no condensation. If condensation occurs, it is the cause of the cooling of the smoke.
- For this reason, during the time of use it is very important to pay special attention, especially to the following:
- Do not touch the glass on the door, there is DANGER OF OPEN;
- Do not touch the smoke drain pipe, there is DANGER OF BURNING;
- Do not open the door , because the boiler works properly only when it is hermetically sealed;
- Do not expel the ash when the boiler is in working order, always observe the boiler maintenance plan;
- Clean the boiler daily (only when the boiler and the ashes are cold);
- Do not use the boiler in the event of any occurrence or in case of unusual noise;
- Do not turn off the boiler by pulling the plug. Use the button to turn off the display;

- Do not tilt the boiler, can become unstable;
- Never leave the fuel tank lid open;
- Do not use petrol, petroleum or any other flammable liquids for ignition;
- Never fire the boiler if the glass is damaged. Do not hit the glass or the door to damage them;
- Glass clean only when the boiler is cold;
- Ensure that the boiler is securely fastened to prevent any change
- Make sure that the door is well closed while the boiler is operating;
- Never use abrasive cleaning agents for boiler surfaces;
- CLEANING the ash from the combustion chamber with a vacuum cleaner every day,
- Use a vacuum cleaner carefully to clean the boiler every day;
- BURN POT (Figure 10) - wood pellets are burnt in it. Make sure that you do not have too much ash and slag-unburned pellets to collect at the bottom of the burn pot and clean it;

Then return the burn pot, place it firmly in place to ensure safe operation of the boiler. If anything is unclear, do not hesitate to call the authorized service for further information. The manufacturer does not assume any liability for damages caused by unprofessional operation.

Upper and Lower Ash Dish, you need to control and clean as needed. Then both vessels must return to their place.

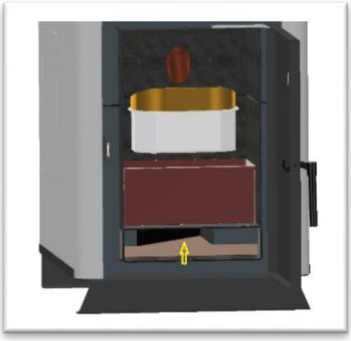
CLEANING FLUE TUBES IN THE BOX-(tabulators)

Cleaning the tabulators- Pick up the metal handle in the lever to move it left-right for many times.
You should do this cleaning every day, or after spending a full pellet tank, as shown in fig a1. The figure shows also the automatic air vent.

Firebox
Should be cleaned regularly when the boiler is cold. When cleaning, use a protective gloves. Open the boiler door and clean the firebox. See Figure a2.

Ash and Fan area box

Should be verified and cleaned regularly. Remove the ash-tray for ash disposal-cleaning.
Use an electric machine cleaner to clean the fan area.



Maintenance table

Pos.	Every day	Every 2 days	Every 7 days	Every 60-90 days	Every year
Firebox	✓				
Cleaning around the ash container		✓			
Cleaning the ash container		✓			
Cleaning the door and glass	✓	✓			
Exchangers (tabulator)	✓				
Cleaning the inner surfaces of the exchanger				✓	
Cleaning the entire exchanger					✓ AS
Cleaning T-pieces of chimney				✓	
Cleaning the flue gas outlet					✓ AS
Control door seals and ash boxes				✓ AS	
Inside parts					✓ AS
Outlet pipe					✓ AS
Pump-circulation					✓ AS
Hydraulic components					✓ AS
Electro-mechanical components					✓ AS
Motor reductor					✓ AS
Rotary burning pot					✓ AS

AS –Authorized Servicer

Dismantling and maintenance

Release the screw and move upper cover plate

Release the screw and the cover

Move the cover

Release the sliding tube

Moving the tabulators

Cleaning the inside parts of tubes

GENERAL CLEANING AT THE END OF THE HEATING SEASON

Make sure the boiler and the ash cool down - turn the boiler off.
It is very important to clean and check the boiler, as explained in the above points.
After a long period of use, it may happen that the sealing tape on the door is removed, so it must be replaced.
GENERAL CLEANING AND MAINTENANCE of boiler and chimney -only for authorized professional masters, best at the beginning of the season.

Dismantling and maintenance

<table>
<tr>
<td> 
Dismantling of covers</td>
<td> 
Dismantling of covers</td>
</tr>
<tr>
<td> 
Water sensor</td>
<td> 
Fan and temperature sensor smoke gases</td>
</tr>
</table>

Gear Motor

Safety Gauge pressure

Burning chamber and brazier

(OPTIONAL)

Self-cleaning brazier

REMARKS:

The automatic cleaning Rotary-mechanism starts together with the start of the boiler.
The turbulator cleaning mechanism starts when the gases are cooled (***and the time it is factory adjusted***) during the final cleaning of the boiler.
During the final cleaning, the boiler doors should not be opened.
The doors are opened only after the boiler cools down.
The ash pan can be removed after the boiler has cooled down.
In case the any of motor-reductor (Gear motor) do not work, the boiler must be turned off.

14. WARRANTY

Warranty period

- The warranty period is 2 years on the body of the boiler and covering, and 2 years on the electrical components (regulation and its parts, motors, heater).
- The boiler must be put into operation by a qualified person - a service technician authorized by ENRAD LLC or an authorized importer.
- The boiler must operate in accordance with the conditions stated in this manual.
- Pellet Boiler must be installed in accordance with applicable national directives and regulations.
- The quality of pellets must comply with the applicable standards specified in this manual.

Terms of guarantee

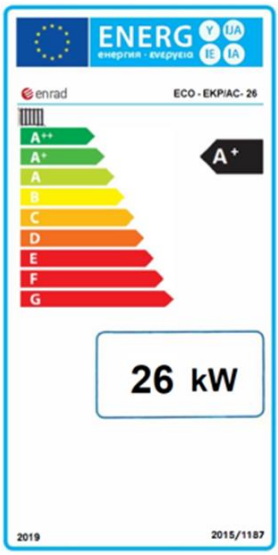
Exemption from the guarantee
Exclusions from the warranty are excluded due to:

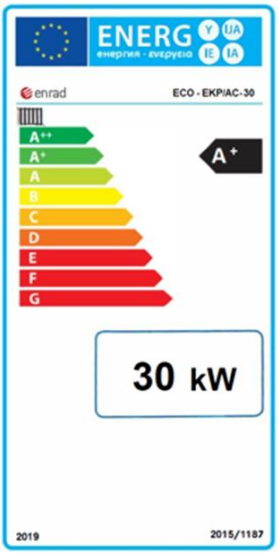
- Poor and negligent handling or maintenance
- First ignition not carried out by an authorized technician;
- Improper and unauthorized opening and repair of the device
- Improper installation, mechanical damage or overload that is not allowed.
- Failure to use the statement
- Failure to comply with installation and commissioning instructions
- Damage caused by external influences such as fire and water, lightning strike, excessive voltage or damage caused during transport.
- Door glass
- Gaskets
- Ignition plug heating elements (warranty period: 1 year)
- Damage to mechanical components or parts due to improper use or to installation carried out by non-qualified staff or not in compliance with the instructions provided with the product;
- Damage to electrical or electronic parts or components due to improper use or to installation carried out by non-qualified staff or not in compliance with the instructions provided with the product.

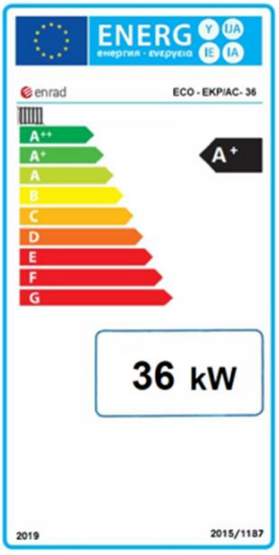
Note:
After purchase, please keep this warranty certificate together with the original package, installation and testing certificate and the retailer receipt.

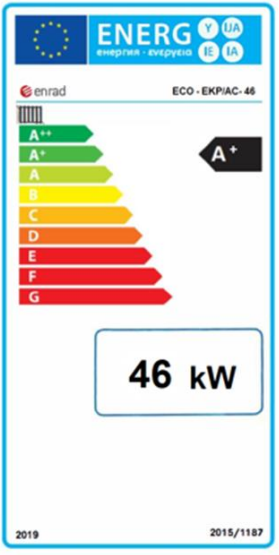
15. LABELING

ECO-EKP









NOTES

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