UNGARO
LA CALDAIASTUFA

luenth2.0

INSTALLATION AND OPERATION MANUAL

Dear Customer!

We wish to thank you for choosing the UNGARO product!

Our pellet thermostoves and boilers represent continuous innovation in biomass hydro heating. From design to production, every step of the manufacturing process is carried out entirely at our premises, including rigorous testing aimed at assessing and certifying the reliability and sustainability of each model, according to the most stringent European standards regulating emissions and safety.
In order to get the best performance, please read carefully this manual before using the product.

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1. Product Description

What is a pellet thermostove or boiler?

The Ungaro thermostove or boiler is a heat generator running on wood pellets. All Ungaro products are used for domestic hot water heating, some of them have forced hot air.

Thanks to a super fast thermic exchange Ungaro products are compact and easy to install.

Copper

The patented Ungaro tube bundle is made of copper. It guarantees exceptional heat transfer rates with correspondingly high efficiency **over 90%**, constant in time.

Ungaro S.r.l. production line works according to the international standards ISO 9001:2008.

Pellets

Pellets are made by compacting finely processed sawdust at extremely high pressure, it is a purely mechanical process. The material is then squeezed through a 6 mm diameter die, and cut to lengths from 5 to 25 mm. The heat released when pressing the pellets through the die activates the lignin that is naturally present in the wood, ensuring the pellet remains compact and retains its cylindrical shape. Pellets have a low moisture content (6-10%) and a low ash content (approximately 0.5%). Compared to wood, pellets have the advantage
of having a practically constant volume. The pellet hopper is positioned at the rear of the boiler and has a lid for filling the pellets that opens from the top. This lid must
be easily accessible to fill the pellets. The efficiency and heating capacity of Ungaro boilers may change in relation to the type and quality of pellets used.

Please use pellets that meet requirements of the standard ISO 17225-2, class A1.

To ensure good combustion, pellets must be stored in an area that is free of humidity.

ATTENTION: The use of fuel of inferior quality or not conforming to the specification given above compromises the running of your appliance and can therefore lead to the termination of the guarantee and of the manufacturer's responsibility for the product.

2. General Information

All Ungaro products are built according to the directives:
- 2011/65/EU(RoHS)
- 2014/35 EU (LVD) Electrical safety
- 305/2011 construction materials
- 2014/30 EU (EMCD) compatibility

and according to the normes:
- EN 14785
- EN 303-5
- EN 60335.2-102
- EN 62233, EN 50581
- EN 55014-1, EN 55014-2,

EN 61000-3-2, EN 61000-3-3.

This warning sign indicates that the message to which it refers should be carefully read and understood, because failure to comply with what these notices say can cause serious damage to the boiler/thermostove and put the user's safety at risk.

This symbol is used to highlight information which is important for proper boiler/thermostove operation. Failure to comply with these provisions will compromise use of the boiler/thermostove and its operation will not be satisfactory.

- After having removed the package, ensure the appliance integrity and that all the required components have been supplied. In case of non conformity, contact your dealer within 15 days days from the date of receipt.
- Do not leave the packaging elements within reach of children or unassisted disabled persons;
- Incorrect installation or faulty maintenance (not conforming to the require-

ments set out in this manual) can cause harm to people, animals or property. In such cases Ungaro is absolved from any civil or criminal responsibility;
- Hopper lid must be easily accessible to fill the pellets;
- Do not block or reduce the primary air inlet, as this is essential for correct combustion;
- Check the chimney for obstructions before lighting the appliance;
- The safety or control devices must not be modified without the specific authorisation of the manufacturer. Failure to heed this warning will void the warranty, with the manufacturer declining all related liability;
- The appliance is designed to operate in any climatic conditions, as long as it is not exposed directly to the weather. In the event of particularly harsh conditions (strong winds, frost,...), safety devices may be activated to switch the heater off. Should this occur, contact technical service and under no circumstances disable the safety devices;
- The appliance is not intended to be used by people of diminished physical, sensorial and mental capacity, including children, or people with insufficient experience or knowledge;
- Children must be supervised to ensure they do not play with the appliance;
- Do not remove the protective grille from the pellet hopper;
- The appliance must not be used as an incinerator;
- Do not open the boiler door during its operation;
- The thermostove/boiler must not be used as a cooking appliance.

2.1 Electrical Safety

The appliance must be connected to an electrical system which is equipped with an earth conductor, as laid down in directives 73/23 EEC and 93/98 EEC.

- Make sure the power plug is accessible after installation of the appliance;
- The power cable must not be in contact with hot parts;
- Do not pull, twist or disconnect the electric cables of the boiler/thermostove even if power supply is disconnected;
- Do not wash the appliance with water. The water could get inside the unit and damage the electrical insulation and cause electric shocks;
- Variations in power supply voltage in excess of 10% of the rated value may affect the correct operation of the appliance and can lead to serious faults within boiler electrical system.Use uninterruptible power supply with frequency 50Hz and pure sine wave or pseudo sine wave;
- In case of alarm don't shut the appliance down, turn it off only if signal "off" appears on the display.

The appliance must be connected to an electrical system which is equipped with an earth conductor, as laid down in directives 73/23 EEC and 93/98 EEC.

2.2 Operating Warnings

- During the first two or three ignitions vent the room several times;
- Pellets must not be fed manually into the burning pot;
- Filling the hopper with pellet make sure that the plastic bag doesn't come into contact with the hot surfaces;
- Un-burnt pellets accumulated in the burning pot must be removed before relighting. Not observing this may cause detonation in the combustion chamber with harm to people, animals or property;
- Do not touch the boiler/thermostove with wet hands or bare feet in view of the fact that it is an electrical appliance;
- Avoid coming into contact with the hot parts of the appliance;
- Do not stand for a long time in front of the hot air vent (if the model has forced hot air);
- Do not expose plants or animals directly to the hot air flow;
- Do not light the appliance with flammable materials. If the ignition system breaks down, please contact the Technical Support in your area.

3. Installation

All the Ungaro boilers/thermostoves can be connected to the pre-exiting water heating systems.
The installation must be carried out by specialized personnel under responsibility of the person entrusted with it.
Ungaro S.r.l. will not be held responsible for damage to persons or things in the event of failed or incorrect operation if the aforementioned warnings are not complied with.

3.1 Regulations

Installation must be carried out with reference to the following standards:
UNI 10683
UNI 10412-2
The smoke duct must comply with:
UNI EN 13384-1 Thermal and dynamic fluid calculation methods for chimneys
UNI 7129 - 1...- 4 heating systems for domestic use
UNI EN 1443 chimneys: general requirements
UNI EN 1457 Requirements and test methods for clay/ceramic flue terminals.

3.2 Additional documentation

At the end of installation, the installer must inform the user on how to use the heating system and provide technical documentation for the appliances used in the installation. The installer must fill in:

- Heating system booklet
- Documentation for the installation

The technical documentation includes:

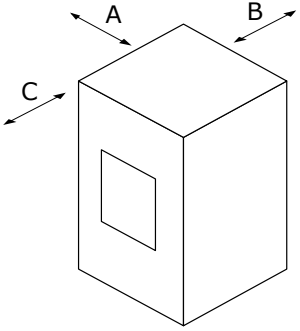
- Reference to the current standards;
- Manufacturers installation indications;
- A rough description or scheme, or photographs of any system modifications made;
- Heating System Compliance Certificate;
- Declaration of Chimney Conformity.

A sign upon receipt of the technical documentation is requested from the user.

3.3 Installation Area

The boiler/thermostove should be positioned on the fire resistant floor. If the flooring is made of flammable material, provide a floor protection surface in compliance with current national standards. Respect the safety clearance as shown on *fig. 1.*

Ungaro S.r.l. will not accept any liability in case of fire for failure to comply with the safety clearance.



A	500 mm
B	500 mm
C	2000 mm

fig. 1 - Safety clearance

3.4 Flue Pipe *(ref. UNI 10683)*

The flue pipe must meet the following requirements:

- Twin wall insulated steel flue, required diameter is 100 mm round, regardless of external or internal installation of the duct;
- It must be resistant to heat, mechanical stress, heat, combustion residues and related condensate;
- It must be installed at a safe distance from eventual combustible materials;
- It must have draft between 11 and 15 Pa.

The proper draught conditions in the flue is critical for the efficient working of pellet boilers/thermostoves. All sections of the flue must be capable of inspection and removable to enable periodic internal cleaning.

The boiler/hermostove must be connected to a flue pipe or a vertical duct which can discharge the fumes at the highest point of the building, conforming to current national regulations. Failure to comply can lead to the termination of the guarantee and of the manufacturer's responsibility for the product.

3.5 Flue gasses discharge

To discharge the flue gas outside, make a hole of an adequate size to the flue pipe.
A T-element with inspection cap and chimney cowl must be installed on the flue pipe run.
Maximum two accessible 90° bends are allowed on the flue pipe, each of them must have a T-fitting with inspection cap. Maximum permissible flue length is 3 meters with an upward slope of 3%.

Flue gasses discharge on the wall is not permitted by current regulations. Failure to comply can lead to the termination of the guarantee and of the manufacturer's responsibility for the product.

The first section should not be a 90° bend, as ash would block the discharge of flue gasses in a short time, causing draught problems.

Chimney terminal position

For the installation of smoke exhaust ducts consult the technical regulations UNI 10683. As shown on the *fig. 2*, the terminal of the chimney over the roof must have the following quotes (b>10°):

- a = 500 mm
- c = 1300 mm

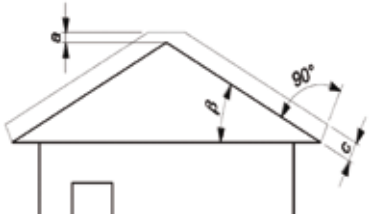


fig. 2 - Chimney

In case of the ducts close to each other, refer to *fig. 3* and *tab.1*.

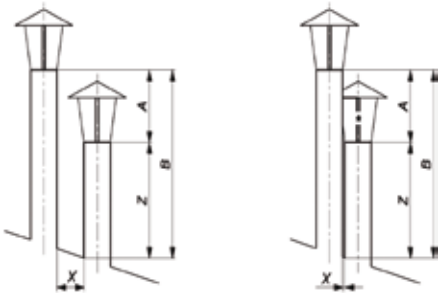


fig. 3 - Near Chimneys

Symbol	Description (mm)	Clearance (mm)
Z	Height	
B	X ≤ 500	Z + A
B	X ≤ 500	Z + A (*)
A	Height above an obstacle	500
*The symbol * means the useful terminal outlet section.*		

tab. 1

Outdoor Chimney *(fig. 4)*

Non-condensing insulated chimney system must be used for external applications. A chimney tee comprising a cap should be placed at the bottom of the vertical section of the chimney.

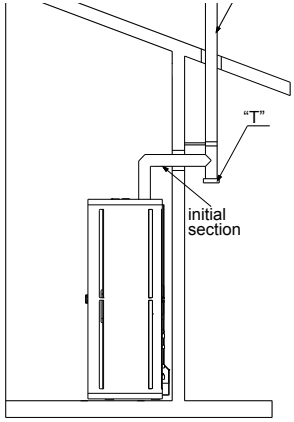


fig. 4 - Outdoor Chimney

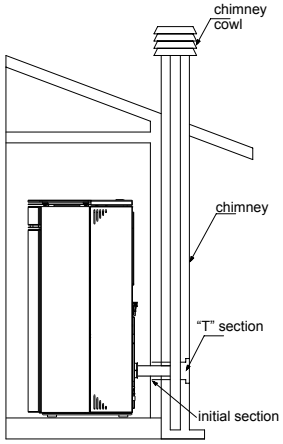


fig. 5 - Existing Flue

Existing flue *(fig. 5)*

A chimney cleanout access door is required. Control and periodically clean the chimney. At the base of the flue is advisable to install a hermitically sealed cleanout access for collecting ash and condensate, in a position where it can be periodically inspected.

Models Yncas *(fig. 6)*

These models need careful planning at an early stage of the installation process. Position the appliance bearing in mind all the instructions and considerations above and follow these requirements:

- Fix the thermochimney base to the ground;
- Make sure that all the required clearances are adhered to for servicing;
- Allow sufficient space around electrical, hydraulics and flue connections.

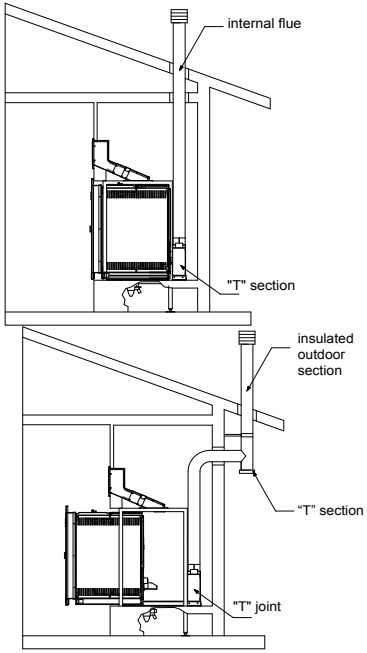


fig. 7 - Yncas Flue

3.6 Air intake

Refer to the national installation regulations for pellet boiler/thermostove.

If the air inlet is direct from outside in the room of installation, its run should not have changes of direction and small mesh grill, as can be easily clogged.

For proper functioning, the appliance should be installed in a location where it will be able to take in the air necessary for combustion. Provide an air intake hole 100 cm² close to the boiler/thermostove. Unless the installation involves a sealed chamber product, there is no obligation to withdraw the combustion air from outside the house through a duct connected directly to the heat generator. If this type of installation is deemed necessary, the outside air intake must be carried out through the wall immediately behind the generator. If it's not possible to withdraw the air from outside, the air intake can be made from an adjacent room. In both cases use straight ducts made of suitable material with the diameter no less than the air inlet of the generator. Protect the duct with a grill grate from inside and outside.

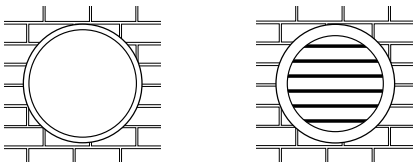


fig. 8 - Air Intake

3.7 Plumbing Connections

Before installing the boiler/thermostove, fully flush the heating system to clear any debris which may have become lodged in the pipework and can compromise the boiler effective operation.

The connection of the boiler/thermostove to the plumbing system must be carried out only by specialized personnel who are capable of carrying out installation properly, in compliance with current standards in the country of installation. The Heating System Compliance Certificate must be issued under the responsibility of the installer.

Please follow up local regulations and directives (*es: regional building regulations, requirements for heating devices, technical regulations for water and air heating systems)*.

- Install gate valves upstream and downstream of the appliance to be able to disconnect it from the plumbing system.
- It is recommended that a water drain cock is used on the return pipework.
- Connect the boiler to the heating system with flexible wedges to give some space for maintenance work.
- The installation of anti-condensation systems with a fixed point at 55 ° C is required in case if system volume greater than 150 liters.
- The installer must determine the necessity of an additional expansion volume considering that the boiler/stove is equipped with a 6/8 L expansion vessel.
- An additional circulation pump can be required if the prevalence is more than the built-in pump can lift.

The **security 3 Bar valve** should be piped outside to prevent injury to the user if it is activated.

Thermal safety drain, if present, should be piped outside downward. In case of overheating, it must operate in complete safety for people, animals or property. The hot water and steam must not remain inside of the room.

Ensure that there is an adequate provision in the system for heat dissipation from the boiler, especially in closed-circuit zone heating systems. The charge pressure, with the system cold, must be between 800 and 1200 mBar. In case of leak, close the water supply and contact the installer. If in your heating system a glycol is used, it must be propylene glycol or ethylene glycol-based fluid.

The following are indicative, non binding schemes.

3.8 Standard Configuration

The scheme in *fig.9* shows the simplicity of the Ungaro boliers/thermostoves installation. The plumbing connections are at the rear of the boiler, connect them to the the respective flow and return pipeworks. Provide an external filling hose on the central heating return pipework.

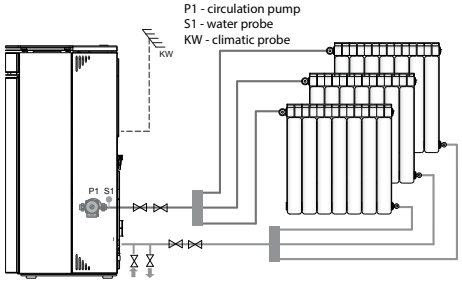


fig. 9 - Standard Configuration

3.9 Heating system with DHW kit

There are four hydraulic connections in this configuration: domestic hot water flow, external filling, heating system flow and return (max. 1500 mBar), *fig. 10*.
Domestic hot water supply is available only if the boiler/thermostove is on with the flame present. Passing through the plate heat exchanger (20kW) the city water temperature increases by 30°C compared to its initial value. The data may vary depending on the condition of the kit. When domestic hot water is used, the central heating is suspended.

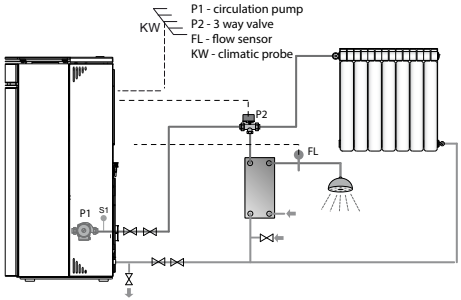


fig. 10 - Configuration with DHW kit

3.10 Configuration with heating system and buffer tank

In the sheme on *fig.11* the generator is connected to an external vessel.The motherboard manages both the boiler and the buffer. Set the temperature required in the buffer tank. The boiler heats the water in the tank first. When the set temperature is reached, the valve P2 sends hot water in the radiators.
If climatic probe is enabled, the motherboard manages the system temperature in base of the external one. Only the tank stored water temperature can be set manually. If the climatic function is off, both temperatures are to be set manually. In "Summer" mode the boiler heats only the water in the tank. It turns off when the temperature set is reached and turns on according to the temperature settings.

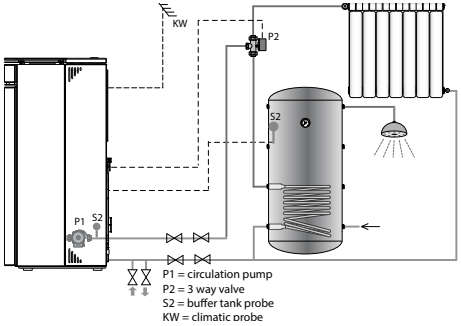


fig. 11 - Configuration with heating system and DHW Tank

In case of anomalies or excessive temperatures, the valve P2 dissipates hot water into the radiators. Keep the radiators open for extra security.

3.11 Configuration with buffer tank

In this sheme (*fig.12)* the boiler is connected to an external vessel. When the temperature set in the tank is reached, the boiler turns off and turns on according to the temperature settings. If climatic sensor is enabled, the motherboard manages the water tank temperature in base of the external one. It can't be set manually.

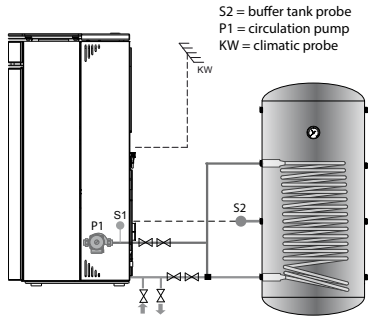


fig. 12 - Configuration with Buffer Tank

4. Components Description

4.1 Display

fig. 13 - Display

Button	Function	Description
1	ESC	Exit from menu or submenu
2	ON / OFF, Reset alarm	Hold the button for 3 seconds
3	SET	Enter in the menu or submenu; Confirm parameters; Save changes.
4 - 6	Run menu	Push the button to choose the menu
	Modify values	Choose the value to set
5	Alarm led	A red led appears in case of alarm

The *fig.14* shows the display screen when the boiler/thermostove is off.

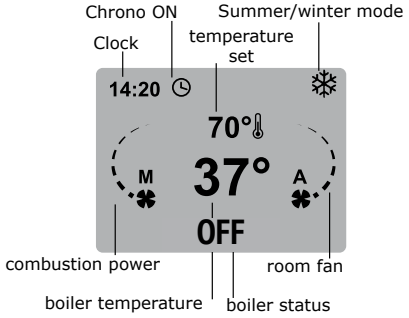


fig. 14 - Main screen

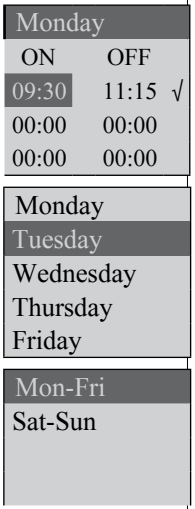
4.2 Messages

Message	Description
Sond	Control of sondes in Check Up phase
Cleaning	A careful cleaning of the heater is necessary. Appears automatically after some hours of work
Block state name	The message appears if the appliance was shut down not manually in the ignition phase (after pre-load). The heater will shut down automatically when the working cycle is compleated.
Link Error	Missing connection between display and motherboard
Cleaning On	Cleaning in progress
Night Mode	The heater is entered in the night mode
Soft Mode	Soft Mode function
Refill	Pellet is finished

In the following tables is explained the User Menu N 1 (press **SET** once to access) and the User Menu N 2 (press and hold for a while the button **SET** to access). Press the arrow buttons to choose the desired menu or value, confirm by pressing **SET** once. Press **ESC** to return in the previous menu. The menus protected with **PW** are for Ungaro authorized service technicians. The presence of some options depends on the type of configuration set.

4.3 User Menu N 1

User Menu N 1			
Power	*Pellet*	The menu permits to modify the combustion power for Pellet Mode. The power can be set automatically or manually. In the first case the heater will automatically regulate the power. When the power is set manually, please pay attention to choose the correct values without raising the pellet consumption. At the left part of the screen will appear A = automatic combustion or M = manual set and the working power of the heater.	
	Heating	In this menu can be modified the power of room fan. In the automatic mode the speed is regulated automatically. In the manual mode the user can regulate it. At the right part of the screen will appear A = automatic combustion or M = manual set and the working power of the fan.	
Thermo-stats	*Boiler*	In this menu can be regulated the water temperature in the boiler. With the climatic function enabled the value can't be modified manually, it's regulated by the heater according to the outside temperature.	
	Buffer tank	The menu is for setting the temperature in the buffer tank. The menu is seen only if the technician has choosen the configuration of the heating system with the tank.	
	Domestic hot water	The menu is for setting the temperature for domestic hot water.	
	Room	The menu is for setting the temperature in the room of installation. When the temperature set is reached (the temperature is detected by a probe of the stove), the room fan goes on minimum.	
	Remote	The menu is for setting remotely the room thermostat.	
Chrono	With the chrono is possible to program ignition and extinguishing of the boiler/thermostove.		
Chrono	*Mode*	In this menu the user can choose the desired mode or disable chrono. Enable modification of the menu by pressing the button **3** Choose th e mode (Daily, Weekly or Week-end) Enable/disable the chrono mode with the button **2** Confirm the modification pressing the button **3**	Disabled Daily Weekly Week-end

Chrono	*Program*	Three types of programming are available: Daily, Weekly, Week-end. After having chosen the program: • with the arrow buttons **6** or **4** select the time slot to program • enter in modification mode by pressing the button **3** (the time slot starts to blink) • modify the time with the buttons **6** or **4** • to save the programmation press the button **3** • enable (a "√" sign appears) or disable the time slot (a "√" disappears) by pressing the button **2.** ***Daily*** Choose the day of the week and set the time slots for ignition and extinguishing. ***Chrono at midnight*** Set the hour of ON of the previous day, for example at 20:30. Set the hour for OFF of the previous day at 23:59. Set the hour for ON of the next day at 00:00. Set the desired hour for OFF of the next day, for exapmle at 06:30. The appliance will start Tuesday at 20:30 and will shut down Wednesday at 6.30. ***Weekly*** For each day of week the programming is the same ***Week end*** The same time slots for ignition and extinguishing on working days Monday-Friday and different operation time slots for Saturday and Sunday.	
Night Mode	In this menu can be set the time slot for Night Mode, the reduced operation mode. The programming is similar to the one described in the Chrono Mode. To program the operation at midnight set the time slot ON until 23:59 with the next operation starting at 00:00 and stopping at the desired hour.		
Refill	In this menu can be activated the calculation of the pellet remaining in the tank basing on the current consumption. Four levels of the tank load will be shown on the display: 100% (full tank), 75%, 50%, 25%, 0 (Refill menu disabled). If you wish to use the Refill function, every time after loading pellet, insert an approximate percentage of tank load. If the load is the same as the last percent inserted manually, press and hold for 3 seconds the button ESC to confirm. During the operation of the generator, the function "Refill" will show on the display an alert when the tank load is less than 20%. After 3 hours this message becomes alarm Er18, this error appears when the pellet load in the tank is les than 10%. Make sure to insert the correct percentage of the pellet loaded in the tank, otherwise can appear an alarm Er03 (load overestimated).		
Soft Mode	The Soft Mode can be enabled and disabled in this menu. It introduces reduced power, without taking in consideration the thermal request of the house.		

4.4 User Menu 2

Settings			
Settings	*Date and Hour*	in this menu can be set time, date, month and year	
	Language	change the language of the display	
	Radio control	if set OFF - there is no radio control	
	2Ways2	optional	
	Night Mode	set the time of beginning and end of the Night Mode and enable the settings by pressing and holding the button **2**.	
	Climatic	An external probe Klimaworks can be bought as an accessory with the thermostove. This probe must be placed at the coldest point outside of the house. With the probe connected and the climatic function enabled, the parameter "Boiler thermostat" is not set manually, but changes dynamically according to the outside temperature read by the probe. The menu consists of 2 submenu: • Enabled - ON, OFF (Boiler thermostat set manually); • Comfort - is available only with the Climatic function enabled. It gives the possibility to modify the thermostat temperature in the range ±20°C. The Comfort mode is available only in the Winter mode (a snow flake symbol appears on the display).	
	Summer-Winter	If the system has a domestic hot water tank, the **Winter** mode manages both radiators heating and domestic hot water. The **Summer** function manages only domestic hot water.	
	Remote thermostat	the menu to enable / disable the Room Thermostat from a remote thermostat	
	Temperature scale	the menu to set Celsius or Fahrenheit scale	
Service	*Counters*	Ignitions	Number of ignitions made
		Failed ignitions	Number of failed ignitions
		Operation hours	Hours of operation in Normal, Modulation and Security mode
	Errors list	Menu for the exclusive use of the authorized technician Ungaro	
	Secondary Information	information related to the real-time operation of the product	

Service	*Auger calibration*	permits to evenly modify the quantity of pellet feeding for each combustion power. The range of setting values is −7÷7. Each step is equal to 3% of pellet feeding for each combustion power. The factory setting is 0. It is recommended to modify this parameter only if indicated by an authorised technician and however varying one step at a time and eventually repeating if necessary.
	Smoke fan calibration	permits to evenly modify the fan speed set by the authorised technician Ungaro during the commissioning and the first ignition. The range of setting values is −7÷7. The factory setting is 0. At the beginning of the heating season a moderate gain of the parameter could be helpful to remove the small obstructions in the smoke duct in the sections that are not easily accessible. Ungaro S.r.l. recommends to modify this parameter only if indicated by an authorised technician and however varying one step at a time and eventually repeating if necessary.
	Automatic power	the menu to set the combustion power in automatic mode. Once the automatic power is enabled, all the menus of the combustion settings will no longer be visible.
	Loading	the menu is for autimatic pellet loading. It will stops automatically after 300 seconds. The thermostove must be OFF when this option must be enabled. After the loading has stopped, empty the burn pot before proceeding to the ignition.
	Test Loading	This menu is for the exclusive access of Ungaro Technical Support
Display	*Keyboard sound*	in this menu is possible to turn on or off the keyboard sound.
	Contrast	modify contrast of the display in the menu
System Menu	This menu is for the exclusive access of Ungaro Technical Support	

4.5 Room thermostat *(optional)*

The motherboard of the boiler/thermostove Ungaro has an inlet for a room thermostat with a clean contact. Once the room temperature set is reached, the thermostat sets the boiler on minimal power, without turning it off. Please contact Customer Support for other available settings.

Do not connect 220V-powered room thermostats, as they can damage the motherboard.

How to wire a room thermostat:

- Turn off the boiler/thermostove main switch;
- Remove the by-pass on the back of the boiler/thermostove *(fig.15)*;
- Connect the wires following the thermostat scheme.

fig. 15 - Thermostat Inlet

The indoor temperatures should be kept within certain limits. Please consult local regulations and directives.

5. Comissioning

For installation of the Ungaro boiler/thermostove contact an installer qualified in compliance with national regulations.

5.1 Pre-Commissioning Checks

Pre-Commissioning checks ensure that the installation complies with the guidelines contained in this manual and that local bye-laws and code requirements have been complied with.

Precommissioning checks include:

- Boiler room survey to establish if the boiler is on the appropriate base;
- Air and venting requirements have been complied with;
- All plumbing connections are complete and system is filled and all pipework has been checked for leaks;
- Electrical connections are complete and safe, electrical installation is fully grounded, power disconnect is in place;
- Fuel is available to commission the boiler.
- It is recommmended that a Pre-Commissioning checklist is completed by the Installed and returned to the Commissioning Engineer before commissioning is arranged.

5.2 Customer Handover

After commissioning the Customer must be provided with training by the Commissioning Engineer. The following is a list of items which should be covered during the product induction with the Customer:

- Provide a general overview of the product and identify the main components and their function;
- Illustrate how to turn on and off theappliance and adjust water temperature through the User Menu;
- Demonstrate where and how to fill the appliance with fuel and advise of the correct quality of fuel to be used;
- Demonstrate how to clean the boiler/thermostove;
- Explain the various error codes that may appear and provide instruction on how to manage and clear errors messages. Provide warning on which error codes are system critical codes and should not be reset by the Customer;
- The Customer must be warned of the safety implications when handling ash: always empty ash into a metal container as ash which may appear cool could be hot in the centre;
- The product Warranty must be explained to the Customer and they shall sign the commissioning card confriming that they have received instructions on how to operate the appliance and agree to the product warranty.

6. Operation

6.1 Filling heating system

Once the installation has been completed and the closure of each sealing element on the system has been verified, proceed with filling with water the circuit as described below. The same operation can be repeated in case of small pressure losses which can occure with time. With the boiler/thermostove OFF and cold the water pressure must be between 800 and 1200 mBar.

- Make sure that the power cable is connected to the electric socket and another its end is connected to the generator. The main switch located on the back part of the thermostove *(fig. 16)* must be on (display active);

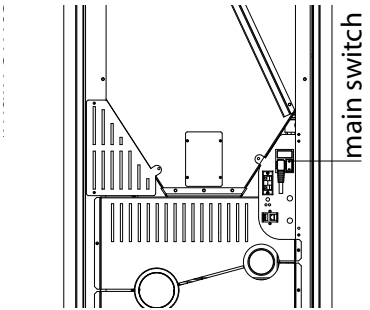


fig. 16 - Main switch

On the display will appear "OFF". If an

alarm code is present, see the troubleshooting table to solve the problem;

- Press repeatedly the buttons 4 or 6 to see in real time the operation parameters of the generator, one of them is "Water Pressure". The charge pressure, with the system cold and the stove off, must be between 800 and 1200 mBar. Slowly open the filling hose on the pipework, water should start to come through the system. Allow the system to fill, controlling the pressure level on the display. Close the hose when finished;
- To reduce pressure, bleed a radiator or drain some water out of the system using a drain point;
- Press SET to return to the main menu, press ESC to exit.

The same operations can be taken as a reference to fix small pressure drops during the entire life of the thermostove. After some working cycles of the heat generator it's recommended to check the water pressure.

6.2 Before Ignition

Every time before starting the thermostove make sure that:

- The pellet hopper is full;
- The combustion chamber and the burner are clean, the burner perfectly fits in place (if there is no self-cleaning burner);
- The ash pan and the inspection box are in their place and well-screwed;
- The tecnical door and the glass door are closed.

After having chosen the heating system configuration, set the temperatures in the menu "Thermostats". Press once the key "Set", use the arrows key to scroll to the menu "Thermostats". Set the temperature in the heating system in the submenu "Boiler". If the buffer tank is installed, set the domestic hot water temperature in the submenu "Buffer tank". Completed the settings, press and hold the ON button to start.

6.3 Ignition

Press and hold the power botton until the signal "Check Up" appears on the display. In this phase the thermostove carries out automatic cleaning (if present on the model), components and security test and draft checking. Completed the test phase, on the display will appear "Ignition" ("PA1"). The pellet starts falling in the burner and in few minutes the flame appears. Once the flame is present, the display shows "PB", which means stabilisation of the flame, at the end of this phase the message "Normal" will appear on the display. The operation power varies automatically from "P1" to "P6" basing on the water temperature in the heating system.

7. Maintenance

To ensure smooth operation and maintain high performance, clean the boiler/thermostove regularly. The frequency of cleaning is determined by the length of time the boiler has been running and by the type of pellet. *(The poorer the quality of the fuel, the more frequently will intervention be necessary for cleaning.)*
Protect the floor from ash before cleaning the boiler/thermostove.

Faulty boiler/thermostove and flue pipe maintenance can alternate proper functioning and void the warranty, with the manufacturer declining all related liability;
Maintenance should be performed only on a boiler/thermostove shut down and cooled;
Don't clean the glass when it is hot.

7.1 Automatic Burn Pot Cleaning

In the models with Automatic Brasier Cleaner the combustion residues are conveyd into the ash box automatically during the ignition phase *(fig. 17)*.

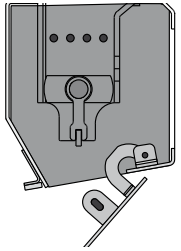


fig. 17 - Self-cleanin burner

7.2 Burning Pot Manual Cleaning

Clean burning pot daily or at every ignition *(fig. 18)*. If the boiler/thermostove maintenance and ash removal are not performed regularly, it can cause:

- Poor combustion;
- Glass smoke up;
- Accumulation of ash and unburnt pellets in the burning pot;
- Ash residue depositing on the heat exchanger and its poor efficiency as result.

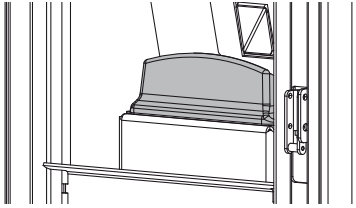


fig. 18 - Burning Pot

7.3 Automatic Exchanger Cleaning

High thermal exchange remains constant in time thanks to the patented Ungaro tube bundle cleaning. The models with Automatic Exchanger Cleaner do not request any user's intervention.

7.4 Exchanger Manual Cleaning

Remove the butterfly screw, pull and push intensively several times the grate of exchanger cleaner *(fig. 19)*. This operation should be performed each three days.

Regular exchanger cleaning helps to keep high efficiency of the boiler/ thermostove.

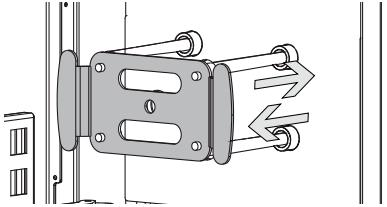


fig. 19 - Heat Exchanger

7.5 Ash Box Cleaning

Empty the ash box *(fig. 20, 21)* when it is full or each 15 days. Remove the screws, empty the box, put it back and tighten the screws.

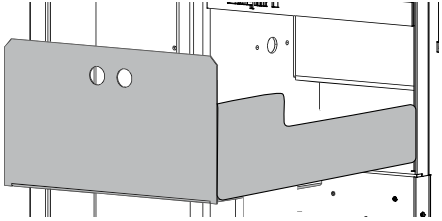


fig. 20 - Easy Clean Ash Box

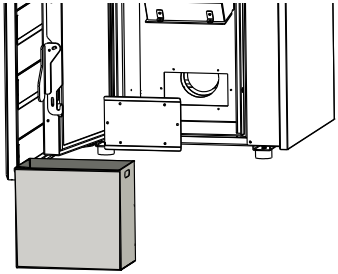


fig. 21 - Boiler Ash Box

7.6 Inspection Compartment Cleaning

Empty the inspection compartment when it is full or each 15 days. Remove the lid, clean the space with an ash vacuum cleaner *(fig. 22)*, place the lid pushing down the handle. To ensure proper combustion, close tightly the inspection compartment.

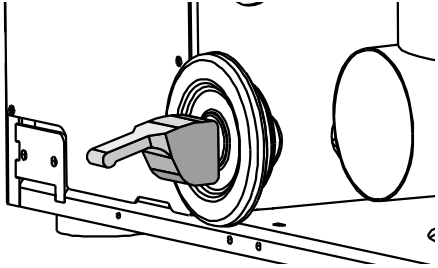


fig. 22 - Inspection Compartment

7.7 Hopper Cleaning

Saw residues may block the auger. Therefore, pellet hopper must be emptied and cleaned each 10/20 refills, depends on the quantity of dust in the pellets. Faulty hopper cleaning can void the warranty, with the manufacturer declining all related liability.

7.8 Annual service

Annually contact the local Technical Support for service and check up of the following components:

- Door gaskets;
- Ash box gaskets;
- Exchanger gaskets;
- Tube bundle silicone gaskets;
- Ash Reducer gaskets;
- Tube bundle cleaning;
- Pellet hopper cleaning;
- Capative sensor cleaning *(if available);*
- Air flux sensor cleaning *(if available);*
- Boiler interspace cleaning;
- Internal flue pipe cleaning;
- Air pipeline cleaning;
- Exhaust fan base cleaning;
- Motherboard cleaning;
- Floor protection cleaning;
- Hot air tangential fan cleaning*;*
- Ignition resistance;
- Burning pot's integrity;
- Gearmotor integrity;
- Expansion vessel;
- Bushings.

At the end of the maintenance the technitian must fill the maintenance document, which is required to maintain the guarantee.

Lack of annual maintenance voids the factory boiler/thermostove warranty. The annual maintenance is responsibility of the customer.

7.9 Maintenance Summary

Components	Each ignition	Each 3 days	Each 15 days	Each 30 days	If full or dirty	Each year
Burner	●*					
Exchanger	●*	●*				
Ash Box		●*			●*	
Inspection Compartment			●		●	
Glass					●	
Ceramic Fiber Gaskets						●**
Gaskets						●**
Internal Flue Duct						●**
Pump						●**
Plate Heat Exchanger						●**
Main Components						●**
Boiler/stove body						●**
Chimney						●***
Pellet tank and Additional Box					●	●**

* automatic where available ** contact local Customer Support *** contact qualified personnel

8. Notifications and errors

8.1 Service

When on the display appears "**Service**", clean carefully the boiler/thermostove and its hopper *(see chap. Maintenance)*. It is not an alarm and does not affect the boiler operation. Press **ESC** button for 3 seconds to reset the notification.

8.2 Standby

The "**Standby**" notification appears when the temperature achieves the set point. The boiler control panel stops conveying pellet and the flame goes out. The boiler/thermostove turns itself on at a new thermal request.

8.3 Over temperature

Alarm "**Er01**" is displayed when water or pellet security thermostat is active. The boiler/thermostove can go in over temperature if:

- Zoned heating system doesn't have an open zone;
- Circulation pump is blocked;
- Shut off valves are closed;
- If domestic hot water kit is installed and the display shows false hot water request, contact Technical Support;
- The temperature in the hopper is too high.

To turn the boiler/thermostove on:

- Solve the cause of over temperature;

The thermal security thermostats can be found below the power cable *(fig. 23)*.

fig. 23 - Security Thermostats

Unscrew the black caps that cover the white buttons, press the buttons until hearing a click. At this point the thermostats are reset;

- Proceed with the ignition.

8.4 Wet

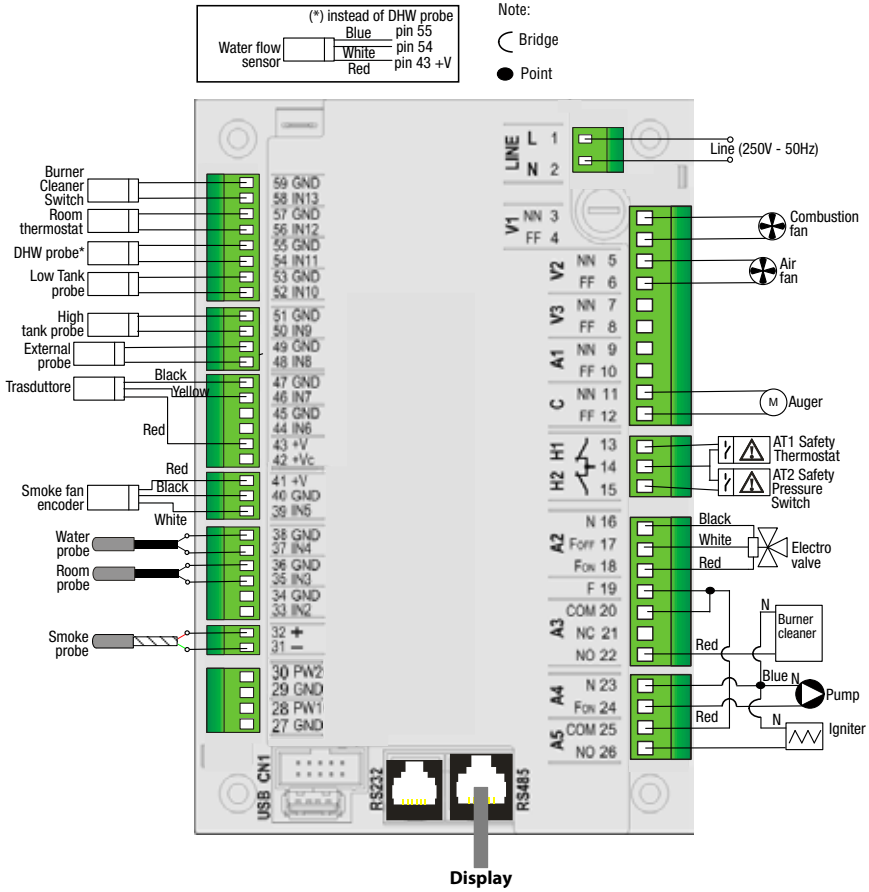
"**WET**" notification displays if the temperature difference between the water leaving the boiler and the system return is too big, over the value set in the factory. If "WET" notification appears more than 5 times during a day, the display will show alarm **Er59**, condensate hazard. Please contact your installer.

8.4 Troubleshooting

Resolve the cause of the issue and push and hold SET for 3 seconds to reset an alarm.

Error	Description	Solution
Er01	Overheated water	Verify proper water flow in the system, check the pump and the water pressure. Disarm water security thermostat and reset the alarm.
	Overheated pellet hopper	Let the appliance cool and check the pellet hopper. Disarm pellet security thermostat and reset the alarm.
	Safety thermostat faulty	Contact Customer Support in your area
Er02	Low draft in the chimney	Verify if the combustion chamber, ash box and inspection box are properly closed. Inspect the flue pipe.
Er03	Extinguishment due to low smoke temperature	Check if pellet is missing in the tank; control if the burn pot is clean (if it's not self-cleaning) and not damaged. Empty the ash drawer, clean the inspection compartment, check if there primary air inlet or flue pipe are clogged.
Er04	Water temperature in the boiler is over 92°; water probe defective.	Verify proper water flow in the system. If the heating system is zoned, make sure to have at least one zone open; check the circulation pump. If the error persists, contact Customer Support in your area
Er05	Excessive smoke temperature	Clean the stove carefully, pay attention to the inspection compartment where the exhaust fan is situated; Inspect the chimney.
Er07 Er08	Incorrect operation of exhaust fan or control panel	Contact Customer Support in your area
Er09	Low water pression	Control the pressure, repressurise the heating system: open slowly water filling loop to increase the pressure. Close it when finished. Verify if there are water losses.
Er10	High water pression	Control the pressure, drain exessive water; verify if automatic water loading unit (if available) is faulty or not calibrated.
Er11	System clock error	Contact Customer Support in your area
Er12	Failed Ignition	Clean burning pot (if it's not self-cleaning); verify if the pellet in the hopper is dry and has adequate dimensions; empty the pellet hopper and check if clogged. Refill the hopper, empty the burner and restart. If the error persists, contact Customer Support in your area
Er15	Loss of voltage for more than 1 minute	If the thermostove was functionning, within 1 minute it will automatically re-start. If the power cut is longer than 1 min, reset the error and re-start the heater.
Er18	No pellet in the tank	Refill the tank, see the description of Refill, page 12.
Er25	Self-cleaning burner anomaly	Re-start the thermostove. If the error persists, contact Customer Support in your area
Er59	Condensate hazard	See description in the paragraph 8.4 "Wet"

9. Motherboard



10. After Sale Service

Only authorized Ungaro personnel may access to the electrical or mecanical parts of the appliance.
Contact your retail shop with questions regarding installation, operation or service.

10.1 Technical intervention

Please read this manual carefully before asking for a technical intervention. Before calling Customer Support provide the following data:

1. Dealer/Retailer contact data;
2. Purchase receipt or invoice;
3. Boiler/thermostove serial number (you can find it on the rear panel *fig.24)*;

10.2 Documents to show by customer

In case of intervention provide these documents:

1. Purchase receipt;
2. Invoice;
3. Heating system scheme;
4. Heating System Compliance Certificate;
5. Electrical Certificate of Compliance;
6. Declaration of Chimney Conformity.

10.3 Documents to ask to Authorized Technician

At the end of intervention the technician will give:

1. Service Log signed;
2. Invoice for the used spare parts for out of warranty interventions.

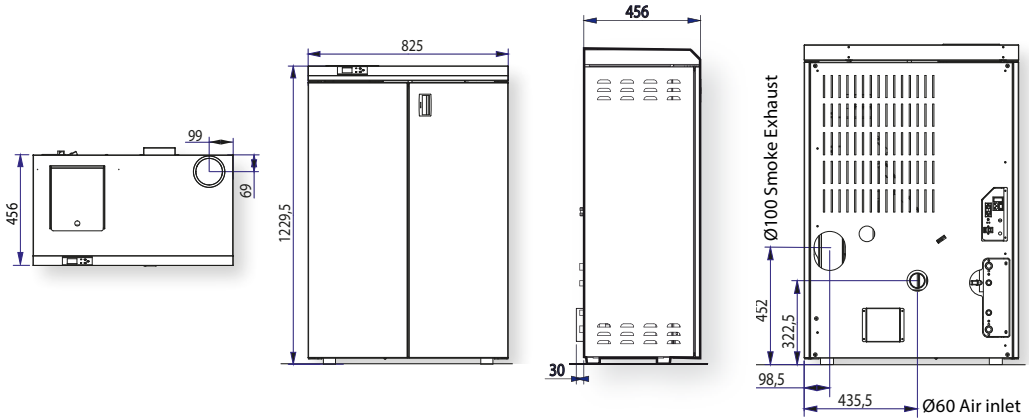
fig. 24 - Serial Number

11. Technical Data

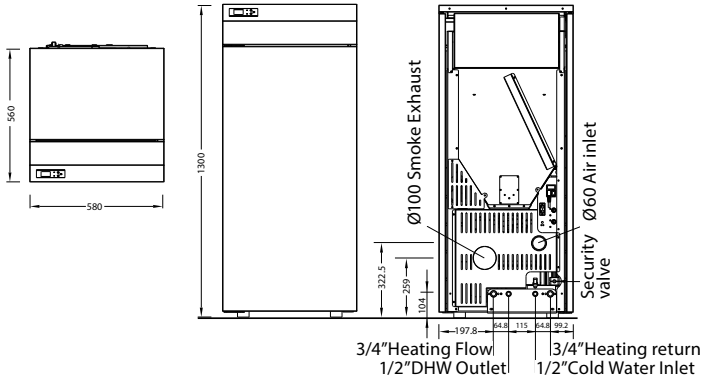
			THERMOSTOVES							BOILERS-STOVES BOILERS,		
			Aqa F, Aqa X, Aqa F Plus, SV Classic		Maia F Maia F Plus		Yncas L	Kucina	Fit I	FIT CS, AQA F CS, FIT C, AQA CF A1		
			6-24	8-30	6-24	9-34	6-24	5-20	6-24	4-15	4-20	4-25
Heat input	Max	kW	25,7	29,4	24,3	34,3	24,8	19,8	25,7	16,4	20,9	24,8
	Min	kW	6,9	8,4	6,8	8,7	6,6	5,1	6,9	4,4	4,4	7,1
Nominal power	Max	kW	23,5	26,5	22	31	23	18,1	23,5	15	19,3	23,1
	Min	kW	6,5	8	6,5	8,3	6,2	4,9	6,5	4	4	6,6
Efficiency	P.Max	%	91,5	90	90,5	90,5	93	91,8	91,5	91,2	92,5	93
	P.Min	%	94	95,5	95,5	95	95,1	96,6	94	90,6	90,6	93
Power to water	P.Max	kW	19,5	24	19,5	28,5	18,5	14	19,5	15	19,3	23,1
	P.Min	kW	4,5	6	5	6,6	4,5	3,8	4,5	4	4	6,6
Power to air	P.Max	kW	4	2,5	2,5	2,5	4,5	4,1	4	-		
	P.Min	kW	2	2	1,5	1,7	1,7	1,1	2			
Pellet consumption	P.Max	kg/h	5,4	6,1	5	7,1	5,0	4	5,4	3,5	4,4	5,3
	P.Min	kg/h	1,4	1,7	1,4	1,8	1,3	1	1,4	0,9	0,9	1,5
Pellet hopper		kg	35	40	35	40	20	25	35	35	35	35 (50 per FITC)
Smoke pipe	Ø	mm	80	100	80	100	100	80	100	100	100	100
Air pipe	Ø	mm	60	60	60	60	60	130	60	60	60	60

12. Technical Drawings

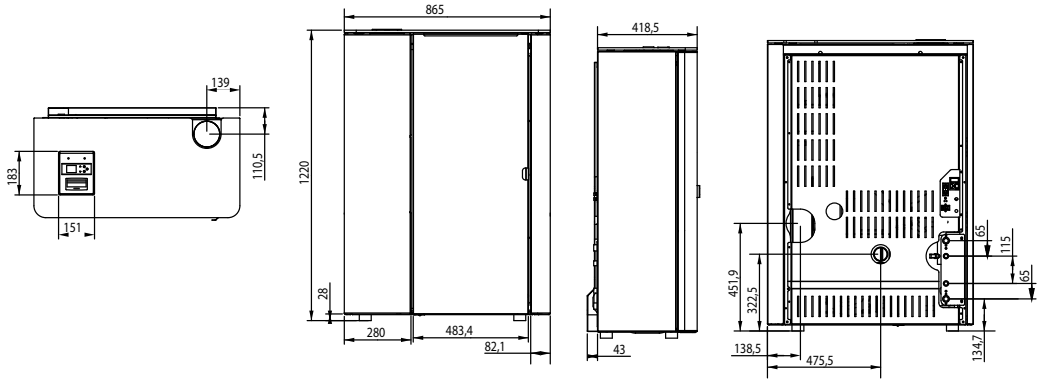
FIT C 4-15/4-20/4-25 kW



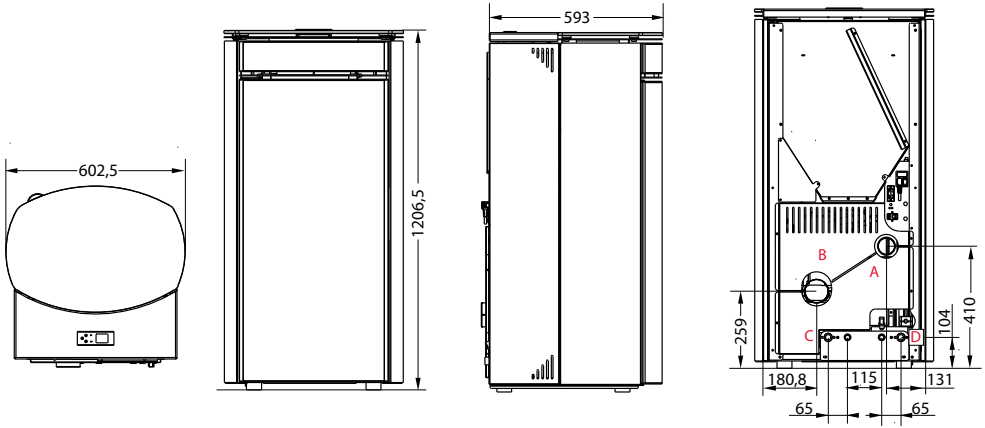
AQA CF A1 4-15/4-20/4-25 kW



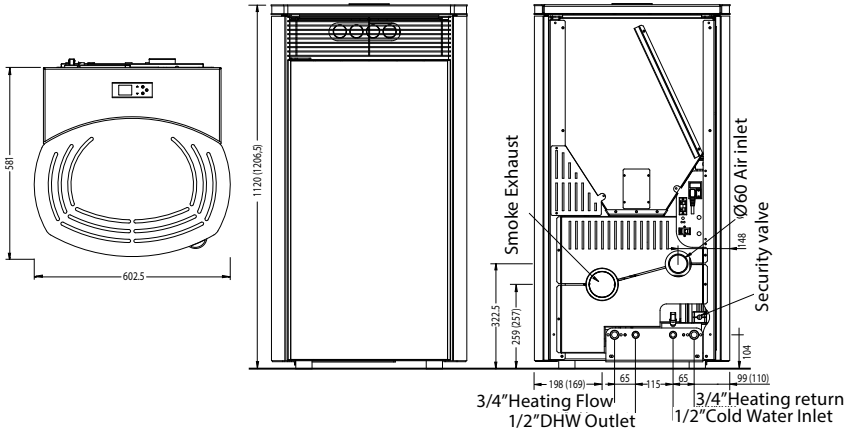
FIT CS STYLE/GLASS/CLASSIC; FIT CS X 4-15/4-20/4-25 kW



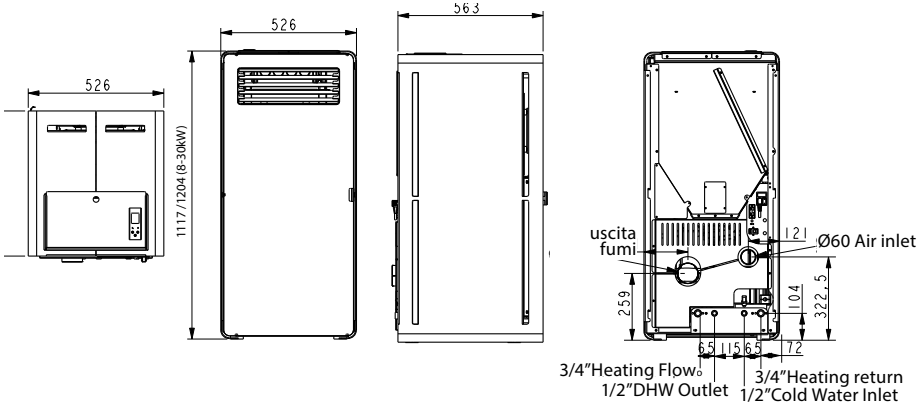
AQA F CS 4-15/4-20/4-25 kW; AQA F PLUS 6-24 kW, MAIA F PLUS 6-24 kW

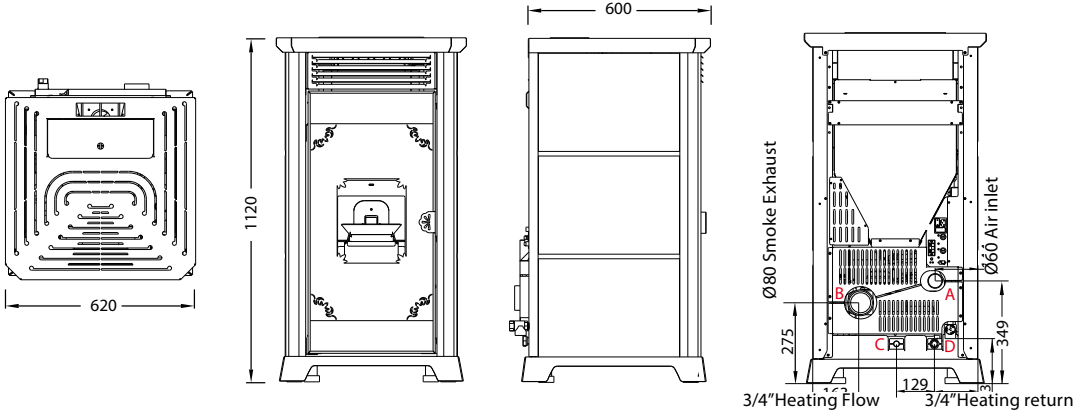


MAIA F STYLE/F GLASS/F CLASSIC 6-24/9-34, AQA F STYLE/F GLASS/F CLASSIC 6-24/8-30

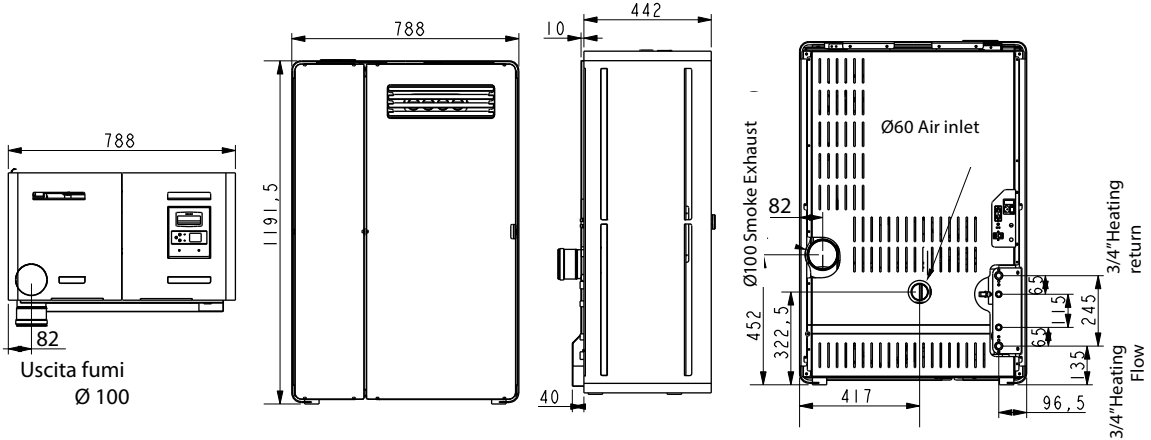


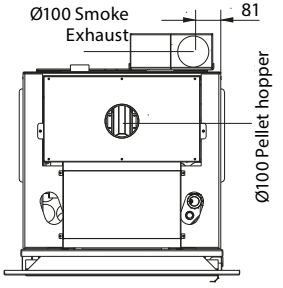
AQA X 6-24/8-30 KW

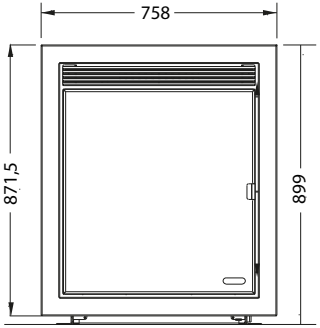


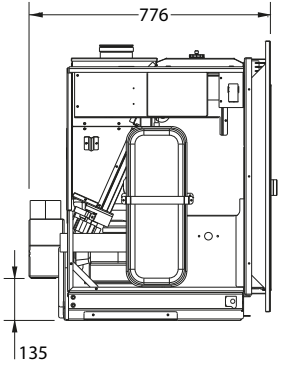

620
1120
600
Ø80 Smoke Exhaust
Ø60 Air inlet
A
B
C
D
275
349
129
3/4"Heating Flow
3/4"Heating return

FIT I 6 - 24 KW


788
82
Uscita fumi
Ø 100
788
1191,5
442
10
40
Ø60 Air inlet
Ø100 Smoke Exhaust
82
452
322,5
417
96,5
6,5
115
245
6,5
135
3/4"Heating return
3/4"Heating Flow


Ø100 Smoke
Exhaust
81
Ø100 Pellet hopper


758
871,5
899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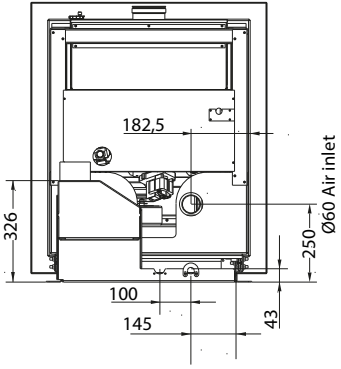
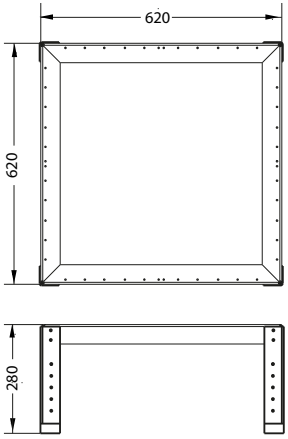
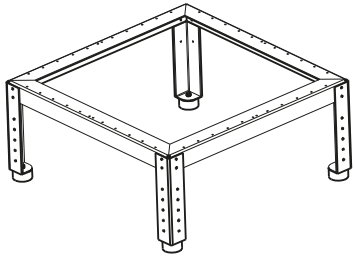
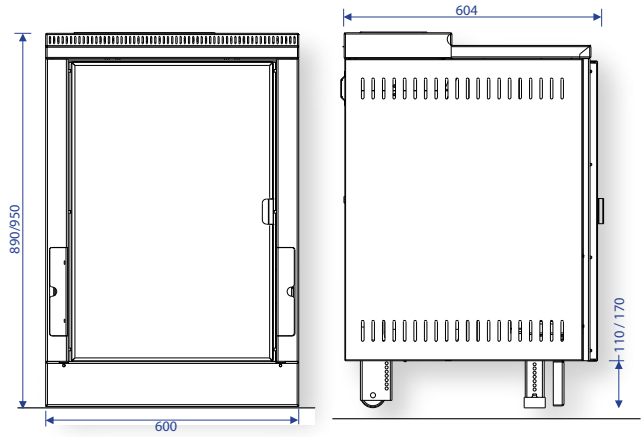
135

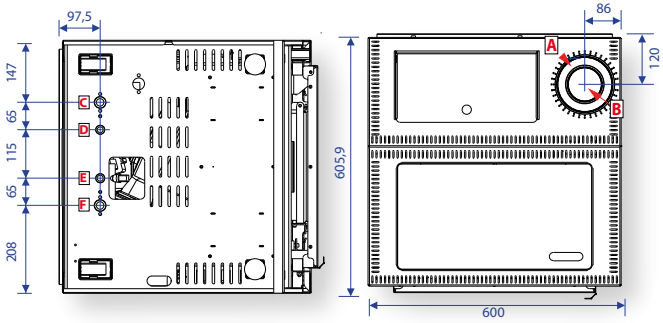

182,5
326
Ø60 Air inlet
250
100
145
43


620
620
280



KUCINA 5-20


604
890/950
600
110/170


97,5
147
65
115
65
208
C
D
E
F
605,9
86
120
A
B
600

Guarantee

Ungaro S.r.l. declares that the the product purchased is in perfect condition and there are no manufacturing defects.
All Ungaro products are singularly tested and covered by guarantee for 24 months.
The guarantee is conditional on the following documents being filled in and returned to the Manufacturer within 8 days from the date of purchase:

- Warranty registration card completed;
- Copy of Heating System Compliance Certificate;
- Copy of a proof of purchase (invoice or receipt) that shows the name of the retailer and the date of purchase.

The term "guarantee" is to be understood to denote the free of charge replacement by qualified personnel or repair of parts recognised to have been defective at the start by reason of manufacturing defects.

The warranty is valid under conditions:

- If all the requirements described in this manual are followed;
- If the appliance is installed by qualified personnel and the warranty registration card is completed and sent to the Manufacturer;
- If the Customer has Heating System Compliance Certificate and Electrical Certificate of Compliance;
- If the appliance is used and serviced as described in this manual;
- **If the appliance is serviced annually by an authorized Ungaro technician;**
- If the flue pipe is installed and serviced as described in this manual and in accordance with the regulations in force in your local area, region and country;
- If used certified pellet conforming to the specification given in this manual;
- If the Customer keeps the warranty registration card filled out, with the receipt of purchase. This document must be shown to the technician in case of intervention.

Exclusions:

The guarantee voids in the event of damage caused by tampering with the appliance, atmospheric chemical agents, natural disasters, electrical discharges, fire, defects in the electrical system, and caused by lack of, or incorrect, maintenance in terms of the manufacturer's instructions.

The requirements for the flue installation, particularly in relation to draught, is the responsibility of the system owner.

The guarantee will be invalidated in case of overheating, combustion of non-conforming materials.

The above guarantee does not cover parts subject to normal wear such as gaskets, fibre board on doors, burner pot, ignition resistance, combustion chamber lining, ceramic glass, painted finishes and other external finishes.
The Customer is in charge of eventual costs (repair, transport) arising from improper exercise of warranty rights.

Ungaro S.r.l is not responsible for damages during transportation and/or handling, please inspect your order immediately upon receipt and contact your retailer for any claims.
This guarantee is valid only for the buyer and cannot be transferred. The replacement of the entire system or the repair of one of its components does not extend the guarantee period.
Expenses incurred from incorrect boiler/thermostove installation, ash accumulated, lack of maintenance or unsuitable cleaning are not covered by the guarantee.
The product installation must comply with all applicable laws and regulations (L.n. 37/08 ex.46/90; dpr n 412/93; norms UNI-CIG; prescriptions VV.FF.; ecc.).
Boiler water supply must not encrust the parts it comes into contact with. An appropriate water treatment should be applied if:

- Water hardness is greater than 25 French degrees;
- Central heating circuit is extended and needs to be refilled or emptied often;
- Water tends to algae and sludge formation.

The guarantee is not valid if:

- The electric installation is not provided with an earth connection or has no certificate of compliance;
- Heating System has no Compliance Certificate;
- There is rust or any other corrosion caused by placing the product in a damp site;
- Damages caused by corrosion or fouling typical for heating circuit;
- Damages caused by overvoltage, electrical discharges, stray currents;
- Damages caused by use of non original spare parts or intervention of non authorized personnel;
- There was a misuse of the product or sabotage.

Any technical interventions at the end of the gua rantee period are to be paid by the Customer, including travel costs.
This is the only guarantee Ungaro S.r.l. gives for the product. No one else may give any guarantee, warranty, or condition on Ungaro's behalf.
Ungaro s.r.l. declines all liability for any damage which may be caused, directly or indirectly, to persons, animals or objects as a consequence of non compliance with any prescription specified in the manual, especially warnings regarding installation, use and maintenance of the appliance.

Ungaro S.r.l. reminds that the manufacturer is the holder of the rights provided by Leg. D. 02/06/2002 and the guarantee does not affect these rights.

In order to improve the product, to keep this publication up to date Ungaro S.r.L reserves the right to make modifications without any advance notice.

Purchase Date

Installation Date

Seller

Installer

Boiler/Thermostove Data

To cut and to sendo to Ungaro S.r.l. within 8 days of the date of purchase. Fill in all the fields in readable form

Last Name First Name

Street n°

ZIP City Prov.

Telephone e-mail

Purchase Date

Seller

Installer

Boiler/Thermostove Data

The customer declares that he/she has read the guaranty and the user manual.

Date_____Signature_____

By signing this consent form, I confirm that pursuant to the provision of Art.13 and 23 L.196/2003 on Personal Data Protection. Ungaro S.r.l. personal data above for the purposes of sending marketing communication, and information of commercial and advertising nature and make such data available to a data processor under the terms and conditions set out by the Personal Data Protection Act. I acknowledge my right to access the personal data, edit it, and to withdraw this consent at any time in a written notice delivered to: Ungaro S.r.l. - Via S. Mango 2 - 88040 S. Mango D'Aquino - CZ. Providing my personal data is voluntary: in the lack of them Ungaro S.r.l. cannot provide services mentioned above. *By signing below I express my consent to personal data processing.*

Date_____Signature_____

Ungaro S.r.l.

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