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PELLET BOILER
GRANDE



INSTRUCTION FOR USE, MAINTENANCE AND INSTALLATION

Version 1.1 / May 2014

Please read in full this operating instruction before you install and start using your GRANDE Pellet Boiler.
The devices (hereinafter refered to as "pellet boiler") of ALFA PLAM A.D. company have been developed and tested in accordance with the safety requirements of the applicable European Directives.
These instructions are intended for end users, installers and repair and service of GRANDE pellet boilers. If you have any questions regarding the instructions or need an explanation, please contact the manufacturer or authorized person of ALFA PLAM A.D.

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The amount of CO_2 produced in combustion is equivalent to the amount of CO_2 that the wood has obtained from the ambient in the environment and changed it in oxygen and carbon.
The use of non-renewable fossil fuels (coal, oil, gas), contrary to what happens with wood, releases into the atmosphere enormous quantities of carbon dioxide (CO_2) accumulated for millions of years, and that increase the greenhouse effect.
The principle of clean combustion fully meets all environmental requirements and a company ALFA PLAM has created its own development on this basis.

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1.0 CONTENTS OF MANUAL

The Manual is intended for the users so that they could undertake all necessary measures and preparations to ensure proper use of the unit.

1.1 UPDATING

These guidelines support the technology of the boiler placed on the market at the time and because owing to that ALFA PLAM does not respect the existing devices with the appropriate technical documentation as flawed and inadequate. After each change, adaptation and application of new technologies on the new device, the changes of the instructions are made.

The contents of this manual should be carefully read and accepted. All the information that this guide contains are necessary for the installation, use and maintenance of your boiler.

Instructions should be carefully and securely stored. Instructions for use, maintenance and installation are an integral part of the pellet boiler unit.

In the event that another person becomes the owner of the boiler, instruction manual should be submitted with the boiler.

2.0 RESPONSIBILITY OF THE MANUFACTURER

By submitting instructions, ALFA PLAM a.d. rejects any civil and criminal liability, both directly and indirectly due to:

- accidents caused by failure to comply with the standards and specifications of the instructions
- accidents caused by illegal and improper use by the user
- accident that occurred because of modifications and repairs that are not approved by ALFA PLAM
- poor maintenance
- unpredictable situations
- accidents caused by the use of unoriginal and incompatible spare parts

The installer is fully responsible for the installation

2.1 RESPONSIBILITY OF THE USER

The user has to meet the following requirements:

- He must be adult and responsible person
- He must have technical knowledge for routine handling of electrical and mechanical parts of the boiler

IT IS FORBIDDEN FOR THE CHILDREN TO BE NEAR THE BOILER WHEN THE BOILER IS IN OPERATION

2.2 BASIC PREVENTIVE REQUIRED STANDARDS

1) Directive 73/23/EEC
2) Directive 85/374/EEC
3) Directive 89/106/EEC
4) Directive 89/336/EEC
5) Directive 89/391/EEC
6) Directive 1999/05/EEC

2.3 TRANSPORT AND HANDLING OF PELLET BOILERS

Handling must be safe, pay attention to the ends of the boiler when the boiler needs to be moved to another location, first make sure that the capacity of the palette forklift is big enough to raise the boiler. Do not make sudden and unexpected movements. The manipulation of the boiler in terms of lifting, moving or relocation can be done by a rod mounts that are threaded on one end. These carriers (4 pieces) are screwed on specified places on both sides of the boiler (see Fig. 1). For this activity 4 people are needed. ***Supports are delivered with the boiler***.

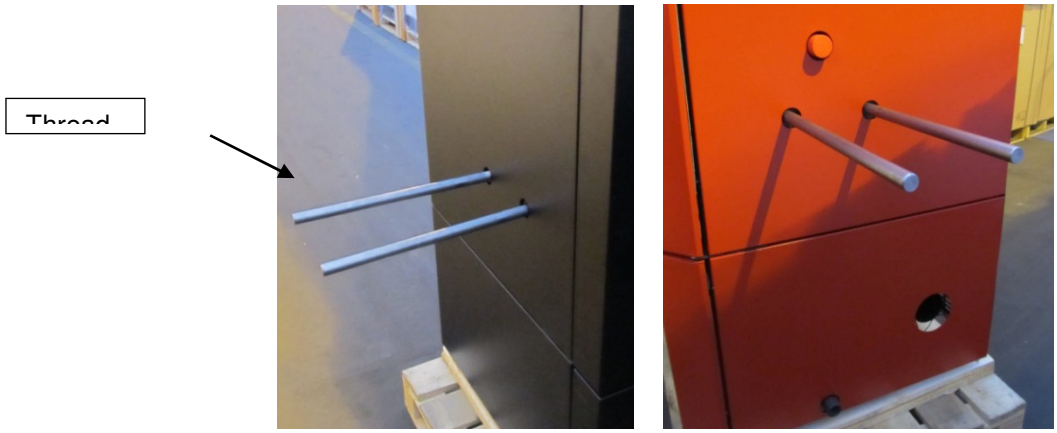


Figure 1. Handling the boiler by supports

Remove all packaging material away from children's access. There is a risk of suffocation with bags, foils, polystyrene, etc.

2.4 RESPONSIBILITY OF THE INSTALLER

The responsibility of the installer is to carry out control of all pipes and pipelines, air supply and all necessary solutions as required for the proper installation of a pellet boiler.
The responsibility of the installer is to bring into accordance the service with the local laws applicable at place of installation.
Standard UN 10683 defines the responsibilities of the installer. The installer must ***check***:

- type of device to be installed
- adequacy of space for installation of the unit, which means the minimum requirement for the size of space where the boiler will be installed
- the manufacturer's instructions with respect to the device related to the flue gases
- the interior of the chimney, the material from which it is made, whether it is flat, i.e. free form obstacles
- height and vertical extension of the chimney
- the existence and well-executed chimney cap
- possibility of supply of outside air
- possibility of simultaneous use of installing generating set and other equipment

If the results of all the above indicated and approved requirements are positive, the installation may begin. Please, follow carefully the instructions given by the manufacturer, and the relevant safety and fire standards.

When the installation is complete it is necessary to carry out the test for at least thirty minutes to check all specified requirements.
When the installation is complete, the installer must provide the buyer with the following:

- Instructions for use, maintenance and installation of the manufacturer (if it is not already part of the unit)
- The required documentation in accordance with applicable standards

3.0 INSTALLATION

The responsibility for the operation of installing rests solely with the installer and the customer.
Before beginning the installation, the installer must check all the statutory safety standards and specially:

- check that the norms regarding the installation of pellet boilers meet local, national and European standards
- recognize the requirements of this document
- check that the pipes and the air supply line are in accordance with the type of installation
- not make temporary electrical connections and thereby use exposed electrical cables
- check the grounding of electrical system
- always use individual safety equipment and legal requirements of protection
- always leave enough space for maintenance and servicing of the boiler

3.1 INSTALLATION OF A PELLET BOILER

It is recommended to unpack the pellet boiler when it is at the place where it will be installed.

If the adjacent walls and floor are of material not resistant to higher temperature, it is necessary to provide adequate protection and use insulation of fireproof material.
Distance between the boiler and all surrounding walls, furniture and other home appliances must allow unrestricted access to the boiler on all sides, during commissioning works and all other interventions. Minimum distance is 500 mm (Fig. 2)

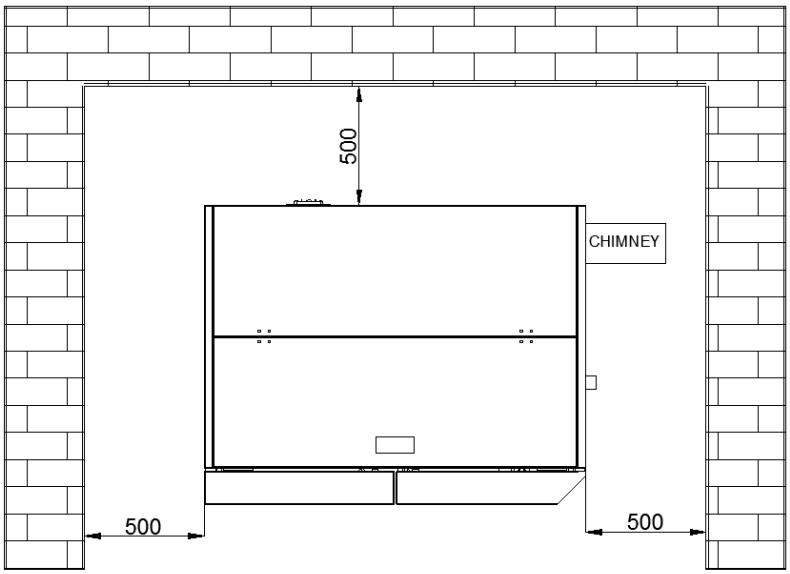


Figure 2. Distance between the boiler and surrounding walls

If the pellet-fired boiler is installed in the space where there are already devices that suck air (eg. range hoods, various sucking devices, etc.), or in the area where there are already other heating devices on solid fuels (eg. wood-fired boilers), ensure supply air volume large enough for safe operation of the heating unit.

If flue gas channel goes through the ceiling, it must be properly insulated with fire resistant insulation material.
During installation, boiler should be leveled by support legs.

DANGER
Flue gases discharge **must not be connected to**:

- chimney or pipe used by other burning devices (boilers, furnaces, fireplaces, etc.)
- relief systems (hoods, vents and fans, etc.)

DANGER

It is forbidden to install valves – covers of the flue gas pipe.

WARNING
If the chimney does not have a satisfactory draft of flue gases (many bends, inadequate cross-section of tubes, bottlenecks), it is necessary to correct boiler parameters and adjust the work of the chimney to the exhaust system.
Parameter changes can be made only by the authorized person – service personnel.
If the change of parameters does not produce satisfactory results, change the chimney.
The system of exhaustion of flue gases from the pellet boiler works on the principle of vacuum and draught from flue exhaust pipe. It is very important that flue gas exhaust pipe is properly sealed. It is necessary to analyze the layout and structure of the area where the chimney is located. The chimney must be properly installed, regardless of whether the port is connected to the wall or the roof, and in accordance with the standards of fire protection.
The boiler operates on 220V-50 Hz. Make sure, when installing the boiler, that the electric cables are not under the boiler and do not come into contact with sharp parts that could damage them. If the pellet boiler is under too high voltage, the life of electrical components is significantly reduced. When the fire is burning in the boiler, never disconnect the power cord. This could damage the boiler and seriously impair its proper operation.

3.2 FLUE GAS PIPE

Flue gas pipe must comply with the applicable regulations. Flue gas pipes must not be connected to other exhaust pipes of any burning unit. It is not allowed to exhaust flue gases in closed or semi-closed space, such as garages,

narrow passages, hallways or similar spaces. When the boiler is connected to the chimney, the chimney must be checked on openings. If there are openings, they must be sealed.

Flue gases exhaust must be grounded in accordance with local regulations. Grounding is legally required and must be carried out independently of the ground tank.

Flue gases exhaust must be performed in accordance with UNI 9615-9731, UNI 10683-N1856-1. Chimneys that are in bad condition, or are made of inappropriate material (asbestos, galvanized sheet metal, etc.) with rough or porous surfaces, are not complied with the law and endanger the operation of the boiler. Smoke can be easily exhausted through a traditional chimney (see below given figure), provided that the following rules are respected:

- check the condition of the chimney
- if the chimney is old it is advisable to renew it by inserting a metal tube properly insulated with glass wool or vermiculite
- it is possible to let the smoke go directly into the chimney, provided that its dimensions are 200x200 mm or maximum diameter is 200 mm and that it is equipped with an inspection hole
- in the event of a larger size chimney, it is necessary to install the corrosion proof pipe of maximum diameter of 200 mm. The pipe must be properly insulated.
- make sure the connection is properly sealed to the chimney
- avoid contact with combustible materials and, in any case, insulate them with fire resistant material

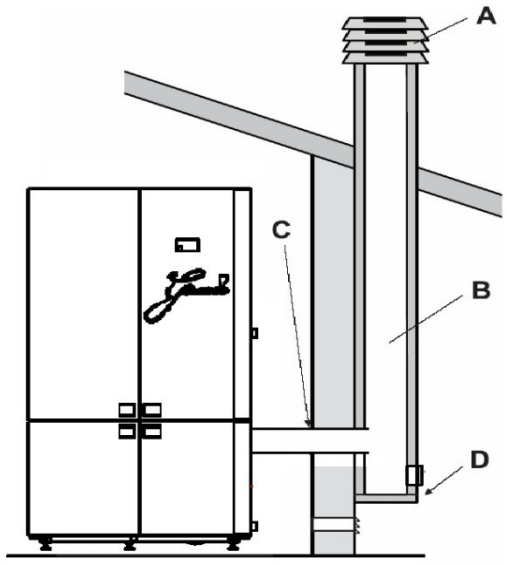


Figure 3

A – chimney protective cap
B – chimney of maximum size of 200 mm and max. height of 5-6 m
C – sealing connection up to the chimney
D – inspection hole

The diameter of the pipe is dependable on the power of the boiler. Operation of pellet boilers is designed for flue gas exhaust pipe of 80 mm diameter. In certain conditions, it is recommendable to use the pipe of 100 mm diameter, as shown in Figure 2. In the event when you have to use the pipe of 100 mm diameter, connect it to the boiler with T-connection of 80 mm diameter and extend the chimney with a reducer of 80/100 mm diameter.

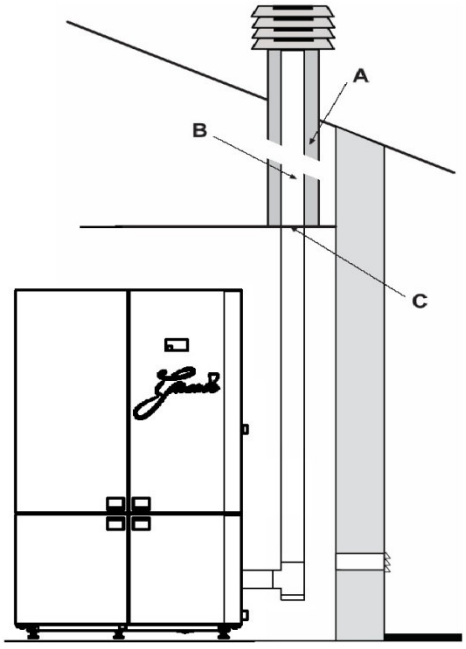


Figure 4

A – vermiculite or glass wool
B – aluminium pipes
C – inter-storey construction

When making the connection between pellet boilers and chimneys, install T-joint with inspection hole, connected directly to the boiler or elbow with cleaning door. Using of T-joint must allow cleaning of ash that builds up on the bottom of the pipes without dismantling them. Smoke in the chimney connector is under slight pressure. Whenever cleaning is done, it is required to check tightness of the lid.



Figure 5 – Elbow with a cleaning hole

It is recommended that elbows of 90° should be in three parts (see Fig. 6).

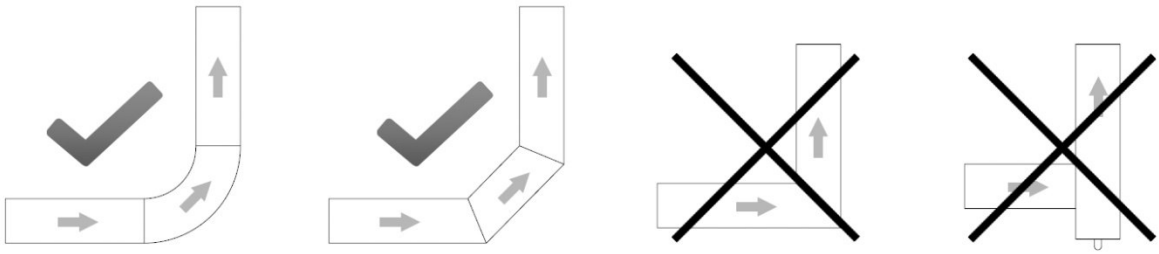


Figure 6 – Shapes of elbows (knees)

Connection between pipes must be made with a male connector facing up (see Figure 7).

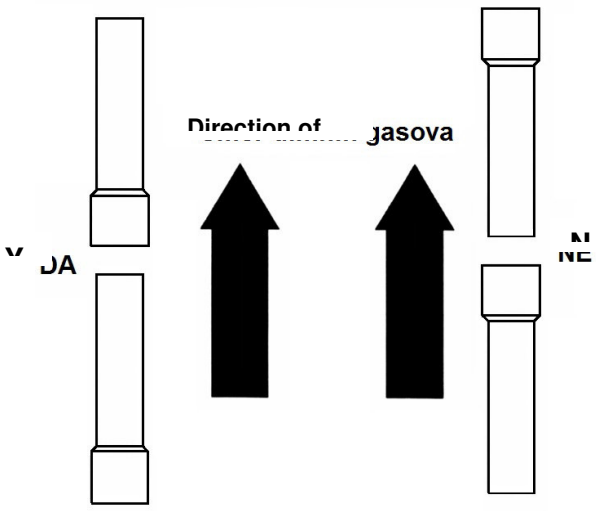


Figure 7 – Way of connecting flue pipes

Avoid long horizontal connection of pipes to the chimney, up to 3 m. Place the flue gas pipe at an angle of 5° upward. Connecting the boiler to the chimney with the horizontal pipe larger than 1 m, without a T-inspection hole, is not recommendable.

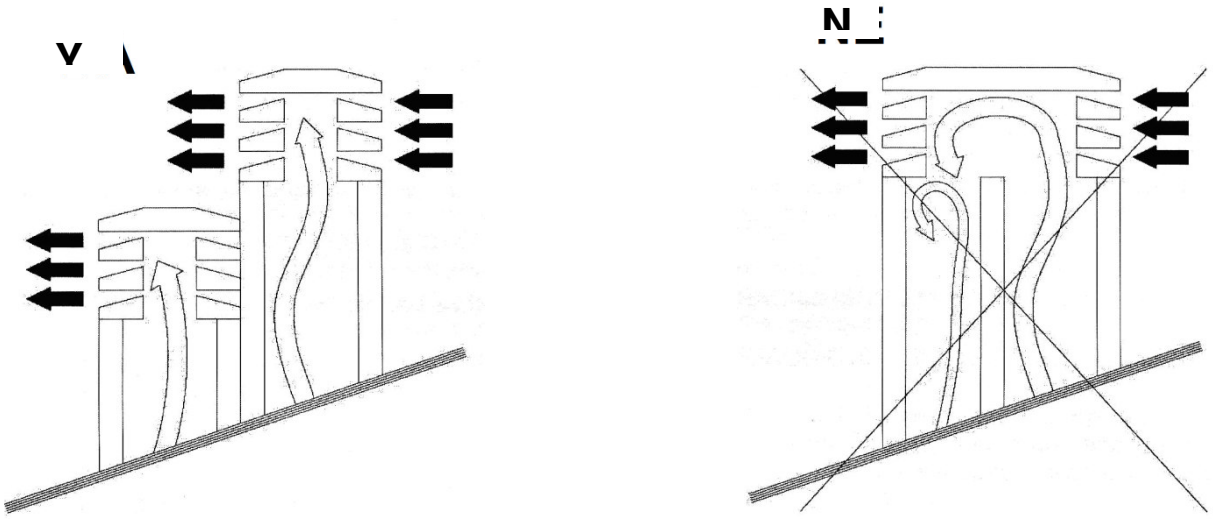


Figure 8 – End of the chimney

Maximum allowed length of 80 mm diameter flue gas pipe to its point of entering the chimney is 6 m. After that the diameter of a flue gas pipe must be increased to 110 – 120 mm. In that case, each elbow accounts for 1 m length. For example, if there are three bends of 80 mm diameter, the length of the flue gas pipes of 80 mm diameter is thus changed by 3 m. Just another 3 m of a straight pipe may be placed to the entrance of the chimney, in order to get 6 m length of the flue gas pipes of 80 mm diameter. After that, the bend must be enlarged, led back to flue gas pipes or should enter the chimney of a greater diameter, 110 – 120 mm.
Care should be taken not to use bends of a sharp angle of 90°. They must be of a certain radius or made in segments. Sharp angle bend increases resistance to flow of the smoke through the bend.

- *Each bend must be equipped with the cleaning door.*
- *Joints between the connection pipes must be tightened.*
- *For greater spacing, use 100 mm diameter connector. In that case, length of up to 8 m is allowed.*

Note:
The chimney shall be adapted or constructed in accordance with the instructions indicated. Each boiler must be adapted and parameters must be adjusted according to the chimney to which they are connected. This adjustment, i.e. putting into operation, is done by a competent person – service personnel.

3.3 INSULATION AND ROOF OPENING DIAMETER

When position of instalation of the boiler is known, it is necessary to make a hole/opening allowing flue gas flow. This position is changed depending on the type of installation, diameter of flue gas uptake and the type of the walls or the roof through which it will pass. Insulation must be mineral type insulation (rock wool) of 80 kg/m^2 nominal density. Draft of the chimney depends mainly on the chimney itself, which must be free from obstacles, such as bottlenecks or various angle connections. It is recommended that the bends of a chimney should not be larger than 45°.
Proper exhaust of flue gases requires installation of a vertical straight pipe of minimum length of 1.5 m.

3.4 COMBUSTION AIR

The air needed for proper combustion, which comes from the area, must be made up by new batch of air through the openings running on the wall, on the door of the boiler room, or simply by opening the window. This allows better boiler operation, lower ash consumption and prevents shutting down of the boiler.
Opening for fresh air supply must be placed on the outer wall and protected by a mesh against the entry of insects and other animals, and located so that it prevents the entry of water into the boiler area.

Standard UNI 10683 prohibits supply of fresh air required for combustion from the storage of flammable material or areas where there is a possibility of ignition.

In the case that in the area containing the boiler pellet there are other devices that need air for combustion, it is necessary to identify that and bring a sufficient quantity of air required for combustion.

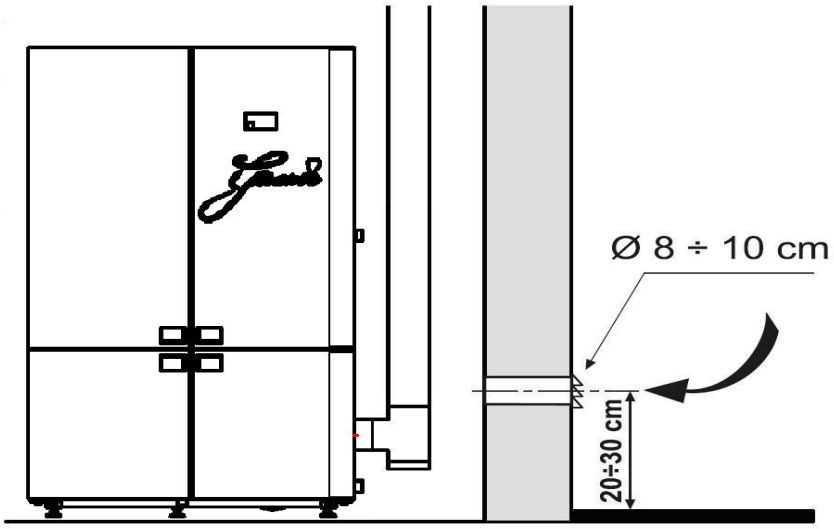


Figure 9. Supply of outside air

3.5 ELECTRICAL CONNECTIONS

The boiler must be connected to electrical supply.
Boiler electric cable is white and marked by an inscription 220 V.
Other power cable designed for connecting the pump is black.

BLACK CABLE – PUMP (BROWN – **F** BLUE – **N)**
WHITE CABLE – BOILER SUPPLY (220V) (BROWN – **F** BLUE – **N)**

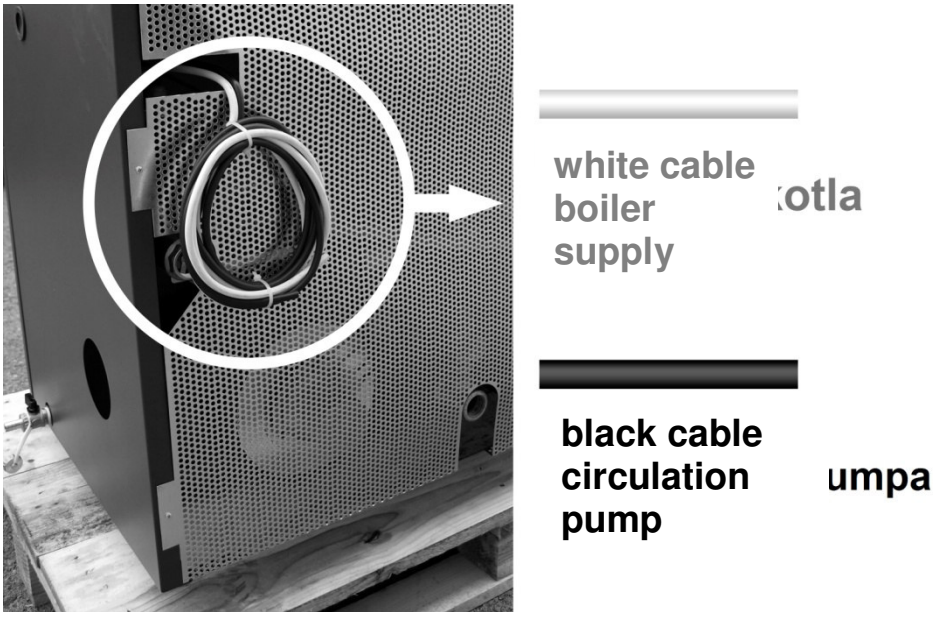


Figure 10

Connection of the boiler to the power grid can be done only by a **QUALIFIED PERSON**, based on the attached wiring diagram.

If the electric cable is damaged, it has to be replaced. It could be replaced by a QUALIFIED PERSON of the manufacturer.

ELECTRICAL CONNECTIONS MUST BE EASILY ACCESIBLE ON THE WIRING.

3.6 NON-RETURN VALVE

Installation of a non-return valve in the hydraulic heating system is mandatory.
The function of the non-return valve is to prevent cooling of the water in the boiler and condensation in the boiler and flue pipes. Condensation can occur as long as you do not spend 2 – 3 fuel tanks.
The non-return valve is installed at the outlet of the pump, behind the pump, instead in front of the pump (see Fig. 11). Care must be taken about the direction of installation of the valve. Also, when purchasing, care must be taken of whether the valves are placed on horizontal, on vertical line, or as inclined, because there are valves that are installed only horizontally or only vertically, or that are universal. Ensure that the valve can be opened easily (try by finger), so that it can be opened by the pump power.
The non-return valve is placed behind each pump. If there are more pumps in the installation, then more non-return valves are needed.
Connections to the boiler are 1". Non-return valves should also be 1", or larger.
If the non-return valve is not installed, the guarantee will not apply.

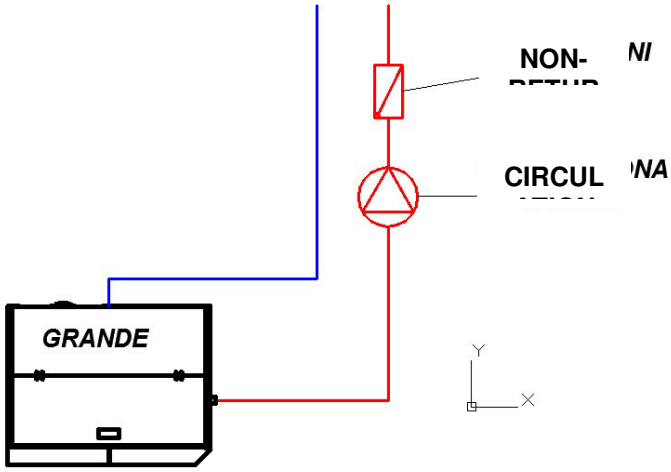


Figure 11. Diagram for installing of non-return valve

3.7 MIXING VALVE

It is necessary that the hydraulic installation is fitted with a four-way mixing valve.
For small installations a mixing valve is not required.
For large installations a mixing valve is desirable.
For underfloor heating installations a mixing valve is required. We recommend special thermostatic valves for underfloor heating, which regulate the temperature of the water entering the floor of up to 50°. If there is no such a thermostatic mixing valve, temperature of water entering the flooring system must be regulated in some other way. It is the job of the designer and the installer.
The mixing valve should be 1".

4.0 FIRST BOILER STURT-UP

Instructions for safety of people, animals and personal property
The task is to make the installer familiarized with simple guidelines that should be followed in order that the pellet boiler could be installed correctly.
In addition to the required standards, it is necessary to read the remainder of the instructions for use, maintenance and installation to get as much information as possible.

- connect pellet boiler to the power grid
- do not let children and animals come close to the pellet boiler
- use only good quality pellet (do not use other types of fuel)
- inform users about the possible risks and dangers and train them in handling of pellet boilers
- if the pellet boiler should be installed on the wooden floor, insulation is recommended

Pellet boiler operates so that underpressure is created in the combustion chamber, thus it is important to be sure that **thermal tightness** of flue gas pipe is provided.
Condensing of boiler at first start-up is normal.

When the pellet boiler is put into operation for the first time, the paint in which it is painted evaporates. Therefore it is necessary to ventilate the space. (This results from the stabilization process in painting)

5.0 WARNINGS ABOUT SAFETY IN TECHNICAL MAINTENANCE

Before taking into account the safety regulations, the repair service shall:

always use safety devices and individual devices according to Directive 89/391/EEC

turn off electrical supply before commencing any activity

use only the appropriate tool

prior to any work to the boiler it is necessary to be sure that the boiler and ash in it are cold

- **THE BOILER SHOULD NOT BE USED IF ANY SAFETY DEVICE IS FAULTY, IMPROPERLY REPAIRED OR IS NOT WORKING!!**
- do not make any repairs of any type for any reason, except as permitted or approved by an authorized person
- always use original spare parts. Do not allow the particular part of the boiler to worn out before the same is replaced. Timely replacement of the boiler part prevents possible damages due to the sudden failure of its components, which may seriously endanger people and / or their characteristics
- clean the pan-ashtray before each use
- check possible formation of condensation which alerts us of the presence of water infiltration and the formation of condensation due to cooling of flue gases
- determine the cause of condensation and prevent further condensation to establish proper operation of pellet boilers.

5.1 SAFETY WARNING FOR USERS

The room in which the pellet boiler is located (installation area), must be in accordance with local, national and European directives.
Pellet boiler is a heating device with certain external surfaces that are relatively hot during its work.
Pellet boiler is used for heating by wood pellets (pellets 6 mm in diameter and up to 30 mm in length, with a maximum humidity of up to 10%).
When using the device it is recommended:

NOT to approach the boiler and touch the glass of the door of firebox, because there is a risk of burning

N OT to touch connection to the chimney, because there is a risk of burns

NOT to perform any cleaning of the device

NOT to open the fire door at the time of its work as the boiler works properly only if the firebox door is fully tightened

NOT to clean the ashes when the boiler is operating

NOT allow children and animals approach the pellet boiler

PLEASE FOLLOW THE REQUIREMENTS OF THIS DOCUMENT

For proper use of the boiler it is necessary:

- To use only and exclusively the fuel specified by the manufacturer of the boiler
- To take into account instructions for use
- To clean the firebox every day (only when the boiler and the ash in it are cold)
- When using low-quality pellet, firebox cleaning can be done twice a day
- Not to use a pellet boiler in the event of malfunctions or anomalies, strange sound or suspected defects
- Not to pour water on the boiler and not to put out the fire in the furnace using water
- Not to lean on the boiler as there is danger of its being unstable
- Pellet boiler should not be used as a support or an object of attachment
- Not to touch painted parts of the boiler during its operation
- Not to use wood or coal but only pellets of the following characteristics: diameter 6 mm, length 30 mm, humidity up to 10%
- Not to use the boiler as ignition device
- To carry out all operations as completely safe

6.0 INSTRUCTIONS FOR CORRECT COMMISSIONING AND CLEANING

Never use fuel oil, oils for lamps or any other oil for starting the pellet boiler. Store such oils away from the boiler.

Never run the pellet boiler if the door glass is damaged. Do not hit the glass to avoid damaging.

Do not open the firebox to clean the glass while the boiler is operating.

When the boiler is turned off, clean the boiler with a cotton cloth or paper towel intended for cleaning glass.

Make sure the pellet boiler is installed correctly and secured.

Make sure the door of the firebox of a pellet boiler is properly closed when the boiler is operating.

Carry out ash suction only if the pellet boiler is cold.

Do not use abrasive cleaners for pellet boilers.

6.1 REGULAR MAINTENANCE AND CLEANING OF PELLET BOILERS

Use of a vacuum cleaner with separator will make your job in cleaning the ash from the boiler easier.
Before you start with the maintenance (cleaning), remember the following safety tips:

Turn off the pellet boiler before you start any cleaning job.

Make sure that the ash in the firebox is cool.

- Suck up ashes from the firebox at least once a week.
- Vacuum and carefully clean the ashtray (only when the firebox is cold) at least once a week.
- At least once a month, open the door on the right side of the boiler and clean (vacuum) the ash piled beneath the heat exchanger.

It is always necessary that the pellet boiler and the ash are cold.

"Ashtray" in the firebox, Figure 13 below, must be inspected at least once a week and cleaned, if necessary. When installing ashtray in the firebox it is necessary to make sure that it has been properly positioned so as not to cause the malfunction of the boiler.

WARNING!
Pay attention to the gasket (stuffing box) located in the firebox.
In case of injury caused by improper assembly by a third party, the manufacturer is not liable for damages.
In the above example, the manufacture is not liable for damages resulting from a third party



Figure 13. A firebox with a stuffing box where pellets are burning

Make sure that the boiler and the ash in it are cold.
Ashtray and firebox must be cleaned once a week, and also vacuumed and emptied of waste and ash that remained in them after the pellets have burned.

Never insert back into the tank with pellets the pellets that are already used but not completely burned.

6.2 INSPECTION AND PARTS THAT NEED MAINTENANCE

Perform the following checks to ensure that the pellet boiler operates safely and without any loss of energy caused by irregular work:

Make sure that the boiler and ash in it are cold.
For proper cleaning needed for a week or for every 200 kg of spent pellets, vacuum ash under and in the ashtray inside the firebox. To clean the interior vertical surfaces in the firebox use a broom or brush.
FAN FOR FLUE GASES SHALL BE CHECKED AND CLEANED AFTER EACH HEATING SEASON

Check that the boiler and the ash in it are cold.
Cleaning of the flue gas fan should be performed so that after removal of fan protection, the plaque on it is removed with a broom or brush.
SIMPLE PRE-SEASON AND POST SEASONAL CLEANING OF THE BOILER

Check that the boiler and the ash in it are cold
Turn off power supply and make cleaning as specified in the instructions.

Check that the boiler and the ash in it are cold
Check the tightness of the gasket on the door of the firebox of the boiler. In the event of its permeability due to its separation from the door base, glue it with the adhesive resistant to high temperatures.
This action ensures tightness of the boiler.
CHIMNEY-TO-CHIMNEY CONNECTION REQUIRES CLEANING AFTER EACH COMPLETED SEASON

Check that the boiler and the ash in it are cold
Chimney channel, chimney and cap should be inspected and cleaned at the completion of the heating season. For professional cleaning operation, contact your chimney sweep.

6.3 SPECIAL MAINTENANCE

Your pellet boiler is a heat generator in which pellets are used, so it requires a special kind of maintenance on a yearly basis by the service authorized by the factory ALFA PLAM a.d.
During the warranty period and after the first heating season, cleaning of the furnace by the professionals of the service of Alfa Plam is mandatory, in order to maintain the properness of the boiler.
The task of the job, as described in the previous section, will ensure smooth operation of the components.

7.0 IMPORTANT SAFETY INFORMATION

You purchased the product of the highest quality

Supplier is at your disposal for any information you need. Proper installation of pellet boilers in accordance with the instructions is indispensable to prevent improper operation and the possibility of fire. **Pellet boiler works on the principle of sub-pressure in the combustion chamber. It is necessary to check that the chimney connection is heat-sealed.**

WARNING

In the event of a fire in the chimney, it is necessary to turn off the power, call the fire department and leave the building.

WARNING

It is forbidden to use finely chopped woods for the boiler operation.

WARNING

Do not use the pellet boiler as fire ignition unit.

8.0 THE QUALITY OF PELLETS

Pellet quality is very important!

The boiler is designed for use of pellets. Due to a variety of types and dimensions of the pellets that appear in the market, it is important to choose pellets that do not contain impurities, which are compact and do not create dust. Consult your dealer about the type of pellet, the size of which must be 30 mm and diameter 6 mm.

The proper functioning of the boiler depends on the type and quality of pellets.

Manufacturer is not in any way responsible for the poor performance of the boiler due to the use of **poor quality** pellets.

8.1 STORAGE OF PELLETS

Pellets should be stored in a dry and not too cool place. Cold and wet pellets (temperature of about 5°) reduce thermal power and require increased cleaning of the boiler.

PELLETS MUST NOT BE STORED RIGHT NEXT TO THE PELLET BOILER

Keep them at a distance greater than ½ m. Pellets should be handled with care, in order to prevent their degradation and creation of dust.

In the case of placing wooden chips in the pellet tank, it is possible to block the ash dosing system.

9.0 DESCRIPTION AND OPERATION OF THE CONTROL DISPLAY

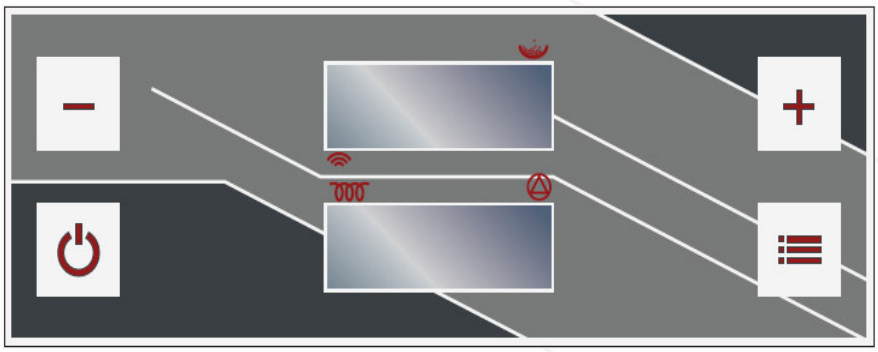


Figure 14. Control display

9.1 DESCRIPTION OF DISPLAY

Button	Description of functions
	**TURN ON / OFF (START / STOP)** Long key press – the boiler is turned on / off Short key press – the boiler returns to the initial display
	**Button +** Pushing the button during operation increases the set power With the previous push on MENU key, push on this key increases the desired temperature By pushing the MENU key, the SubMenu is chosen
	Button – Pushing the button during operation reduces the set power With the previous push on MENU key, push on this key reduces the desired temperature By pushing the MENU key, the SubMenu is chosen
	**MENU button** Short key press in the initial display indicates the water temperature in the boiler that can be adjusted by pressing the + and – buttons By pressing the button for more than 2 s MENU display is activated By pressing the button for more than 4 s access to advanced MENU is enabled By continuing to press the key, the options of MENU are changed To select items in the SubMenu the keys + and – are used. By pressing the MENU button set parameter value, that can be changed by pressing + and - key, starts flashing Short press on TURN ON / OFF key provides return to the initial display

Display/Indicator	Description / Function
	The **upper display** shows the status of the boiler, the selected menu and the indicator of dosing operation on the timer
	The lower display shows clock, setting values and parameters as well as names of warnings
	Indicator of the operation of spark plugs (ignition device)
	Indicator of operation of circuit pump
	Indicator of operation of pellet dosing

9.2 BOILER DURING OPERATION – TURNING ON OF THE BOILER

By pressing the buttons **SWITCHING ON/SWITCHING OFF** for more than about half a second, while the boiler is in standby mode, the display shows **ON** or **OFF**. Once the button is released, the boiler begins the process of switching on. The words **TEST FIRE** are displayed, fans run at full speed to clean the firebox, screw conveyor is idle and the ignition spark is heated. After that, if the temperature of the firebox is low, **HEAT UP** procedure begins, in which pellets are dosed fast and fans are still. Finally, the procedures **FUEL IGNI** and **TEST IGNI** begin and proceed until the boiler reaches conditions for turning to the phase of burning (**BURN**).

WHEN THE BOILER IS IN THE OPERATION MODE, SCREEN DISPLAY INDICATES:

Upper LED display - left	Displays the current boiler power: P5
Upper LED display - right	Displays the set (adjusted) boiler power: D5
Lower LED display:	Displays the current temperature of water in the boiler: B72

The display shows current phase of work (eg. TestFire, HeatUp, etc.) and the upper display alternately indicates set and actual power of the boiler every five seconds.

By pressing the **+ button** the power increases and by pressing – **button** the power reduces.

By pressing the **MENU button** the set temperature of water in the boiler, which can be changed by pressing **buttons +** and – is displayed.

The boiler operates at the set power until the water temperature reaches modulation threshold, or until the flue gases reach their limits. In the first case, Regu H2O is displayed, and in the second Regu Gas is displayed.

In the event of a short power interruption (up to 2 minutes) and the restoration of power, the boiler continues to operate in the manner as before power failure.

In the interruptions of long time, the boiler shall automatically perform safe switching off and cooling and repeat the ignition.

9.3 STOPPING (SHUTTING DOWN) OF THE BOILER

By pressing down the **ON/OFF button** longer than about half a second, during boiler operation, the display shows **ON** or **OFF**. Once the button is released, switching off of the boiler starts.

Screw conveyor stops, the inscription STOP FIRE appears on the display, fans run at maximum speed to clean the firebox. Once the boiler is cooled to the appropriate temperature, the boiler shuts down and goes to standby mode. The inscription OFF appears on the display.

WHEN THE BOILER IS IN THE PROCESS STOP (OFF)

Upper LED screen (display)	Displays the "OFF"
Lower LED screen (display)	Displays the current time, i.e. "Clock": 18:35

ATTENTION

By pressing the MENU button for 2 seconds (release the button after tH2O appears on the display), the current water temperature appears on the display.
Pressing the + i.e. – we select display of other temperatures and fan status.

9.4 SETTING THE TIME-CONTROLLED PROGRAMME

By pressing the **MENU button** (until the TIMER inscription appears on the display) time-controlled program opens.
By selecting the option **ON** or **OFF** the time-controlled program is switched on or switched off. It is necessary to select the correct time and day of the week (1 = Monday, 2 = Tuesday,… 7 = Sunday) and then to program the six program periods and temperatures.
Each of the six time periods is bounded with the starting (P1 a – program 1 start time) and ending time (P1d – program 1 end time). Within this period, the boiler is up and running so as to maintain the set temperature in the boiler (P1t).
After that, we choose three time periods for every day of the week.
For example, on Tuesday, DAY2 is shown on upper display, and P1, P3 and P6 on the lower one, which means that on Tuesday boiler works at times programmed in the programs P1, P3 and P6.

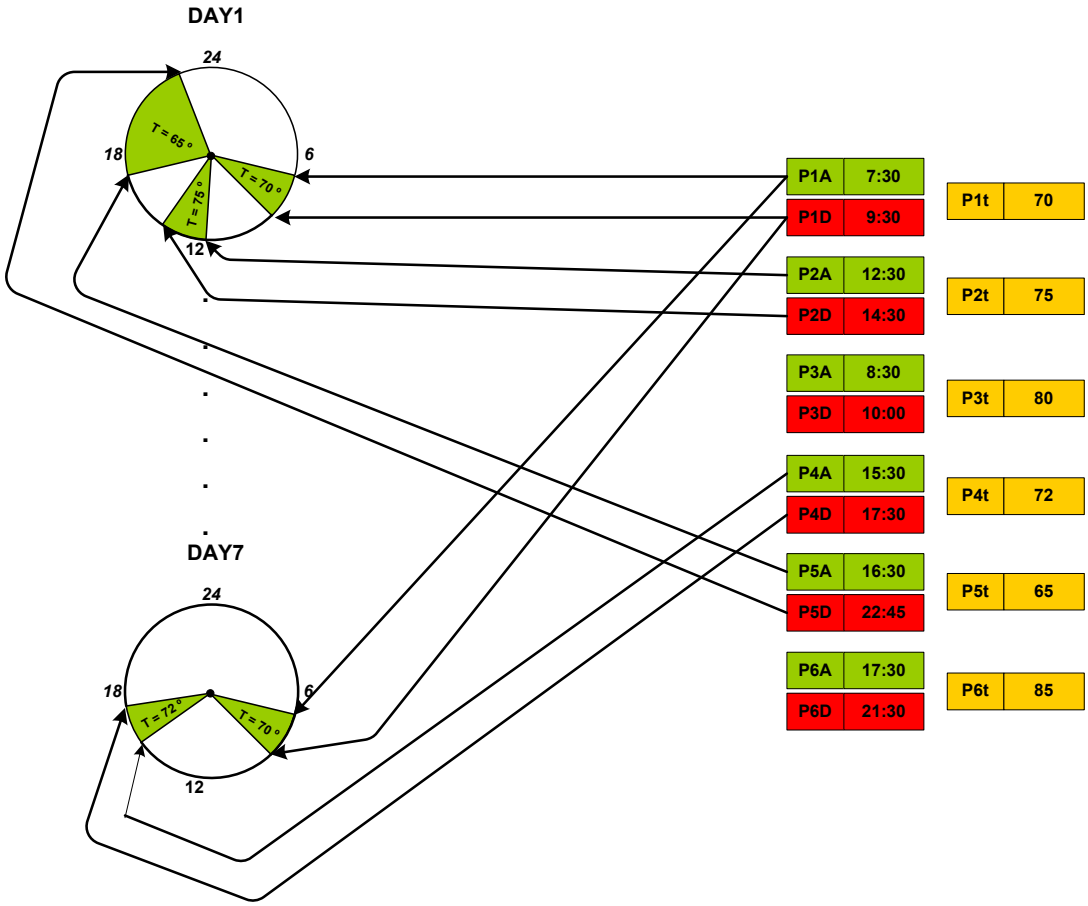


Figure 15. Diagram of setting the timer

9.5 DESCRIPTION OF THE MESSAGE IN DISPLAY

Messages and indications in the display	Meaning of the message and the status of the boiler
OFF 12:53	The boiler is at rest
°OFF 12:53	The boiler is at rest, but time mode is activated, so that it turns on automatically at preset time
TEST FIRE	The boiler checks if there is a flame and burning in the firebox**.** This process is activated after power failure
Heat UP	In ignition stage, after screw conveyor has filled firebox, ignition spark plug heats the pellets to ignition
Fuel IGNI	After Heat up phase, the boiler ignites pellets. There is not dosing at this stage.
TST IGNI	At the end of ignition phase boiler turns off the spark plug and examine whether ignition is successful ,whether burning is proper and whether the temperature rises properly
BURN 123°	Burning phase (which is usually the working phase). The lower display shows the temperature of the flue gas at the outlet of the boiler.
BURN B78°	Combustion phase, the lower indicator (display) displays the temperature of the water in the boiler
BURN R48°	Combustion phase, the lower indicator (display) displays the temperature of the water in the return line
P5D5 R48°	Burning phase, the upper indicator (display) displays the current power of the boiler (Px) and the set power of the boiler (Dx)
CLN FIRE	Stages of cleaning. Fans are blowing ash and other residues from the firebox. This phase occasionally runs automatically in the process of burning.
FIRE STOP	The boiler is in the process of stopping and cooling.
COOL FLUID	When the water temperature reaches a certain temperature, even with minimum temperature, the boiler switches to COOL FLUID stage and begins to cool. Boiler automatically restarts after the water in the boiler is cooled below a certain value.

ALAR PEL	In the phase of burning pellets disappeared.
ALAR FIRE	Failed ignition. Check the condition of the boiler, clean the firebox and try to **turn on** the boiler
ALAR SEC	Thermal fuse has reacted. Check the condition of the boiler and if you do not see any problem, reactivate the circuit manually and re-start the boiler. Otherwise, contact the service.
ALAR PRES	Reacted safety pressure switch. Check the condition of the boiler and if you do not see any problems, turn the boiler. Otherwise, contact the service.
ALAR TC1	No signal of flue gases probe. Contact the service
ALAR TCh	No signal of firebox temperature. Contact the service
ALAR Alr	No flow signals or the fans are not working properly. Contact the service
ALAR drtY	It is necessary to clean the boiler and/or chimney
ALAR NTC	No signal of water temperature. Contact the service
ALAR GASS	Flue gas temperature is too high

10.0 MENUS

If the **MENU button** is held down, menus are displayed. To select the menu you need to release the button when viewing the corresponding menu. The descriptions of the menus are listed below.

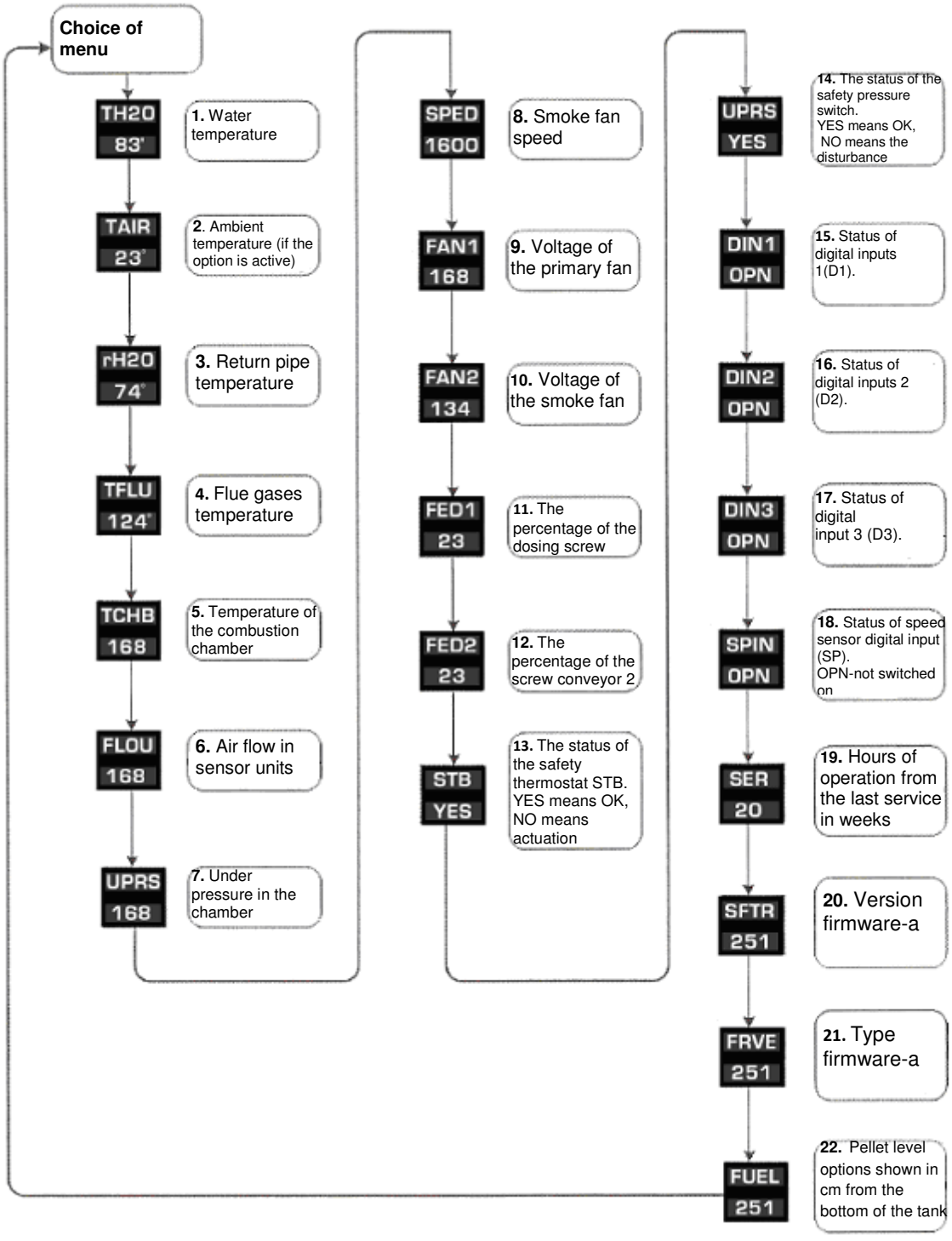
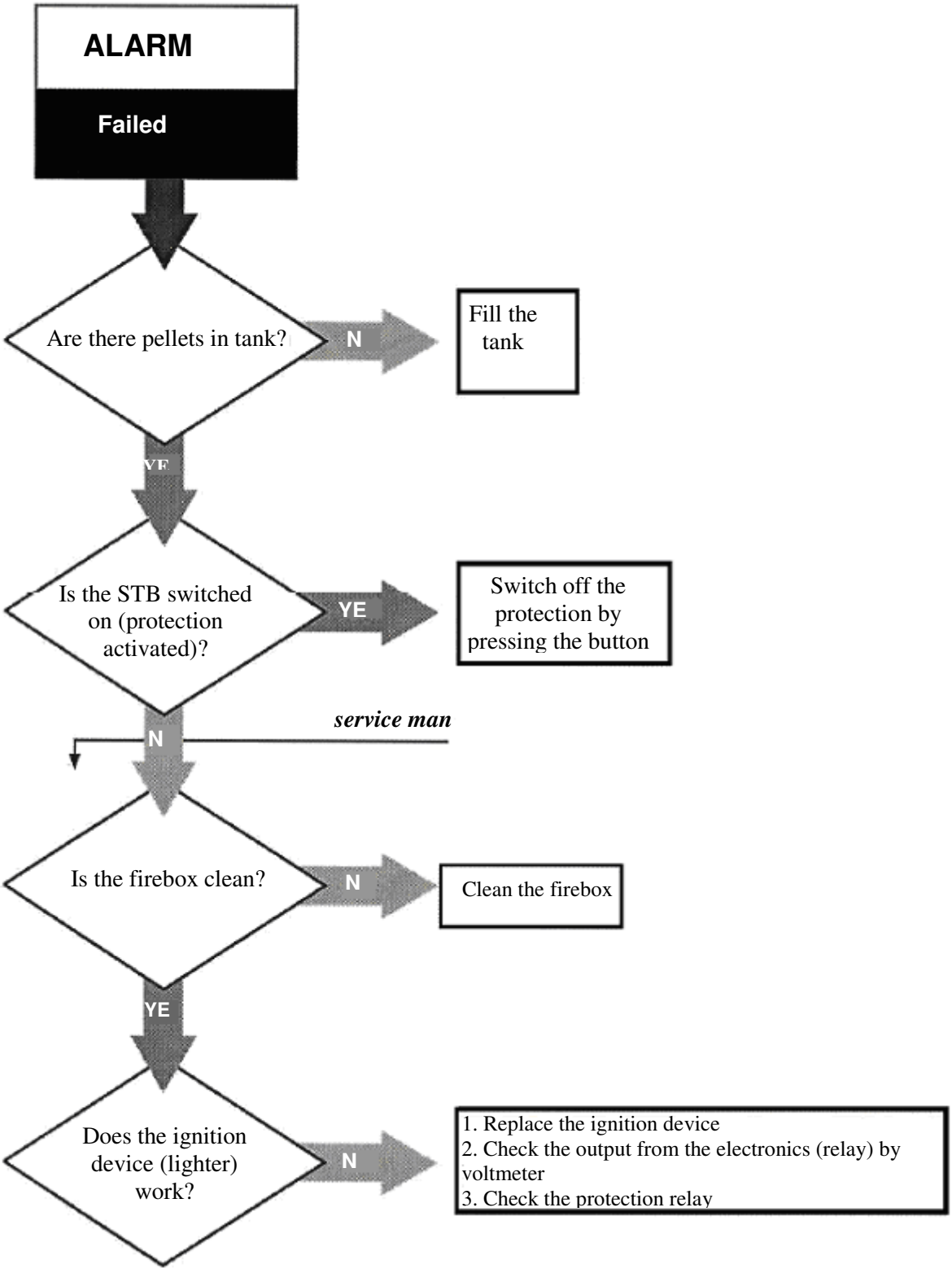
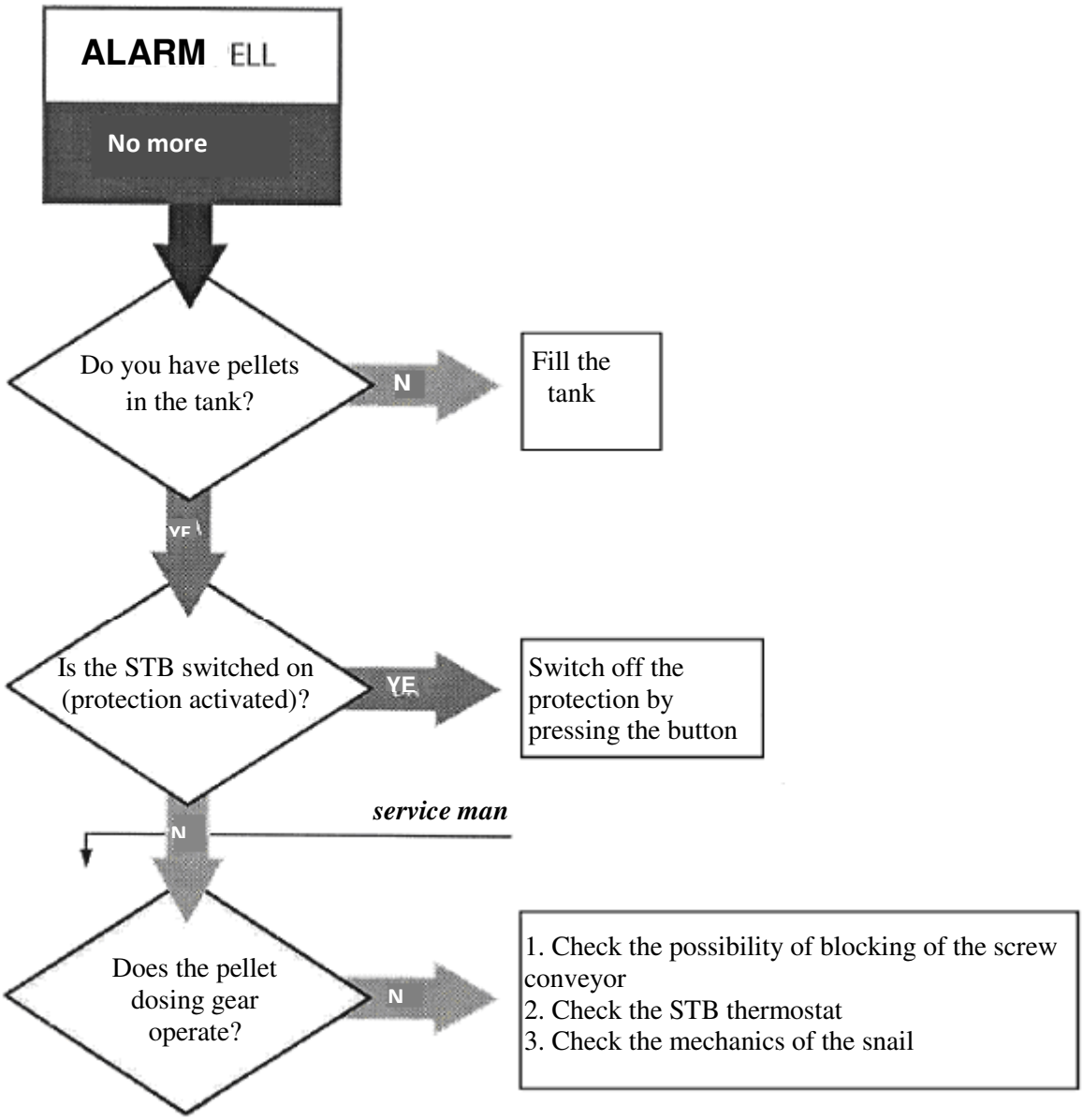
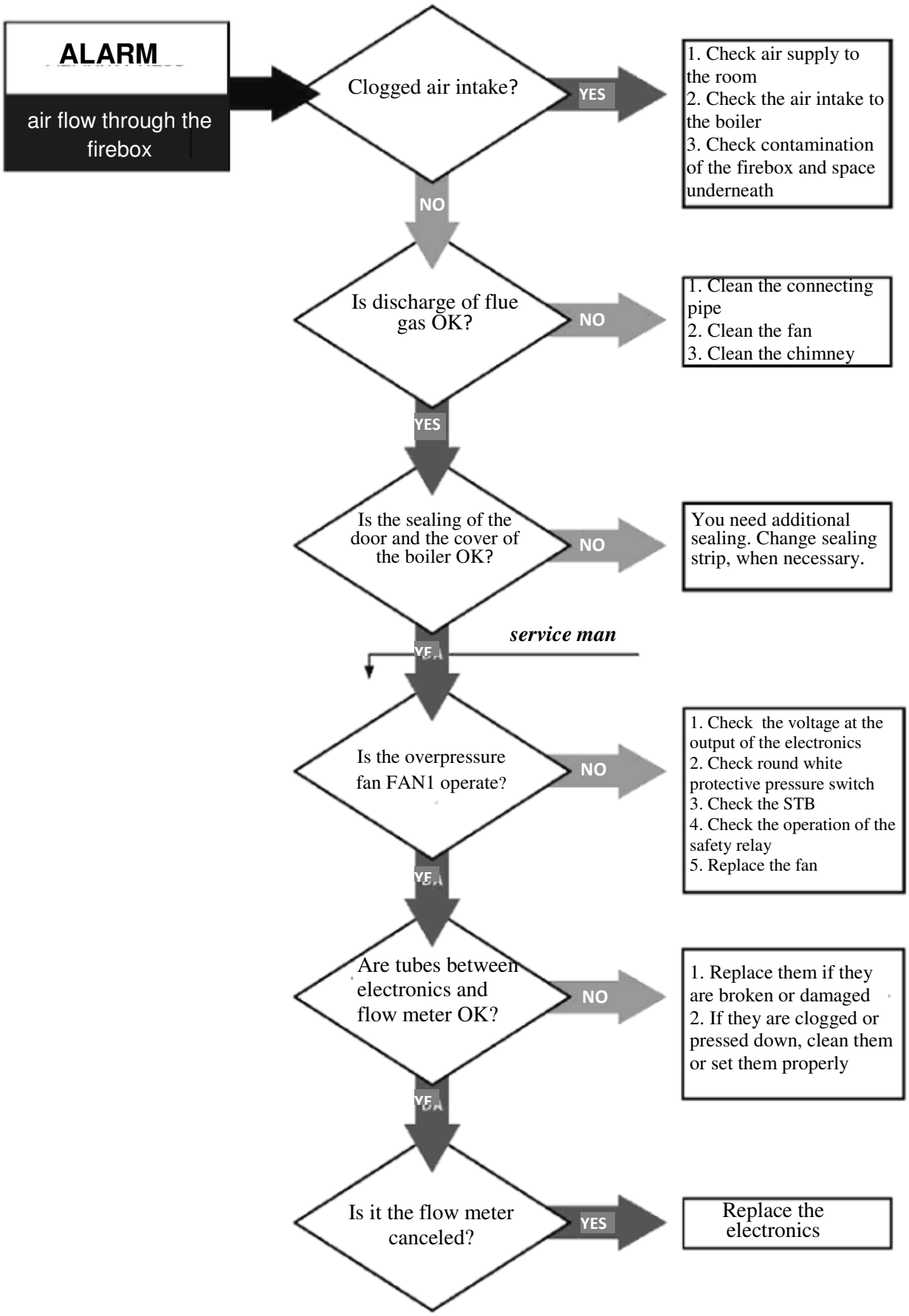


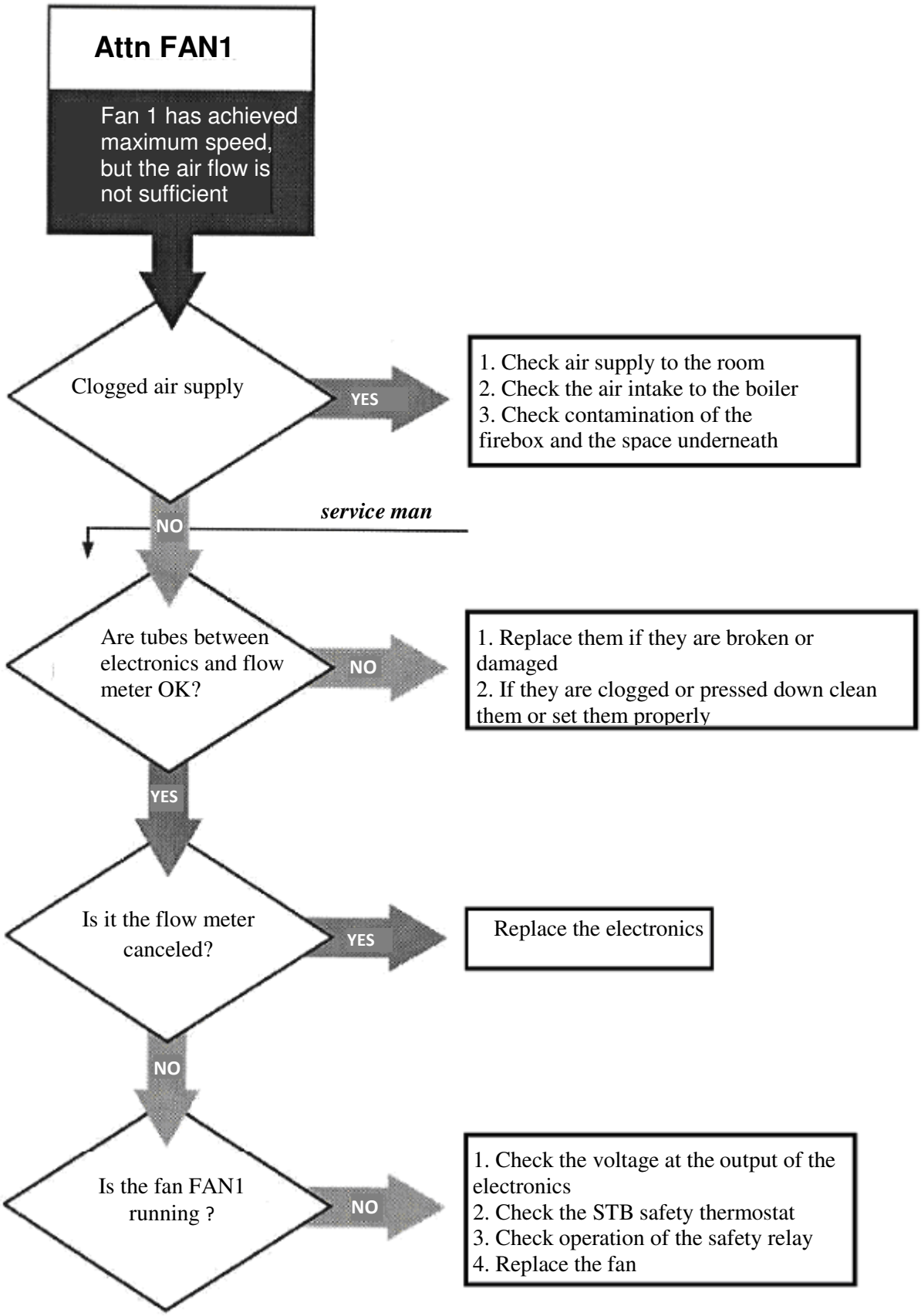
Figure 16. Description of the menu

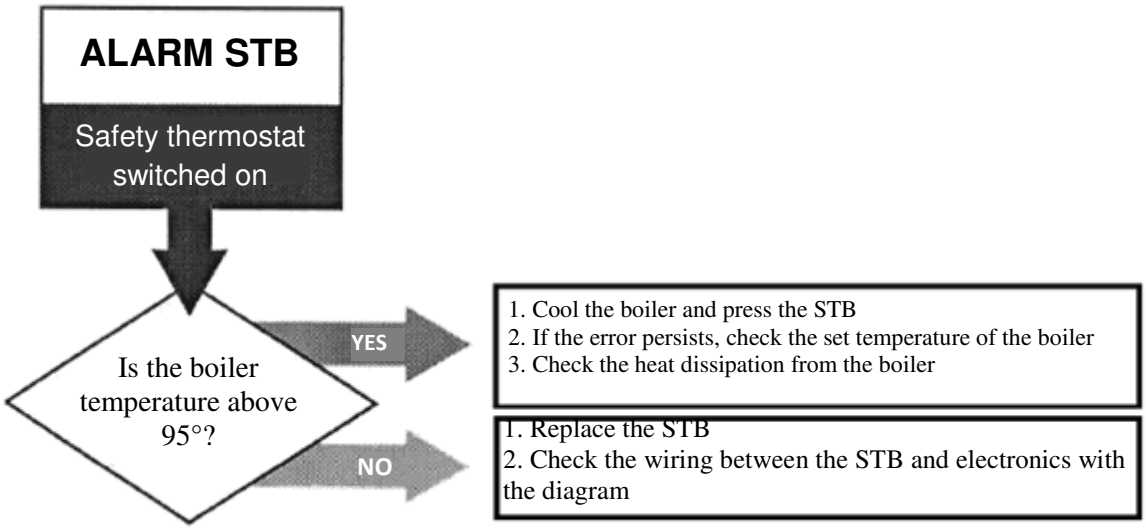
11.0 ALARM STATES – DESCRIPTION AND MANAGEMENT

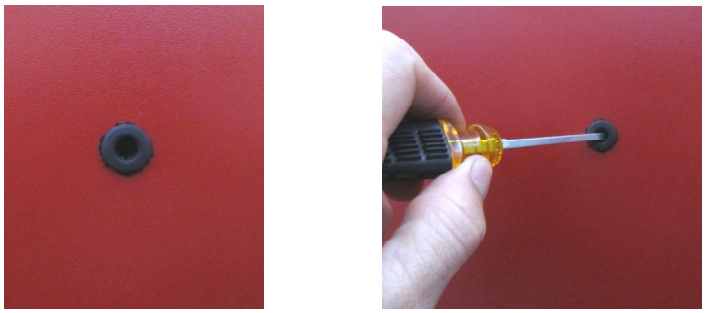



ALARM ELL
No more
Do you have pellets in the tank?
N
Fill the tank
Is the STB switched on (protection activated)?
YE
Switch off the protection by pressing the button
service man
N
Does the pellet dosing gear operate?
N
1. Check the possibility of blocking of the screw conveyor
2. Check the STB thermostat
3. Check the mechanics of the snail

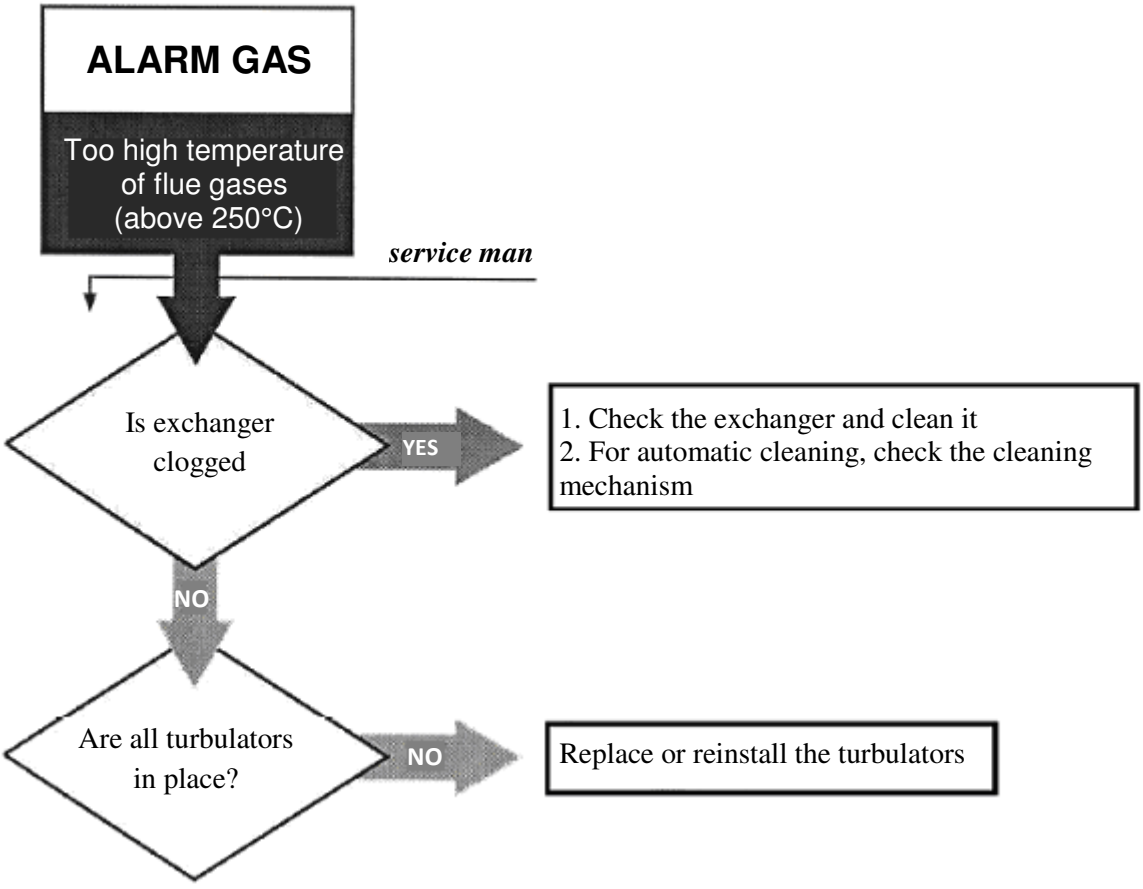

ALARM
air flow through the firebox
Clogged air intake?
YES
1. Check air supply to the room
2. Check the air intake to the boiler
3. Check contamination of the firebox and space underneath
NO
Is discharge of flue gas OK?
NO
1. Clean the connecting pipe
2. Clean the fan
3. Clean the chimney
YES
Is the sealing of the door and the cover of the boiler OK?
NO
You need additional sealing. Change sealing strip, when necessary.
YES
service man
Is the overpressure fan FAN1 operate?
NO
1. Check the voltage at the output of the electronics
2. Check round white protective pressure switch
3. Check the STB
4. Check the operation of the safety relay
5. Replace the fan
YES
Are tubes between electronics and flow meter OK?
NO
1. Replace them if they are broken or damaged
2. If they are clogged or pressed down, clean them or set them properly
YES
Is it the flow meter canceled?
YES
Replace the electronics

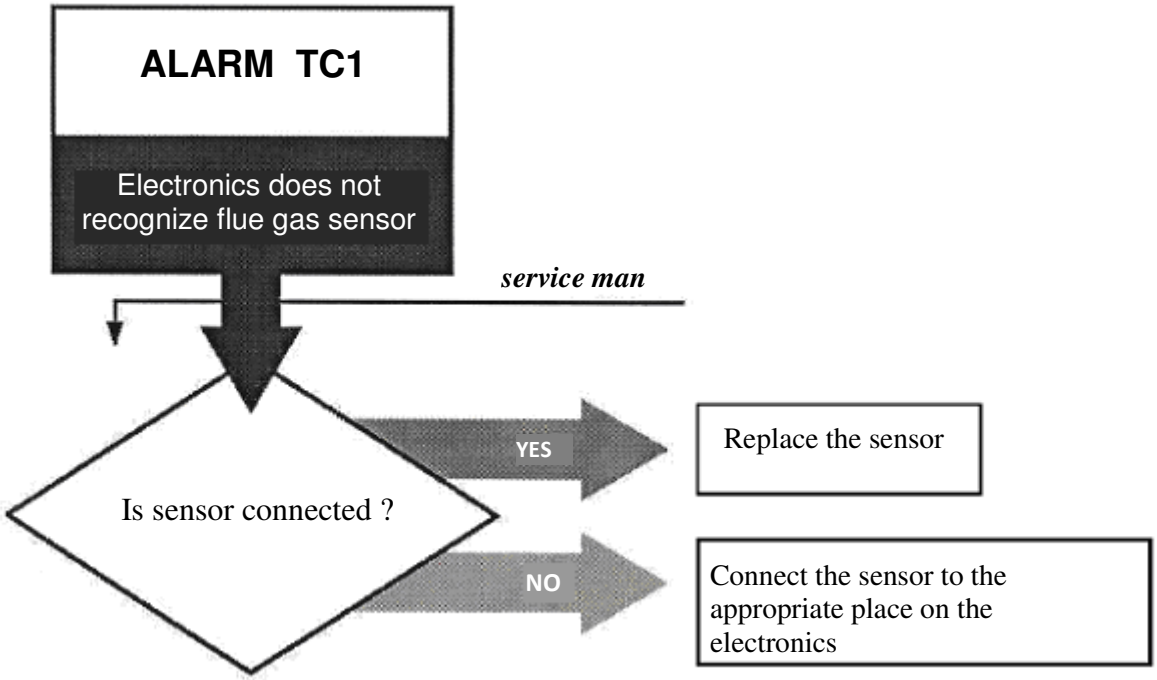

Attn FAN1
Fan 1 has achieved maximum speed, but the air flow is not sufficient
Clogged air supply
YES
1. Check air supply to the room
2. Check the air intake to the boiler
3. Check contamination of the firebox and the space underneath
NO
service man
Are tubes between electronics and flow meter OK?
NO
1. Replace them if they are broken or damaged
2. If they are clogged or pressed down clean them or set them properly
YES
Is it the flow meter canceled?
YES
Replace the electronics
NO
Is the fan FAN1 running ?
NO
1. Check the voltage at the output of the electronics
2. Check the STB safety thermostat
3. Check operation of the safety relay
4. Replace the fan

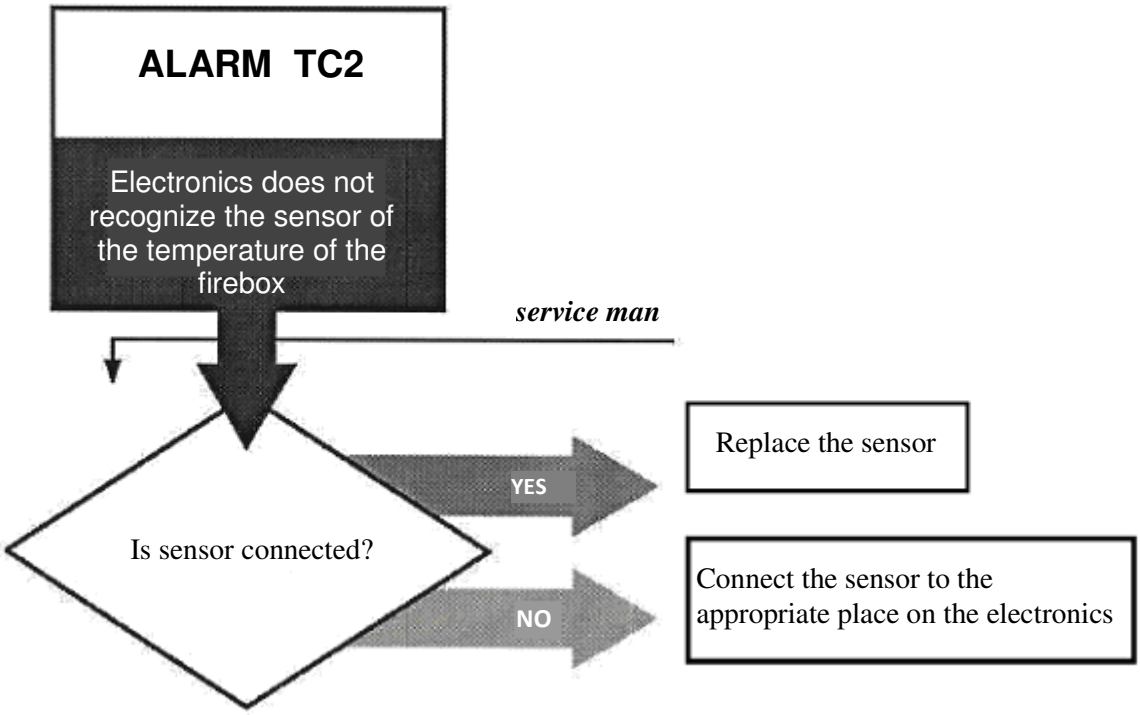


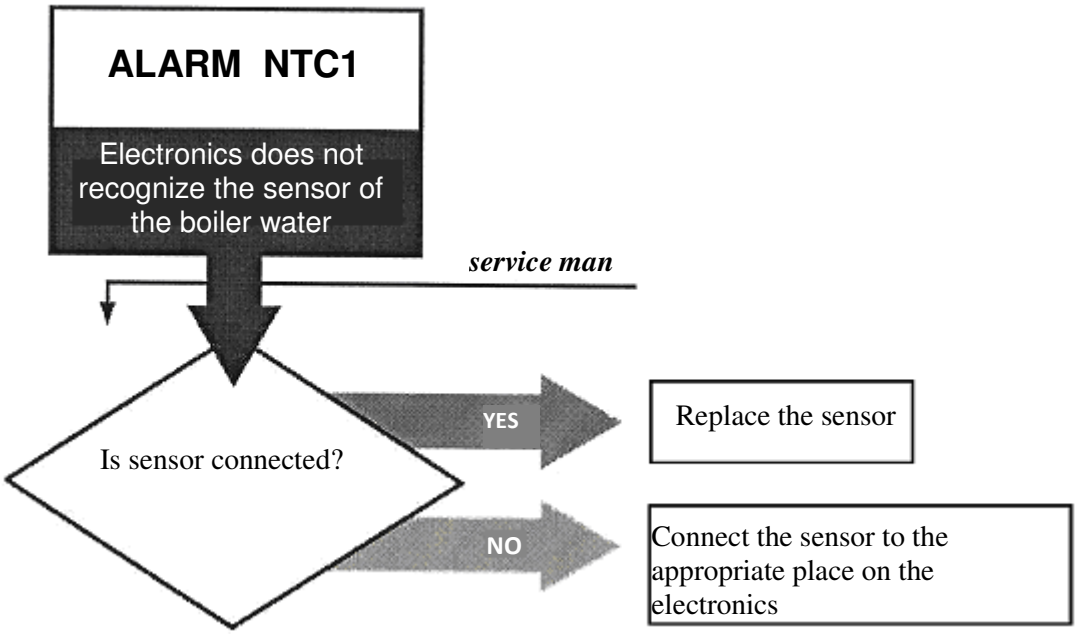


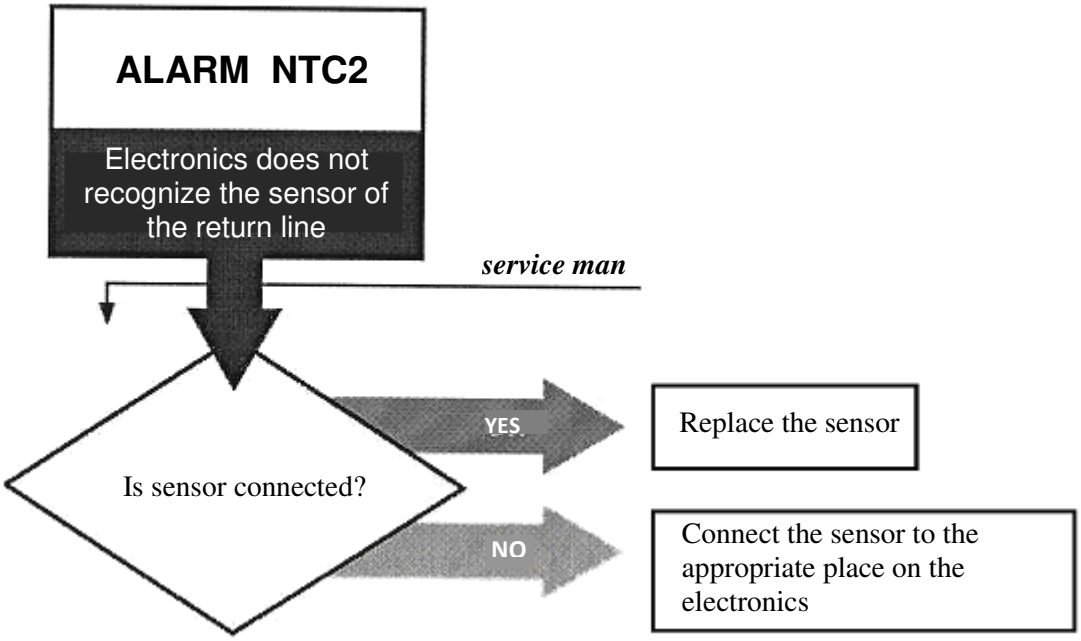
Activating safety thermostat



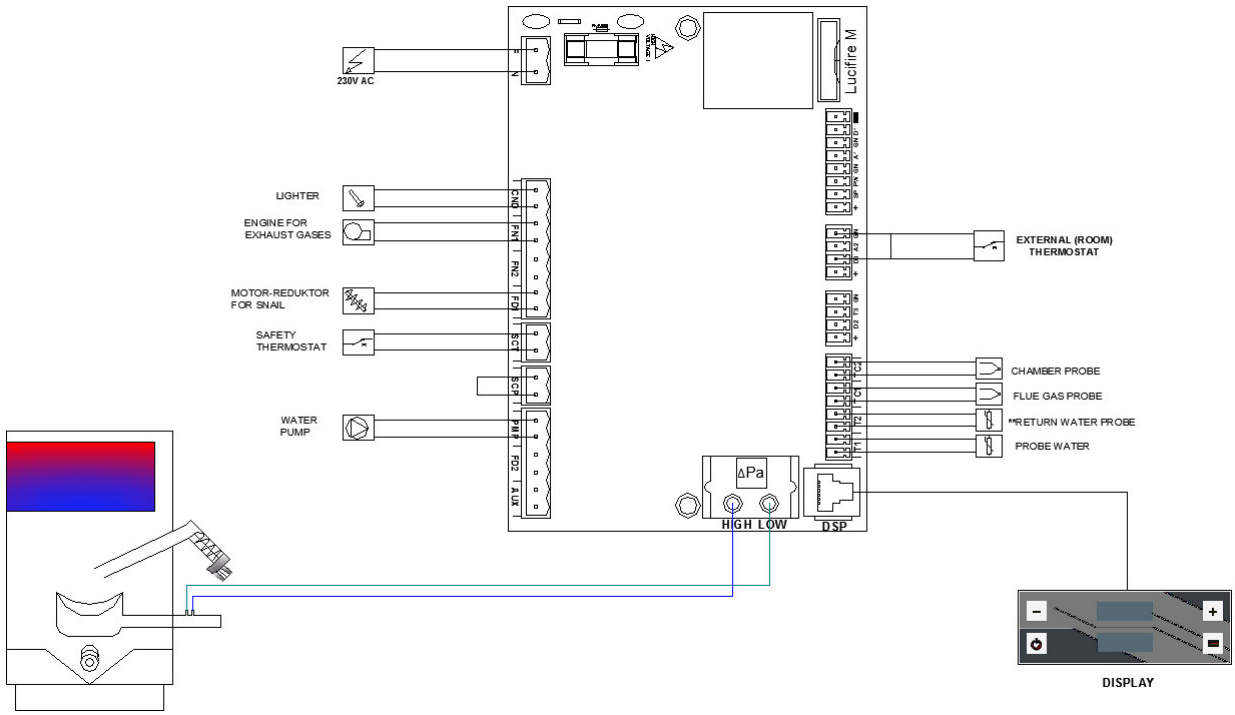

ALARM TC1
Electronics does not recognize flue gas sensor
service man
Is sensor connected ?
YES
NO
Replace the sensor
Connect the sensor to the appropriate place on the electronics


ALARM TC2
Electronics does not recognize the sensor of the temperature of the firebox
service man
Is sensor connected?
YES
NO
Replace the sensor
Connect the sensor to the appropriate place on the electronics


ALARM NTC1
Electronics does not recognize the sensor of the boiler water
service man
Is sensor connected?
YES
Replace the sensor
NO
Connect the sensor to the appropriate place on the electronics


ALARM NTC2
Electronics does not recognize the sensor of the return line
service man
Is sensor connected?
YES
Replace the sensor
NO
Connect the sensor to the appropriate place on the electronics

12.0 ELECTRICAL DIAGRAM



External (room) thermostat is an option that is installed later, by connecting to a place specified in the wiring diagram.

Return water probe is an option that is installed later, by connecting to a place specified in the wiring diagram

13.0 INFORMATION ON THE DISPOSAL AND STORAGE OF THE BOILER

Disposal of the boiler and its removal (as waste material) is under the responsibility of the owner of the boiler.
The owner must comply with the applicable regulations of the state where the boiler is disposed, for sake of safety and environmental protection.
Disposal of the boiler can be delegated to a third party that is licensed for such work.
INDICATION: In any case, you have to respect the laws of the state in which the pellet boiler is installed.

WARNING: All disassembled parts that should be destroyed must be properly removed:

- remove all electrical components
- disconnect the battery from the electronics
- dispose of the battery separate from the electronics in accordance with the standards in designated containers
- separate the base of the boiler and dispose of it as a scrap

WARNING: Boilers thrown in outside in natural environment is becoming a serious threat to humans as well as animals.
When the boiler is disposed, it is necessary to dispose of CE marking, instructions for use and any other document related to the installation.

14.0 GUARANTEE TERMS

14.1 GUARANTEED TIME OF SERVICING

This includes the time in which we guarantee service, accessories and spare parts, starting from the date of purchase.
Time of guaranteed service is in accordance with the applicable regulations.
In case of change of model and product design, the term for replacement of parts that changed the design is legally defined term.

14.2 TERMS OF WARRANTY

Product warranty applies within legally defined period.
Guarantee does not apply to glass and physical damage caused after purchase.
THE MANUFACTURER RESERVES ALL RIGHTS TO CHANGE.
The product will function properly during the warranty period only if it is used in accordance with the instructions for connection and use.
The warranty becomes invalid if it is determined that:

- connecting or repair of products was performed by unauthorized persons, or if counterfeit parts were built
- if the product was not used properly in accordance with the instructions
- if mechanical damage to the product occurred during use
- if faults repair was performed by an unauthorized person
- if the product was used for commercial purposes
- if the damage occurred in transportation after the sale of the product
- if the failure occurred due to improper assembling, improper maintenance or mechanical damage by the customer
- if the failure was caused by too high or too low voltage and force majeure.

We can also remove product failures after the warranty period with original spare parts for which we give warranty on the same terms.
This guarantee does not exclude or affect the rights of consumers regarding the conformity of the goods in accordance with legal regulations. If the product delivered is not in conformity with contract, the consumer has the right to require the seller to remedy, free of charge, such non-conformance by repair or replacement of the product in accordance with the applicable regulations.

15.0 TECHNICAL CHARACTERISTICS OF PELLET BOILER *GRANDE*

Name of feature	Value	
	Minimum	Nominal
***Boiler power**	**8,65 kW**	**30.8 kW**
***Efficiency (%)**	**91.92**	**91,94**
Consumption of pellets per hour	**1.92 kg / h**	**6.82 kg /h**
Combustion period in hours	**93,8**	**26,4**
Emissions of CO (at 10% O_2)	**155 mg/m³**	**10 mg/m³**
Exhaust gas temperature	**56,8**	**114,9**
Exhaust mass flow	**0,0071**	**0,0152**
Chimney connection	**Ø80 mm**	
Weight	**310 kg**	
Fuel	**Pellet C1**	
Boiler Class according to EN 303-5:2012	**5**	
Boiler Class (fuel)	**C1**	
Water content in litres	**74l**	

Maximum water temperature	**95°C**
Setting range for water temperature	**65°C -80°C**
Minimal return temperature	**50°C**
Maximum working pressure	**2 bar**
Water-side resistance	**38 mbar**
Chamber volume	**60,44 l**
Pellet tank	**~ 200 kg**
Chimney draft	**0,11 (±0,0 2) mbar**
Supply voltage	**220 V**
Current during highest power consumption	**1,80 A**
Frequency	**50 Hz**
Highest power consumption during operation of the boiler	**78,5 W**
Lowes power consumption during operation of the boiler	**19 W**
Highest power consumption at turning the boiler	**280,5 W**
Degree of safety	**IP 20**
Heating appliance is running with using a fan	**YES**
Heating appliance is working with under pressure at flue gas outlet	**YES**
Heating appliance is working under non condensing conditions	**YES**
Noise	**Less than 70dB**

16.0 DIMENSIONS OF BOILER - GRANDE

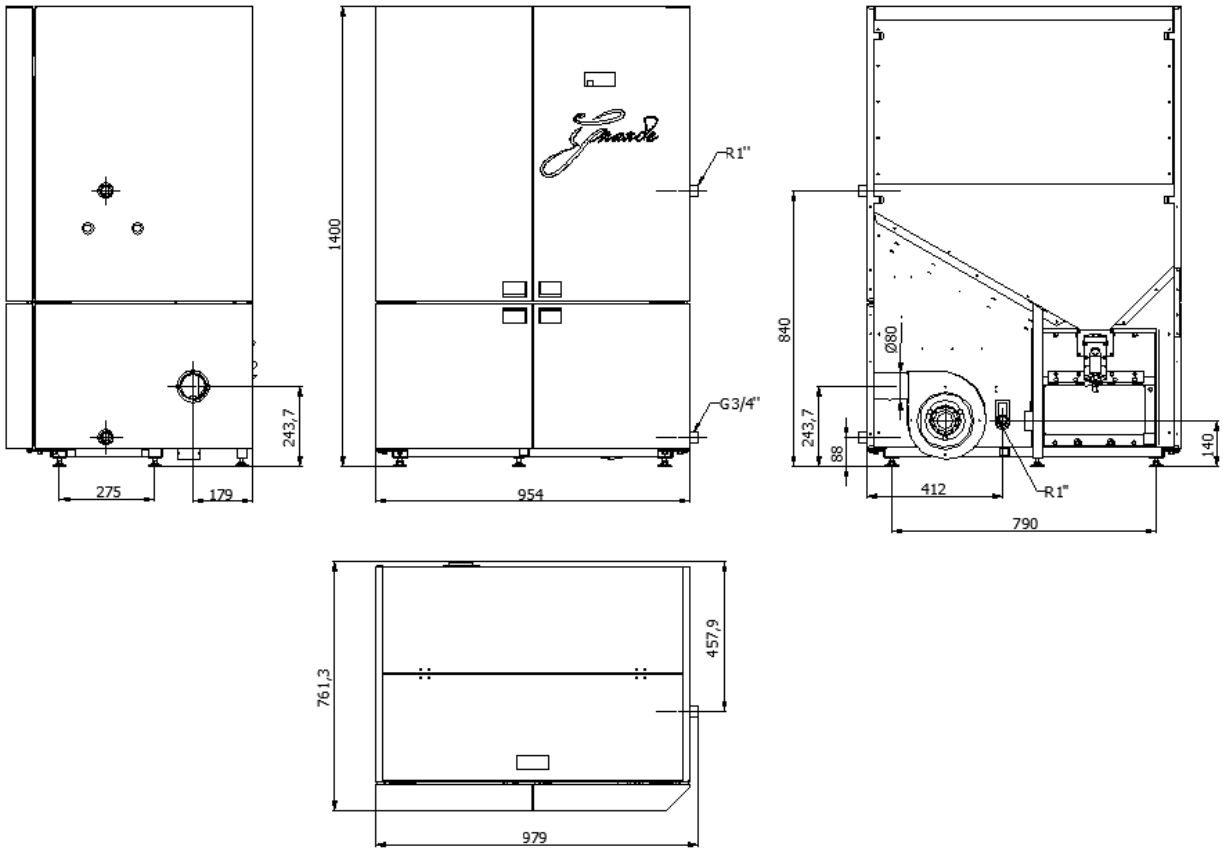
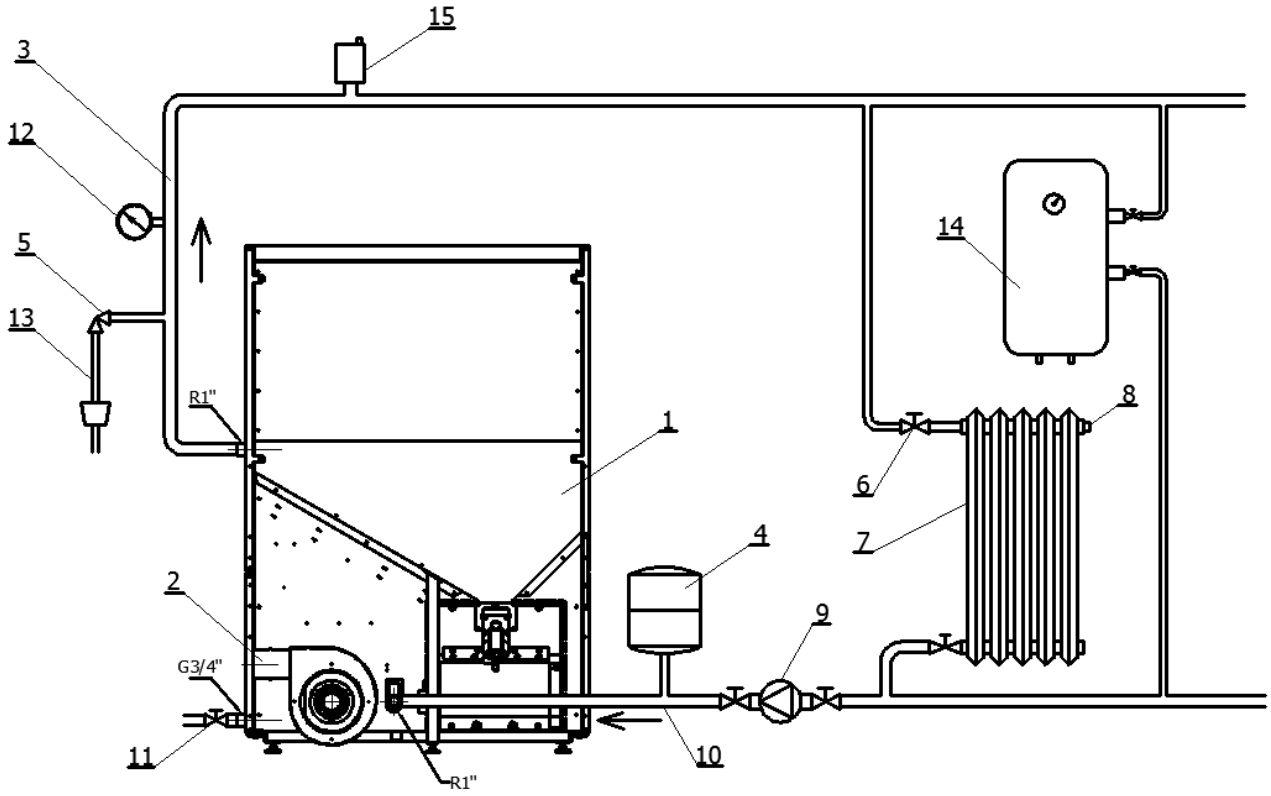


Figure 17

Scheme of hydraulic installation of pellet boiler – GRANDE



1. Boiler GRANDE – back side
2. Chimney (flue pipe) connection Ø80 mm
3. Distribution line
4. Expansion vessel
5. Safety valve
6. Radiator valve
7. Radiator
8. Air release valve
9. Circulation pump
10. Return line
11. Faucet for filling and emptying
12. Pressure gauge
13. The drain pipe from the safety valve
14. Boiler for sanitary water
15. Automatic air vent (pot)