INSTALLATION AND USER GUIDE **EN**

PELLET BOILER

COMPACT 35

translation of original instructions

red

8901238400

TABLE OF CONTENTS

INTRODUCTION

DDear Customer,
Our boilers are designed and built in compliance with the European standard EN 303-5 (manual or automatic loading solid fuel boilers). They also meet the essential requirements of directive 2006/95/EC (Low Voltage) and directive 2004/108/EC (Electromagnetic Compatibility).
To get the best performance out of your boiler, we suggest you read the instructions in this manual carefully before starting it up for the first time.
This installation and use manual forms an integral part of the product: ensure that the manual is always supplied with the device, even if the boiler changes owner. If the manual is lost, you can request another copy from the local technical service or download it directly from the company website.
All local regulations, including those regarding national and European regulations, must be respected when the device is installed.
In Italy, for the installation of devices with biomass lower than 35KW, refer to ministerial decree 37/08, and the qualified installation technician with the appropriate requisites must issue a certificate of compliance for the system installed.

REVISIONS TO THE PUBLICATION

The content of this manual is strictly technical and the property of MCZ Group Spa.
No part of this manual may be translated into other languages, adapted or reproduced, even in part, in other mechanical or electronic forms, photocopies, recordings or other, without the prior written authorisation from MCZ Group Spa.
The company reserves the right to make changes to the product at any time without prior notice. The proprietary company reserves its rights according to the law.

CARE OF THE MANUAL AND HOW TO CONSULT IT

- Take care of this manual and keep it in an easily accessible place.
- Should the manual be misplaced or ruined, request a copy from your retailer or directly from the authorised Technical Assistance Department. It can be downloaded from the company website.
- The "**text in bold**" must be read with particular care.
- The "*text in italics*" draws attention to other sections in this manual or clarifications.
- "NOTE" provides the reader with additional information.

SYMBOLS USED IN THE MANUAL

	**ATTENTION:** Read the relative message with care as **failure to observe the information provided could result in serious damage to the product and put the persons who use it at risk**.
	**INFORMATION:** failure to comply with these provisions will compromise the use of the product.
	**OPERATING SEQUENCES:** sequence of buttons to be pressed to access the menus or change settings.
	**MANUAL** carefully read this manual or the relative instructions.

1-WARNINGS AND WARRANTY TERMS

SAFETY PRECAUTIONS

- **Installation, electrical connection, function test and maintenance must only be carried out by authorised and qualified personnel.**
- **Install the product in accordance with all local and national legislation and regulations in force in the region or state.**
- Only use the fuel recommended by the manufacturer. The product must not be used as an incinerator. It is strictly forbidden to use liquid fuel.
- Do not put any fuel other than wood pellets in the hopper.
- The instructions provided in this manual must always be complied with to ensure the product and any electronic appliances connected to it are used correctly and accidents are prevented.
- The user, or whoever is operating the product, must read and fully understand the contents of this installation guide before performing any operation. Errors or incorrect settings can cause hazardous conditions and/or poor operation.
- Do not climb on or lean on the product.
- Do not put linen on the product to dry. Any drying racks or similar objects must be kept at a safe distance from the product. **Fire hazard.**
- *All liability for improper use of the product is entirely borne by the user and relieves the Manufacturer from any civil and criminal liability.*
- Any type of tampering or unauthorised replacement with non-original spare parts could be hazardous for the operator's safety and relieves the company from any civil and criminal liability.
- Many of the surfaces of the product get very hot (door, handle, glass, smoke extraction pipes, etc.). **Therefore, avoid touching these parts without wearing suitable protective clothing, such as heatproof gloves.**
- **It is forbidden to use the product with its door open.**
- The product must be powered by an electrical system that is equipped with an effective earthing device.
- Switch the product off in the event of a fault or malfunction.
- Do not wash the product with water. The water could get inside the unit and damage the electrical insulation and cause electric shocks.
- Install the product in a location that does not present a fire hazard and is equipped with power and air supplies and smoke extractors.
- In the event of fire in the chimney, turn off the device, disconnect it from the mains electricity and do not open the hatch. Then contact the competent authorities.
- In the event of a malfunction with the ignition system, do not force it to light by using flammable materials.
- Special maintenance must only be performed by authorised and qualified personnel.
- Evaluate the static conditions of the surface on which the weight of the product will stand and provide suitable insulation if it is made of a flammable material.

1-WARNINGS AND WARRANTY TERMS

INFORMATION:

Please contact the retailer or qualified personnel authorised by the company to resolve a problem.

- You must only use the fuel specified by the manufacturer.
- Check and clean the smoke extraction pipes regularly (connection to the chimney).
- Always keep the cover of the fuel hopper closed.
- Store this installation and use manual with care as it must accompany the product for the duration of its useful life. If the product is sold or transferred to another user, ensure the manual is also handed over.

INTENDED USE

The product only works with wood pellets and must be installed indoors.

WARRANTY CONDITIONS

The company guarantees the product, **with the exception of elements subject to normal wear** listed below, for a period of **2 (two) years** from the date of purchase attested by:

- a document to serve as proof of purchase (invoice and/or receipt) that shows the name of the vendor and the date on which the purchase was made;
- forwarding of the completed certificate of guarantee within 8 days of purchase.

Furthermore, in order for the guarantee to be valid, the device must be installed and calibrated by qualified personnel, and where necessary, the user must be issued with a declaration of conformity and correct functioning of the product.
We suggest performing the product function test before completing the finer calibrations.
Any installation that fails to comply with the regulations in force will invalidate the product guarantee, as will improper use or failure to carry out the maintenance prescribed by the manufacturer.
The guarantee is valid on the condition that the instructions and warnings contained in the use and maintenance manual are observed, and therefore the product is used correctly.
The replacement of the entire system or the repair of one of its components does not extend the guarantee period, and the original expiry date remains unchanged.
The guarantee covers the replacement or free repair **of parts recognised as being faulty at source due to manufacturing defects.**
To benefit from the guarantee, in the event of a fault, the customer must have the guarantee certificate and present it with the proof of purchase document to the Technical Assistance Office.
rmed at all or as indicated by the manufacturer.

1-WARNINGS AND WARRANTY TERMS

EXCLUSIONS

The guarantee does not cover malfunctions and/or damage to the appliance that arise due to the following causes:

- Damage caused during transportation or relocation
- all parts that develop faults due to negligence or improper use, incorrect maintenance, installation that does not comply with the manufacturer's instructions (always refer to the installation and use manual provided with the appliance)
- incorrect dimensioning with regards to the use or faults in the installation or failure to adopt the necessary devices to guarantee proper execution
- improper overheating of the equipment, use of fuels not conforming to the types and quantities indicated in the instructions provided
- further damage caused by incorrect user interventions in an attempt to fix the initial fault
- worsening of the damage caused by the user continuing to operate the appliance even after the fault has been noticed
- any corrosion, incrustation or cracking caused by water flow, condensation, hardness or acidity of the water, improper de-scaling treatments, lack of water, mud or limescale deposits
- inefficiency of chimneys, flues or parts of the system affecting the appliance
- damage caused by tampering with the appliance, atmospheric agents, natural disasters, vandalism, electrical discharges, fires.
- faults in the electric and/or hydraulic system.

Also excluded from this guarantee are:

- parts subject to normal wear such as seals, glass, claddings and cast iron grids, painted parts, handles and electric cables, bulbs, indicator lights, knobs, all removable parts from the firebox.
- Chrome variations of painted parts.
- masonry work
- parts of the system not supplied by the manufacturer

Any technical interventions on the product to eliminate the defects mentioned above and consequent damages must be agreed upon with the Technical Assistance Centre, who reserves the right to accept the relative appointment or not. However, said interventions will not be carried out under the guarantee but as technical assistance to be granted as part of any eventual and specific agreed conditions and in accordance with the fee applicable for the work to be carried out.
The user will also be charged for any costs incurred to remedy the incorrect technical interventions, tampering or damage to the appliance, not attributable to original faults.
Save for the legal or regulatory limits, the guarantee does not cover the containment of atmospheric and acoustic pollution.

The company 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.

1-WARNINGS AND WARRANTY TERMS

SPARE PARTS

In the event of a malfunction, consult the retailer who will forward the call to the Technical Assistance Service.

Use only original spare parts. The retailer or service centre can provide all necessary information regarding spare parts.
We do not recommend waiting for the parts to be worn before having them replaced. It is important to perform regular maintenance.

The company declines all liability if the product and any other accessory is used improperly or modified without authorisation.
All parts must be replaced with original spare parts.

WARNINGS FOR THE CORRECT DISPOSAL OF THE PRODUCT.

The owner is the sole party responsible for demolishing and disposing of the product. This must be performed in compliance with laws related to safety and environmental protection in force in his/her country.
At the end of its working life, the product must not be disposed of as urban waste.
It must be taken to a special differentiated waste collection centre set up by the local authorities or to a retailer that provides this service.
Separating and recycling prevents potential negative effects on the environment and health (often caused by inappropriately disposing of product parts). It also allows materials to be recovered in order to obtain significant savings in energy and resources.

1-WARNINGS AND WARRANTY TERMS

RULES FOR INSTALLATION

The product is a boiler that uses wood pellets.
Below is a list of European regulations regarding the installation of the product:
EN 303-5:2012: Solid fuel boilers, with manual or automatic loading, nominal thermal power of 500 kW - Terminology, requisites, tests and marking.
EN 12828 Heating systems design.
Electrical systems with rated voltage not exceeding 1000 V AC and 1500 V DC.
EN 1443 General chimney regulation
EN 1856-1 metal smoke ducts
EN 1856-2 metal smoke extraction channels
EN 1457 chimneys - Interior terracotta / ceramic flues
EN 13384-1 Chimneys - Thermal and dynamic fluid calculation methods - Part 1: Chimneys connected to a single appliance
Below are some applicable regulations for Italy:
UNI 10683:2012 Heat generators fuelled by wood or other solid bio-fuels - Test, installation, control and maintenance (for thermochemical power at the firebox lower than 35kW)
UNI/TS 11278 general technical regulation for the choice of smoke duct/flue
UNI 10847:2000 Smoke extractor systems for liquid and solid fuelled generators - Maintenance and control - Guidelines and procedures
UNI 8065 water treatment in civil plants.
UNI 9182 Hot and cold (sanitary) air supply and distribution systems.

Installation must be carried out with reference to the diagram of the heating system prepared in accordance with the standards and local recommendations in force:
In any case, respect:
For the heating appliance
Local requirements concerning the chimney connection.
Local requirements for fire-fighting standards.
For electrical parts - **EN 60335 "Safety of electrical household appliances and similar**
Part 1 - General requirements
Part 2 - Special regulations for appliances with gas, gas oil and solid fuel burners with electrical connections.

The Clean Air Act 1993 and Smoke Control Areas

Under the Clean Air Act local authorities may declare the whole or part of the district of the authority to be a smoke control area. It is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler if located in a designated smoke control area. It is also an offence to acquire an "unauthorised fuel" for use within a smoke control area unless it is used in an "exempt" appliance ("exempted" from the controls which generally apply in the smoke control area).
The Secretary of State for Environment, Food and Rural Affairs has powers under the Act to authorise smokeless fuels or exempt appliances for use in smoke control areas in England. In Scotland and Wales this power rests with Ministers in the devolved administrations for those countries. Separate legislation, the Clean Air (Northern Ireland) Order 1981, applies in Northern Ireland. Therefore it is a requirement that fuels burnt or obtained for use in smoke control areas have been "authorised" in Regulations and that appliances used to burn solid fuel in those areas (other than "authorised" fuels) have been exempted by an Order made and signed by the Secretary of State or Minister in the devolved administrations.
Further information on the requirements of the Clean Air Act can be found here : http://smokecontrol.defra.gov.uk/
Your local authority is responsible for implementing the Clean Air Act 1993 including designation and supervision of smoke control areas and you can contact them for details of Clean Air Act requirements"

The Compact 35 has been recommended as suitable for use in smoke control areas when burning wood pellets in accordance with class A1-A2 specified in the standard EN14961-2.

2-INSTALLATION INSTRUCTIONS

The instructions in this chapter refer explicitly to the Italian installation regulation UNI 10683. In any case, always observe the domestic regulations in force.

PELLETS

Wood pellets are manufactured by hot-extruding compressed sawdust which is produced during the working of natural dried wood. The compactness of the material is guaranteed by the lignin contained in the wood itself and allows pellets to be produced without glue or binders.

The market offers different types of pellets with characteristics that vary according to the wood mixtures used. The most common diameter on the market is 6 mm (although 8 mm diameter is available too) with a length, on average, of between 5 and 30 mm. A good quality pellet has a density of between 600 and 750 or more kg/metres cubed and a water content that accounts for 5 to 8% of its weight. Pellets have technical advantages besides being an ecological fuel, as the wood residue is used completely, thereby achieving cleaner combustion than that of fossil fuels.

Good-quality wood has a calorific value of 4.4 kW/kg (15% moisture, after about 18 months of seasoning), whereas that of pellets is 4.9 kW/kg. To ensure good combustion, the pellets must be stored in a dry place and protected from dirt. Pellets are usually supplied in 15 kg bags, therefore, storing them is very convenient.

15 Kg BAGS OF FUEL

Good quality pellets guarantee good combustion, thereby decreasing harmful emissions into the atmosphere.

The poorer the quality of the fuel, the more often the internal parts of the brazier and combustion chamber must be cleaned.

The main quality certifications for pellets currently available on the European market guarantee that the fuel complies with class A1/A2 according to EN14961-2. These certifications include, for example, **ENPlus**, **DINplus**, **Ö-Norm M7135,** and in particular, guarantee the following characteristics:

- calorific value: 4.6 ÷ 5.3 kWh/kg.
- Water content: ≤ 10% of the weight.
- Percentage of ash: max 1.5% of the weight.
- Diameter: 6±1/8±1 mm.
- Length: ≤ 40 mm.
- Content: 100% untreated wood without the addition of binding substances (max 5% bark).
- Packaging: in sacks made from ecologically compatible or biologically decomposing material.

The company strongly recommends using certified fuel for its products (ENplus, DINplus, Ö-Norm M7135).
Poor quality pellets or others that do not comply with the characteristics specified previously may compromise the operation of your product and can therefore render the guarantee and product liability invalid.

2-INSTALLATION INSTRUCTIONS

PRECAUTIONS REGARDING INSTALLATION

IMPORTANT!
Product installation and assembly must be carried out by qualified personnel.

The product must be installed in a suitable place that allows easy access for it to be opened regularly and for routine maintenance to be performed.
The installation area must be:

- suitable to enable the appliance to operate correctly.
- Equipped with an adequate smoke extraction system.
- Equipped with adequate ventilation from outside.
- Equipped with 230V 50 Hz power supply with an EC compliant earthing system.

IMPORTANT!
The product must be connected to a chimney that expels the smoke at the highest point of the building.
The chimney must be of suitable dimensions, caulked, and fitted with a condensation collector for collecting the water vapour that can form due to the high performance of the appliance and the consequently low temperatures of the outgoing fumes.
The chimney must comply with regulations in force.
The holes of the external air inlet and the smoke outlet pipe must be drilled before positioning the product.

THE OPERATING AREA

The boiler must be installed indoors in an area well protected from atmospheric elements.
The surface on which it stands and/or support points must have sufficient load bearing capacity to support the total weight of the appliance, its accessories and covers.
To ensure the appliance works well, we recommend installing the boiler detached from any walls or furniture, and with good air circulation to allow effective ventilation for the appliance. The product should be located in an area that allows sufficient space for normal use and maintenance operations.

The volume of the room should be no less than 15 m^3.

It is essential that an adequate outdoor air intake is provided that supplies the air for combustion needed for the product to function correctly.
These air inlets must be arranged so that it is impossible for them to be obstructed.
Protect the inlets with grilles, metal mesh, etc., without reducing the net cross-section.

Remember that the ventilation grilles always have the useful cross-section in cm^2 indicated on one side. When choosing the grille and size of the inlet, check that the useful cross-section of the grille is larger or equal to the section required for product operation.

The flow of air between the outside and the room of installation may be direct, through an inlet in an external wall of the building; or indirect, through the intake of air from rooms adjoining and connecting permanently with the room of installation. Adjoining areas may not include sleeping areas, garages or general areas that present a fire hazard.
For air ducts, up to 3m increase the cross-section by approximately 5%, while for ducts that run for longer increase it by 15%.

IMPORTANT!
The air flow can also be drawn from an adjoining room to that of the room where the product is installed, provided the air can flow freely through permanent openings to the outside; avoid connection to sleeping areas and rooms that present a fire hazard in general.

2-INSTALLATION INSTRUCTIONS

POSITIONING AND RESTRICTIONS

In the case of simultaneous installation with other heating appliances, provide appropriate air inlets for each one (according to the instructions of each product).

Installation of the product is not permitted:

- ***in rooms where there are liquid fuel appliances with continuous or intermittent operation that draw the combustion air from the room they are installed in;***
- ***in rooms where there are B-type gas heating appliances, with or without domestic hot water production and interconnecting rooms;***
- ***in rooms in which the decrease in pressure during use, as measured between the pressure outside and the pressure in the room, is greater than 4 Pa.***

The product may not be installed in rooms used as sleeping areas, bathrooms, garages or in rooms that present a fire hazard in general.

BOILER ROOM

Check that the room meets the requirements and provisions of the standards in force. There must also be a flow of at least enough air in the room for normal combustion. Vents must be installed in the walls of the room that meet the following requirements:

- Increase the cross-section by at least 6 cm^2 for each 1 kW (859.64kcal/h) The minimum cross-section of the opening must not, however, measure less than 100 cm. The cross-section can be calculated using the following relations:
  $S = K * Q \geq 100\ cm^2$
  Where "S" is in cm^2, "Q" in kW, "K" = 6 cm^2/kW
- The opening must be located at the base of an external wall, preferably opposite the one with the outlet for combusted gases.

Heat-sensitive or flammable objects cannot be stored near the product; keep such objects at a minimum distance of 80 cm from the outermost point of the product.

2-INSTALLATION INSTRUCTIONS

FOREWORD

This chapter on the Smoke Flue has been produced in reference to the prescriptions of European regulations (EN13384 - EN1443 - EN1856 - EN1457).

The chapter provides indications for installing an efficient and correct smoke flue but is under no circumstances to substitute the regulations in force, which the qualified technician must be in possession of. Check with local authorities whether there are any restrictive regulations in force regarding the intake of air for combustion, the smoke extraction system, the flue or the chimney.

The company declines all liability relating to the poor functioning of the boiler if this is due to the use of an insufficiently sized flue in violation of regulations in force.

SMOKE FLUE

Have the efficiency of the flue checked by an authorised technician.

The flue or chimney is vital to the correct functioning of a forced draft solid fuel heating appliance, given that boilers with high performance have cooler fumes with consequently weaker draft and the possible formation of condensation.

It is therefore essential that the flue meets all construction standards and is always maintained in perfect condition.

A flue that serves a pellet/wood fuelled appliance must be at least category T400 (or greater if the appliance requires, and resistant to soot fires. Smoke must be extracted through a single flue made of insulated steel (A) or an existing flue that complies with the intended use (B).

A simple air shaft in cement must be suitably lined. In either case, ensure to include an inspection cap (AT) or inspection door (AP) and a suitable device for collecting condensation - FIG.1.

It is prohibited to connect more than one wood/pellet or any other type of appliance (vent cowling...) to the same flue.

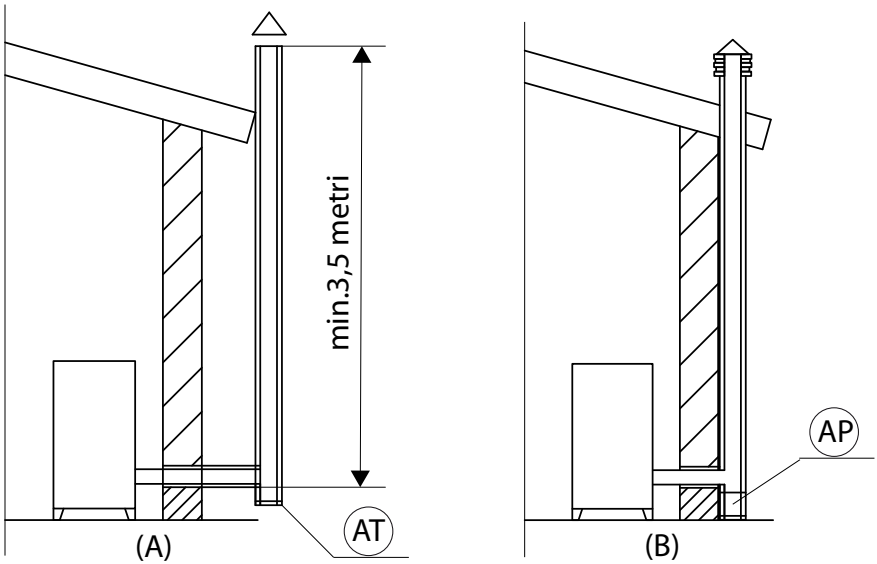


FIGURE 1 - SMOKE FLUE

2-INSTALLATION INSTRUCTIONS

TECHNICAL CHARACTERISTICS

Flues serving a pellet/wood fuelled appliance must meet the following requirements:

- made of materials that are sufficiently resistant to mechanical stress, heat, the action of the products of combustion and their vapours.
- made of materials that are impermeable to fumes, condensation, be thermally insulated and resistant to normal mechanical stress over time
- go in a vertical direction and deviate no more than 45° from the vertical axis and be free of choke points
- be suited to the specific operating conditions of the product and have CE marking (EN1856-1, EN1443).
- Be of the correct size to suit the draft/smoke extraction requirements necessary for the product to work properly (EN13384-1)
- Be suitably caulked externally to avoid condensation and reduce the cooling of the smoke.
- Be at least category T400 (or greater if the appliance requires) and resistant to soot fires.

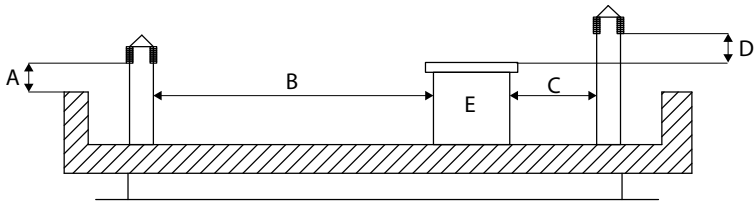
We recommend in particular to check on the data tags of the flue (in accordance with EN1856-1, EN1443) the safety distances that must be respected in presence of passing combustible materials and the type of insulating material to be used. These indications must be followed rigorously to avoid serious harm to personnel and surrounding infrastructure.

The chimney opening must be in the same room as the appliance, or at most in the adjoining room, and have a soot and condensation collection chamber beneath the opening, and be accessible via a watertight metal hatch.

Smoke must be extracted through a single flue (see fig. 3) with insulated steel tubes (A) or though an existing flue that complies with the intended use (B). A simple air shaft in cement must be suitably lined. In either case, ensure to include an inspection cap (AT) and/or inspection door (AP) and a suitable device for collecting condensation - FIG.1.

It is prohibited to connect more than one wood/pellet or any other type of appliance (vent cowling...) to the same flue.

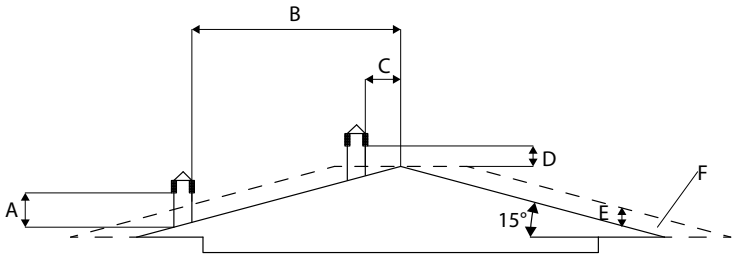
FLAT ROOF



A = 0.50 metres
B = DISTANCE > 2 metres
C = DISTANCE < 2 metres
D = 0.50 metres
E = TECHNICAL VOLUME

FIGURE 2

ROOF AT 15°

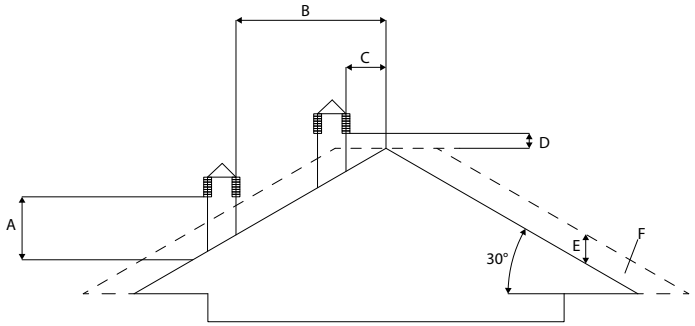


A = MIN. 1.00 metres
B = DISTANCE > 1.85 metres
C = DISTANCE < 1.85 metres
D = 0.50 metres above highest point
E = 0.50 metres
F = REFLUX ZONE

FIGURE 3

2-INSTALLATION INSTRUCTIONS

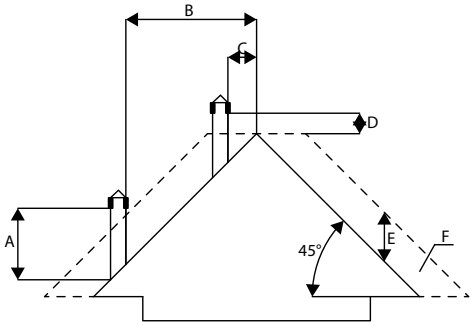
ROOF AT 30°



A = MIN. 1.30 metres
B = DISTANCE > 1.50 metres
C = DISTANCE < 1.50 metres
D = 0.50 metres ABOVE HIGHEST POINT
E = 0.80 metres
F = REFLUX ZONE

FIGURE 4

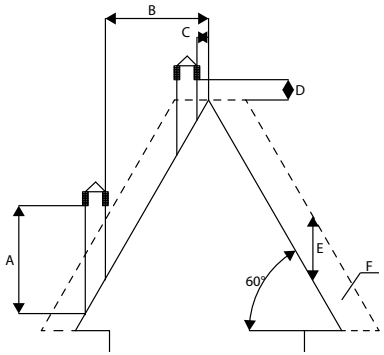
ROOF AT 45°



A = MIN. 2.00 metres
B = DISTANCE > 1.30 metres
C = DISTANCE < 1.30 metres
D = 0.50 metres ABOVE HIGHEST POINT
E = 1.50 metres
F = REFLUX ZONE

FIGURE 5

ROOF AT 60°



A = MIN. 2.60 metres
B = DISTANCE > 1.20 metres
C = DISTANCE < 1.20 metres
D = 0.50 metres ABOVE HIGHEST POINT
E = 2.10 metres
F = REFLUX ZONE

FIGURE 6

2-INSTALLATION INSTRUCTIONS

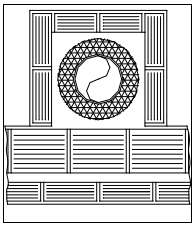
DIMENSIONING

The drop in pressure (draft) of a flue depends on its height. Check the drop in pressure with the values indicated in the technical characteristics. The minimum height of the chimney is 3.5 meters.

The interior cross-section of the flue can be circular (best variation), square or rectangular (the ratio between the interior sides must be ≤1.5) with the sides joined with a minimum radius of 20 mm. The dimension of the cross-section must be a **minimum Ø150mm**.

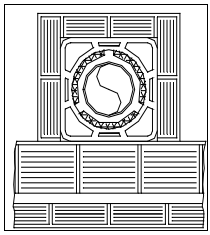
The cross-sections/lengths of the chimneys shown in the technical data tables are indications for correct installation. Any alternative configurations must be correctly dimensioned in accordance with the general method of calculation of UNI EN13384-1 or other proven efficiency methods.

Below is a list of some flues available on the market:



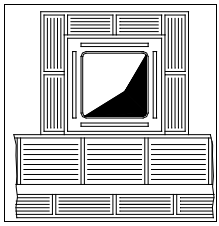
Steel chimney AISI 316 with double chamber insulated with ceramic fibre or equivalent resistant up to 400°C.

EXCELLENT



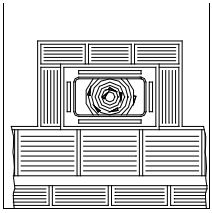
Refractory chimney with double insulated chamber and external lightweight concrete cladding with cellular material such as clay.

GOOD



Traditional square-section clay chimney with insulating empty inserts.

POOR



Avoid products with an internal rectangular section where the larger side is 1.5 times the smaller side (e.g. 20x40 or 15x30).

VERY POOR

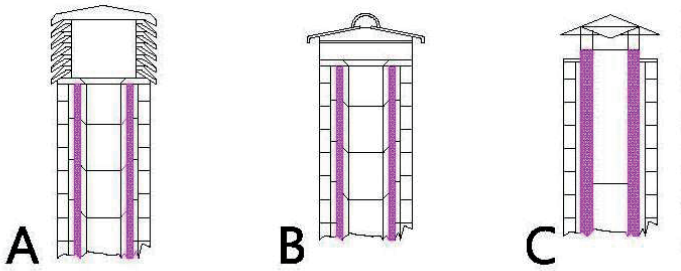
2-INSTALLATION INSTRUCTIONS

MAINTENANCE

The flue must be kept clean, since the deposit of soot or unburned oils reduces the cross-section reducing the draft and thus compromising the efficient functioning of the heater and, if large build-ups accumulate, can catch fire. The flue and chimney must be cleaned and checked by a qualified chimney sweep at least once a year. Once the maintenance has been performed, request a written declaration that the device is safe.
Failure to clean the system jeopardises the safety.

CHIMNEY

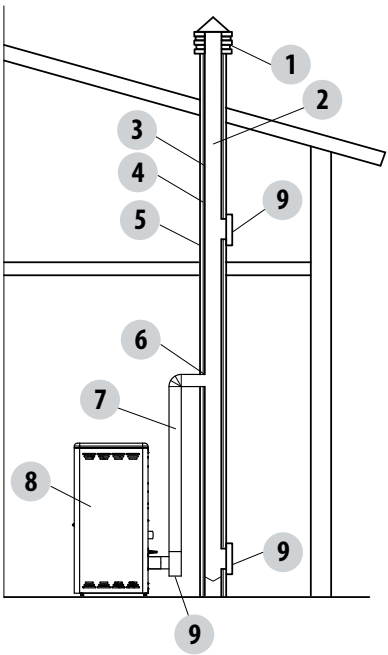
The chimney is a crucial element for the heating appliance to work properly: we recommend a wind proof chimney (A), see Figure 7.



The area of the opening for smoke extraction must be at least double the cross-section of the smoke duct/flue system, and arranged so that smoke extraction is ensured even in strong wind. The chimney must prevent rain, snow or animals from entering the chimney. The height of outflow into the atmosphere must be beyond the reflux zone created by the shape of the roof or any obstacles near the outlet (see Figures 2-3-4-5-6).

FIGURE 7

CHIMNEY COMPONENTS



KEY:
(1) CHIMNEY
(2) REFLUX CHANNEL
(3) SMOKE DUCT
(4) THERMAL INSULATION
(5) OUTSIDE WALL
(6) CHIMNEY CONNECTION
(7) SMOKE CHANNEL
(8) HEAT GENERATOR
(9) INSPECTION ACCESS PANEL

FIGURE 8

2-INSTALLATION INSTRUCTIONS

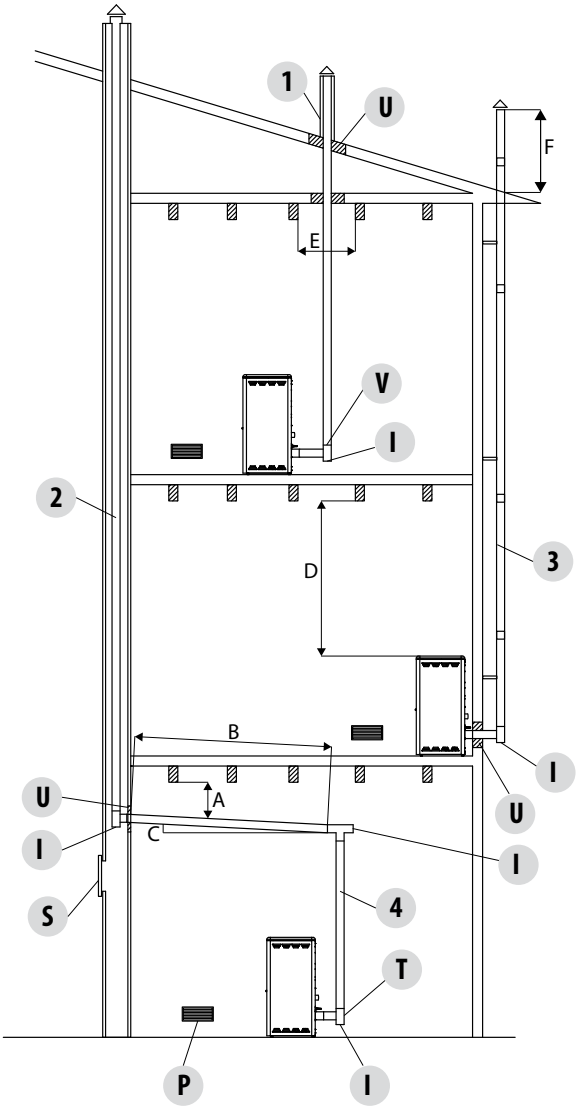
CONNECTION TO FLUE

The connection between the flue and the appliance must be via a smoke duct that conforms with EN 1856-2. The connecting section must extend no more than 4 m horizontally, with a maximum incline of 3% and containing a maximum of 3 90% bends (accessible for inspection - do not count the T joint at the appliance outlet).
The diameter of the smoke duct must be equal to or greater than that of the outlet of the appliance (Ø 100 mm).

TYPE OF DEVICE	SMOKE DUCT
Minimum vertical length	1.5 metres
Maximum length (with 1 accessible 90° bend)	6.5 metres
Maximum length (with 3 accessible 90° bends)	4.5 metres
Maximum number of accessible 90° bends	3
Horizontal sections (minimum incline 3%)	4 metres

Use smoke flues of 100mm diameter and silicon seals or similar seals that can resist the high operating temperatures of the appliance (min. T200 class P1). **The use of flexible metal tubes in fibre cement or aluminium is prohibited. For direction changes, we always recommend the use of a T joint** with an inspection cap allowing easy access for cleaning the tubes. Always ensure that the inspection cap is replaced and hermetically sealed with the seal in tact after cleaning.
It is prohibited to connect more than one appliance to the same smoke duct, or the discharge from overhead cowling. It is prohibited to extract the products of combustion directly through the wall, whether into indoor spaces or outdoors.
The smoke duct must be a minimum distance of 400 mm from flammable or heat-sensitive structures.

EXAMPLES OF CORRECT INSTALLATION



1. Installation of Ø150mm flue with hole for the passage of the tube increased by:
minimum 100 mm around the tube if next to non flammable parts such as cement, brick, etc.; or
minimum 300 mm around the tube (or as prescribed by data tags) if next to flammable parts such as wood etc.
In both cases, install suitable insulation between the flue and the ceiling.
Always check and respect the data tags on the flue, in particular the minimum safety distances from combustible materials.
The previous rules also apply for holes made in walls.
2. Old flue, minimum tube Ø150mm with the inclusion of an external access door for chimney cleaning.
3. External flue made of insulated stainless steel tubes, i.e. with double walls minimum Ø150mm: all securely mounted to the wall. With wind-proof chimney. See fig. 7 type A.
4. Ducting system using T joints that allow easy access for cleaning without having to remove the tubes

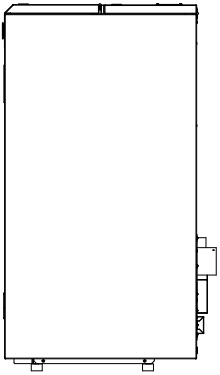
FIGURE 11

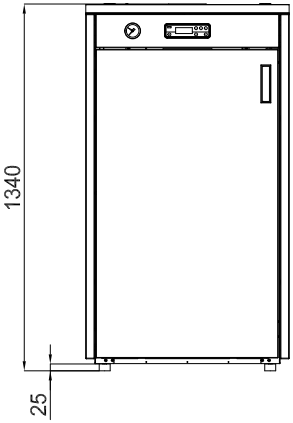
U = INSULATING
V = ANY REDUCTION FROM 100 TO 80 MM
I = INSPECTION CAP
S = INSPECTION ACCESS PANEL
P = AIR INLET
T = T JOINT WITH INSPECTION CAP

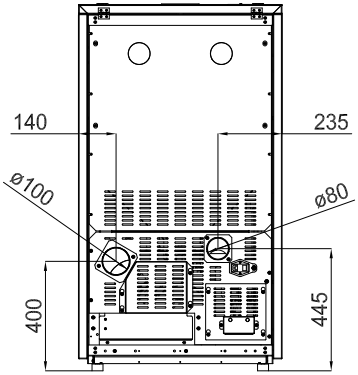
A = MINIMUM 40 MM
B = MAXIMUM 4 M
C = MINIMUM 3°
D = MINIMUM 400 MM
E = HOLE DIAMETER
F = SEE FIG.2-3-4-5-6

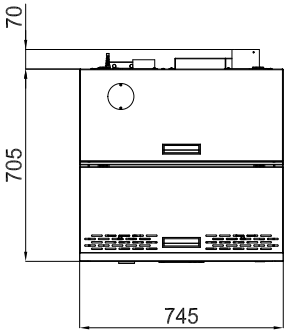
DRAWINGS AND CHARACTERISTICS

COMPACT 35 HYDRO DIMENSIONS (in cm)









3-DRAWINGS AND TECHNICAL SPECIFICATIONS

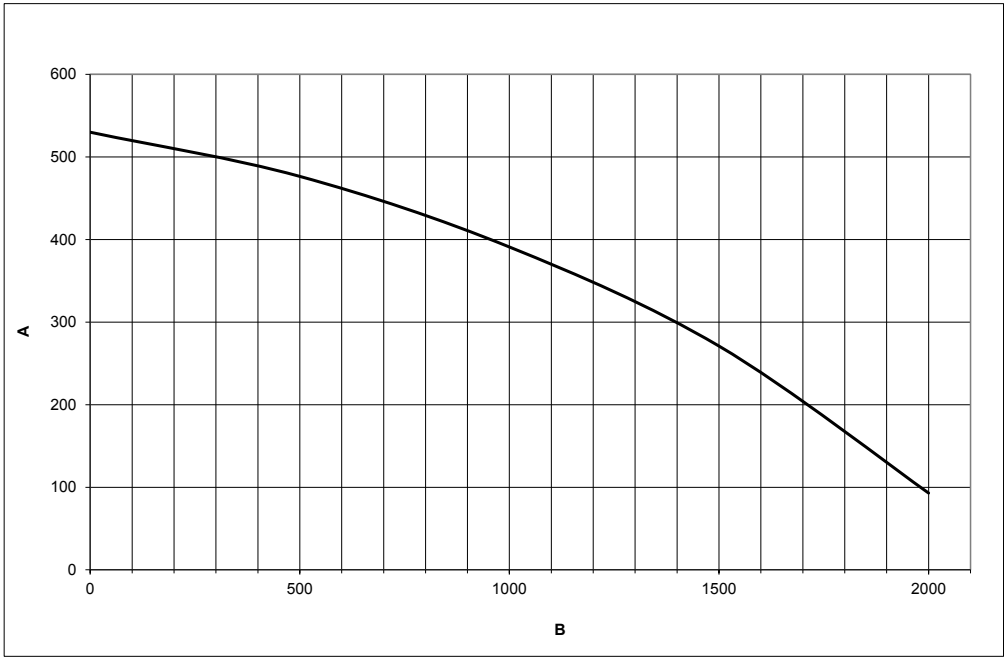
TECHNICAL CHARACTERISTICS	COMPACT 35 HYDRO
Product class (EN 303-5:2012)	5
Nominal thermal power to firebox	34,5 kW (29670 kcal/h)
(Max) nominal output power:	32,0 kW (27520 kcal/h)
Minimum output power	8,1 kW (6966 kcal/h)
Efficiency at Max	92,8%
Efficiency at Min	90,0%
Temperature of exhaust smoke at Max	140°C
Temperature of exhaust smoke at Min	60,5°C
Maximum temperature that can be set	80°C
Maximum operating temperature	95°C
Particulate/OGC / Nox (10%O_2)	23 mg/Nm^3 - 2 mg/Nm^3 - 196 mg/Nm^3
CO at 10% O_2 at Min and at Max	0,014 - 0,005%
CO_2 at Min and at Max	5,6 - 10,3%
Recommended draught at Max power	0.10 mbar - 10 Pa
Recommended draught at Min power	0.05 mbar - 5 Pa
Mass of smoke	21.5 g/sec
Hopper capacity	146 litres
Type of pellet fuel	Pellet diameter 6-8 mm and size 5/30 mm
Pellet hourly consumption	Min ~ 1.3 kg/h* - Max ~ 6.7 kg/h*
Autonomy	At min ~ 80 h* - At max ~ 16 h*
Heatable volume m3	688/40 - 786/35 - 917/30**
Water content	30 litres
Maximum operating pressure	3 bar - 300 kPa
Combustion air inlet	External diameter 80 mm
Smoke outlet	External diameter 100 mm
Air inlet	100 cm^2
Nominal electrical power (EN 60335-1).	190 W (Max 440 W)
Supply voltage and frequency	230 Volt / 50 Hz
Net weight	300 kg
Weight with packaging	320 kg

* Data that may vary depending on the type of pellets used.
**Heatable volume based on the requested power per m3 (respectively 40-35-30 Kcal/h per m3)

3-DRAWINGS AND TECHNICAL SPECIFICATIONS

Residual head

We recommend in particular to check the data tags of the flue for the safety distances that must be respected in presence of combustible materials and the type of insulating material to be used. These indications must be followed rigorously to avoid serious harm to personnel and surrounding infrastructure.



A = Residual Head (mbar)
B = Load (l/h)

4-INSTALLATION AND ASSEMBLY

PREPARATION AND UNPACKING

The Compact boiler is supplied complete with all its electrical and mechanical components and factory-tested:
Open the package and remove the two screws between the bracket and the boiler and the two screws that fasten the bracket to the pallet. Set the boiler in the pre-selected place, making sure this complies with the requirements. The boiler body or unit must always be kept in a vertical position when handled and moved by using carts only. Pay particular attention that the door is protected from mechanical knocks that would compromise its integrity.

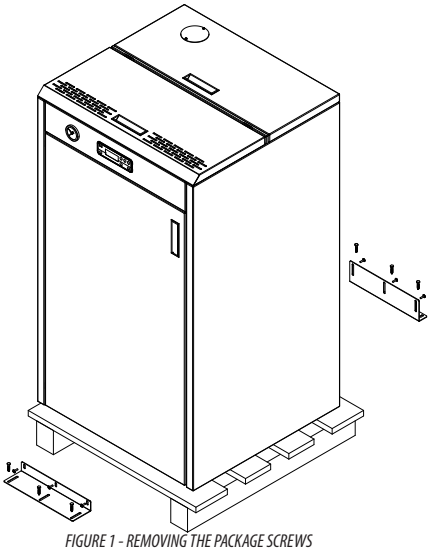


FIGURE 1 - REMOVING THE PACKAGE SCREWS

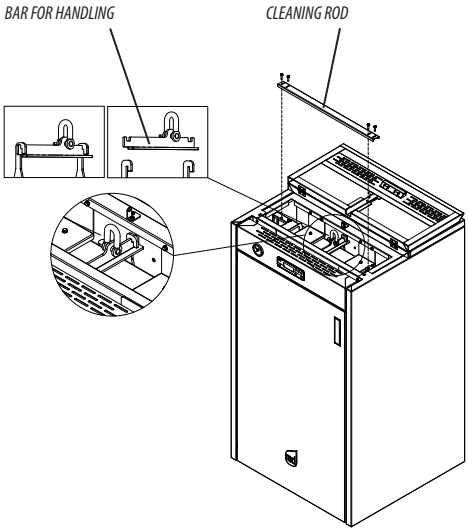


FIGURE 2 - HOOK FOR HANDLING

Always handle the products with care. If possible, unpack the boiler near the chosen place of installation. The materials that make up the packaging are neither toxic nor harmful, and so require no particular disposal measures.
The product, as shown in figure 2, is equipped with a hook to ease handling. To use the hook it is necessary to lift the front cover, unscrew the rod that is used to clean the pipe unit, take the bar for handling (supplied with the boiler) and insert it in the hooks arranged on the boiler; at this point it is possible to use the hook for handling.
Once the package has been removed make sure that the boiler is complete and not damaged, in case of doubt contact the retailer.

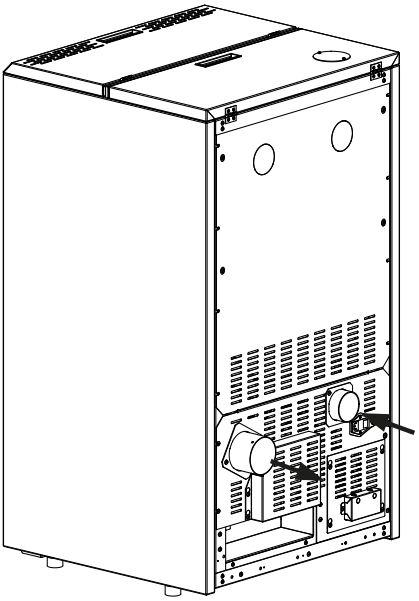
The product packaging contains the following documents:

- System booklet
- Instructions booklet
- Annex G - Technical inspection report for heat system with heat output below 35 kW.
- Warranty

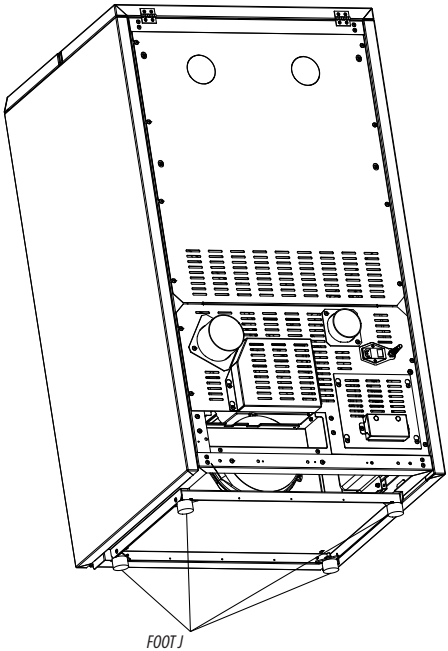
4-INSTALLATION AND ASSEMBLY

The end user is responsible for product storage, disposal or possible recycling in compliance with the relative applicable laws. Position the product without its cladding and connect it to the chimney. Once the connections are complete, assemble the cladding. Adjust the 4 feet (**J**) to level the stove so that the smoke exhaust and the pipe are coaxial.

Attention!!
If the boiler smoke outlet is forced or used improperly to lift it or position it, the operation of the stove can be damaged irreparably.



1. TURN THE FEET CLOCKWISE TO LOWER THE PRODUCT.
2. TURN THE FEET ANTI-CLOCKWISE TO RAISE THE PRODUCT.

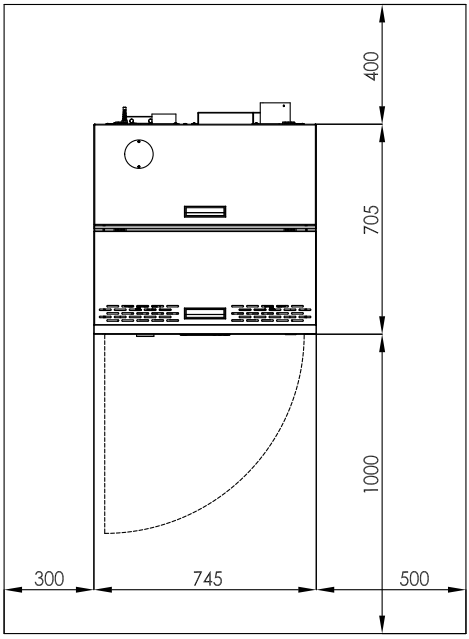


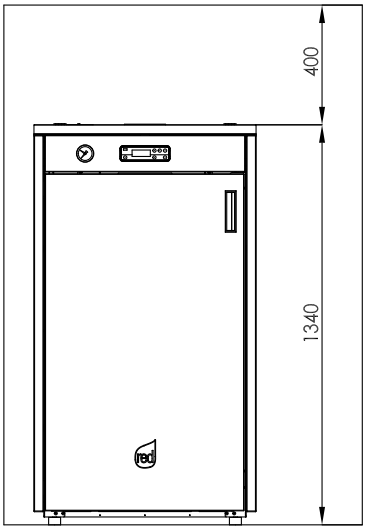
FOOT J

4-INSTALLATION AND ASSEMBLY

REQUIREMENTS FOR SYSTEM INSTALLATION

- **the minimum distance in front of the product** to allow for cleaning, maintenance, etc. must be at least **1000 mm**;
- the minimum admitted distance between the rear of the product and the wall must be **400 mm**;
- the minimum distance between the upper part of the product and a wall (ceiling) must be of **400 mm** to ensure easy access for heat exchanger cleaning and maintenance (for example to remove ashes);
- the minimum distance between the side product and wall must be **300 mm**.





It is essential to make ventilation holes connecting to the exterior and in compliance with Standard UNI 10683, with the following characteristics:

1. They must be made at a height close to that of the floor;
2. They must be adequately protected by wire mesh or grille, provided it does not reduce the minimum passage section;
3. They must be positioned in such a way as not to be clogged.

Proper air flow can also be guaranteed by openings to an adjacent room, as long as it has direct ventilation and is not an environment with danger of fire, such as storage rooms, garages or warehouses as regulated by Standard UNI 10683.

It is good practice to install the boiler in rooms in which there are no leaking devices with respect to the room or appliances which may cause depression in the room itself with respect to the external environment thus causing poor draught problems of the smoke evacuation system (UNI 10683).

5-PLUMBING CONNECTION

PLUMBING CONNECTION

IMPORTANT:
The connections depend on the type of hydraulic kit installed and on the type of System Configuration.

IMPORTANT!
If installation of the product involves interaction with another, pre-existing system complete with heating equipment (gas boiler, methane boiler, diesel boiler, etc.), contact qualified personnel, who subsequently will be responsible for conformity of the system in compliance with the applicable law in force.
The Company declines all responsibility for damage to persons or things in the event of failed or incorrect operation, if the aforementioned warnings are not complied with.

IMPORTANT!!!
FLUSH THE ENTIRE SYSTEM BEFORE CONNECTING THE BOILER IN ORDER TO REMOVE RESIDUES AND DEPOSITS.
Always install gate valves upstream from the boiler so as to disconnect it from the plumbing system should it be necessary to move it, or when it requires routine and/or special maintenance.
Connect the boiler using hoses so that the boiler is not too strictly connected to the system, and to allow slight movements.

HYDRAULIC KIT

The boilers must be connected to an optional hydraulic kit with or without domestic water production.

CLEANING THE SYSTEM

Install suitable shutters to cut off the tubes from the heating system.
To protect the heating system from being damaged by corrosion, incrustation or smoke deposits, it is extremely important, before the appliance is installed, that it be washed according to the UNI 8065 standard (water treatment of thermal systems for civil use) with appropriate products.
As standard, RED supplied the product FERNOX PROTECTOR F1 with the product.
This provides long term protection against corrosion and calcium build-up for the heating appliance. It prevents the corrosion of the metal parts of the appliance, i.e. the ferrous metals, copper and copper and aluminium alloys. It also reduces the noise produced by the boiler. Refer to the instructions on the product. Cleaning should be performed by a qualified technician.
We also recommend the use of FERNOX CLEANER F3 and LEAK SEALER F4, available from our authorised distribution centres.
FERNOX F3 is a neutral product for rapid and efficient cleaning of heating appliances. It has been designed to eliminate residue, oily deposits and incrustations from existing appliances of all ages. It can help restore the heating efficiency of the boiler and reduce the noise it generates.
FERNOX F4 is intended to be used with all heating appliances to seal micro fractures that cause small and inaccessible leaks.

Attention: Failure to clean the heating system and to add a suitable inhibitor will void the warranty of the equipment and other accessories such as for example pumps and valves.

5-PLUMBING CONNECTION

FILLING THE SYSTEM

Fill the system slowly to allow air bubbles to pass through the vent holes of the heating system. For closed circuit heating systems, the filling pressure of the system at cold and the pre-inflation pressure of the expansion tank must be the same.

- In **open** vessel heating systems, direct contact between circulating liquid and air is allowed. During the heating season, the user must check the circulating water level in the expansion tank regularly. The water level in the circulation system must be kept constant. Practical experience shows that a regular check of the water level must be made every 14 days to maintain a relatively constant level. When necessary, the water level must be topped up when the boiler has cooled to room temperature. This is to avoid and damage being caused to the steel body of the boiler due to thermal stress.
- In systems with an open vessel, the water pressure in the boiler must not be less than 0.3 bar when the system is cool.
- The water used for filling the heating system must be decontaminated and not contain air.

Attention!
Do not mix heating water with incorrect concentrations of anti-freeze or anti-corrosion substances! This could damage the gaskets and cause noise during operation.
The manufacturer denies any liability for harm caused to persons, animals or objects caused by failure to observe these precautions.

After making all the hydraulic connections, pressure-test the seals by filling the boiler.

This must be done with care by doing the following:

- open the air vent valves of the radiators, boiler and system;
- gradually open the filling tap of the system, making sure that any automatic air vent valves in the system work correctly;
- close the vent valves of the radiators as soon as water comes out;
- use the pressure gauge inserted in the system to check that the pressure reaches a value of approximately 1 bar; for open vessel systems, the water is topped up automatically through the vessel.
- close the filling tap of the system and then open the vent valves of the radiators again to purge any air;
- check the seal of all the connections;

- after starting up the boiler for the first time and bringing the system up to temperature, stop the pumps and repeat the air purging procedure;
- leave the system to cool, and if necessary, restore the water pressure to 1 bar.

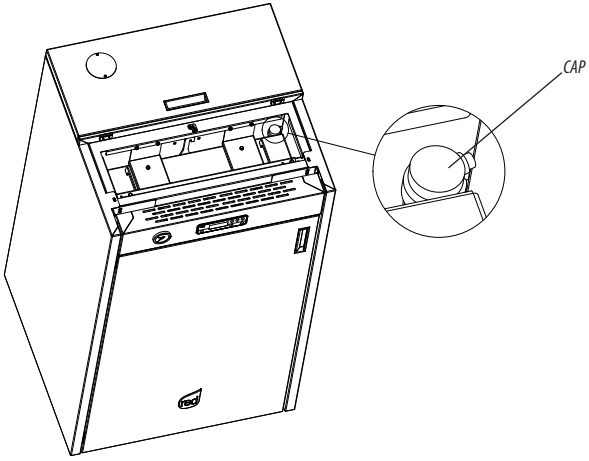
NOTE
In systems with a closed vessel, where possible, the water pressure in the heating system must not be lower than 1 bar when the system is at room temperature; if this is not the case, use the tap to fill the system.
This operation must be performed when the system is cool.
The pressure gauge on the system enables you to read the pressure in the circuit.

5-PLUMBING CONNECTION

To fill the system, the hydraulic kit (optional) is fitted with a tap, with a check valve, to load the heating system manually.
During this operation, any air in the system is released via the air valve located in the upper part of the boiler.

To ensure the valve vents, it is advisable to loosen the side cap (see figure)
The filling pressure of the system **WHEN COLD** must be 1 bar.
Upon completion of this filling operation, **always** close the loading tap.

AIR VALVE WITH SIDE CAP LOOSENED BY 1 TURN



THERMOSTATIC DIVERTER VALVE (COMPULSORY)

The automatic thermostatic diverter valve is used in solid fuel boilers to prevent the return of cold water into the exchanger which would cause condensation to form.
The prolonged formation of condensation irreparably damages the heat exchanger.
The lack of a device to prevent this invalidates the guarantee.
A higher return temperature reduces the formation of condensation of the fumes and extends the life of the boiler.
Valves available offer various calibrations. RED recommends the model (see accessories list) at 55°C.
Once the calibration temperature is reached, the valve opens providing hot water to the system.

6 - ELECTRICAL CONNECTIONS

GENERAL PRECAUTIONS

Electrical safety of the system is ensured only when it is properly connected to an efficient earthing system made in compliance with the safety standards in force: gas, water or heating systems pipes are not suitable as earth connections.
One must check this essential safety requirement; if in doubt, request an accurate inspection of the electrical system to be carried out by qualified personnel, because the boiler manufacturer is not responsible for any damage caused by failure to earth the system.
Have professionally qualified personnel check the electrical system is suitable for the maximum power absorbed by the heating system, ensuring in particular that the diameter of cables is appropriate for the power absorbed by the loads.
The use of any component that is powered by electricity entails compliance with some basic rules such as:

- do not touch the appliance with wet and/or damp body parts and/or bare feet;
- do not pull the electric cables;
- do not leave the appliance exposed to weathering (rain, sun, etc.),
- do not allow the appliance to be used by children or inexperienced persons.

230V electrical power supply connection

Installation of the boiler accessory electrical components requires electrical connection to a **230 V – 50 Hz** mains: This connection must be state of the art according to the IEC standards in force in the country where the product is installed.

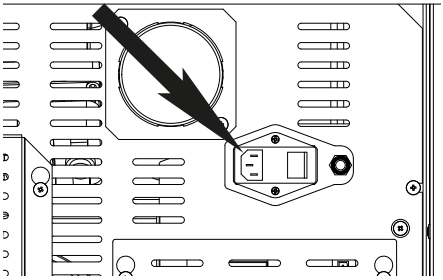
Hazard!
Electrical installation must be carried out by a qualified technician only.
Before performing connections or any operation on the electrical parts, always disconnect the power supply and make sure it cannot be accidentally reconnected.
Please note that the boiler electrical power line must be fitted with a bipolar switch with a contact gap greater than 3 mm, easy to access, in order to make any maintenance operations quick and safe.

The power cable must be replaced by authorised technical personnel. Failure to comply with the provisions listed above may compromise the safety of the appliance.

ELECTRICAL CONNECTION

First connect the power cable to the back of the boiler and then to a wall socket.
The main switch at the back must only be activated to switch the boiler on; otherwise, it is advisable to keep it switched off.

It is recommended to disconnect the boiler power cable when the boiler is not used.



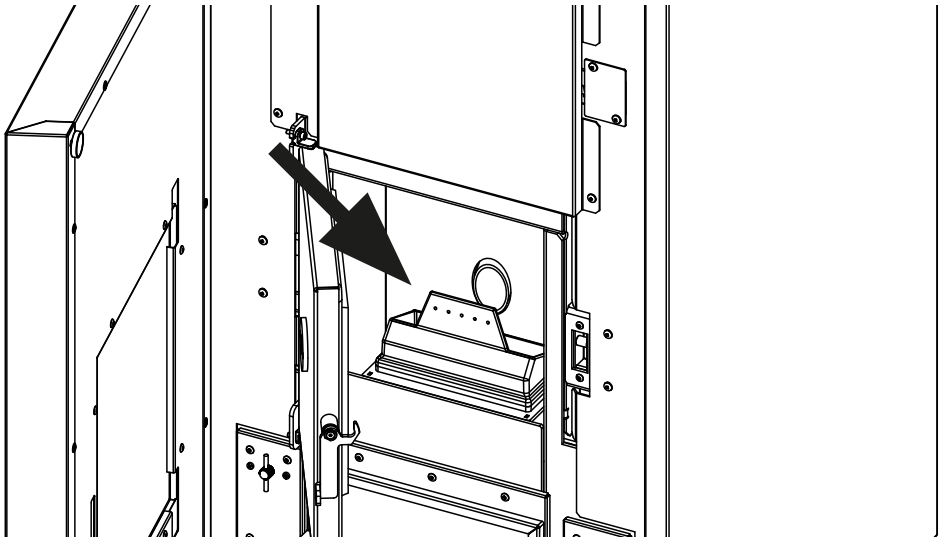
ELECTRICAL CONNECTION

7 - INITIAL START-UP

BEFORE START-UP

GENERAL PRECAUTIONS

Remove all components that could burn from the brazier (manual, various adhesive labels and any polystyrene).
Check that the brazier is positioned correctly and rests properly on the base.



After a long period of inactivity, remove any pellets left in the hopper (**using a vacuum cleaner with a long pipe**), as they could have absorbed moisture, thereby altering their original characteristics and no longer being suitable for combustion.

The first start-up may not be successful as the feed screw is empty and does not always manage to load the required amount of pellets in the brazier in time for the fire to be regularly ignited.

CANCEL THE FAILED START-UP ALARM STATUS BY PRESSING AND HOLDING KEY 1 (ESC). REMOVE THE PELLETS FROM THE BRAZIER AND REPEAT START-UP.

If a flame does not ignite after a number of failed start-ups, even though the pellet supply is correct, make sure the brazier is set in place correctly, which must be **interlocked in its seat and free from any ash deposits.** If no anomaly is found during this inspection, there may be a problem with the product components or installation may not be correct.

REMOVE THE PELLETS FROM THE BRAZIER AND CONTACT AN AUTHORISED TECHNICIAN.

Avoid touching the boiler during the initial start-up, as the paint in this stage hardens; by touching the paint, the steel surface may be exposed.

If necessary, touch up the paint with the spray can in the original colour (see the "Accessories for pellet boilers" section).
It is good practice to guarantee effective ventilation in the room during the initial start-up, as the boiler will emit some smoke and smell of paint.

Do not stand close to the product and air the room. The smoke and smell of paint will disappear after about an hour of operation, however, remember they are not harmful in any case.

7 - INITIAL START-UP

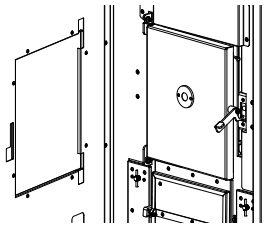
The boiler will be subject to expansion and contraction during the start-up and cooling phases, therefore slight creaking noises may be heard.
This is absolutely normal as the structure is made of laminated steel and must not be considered a defect.
It is extremely important to make sure the boiler is not immediately overheated and the temperature is increased gradually, initially using low power.

DO NOT EXPECT HEATING EFFICIENCY IMMEDIATELY!!!

OPENING/CLOSING THE INTERNAL DOOR

ATTENTION!
The door must be closed properly for the boiler to work correctly.

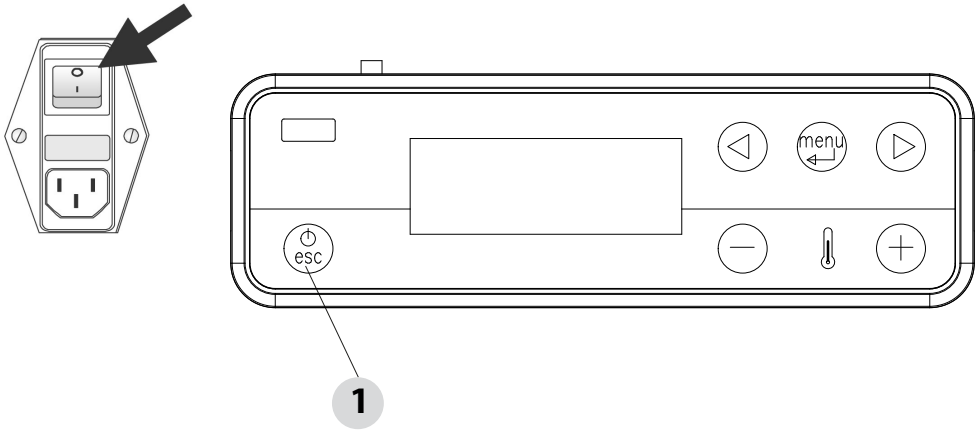
to open the internal door lift and pull the handle towards you. In the event one needs to open the door while the boiler is running one must use suitable heat protection clothing (for example leather gloves).



OPENING THE INTERNAL DOOR.

SETTINGS TO BE CARRIED OUT BEFORE THE INITIAL START-UP

Once the power cable is connected in the rear part of the product, turn the switch to position (**I**). To switch the stove on or off press key **1** on the control panel.



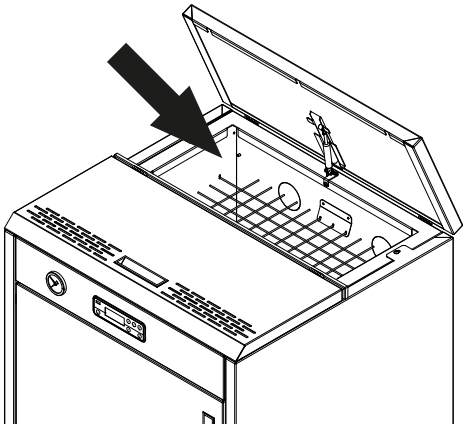
7 - INITIAL START-UP

LOADING THE PELLETS

Pellets loading can be either manual or automatic. When empty the hopper can contain 150 litres i.e. roughly 100 kg of pellets.

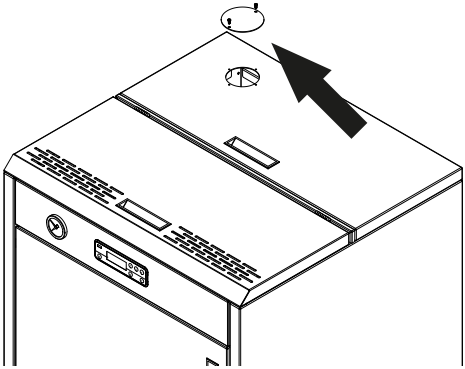
Manual Loading:

- Open the upper door of the boiler directly and pour in the pellets.



Automatic Loading (to be combined with the remote 100/200 or 400 kg hopper - optional - see accessories):

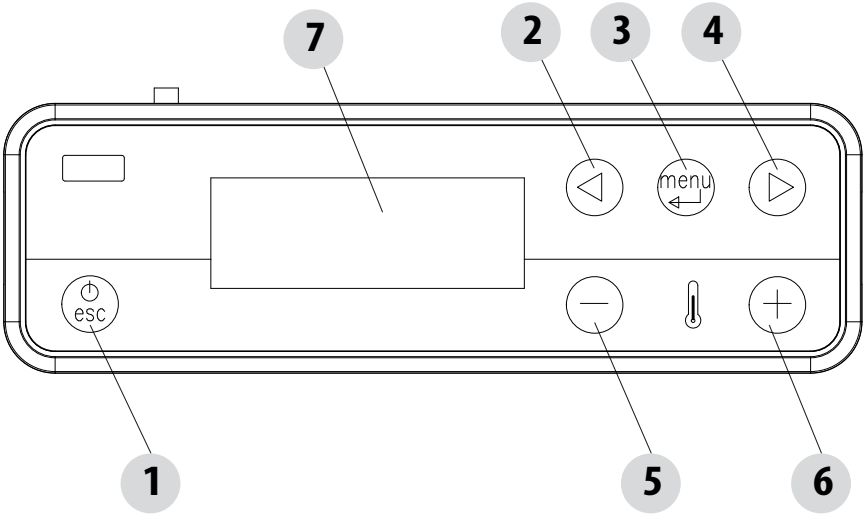
- Remove the round plate from the door, cut the insulation and insert the hopper pipe. Subsequently load from the optional hopper.



Never remove the protective grille from inside the hopper. When loading pellets, prevent the pellet bag from coming into contact with hot surfaces.

8 - MENU ITEMS AND OPERATION

CONTROL PANEL DISPLAY
Menu items



KEY

1. Boiler lighting/shutdown 2. Scrolling of programming menu to decrease. 3. Menu 4. Scrolling of programming menu to increase.	5. Decrease set temperature/programming functions. 6. Increase set temperature/programming functions. 7. Display.

MAIN MENU

It is accessed by pressing key 3 (menu). The items that are accessed are:

- Date and Time
- Timer
- Sleep (only with the boiler on)
- Settings
- Info

Date and time setting

To set the date and time act as follows:

- Press the "menu" button.
- Select "Date and Time".
- Select by pressing "menu"
- Scroll with the arrows and select the variables to be modified one at a time: Day, Hours, Minutes, Day number, Month, Year.
- Select "menu" to confirm.
- Modify with the + - keys.
- Finally press "menu" to confirm and "esc" to exit.

8 - MENU ITEMS AND OPERATION

PROGRAMMED MODE SETTING (TIMER) - Main menu

Setting the current day and time is essential for the proper operation of the timer.

There are six TIMER programmes, for each one the user can decide the start-up and shutdown time as well as the day of the week in which it is active.
When one or more programmes are active, the panel alternately displays the boiler status and TIMER "n" whereby "n" is the number relating to the activated timer programmes, separated from each other with a dash
Example:
TIMER 1 Timer programme 1 active.
TIMER 1-4 Timer programmes 1 and 4 active.
TIMER 1-2-3-4-5-6 Timer programmes all active.
EXAMPLE OF PROGRAMMING
With boiler on or off:

- access the MENU,
- scroll to TIMER with the <> arrows,
- press the "Menu" key
- the system proposes "P1" (Press the <> keys for the subsequent timers P2,P3, P4, P5, P6)
- to activate "P1" press the "Menu" key
- press + - and select "ON"
- confirm with the "Menu" key

At this point it will propose 00:00 as starting time, with key + - adjust the starting time and press the "menu" key to confirm.
The next step proposes a shutdown time of 10 minutes above that set for start-up: press the + key and adjust the shutdown time, confirm with the "menu" key.
Subsequently the system proposes the days of the week in which to activate or deactivate the previously set timer. With the - or + key highlight with the white background the day in which one wishes to activate the timer and confirm with the "menu" key. If no day of the week is confirmed as active, in turn the timer programme will not appear active in the status screen.
Continue to program the following days or press "ESC" to exit. Repeat the procedure to program the other timers.
PROGRAMMING EXAMPLES:

P1			P2		
on	off	day	on	off	day
08:00	12:00	mon	11:00	14:00	mon
Boiler on from 08:00 to 14:00					

P1			P2		
on	off	day	on	off	day
08:00	11:00	mon	11:00	14:00	mon
Boiler on from 08:00 to 14:00					

P1			P2		
on	off	day	on	off	day
17:00	24:00	mon	00:00	06:00	tue
Boiler on from 17:00 on Monday to 06:00 on Tuesday					

8 - MENU ITEMS AND OPERATION

NOTES FOR TIMER OPERATION

- Start-up with the timer always takes place with the last temperature and ventilation settings (or with default 20°C and V3 settings in the event they have never been changed).
- Start-up time ranges from 00:00 a 23:50
- If the shutdown time is not already memorised, it proposes a start-up time in + 10 minutes.
- A timer programme switches the boiler off at 24:00 of one day and another programme switches it on at 00:00 of the next day: the boiler stays on.
- A programme proposes a start-up and shutdown in times included within another timer programme: if the boiler is already on, start will not have any effect, while OFF will switch it off.
- In the boiler on and timer active condition, press the OFF key and the boiler will switch off, it will switch on automatically at the next time set on the timer.
- In the boiler off and timer active condition, press the ON key and the boiler will switch on, it will switch off at the time set on the active timer.

Sleep setting

The sleep function is activated only when the boiler is switched on and allows to quickly set a time at which the product must switch off.
To set the Sleep function act as follows:

- Enter MENU
- Scroll to SLEEP with the <> arrows
- Press Menu
- With the + - keys adjust the desired shutdown time.

The panel proposes a shutdown time of 10 minutes from the current time, adjustable with key 4 until the next day (I can therefore delay the shutdown for up to a maximum of 23 hours and 50 minutes).

If the SLEEP function is active with the TIMER active the first has priority over the latter, therefore the boiler will not switch off at the time set on the timer but instead by the time established by the sleep function, even if later than the time set on the timer.

ADJUSTMENTS MENU

This function is used to adjust room temperature, water temperature and the speed of the exchanger.
To access the adjustments menu act as follows:

- Press the + - keys
- Scroll with the <> arrows and select "Set Room T" or "Set Water T" or "Exchanger Exchanger"
- Press "menu" to access the selected option.
- Modify with the + - keys.
- Press "menu" to confirm and "esc" to exit.

8 - MENU ITEMS AND OPERATION

SETTINGS MENU

The SETTINGS menu allows to act on the boiler operating mode:

a. Language.
b. Cleaning (displayed only when the boiler is switched off).
c. Feed screw loading (displayed only when the boiler is switched off).
d. Tones.
e. External thermostat (activation).
f. Auto Eco (activation).
g. Eco-Shutdown T (default 10 minutes).
h. pump on T (default 50°C).
i. Auxiliary boiler (default active).
j. Pellet recipe.
k. Smoke rpm % ventilation.
l. Maximum power (1-5 - default 5).
m. Components test (displayed only when the boiler is switched off)
n. "Chimney sweep" function (activated only when the boiler is switched on, for field emissions test).
o. System configuration (factory setting: system 02).
p. Season.
q. Technical menu.

NOTE: Some of the items listed above cannot be activated in certain "system configurations".

a - Language

To select the language act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "language" using the arrows.
- Press "menu" to confirm.
- With the + - keys select the language of interest (IT/EN/DE/FR/ES/NL/PL/DA)
- Press "menu" to confirm and "esc" to exit.

b - Cleaning

This function is only enabled when the boiler is off. When the fan is enabled it turns at maximum speed so as to extract the soot that has been removed with the turbulators during the cleaning phase.

To select "Clean" act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Cleaning" using the arrows.
- Press "menu" to confirm.
- Select "On" with the + - keys.
- Press "menu" to confirm and "esc" to exit.

8 - MENU ITEMS AND OPERATION

c - Feed screw loading

Allows to fill the pellets loading system. It can only be activated with the boiler switched off, it displays an 180" countdown after which the feed screw stops automatically, as when exiting the menu.
To select "Feed screw loading" (only when the boiler is switched off) act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Feed screw loading" using the arrows.
- Press "menu" to confirm.
- Select "Enable" with the + - keys.
- Press "menu" to confirm and "esc" to exit.

d - Tones

This function is disabled by default, so to enable act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "tones" using the arrows.
- Press "menu" to confirm.
- Select "On" with the + - keys.
- Press "menu" to confirm and "esc" to exit.

e - External thermostat

EXTERNAL THERMOSTAT (not included with the boiler, to be provided by the user)
The temperature of the boiler can also be controlled by an external room thermostat. It is located in a central position of the room where the boiler is installed. It provides a closer match between the heating temperature requested of the boiler and what it actually provides.

Connect the cables from the external thermostat to points 1-2 of the terminal block on the boiler.
Once the thermostat has been connected one must enable it.
In order to do this, proceed as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows.
- Select by pressing "menu".
- Scroll once again to "External thermostat" using the arrows.
- Select by pressing "menu".
- Press the - + buttons.
- Select "On" to activate the external thermostat.
- Press the "menu" button to confirm.
- Press the "esc" button to exit.

f - Auto-Eco activation

To select the Auto-Eco function act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Auto-Eco" using the arrows.
- Press "menu" to confirm.
- Select "On" with the + - keys.
- Press "menu" to confirm and "esc" to exit.

g - Eco Shutdown t

To select the Eco - shutdown t function act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Eco - shutdown t" using the arrows.
- Press "menu" to confirm.
- Enter the minutes with the + - keys.
- Press "menu" to confirm and "esc" to exit.

AUTO ECO MODE

Auto-Eco mode changes the behaviour of the boiler in automatic mode, i.e.:
when the room temperature set by the user has been reached (the temperature is read by the probe on board the product or by the external thermostat) the boiler modulates at power 1 for a brief period of time; if the temperature remains constant or greater than the set one, the boiler switches off. On the other hand, if the room cools down and requires more heat, the boiler automatically switches back on (not before time interval required to cool the boiler).
This mode is only advisable if the product is operating in highly insulated rooms or where heat dispersion over time is minimum, as it allows you to optimise boiler consumption without wasting fuel.

To activate the "Auto Eco" mode and adjust the time refer to points "f" and "g" respectively.
The ECO shutdown procedure is activated automatically when all the power demand devices involved in the "system configuration" are satisfied: room probe/external thermostat (configurations 1-2-3), flow switch (configuration 2), puffer thermostat/ntc (10 kΩ ß3435) (configuration 4-5) or boiler thermostat/ntc (10 kΩ ß3435) (configuration 2-3). If all devices present are satisfied the "ECO shutdown t" time decrease starts (by default 10 minutes, it can be changed within the "Settings menu"). During this stage the panel displays ON with a small flame and alternately Chrono (of active) - Eco active. The minutes indicating the countdown for the Eco Stop are shown at the top of the display. The flame goes into P1 and stays there until the programmed "Eco shutdown t" time has elapsed and if the conditions are still satisfied, it goes into the shutdown stage. The ECO switch off countdown resets if one of the devices boosts power again.
When switch off starts the panel displays: Off - Eco Active - small flashing flame.
Once the boiler has reached the off condition, the panel displays OFF-ECO with the extinguished flame symbol.
To restart from ECO the following conditions must be satisfied simultaneously:

- Power demand
- After 5 minutes from the beginning of shutdown.
- $TH_2O < TSetH_2O$.
- If the domestic hot water (DHW) demands power the first 5' are ignored and the boiler restarts as needed.

NOTE: In configuration 4 - 5 the Auto Eco mode is enabled automatically. Even when one sets the "summer" function in configuration 2 - 3 it is enabled automatically. In the cases where it is designed to be active, it is not possible to deactivate the mode.

h - Pump On T (only for expert users)

This menu item allows to adjust the pump activation temperature.
To select the Pump On T function act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Pump On T" using the arrows.
- Press "menu" to confirm.
- Modify the °C with the + - keys.
- Press "menu" to confirm and "esc" to exit

i - Auxiliary boiler

One must install an additional module (optional) to enable start-up of an auxiliary boiler in the event the boiler is switched off or in alarm conditions. By default this function is deactivated, if needed activate it to access the settings menu.

l - Pellet Recipe

This function is for adapting the boiler to the pellets that are being used. In fact, as there are several types of pellets on the market, boiler operation is extremely variable depending on the fuel quality. In the event the pellets tend to clog the brazier due to an excessive load of fuel or in the event the flame is always high even at low powers and, vice versa if the flame is low one can decrease/increase the amount of pellets in the brazier:
The available values are:
-3 = Decrease by 30% compared to factory settings.
-2 = Decrease by 20% compared to factory settings.
-1 = Decrease by 10% compared to factory settings.
0 = No variation.
1 = Increase by 5% compared to factory settings.
2 = Increase by 10% compared to factory settings.
3 = Increase by 15% compared to factory settings.

To change the recipe act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Pellet recipe" using the arrows.
- Press "menu" to confirm.
- Modify the % with the + - keys.
- Press "menu" to confirm and "esc" to exit

m - Smoke rpm % ventilation

If the installation presents difficulties for smoke evacuation (no draught or no pressure in the duct), the smoke and ash expulsion speed can be increased. This change resolves all the potential problems related to pellets clogging in the brazier and deposits forming at the bottom of the brazier itself caused by poor quality fuel or fuel that produces a lot of ashes. The values available are from -30% to +50% with variations of 10 percentage points at a time. The variation in negative can be used in case the flame is too low. To change the parameter act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Smoke rpm variation" using the arrows.
- Press "menu" to confirm.
- Modify the % with the + - keys.
- Press "menu" to confirm and "esc" to exit

n - Maximum power (only for expert users)

It allows to set the maximum flame limit at which the boiler can operate to reach the set temperature target.
To change the power act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Maximum power" using the arrows.
- Press "menu" to confirm.
- Change the power from 01 to 05 with the + - keys
- Press "menu" to confirm and "esc" to exit

o - Components test (only when the boiler is switched off)

It can only be carried out with the boiler switched off, it allows to select the components to be tested:

- **Spark plug**: it is turned on for a fixed time of 1 minute during which the panel displays the countdown seconds.
- **Feed screw**: it is powered for a fixed time of 1 minute during which the panel displays the countdown seconds.
- **Extractor**: it is activated at 2500 rpm for a fixed time of 1 minute during which the panel displays the countdown seconds.
- **Exchanger**: it allows to carry out the test in V5 for a fixed time of 1 minute during which the panel displays the countdown seconds.
- **Pump**: it is activated for a fixed time of 10 seconds during which the panel displays the countdown.
- **3 way**: the 3 way valve is activated for a fixed time of 1 minute during which the panel displays the countdown seconds.

To activate the "Components test" function (only when the boiler is switched off) act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Components test" using the arrows.
- Press "menu" to confirm.
- Select the test to be performed with the + - keys
- Press "menu" to confirm and "esc" to exit

p - Chimney sweep function (for maintenance technicians only)

This function can be activated only when the boiler is on and with power output and heating operation power with parameters P5, with fan (if present) in V5. Any loading/smoke ventilation percentage corrections must be taken into account. This status lasts 20 minutes, the countdown is displayed on the panel. During this interval the thermostat/puffer/room set point/H_2O set point are not taken into account, only the safety shutdown at 85°C remains active. At any time the technician can interrupt this stage by quickly pressing the on/off key.
To activate the "Chimney sweep" function act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to the "Chimney sweep" function using the arrows.
- Press "menu" to confirm.
- Select "On" with the + - keys (Off by default)
- Press "menu" to confirm and "esc" to exit

q - System configuration

To change the system configuration act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "System configuration" using the arrows.
- Press "menu" to confirm.
- Change the configuration from 01 to 05 with the + - keys
- Press "menu" to confirm and "esc" to exit.

r - Season

In configurations 2 and 3, by enabling the "summer" function, the deviation of the 3-way valve to the heating system is inhibited in order to prevent the radiators from heating up, therefore the flow is always directed towards the domestic hot water (DHW).
By activating the "summer" option one automatically enables the auto-eco function (it cannot be deactivated). The room probe/external thermostat are not taken into account.
To change the function act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Season" using the arrows.
- Press "menu" to confirm.
- Select "Summer" or "Winter" with the + - keys.
- Press "menu" to confirm and "esc" to exit.

s - Technical menu

To access the technical menu one must contact an assistance centre as one needs a password to enter.
To intervene on the "technical menu" act as follows:

- Press the "menu" button.
- Scroll to "Settings" using the arrows
- Press "menu" to confirm.
- Scroll to "Technical menu" using the arrows.
- Press "menu" to confirm.
- Select "Product Type", "Service", "Parameters", "Sanitary Parameters", "Meters memories", "Enable fan" and "Puffer data" with the + - keys.
- Press "menu" to confirm and "esc" to exit

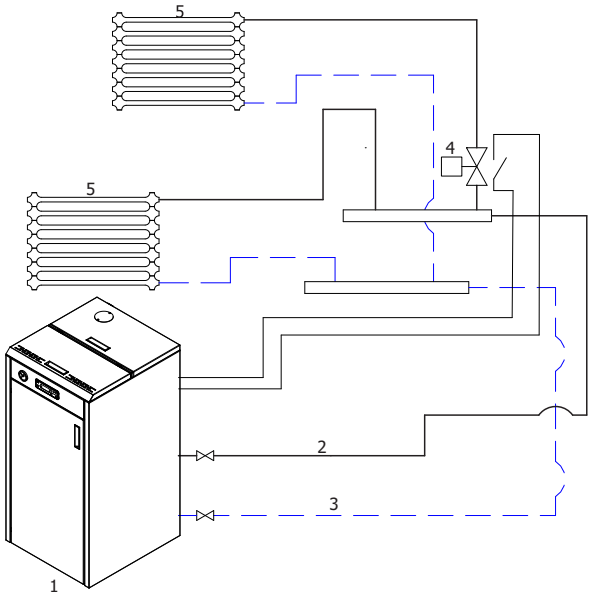
8 - MENU ITEMS AND OPERATION

SYSTEM CONFIGURATIONS

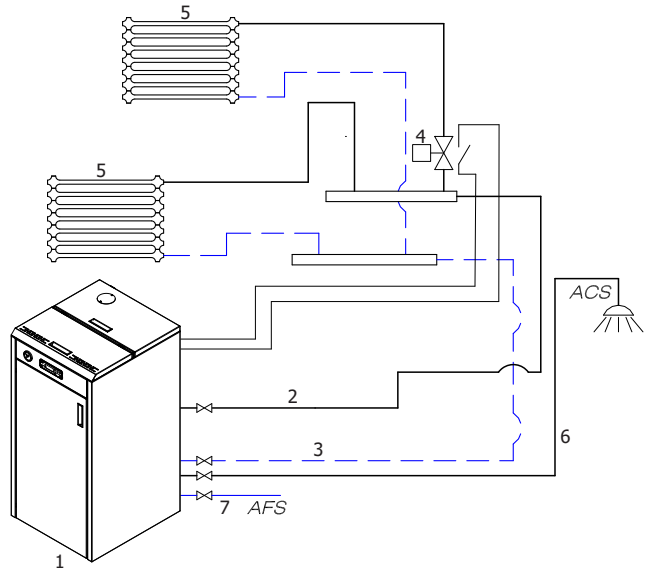
Upon installation, the product must be set according to the type of system, selecting the appropriate parameter in the "SETTINGS" menu. The possible configurations are 5, as described below:

Configuration	Description
1	Room temperature management via the boiler probe or by enabling the external room thermostat.
2	2.1 Room temperature management via the boiler probe or by enabling the external room thermostat; instantaneous hot domestic water production with plate heat exchanger (FACTORY CONFIGURATION).
	2.2 Room temperature management via the boiler probe or by enabling the external room thermostat; instantaneous hot domestic water production for boiler or storage tank with thermostat (optional).
3	Room temperature management via boiler probe or enabling the external room thermostat; boiler hot domestic water production with ntc probe (10 kΩ ß3435).
4	External Puffer management controlled by thermostat.
5	External Puffer management controlled by ntc probe (10 kΩ ß3435).

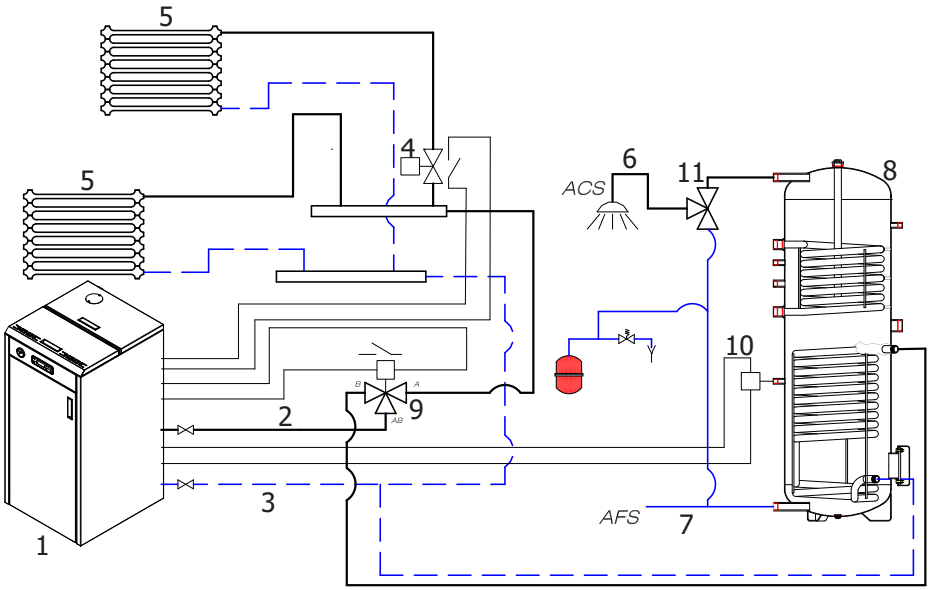
CONFIGURATION 1



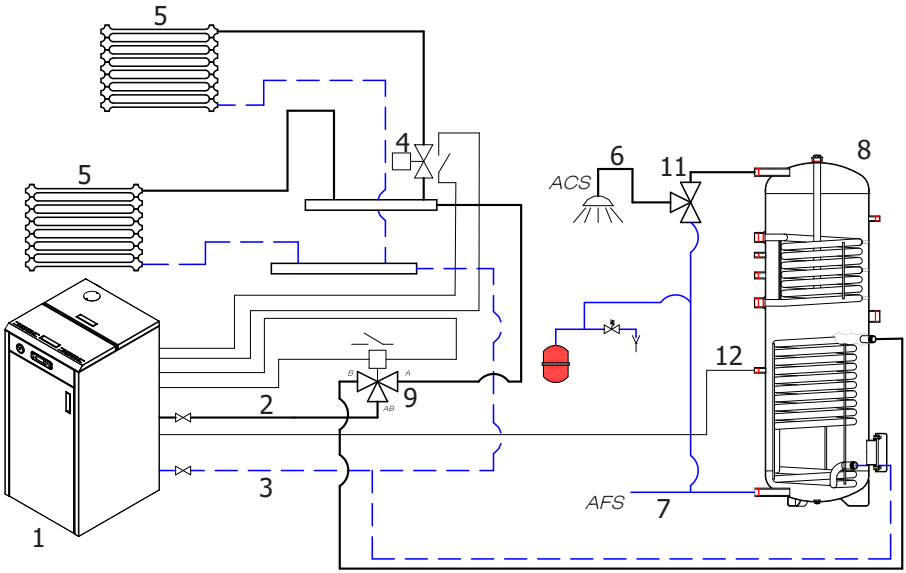
CONFIGURATION 2.1 (FACTORY SETTING)



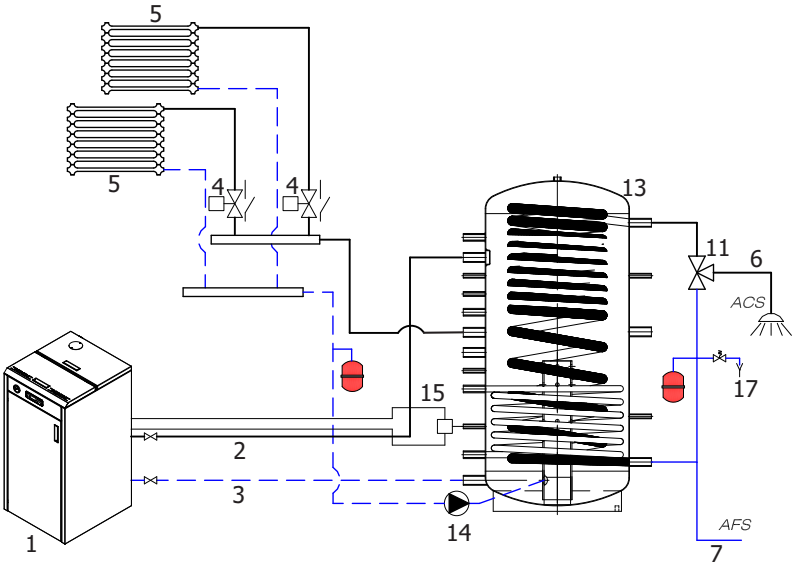
CONFIGURATION 2.2



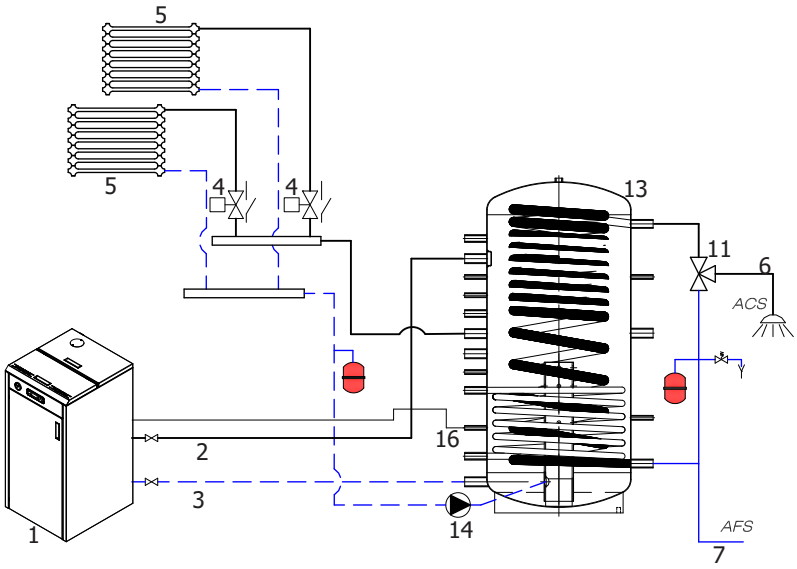
CONFIGURATION 3



CONFIGURATION 4



CONFIGURATION 5

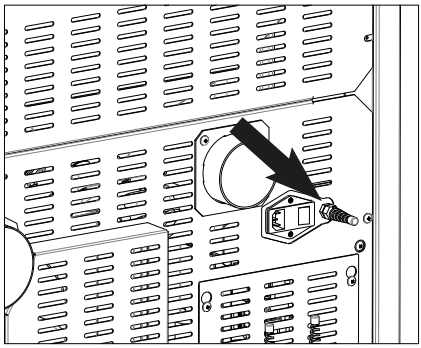


1	COMPACT
2	HEATING DELIVERY
3	HEATING RETURN
4	ZONE VALVES
5	HEATING BODIES
6	DOMESTIC HOT WATER
7	COLD DOMESTIC WATER
8	DOMESTIC WATER BOILER
9	DIVERTER VALVE
10	BOILER THERMOSTAT
11	THERMOSTATIC MIXING VALVE
12	DOMESTIC WATER 10 kΩ β3434 NTC PROBE
13	HEATING PUFFER
14	HEATING SYSTEM CIRCULATOR
15	PUFFER THERMOSTAT
16	PUFFER 10 kΩ β3434 NTC PROBE
17	SAFETY VALVE

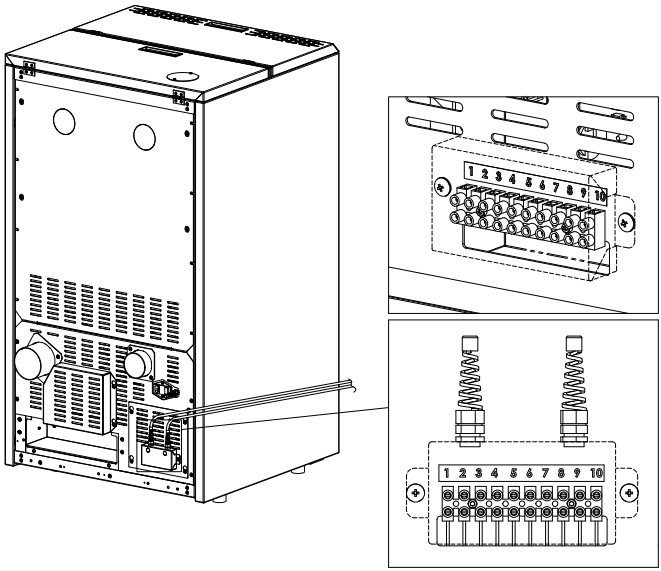
8 - MENU ITEMS AND OPERATION

OPERATING MODE

Flame modulation is managed according to the "System configuration" of the room probe placed on the rear of the appliance (see drawing), by the external thermostat, by the boiler water temperature or by the NTC probes.



ELECTRICAL CONNECTIONS



TERMINAL BLOCK CONTACTS	
POS.1-2 EXTERNAL THERMOSTAT/PUFFER THERMOSTAT	POS.8 THREE-WAY VALVE NEUTRAL
POS.3-4 PUFFER/BOILER PROBE	POS.9 THREE-WAY VALVE NEUTRAL (domestic)
POS.5 EARTHING	POS.10 THREE-WAY VALVE NEUTRAL (heating)
POS.6-7 ADDITIONAL BOILER	

8 - MENU ITEMS AND OPERATION

IMPORTANT!
Set up all of the electrical and hydraulic connections to the hydraulic kit, purchased separately, following the instructions of the dedicated manual.

START-UP

Press key **1** (esc) to begin start-up, the control panel displays ON with a flashing flame. When the flame stops flashing the boiler has reached the "power output" operating mode.
The room temperature set by default is 20°C, if one wishes to change it act as instructed in the adjustments menu; act likewise to set the heating water temperature and the room fan speed. To activate external thermostat if any see the relative section.

POWER OUTPUT

Once the start-up stage is complete the control panel will display ON with a fixed flame at level 3 . The subsequent flame modulation at lower or higher powers is managed autonomously and upon reaching the temperatures set in the "System configuration".

9-SAFETY DEVICES AND ALARMS

SAFETY DEVICES

The product is supplied with the following safety devices

PRESSURE SWITCH
Monitors pressure in the smoke duct. It is designed to shut down the pellets feed screw in the event of an obstructed flue or significant back-pressure. (wind)

SMOKE TEMPERATURE PROBE
Detects the temperature of the smoke, thereby enabling start-up or stopping the product when the temperature drops below the preset value.

CONTACT THERMOSTAT IN THE FUEL HOPPER
If the temperature exceeds the preset safety level, it immediately shuts down boiler operation.

CONTACT THERMOSTAT IN THE BOILER
If the temperature exceeds the preset safety level, it immediately shuts down boiler operation.

WATER TEMPERATURE PROBE
If the water temperature approaches the shutdown temperature (85°C) the probe makes the boiler perform the "OFF Stand-by" automatic shutdown.

ELECTRICAL SAFETY
The product is protected against sudden current surges by a main fuse in the power supply panel on the rear part of the product. Other fuses that protect the electronic boards are found on the latter.

SMOKE FAN
If the fan stops, the electronic board promptly shuts off the pellets supply and an alarm message is displayed.

GEAR MOTOR
If the gear motor stops, the boiler will continue to run until the flame goes out due to lack of fuel and until a minimum level of cooling is reached.

TEMPORARY POWER CUT
If the power cut lasts less than 10" the boiler returns to its previous operating status; if it lasts more it carries out a cooling/restart cycle.

FAILED START-UP
If during ignition no flame develops, the boiler will go into alarm condition.

ANTIFREEZE FUNCTION
If the probe in the boiler detects a water temperature of less than 5°C, the circulation pump is automatically activated to prevent the system from freezing.

PUMP ANTI-SEIZURE FUNCTION
If the pump is not used for prolonged periods, it is activated periodically for a few seconds to prevent it from seizing up.

9-SAFETY DEVICES AND ALARMS

TAMPERING WITH THE SAFETY DEVICES IS PROHIBITED

If the product is NOT used as described in this instruction manual, the manufacturer declines all liability for any damage caused to persons and property. The manufacturer furthermore refuses to accept responsibility for damage to persons and property arising from the failure to observe all the rules contained in the manual and in particular:

- ***All the necessary measures and/or precautions must be adopted when performing maintenance, cleaning and repairs.***
- ***Do not tamper with the safety devices.***
- ***Do not remove the safety devices.***
- ***Connect the product to an efficient smoke expulsion system.***
- ***Verify that the room in which the appliance will be installed is adequately ventilated.***

The product can be started-up and the automatic function of the probe restored only after having eliminated the cause that triggered the safety system. This manual will help you understand which anomaly has occurred, and explain how to intervene according to the alarm message displayed on the appliance.

9-SAFETY DEVICES AND ALARMS

ALARM ALERTS

Whenever an operating condition other than that designed for the regular operation of the boiler occurs, there is an alarm condition. The control panel gives information on the reason of the alarm in progress. A sound signal is not envisioned for alarms A01-A02 only so to not disturb the user in the event of pellets running out in the hopper during the night.

Panel alert	Type of problem	Solution
A01	The fire does not ignite.	Check whether the brazier is clean / level of pellets in the hopper.
A02	The fire goes off abnormally.	Check the level of pellets in the hopper.
A03 **Thermostat alarms**	The temperature of the pellets hopper or the water temperature exceed the envisioned safety threshold.	Wait for the cooling stage to end, cancel the alarm and restart the boiler setting the fuel loading at minimum (SETTINGS menu - Pellets recipe). If the alarm persists, contact the service centre. Check if the room fan works properly (if present).
A04	Smoke overheating.	The set smoke threshold has been exceeded. Reduce pellets loading (SETTINGS menu - Pellets recipe).
A05 **Pressure switches alarm**	Smoke pressure switch intervention or water pressure insufficient.	Verify chimney obstruction / door opening or hydraulic system pressure.
A08	Abnormal smoke fan operation.	If the alarm persists, contact the service centre.
A09	Smoke probe faulty.	If the alarm persists, contact the service centre.
A19	Water probe faulty.	Water probe disconnected / interrupted / defective / not recognised.
A20	Puffer probe alarm.	Puffer probe disconnected / interrupted / defective / not recognised.
Service	Routine maintenance alert (it does not block the system).	When this flashing message appears upon start-up, it means that the preset operating hours have elapsed before maintenance. Contact the service centre.

ALARM RESET

To reset the alarm one must press and hold key 1 (ESC) for a few seconds. The boiler performs a check to determine if the cause of the alarm persists or not.
In the first case the alarm will still be displayed, in the second case it will go onto OFF.
If the alarm persists, contact the service centre.

9-SAFETY DEVICES AND ALARMS

NORMAL SHUTDOWN (on the panel: OFF with flashing flame)

If the shutdown key is pressed or if there is an alarm signal, the boiler goes into the thermal shutdown phase which entails the automatic execution of the following stages:

- It stops pellets loading
- The room fan (if provided) maintains the set speed until the smoke T reaches 100°C, then it automatically sets itself at the minimum speed until it reaches the shutdown temperature
- The smoke fan sets itself at maximum speed and maintains it for a fixed time of 10 minutes, at the end of which if the smoke T has fallen below the shutdown threshold it switches off permanently, otherwise it sets itself at the minimum speed until it reaches such threshold before switching off.
- If the boiler was shutdown regularly but, due to thermal inertia the smoke temperature exceeds the threshold again, the shutdown stage restarts at the minimum speed until the temperature goes down.

BLACKOUT A with the boiler ON

In the event of a power cut (BLACKOUT) the boiler behaves as follows:

- Blackout below 10": it returns to its operation in progress;
- In the event of a power cut that lasts over 10" with the boiler on or in the start-up stage, when the boiler is powered again it goes back to the previous operating condition with the following procedure:

1. It cools down activating the smoke extractor at minimum power for 10' and goes onto the next point;
2. It takes the boiler back to the operating condition before the blackout.

During stage 1 the panel displays ON BLACK OUT.
During stage 2 the panel displays Start-up.
If during stage 1 the boiler receives commands from the panel and thus carried out manually by the user, then the boiler stops executing the blackout recovery status and proceeds to restart or shutdown as requested by the command.

BLACKOUT ABOVE 10" WITH Boiler IN SHUTDOWN STAGE

In the event there is a power cut that lasts MORE THAN 10" with the boiler in the shutdown stage, when the boiler is powered again it restarts in shutdown mode even if the smoke temperature has fallen under 45°C in the meanwhile. This last stage can be skipped by pressing key 1 (esc) (it goes into start-up) and by pressing it again (it recognises that the boiler is switched off).

9-SAFETY DEVICES AND ALARMS

Safety thermostat - Alarm A03

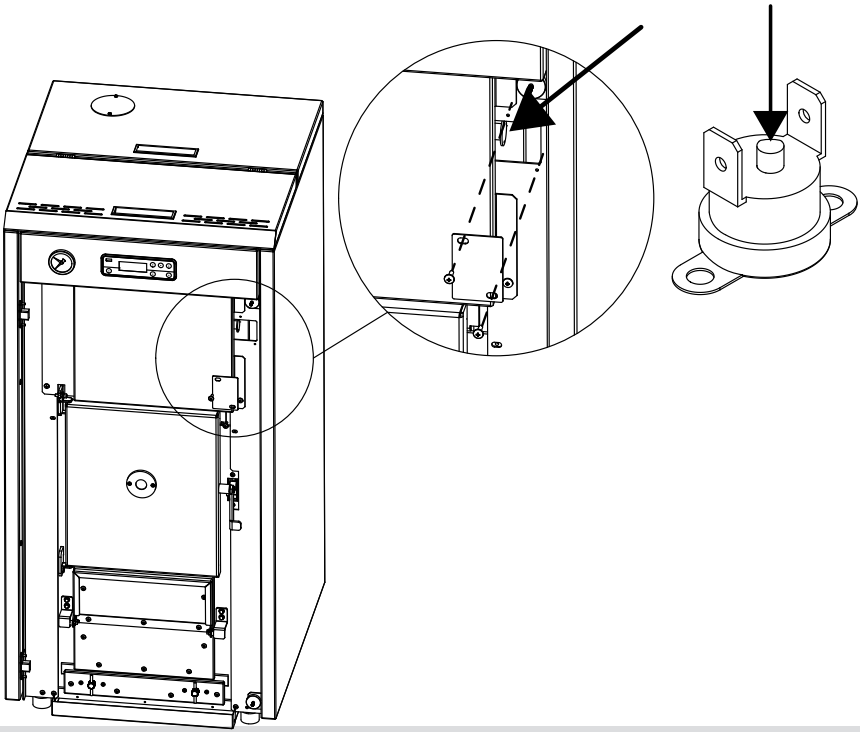
This type of alarm occurs when the water temperature in the boiler exceeds 95°C.
The boilers contain a safety thermostat that prevents the water in the boiler from boiling.
The safety thermostat in the boilers must be reset manually. This is done by pressing the small button between the two sockets (see below). Problems like this can happen if there is no water circulation because the pump is blocked, if all the valves are closed or if there is no electricity.

CAUTION:
All operations must only be carried out when the boiler is switched off and the plug disconnected.
If the problem persists, contact a service centre.

To reset the safety thermostat in the case of alarm A03 proceed as follows:

- Switch the boiler off
- Disconnect the power supply
- Wait for the boiler to cool down
- Access the safety thermostat by opening the door to the boiler, removing the two screws and the plate (see figure below). You can access the thermostat from the hole.
- Reset the thermostat by pressing the button between the two sockets until it clicks (if the button cannot be pressed, the boiler temperature may still be too high or the thermostat may be damaged)
- set the plate back into position
- power the stove once again,
- Cancel the alarm (if the alarm persists, contact the service centre).

Reset the alarm by pressing key 1 (ESC) for a few seconds. The boiler checks whether the cause of the alarm is ongoing. In the first case, the alarm continues to be displayed (contact the service centre) and in the second case it goes OFF.



10-MAINTENANCE AND CLEANING

DAILY OR WEEKLY CLEANING PERFORMED BY THE USER BEFORE EACH START-UP

Clean the ash and any deposits in the brazier that could clog the air passage holes. If the pellets in the hopper finish, unburned pellets may accumulate in the brazier. Always empty the residue in the brazier before starting-up.

REMEMBER THAT ONLY A CORRECTLY POSITIONED AND CLEAN BRAZIER CAN GUARANTEE START-UP AND OPTIMAL OPERATION OF YOUR PELLET BOILER.

For the brazier to be cleaned properly, remove it from its housing completely and thoroughly clean all the holes and the grate on the bottom.

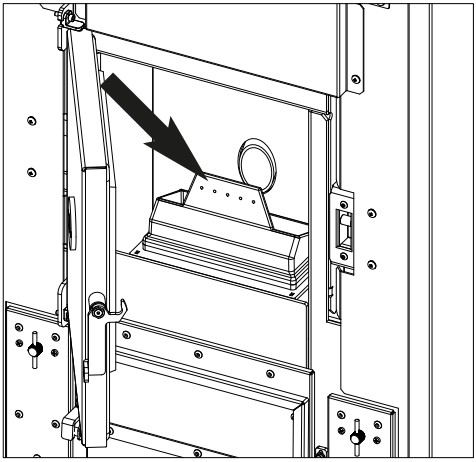
If you use good quality pellets, you will normally only need to use a paintbrush to restore the perfect operating condition of the component. For tough incrustations, use the steel tool provided with the boiler.

CHECKS TO BE PERFORMED EVERY 2/3 DAYS

Clean the compartment around the brazier from ash paying attention to hot ashes.

Only if the ash is completely cold can a vacuum cleaner be used to remove it. Use a drum-type vacuum cleaner that is suitable for picking up particles of a certain size. Experience and the quality of the pellets will determine the cleaning frequency required.

However, it is recommended not to exceed 2 or 3 days.



CLEANING THE ASH COLLECTION COMPARTMENT

10-MAINTENANCE AND CLEANING

CLEAN THE EXCHANGER AND THE UNDERGRATE SPACE EVERY 2/3 DAYS

Cleaning the exchanger and the undergrate space is a simple operation but very important for always maintaining performance as declared.

Therefore we recommend cleaning the internal exchanger every 2-3 days, performing these simple operations in sequence:

- **Activate the "CLEANING"** function – when the boiler is switched of press - menu, select"Settings", with the <> arrows select "Cleaning", confirm with "Menu", activate cleaning "ON" by pressing the +- keys. This procedure activates the smoke extraction fan on maximum power to expel the soot that is dislodged when the exchanger is cleaned.
- **Cleaning the pipe unit** – Use the handle for cleaning, located under the front cover, illustrated by the arrow in the drawing, shake the handle approximately 5 times forwards and backwards. This will remove any soot that has deposited on the exchanger smoke ducts during normal boiler operation.
- **Disable the "CLEANING" function** - this function is automatically disabled after two minutes. If one needs to stop this function in advance press the "Esc" key.
- **Clean the smoke conveyor compartment (fig.2) -** The boiler is fitted with three removable pans to clean out the ash, designed to collect any soot and ash build-up. To empty the pan **F** it is necessary to grasp the handle **E**, lower it and pull the drawer outwards. To empty pans **H** it is necessary to turn the two hooks on the front of the pan and pull towards yourself.
- When cleaning is finished, close the cover back up and put the ash pans back in place **H** and **F**.

If such cleaning is not done every 2-3 days the boiler could go into alarm caused by ash clogging after several hours of operation.

HANDLE TO CLEAN PIPE UNIT

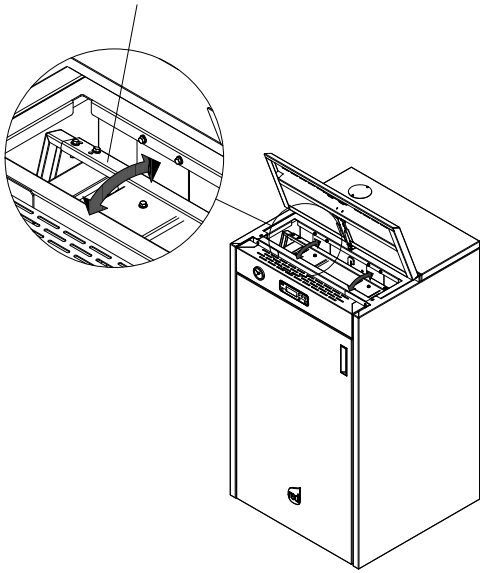


Figure 1

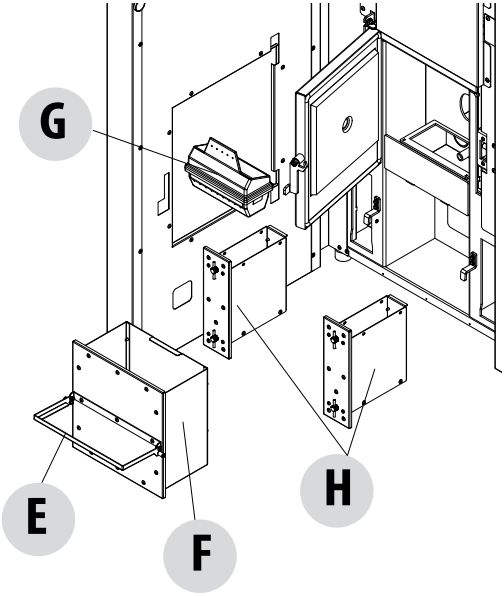


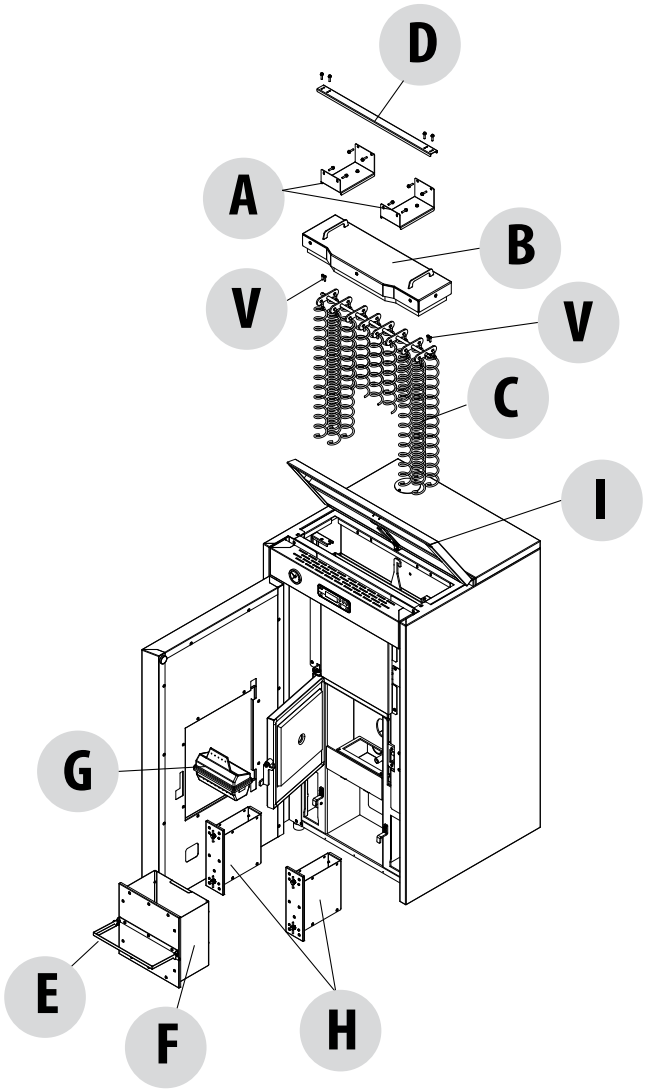
Figure 2

PERIODIC CLEANING PERFORMED BY A QUALIFIED TECHNICIAN

CLEANING THE EXCHANGER AND PIPE UNIT

CLEANING THE UPPER COMPARTMENT

When the boiler is cool, lift the front cover "**I**"; unscrew the screws on the rod "**D**" to clean the pipe unit and take out the two beams "**A**". Now take off the cover "**B**". Then, take off screws "**V**" (two on the right and two on the left) that hold the turbulators to the boiler.
At this point, remove the four turbulators "**C**" and using a rigid rod or a bottle brush, clean the internal pipe unit and the turbulators, removing all of the accumulated ash.
Check the cover gasket and replace it if necessary.



10-MAINTENANCE AND CLEANING

ATTENTION: It is advisable to carry out the cleaning of the upper exchanger at the end of the season by an authorised technician in order to also replace the gasket located below plug "B".

CLEANING THE LOWER COMPARTMENT

Lower lever "**E**" and extract pan "**F**", take out pans "**H**". Remove the ash from all pans and if needed use a vacuum cleaner to remove any other ash or soot that has built-up under the drawer. Remove brazier "**G**" and clean it every 2/3 days. Check the seal of the ceramic fibre gasket on the plug and replace it if necessary.

Check the seal of the door gasket and replace it if necessary.

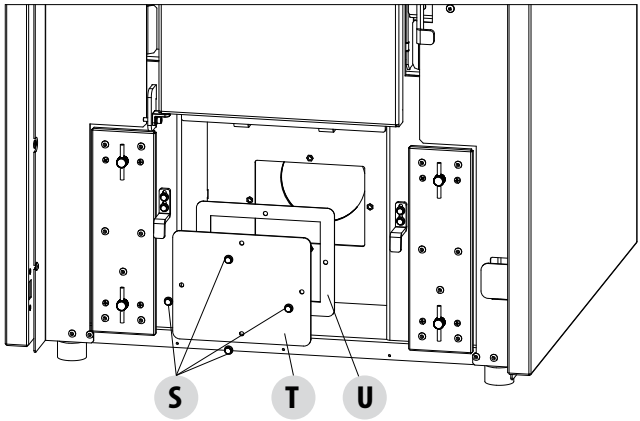
At the end of the season one must clean the compartment under the brazier and the inside of the heat exchanger.

This general cleaning should be carried out at the end of the season in order to facilitate the general removal of all combustion residues, without waiting too long, because with time and humidity these residues can become compacted.

CLEANING THE SMOKE FAN COMPARTMENT

Remove the four screws "**S**" that keep the plug "**T**" fastened on the rear part of the boiler and remove any ash deposited on the smoke fan with a vacuum cleaner.

Check the seal of the ceramic fibre gasket "**U**" on the plug and replace it if necessary.



CLEANING THE SMOKE DUCT AND GENERAL CHECKS:

Clean the smoke exhaust, especially around the T-fittings, curves and any horizontal sections. For information on cleaning the flue, contact a chimney sweeper.

Check the tightness of the ceramic fibre gaskets on the boiler door. If necessary, order new replacement gaskets from the retailer or contact an authorized service centre to carry out this task.

ATTENTION:

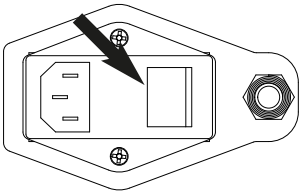
The frequency with which the smoke exhaust must be cleaned depends on the use of the boiler and the type of installation.

We recommend contacting an authorised service centre for end-of-season maintenance and cleaning as the above-mentioned operations will be performed together with a general inspection of the components.

10-MAINTENANCE AND CLEANING

END-OF-SEASON SHUTDOWN

At the end of season, before shutting down the boiler, we recommend completely removing pellets from the hopper with the use of a vacuum cleaner with an extension.
The service fuse may have to be replaced if the control panel display does not go on when the product is re-started upon pressing the main switch on the rear of the boiler.
On the rear of the boiler there is a fuse compartment which is located underneath the supply socket. Use a screwdriver to open the fuse compartment and if necessary replace them (3.15 A delayed).



CHECKING THE INTERNAL COMPONENTS

ATTENTION!
The internal electromechanical components must only be checked by qualified personnel whose technical expertise includes combustion and electricity.

It is recommended to perform this routine maintenance annually (with a scheduled service contract), which focuses on a visual and functional verification of the internal components. The following is a summary of the necessary checks and/or maintenance for the product to work correctly.

- Gear motor
- Smoke expulsion fan
- Smoke probe
- Start-up spark plug
- Automatic resettable pellet/water thermostat
- Room/water probe
- Motherboard
- Panel - motherboard protection fuses
- Cabling

10-MAINTENANCE AND CLEANING

PARTS/INTERVAL	2-3 DAYS	EVERY WEEK	15 DAYS	60-90 DAYS	EVERY SEASON
Clean the brazier.*	•				
Clean the ash collection compartment with a vacuum cleaner		•			
Clean the ash pan	•				
Clean the hearth door and glass			•		
Clean the turbulators	•				
Clean the lower ash pan			•		
Clean the "T" exhaust fittings (outside the boiler)				•	
Clean the exchangers and remove ash and incrustations					•
Clean the smoke fitting					•
Circulation pump inspection					•
Hydraulic leaks inspection					•
Door gasket inspection					•
Start-up spark plug inspection					•

** With poor quality pellets cleaning frequency must be increased.*

11-PROBLEMS/CAUSES/SOLUTIONS

CHECKING THE INTERNAL COMPONENTS

ATTENTION:
GUIDE FOR THE EXCLUSIVE USE OF THE SPECIALISED TECHNICIAN.
ATTENTION:
All repairs must be carried out exclusively by a specialised technician, with the boiler switched off and the plug disconnected. The operations marked in bold type must be carried out by specialised personnel.
The manufacturer declines all liability and warranty terms expire if this condition is not complied with.

ANOMALY	POSSIBLE CAUSES	SOLUTIONS
The pellets are not fed into the combustion chamber	The pellet hopper is empty	Fill the hopper with pellets
	Sawdust has blocked the feed screw	Empty the hopper and remove the sawdust from the feed screw by hand
	Faulty gear motor	*Replace the gear motor*
	Faulty electronic board	*Replace the circuit board*
The fire goes out or the boiler stops automatically	The pellet hopper is empty	Fill the hopper with pellets
	The pellets are not fed	See the previous anomaly
	The pellet temperature safety probe has been triggered	Let the boiler cool down, restore the thermostat until the problem is resolved and switch the boiler on again. If the problem persists contact technical assistance
	The door is not closed properly or the gaskets are worn	*Close the door and replace the gaskets with original ones*
	Unsuitable pellets	Change the type of pellets with those recommended by the manufacturer
	Low pellet supply	*Have the fuel flow checked following the booklet instructions*
	The combustion chamber is dirty	Clean the combustion chamber, following instructions in the manual
	Clogged outlet	Clean the smoke duct
	Faulty smoke extraction motor	*Check the motor and replace it, if necessary*
	Pressure switch faulty or defective	*Replace the pressure switch*

11-PROBLEMS/CAUSES/SOLUTIONS

ANOMALY	POSSIBLE CAUSES	SOLUTIONS
The boiler runs for a few minutes and then switches off	Start-up phase is not completed	Repeat start-up
	Temporary power cut	Wait for the automatic restart
	Clogged smoke duct	Clean the smoke duct
	Faulty or malfunctioning temperature probes	*Check and replace the probes*
	Faulty spark plug	*Check the spark plug and replace it, if necessary*
Pellets accumulate in the brazier, the glass of the door gets dirty and the flame is weak	Insufficient combustion air	Clean the brazier and check that all the holes are clear. Perform a general cleaning of the combustion chamber and smoke duct. Check that the air inlet is not obstructed.
	Damp or unsuitable pellets	Change the type of pellets
	Faulty smoke evacuation motor	*Check the motor and replace it, if necessary*
The smoke evacuation motor does not work	The boiler is not powered	Check the mains voltage and the protection fuse
	The motor is faulty	*Check the motor and capacitor and replace them, if necessary*
	Defective motherboard	*Replace the electronic board*
	Control panel broken	*Replace the control panel*
In the automatic position the boiler always runs at full power	Thermostat is set to minimum	Set the thermostat temperature again.
	Room thermostat in position that always detects cold.	Change the position of the probe
	Faulty temperature probe.	*Check the probe and replace it, if necessary.*
	Faulty or malfunctioning control panel.	*Check the panel and replace it if necessary.*

11-PROBLEMS/CAUSES/SOLUTIONS

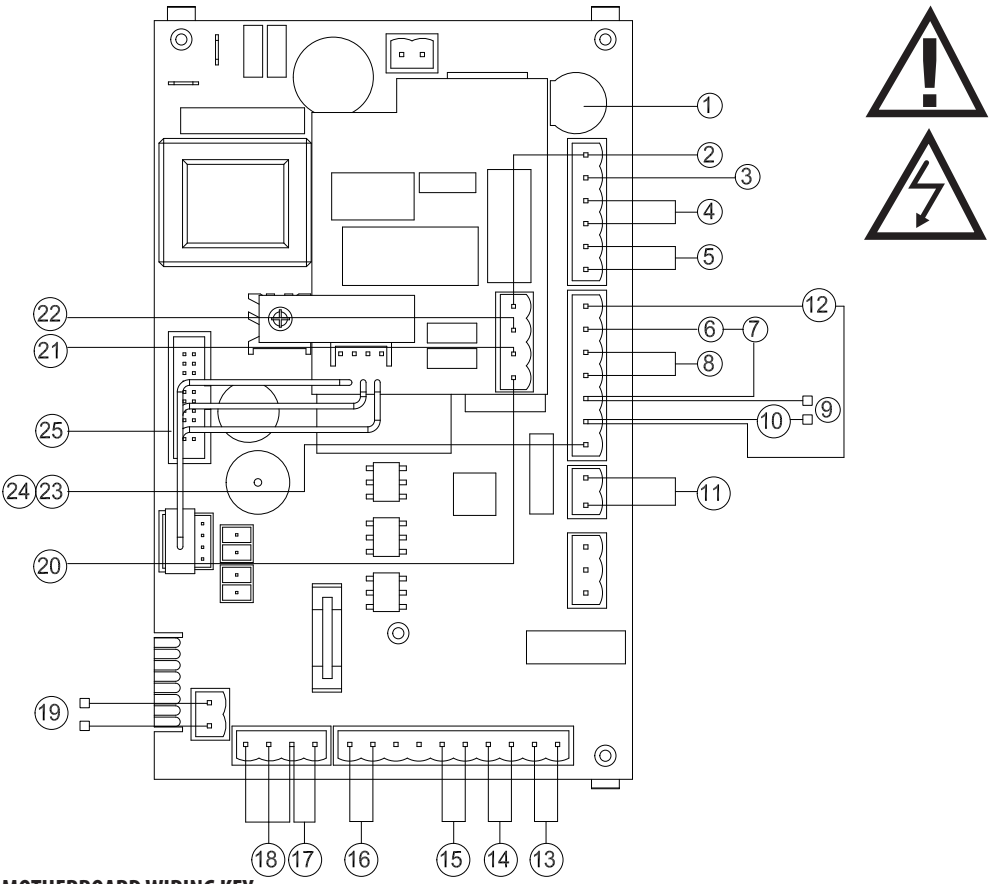
The boiler does not start	No power supply	Check that the plug is inserted and the main switch is in the "I" position.
	Pellet probe blocked	*Unblock it by acting on the rear thermostat, if it happens again contact the service centre.*
	Blown fuse	Replace the fuse.
	Pressure switch faulty (block alert)	Water pressure low in boiler
	Clogged smoke exhaust or smoke duct	Clean the smoke exhaust and/or the smoke duct.
	Water temperature probe triggered	Contact the service centre

ANOMALIES RELATED TO THE PLUMBING SYSTEM

No increase in temperature with boiler in operation	Incorrect combustion adjustment.	Check recipe and parameters.
	Boiler/system dirty	Check and clean the boiler.
	Insufficient boiler power.	Check that the boiler is properly sized for the requirements of the system.
	Poor pellet quality	Use quality pellets
Condensation in boiler	Incorrect temperature adjustment	*Set the boiler at a higher temperature*
	Insufficient fuel consumption.	*Check the recipe and/or technical parameters.*
Radiators cold in winter	Room thermostat (local or remote) set too low. If remote thermostat, check if it is defective.	*Set it at a higher temperature or replace it. (if remote)*
	Circulator does not run because blocked.	*Free up the circulator by removing the plug and turning the shaft with a screwdriver.*
	Circulator does not run.	*Check the electrical connections of the circulator; replace if necessary.*
	Radiators have air in them	*Bleed the radiators*

ATTENTION!
The operations in italics must be carried out by specialised personnel only.
The manufacturer declines all liability and warranty terms expire if this condition is not complied with.

12-WIRING DIAGRAM



MOTHERBOARD WIRING KEY

1. FUSE
2. BOARD PHASE
3. BOARD NEUTRAL
4. SMOKE EXPULSION FAN
5. ROOM FAN
6. PELLETS SAFETY THERMOSTAT
7. WATER TEMPERATURE OVERLOAD PROTECTOR
8. SPARK PLUG
9. CONNECT TO THE WATER PRESSURE SWITCH OF THE HYDRAULIC KIT (OPTIONAL)
10. AIR PRESSURE SWITCH
11. AUXILIARY BOILER CONNECTION (TERMINAL BLOCK)
12. FEED SCREW
13. SMOKE PROBE
14. EXTERNAL THERMOSTAT CONNECTION (TERMINAL BLOCK)
15. INTERNAL ROOM PROBE
16. PUFFER/BOILER PROBE CONNECTION (TERMINAL BLOCK)
17. BOILER WATER TEMPERATURE PROBE
18. SMOKE EXTRACTOR FAN REVOLUTIONS CONTROL
19. STORAGE TANK FLOW SWITCH OR THERMOSTAT TO BE CONNECTED TO THE HYDRAULIC KIT (OPTIONAL)
20. 3-WAY VALVE PHASE (HEATING)
21. 3-WAY VALVE PHASE (DOMESTIC)
22. PUMP PHASE
23. PUMP NEUTRAL
24. 3-WAY VALVE NEUTRAL
25. CONTROL PANEL

N.B. The wiring of the individual components is fitted with pre-wired connectors of different sizes.

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