EN

PELLET THERMOSTOVE

INSTALLATION, USE AND MAINTENANCE MANUAL

IDRO PRINCE³ 12 - IDRO PRINCE³ 16 - AQUOS³ 16 - IDRON 16 AIRTIGHT - MIRA 16 - TESIS 16 AIRTIGHT - IDRO PRINCE³ 23 - AQUOS³ 23 - IDRON 22 AIRTIGHT - HIDROFIRE 22.8 - MIRA 22 - TESIS 22 AIRTIGHT - IDRO PRINCE³ 23 H_2O - AQUOS³ 23 H_2O - IDRO PRINCE 30 - IDRO PRINCE 30 H_2O

SUMMARY

1 INTRODUCTION

Dear Customer,
our products are designed and built in compliance with the European reference standards for construction products (EN 13240 stoves fired by solid fuels, EN 14785 appliances fired by wood pellets, EN 13229 inset appliances fired by solid fuel, EN 12815 cookers fired by solid fuel), using high quality materials and extensive experience in transformation processes. Our products also meet the essential requirements of the 2006/95/EC (Low Voltage) directive and the 2004/108/EC (Electromagnetic Compatibility) directive.
We recommend carefully reading the instructions contained in this manual for optimal performance.
This installation and operating manual is an essential part of the product: make sure it always accompanies the machine, even in the event it is transferred to another owner. If lost, request a copy from the local technical service or download it directly from the company website.
All local regulations, including those that refer to the national and European standards, must be followed when the appliance is being installed.
In Italy, for installations of systems with a biomass less than 35KW refer to Ministerial Decree 37/08 and all qualified installation technicians with the requisites must issue a certificate of compliance for the installed system. ("System" is intended as Stove+Chimney+Air vent).

1.1 REVISIONS TO THE PUBLICATION

The content of this manual is strictly technical and property of CADEL srl.
No part of this manual can be translated into another language and/or altered and/or reproduced, even partially, in another form, by mechanical or electronic means, photocopied, recorded or similar, without prior written approval from CADEL srl.
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.

1.2 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.

1.3 SYMBOLS USED IN THE MANUAL

	ATTENTION: carefully read and understand the relative message because failure to comply with what is written can cause serious damage to the product and put the user's safety 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 make adjustments.
	MANUAL carefully read this manual or the relative instructions.

2 WARNINGS AND WARRANTY TERMS

2.1 SAFETY WARNINGS

Installation, electrical connection, operational testing, and maintenance must be done exclusively by authorised qualified personnel.
Install the product in accordance with all local and national laws, as well as with the standards in force in the town, region, or nation.
Using the product improperly or incorrect servicing can lead to a serious risk of explosion in the combustion chamber.
Exclusively use the fuel recommended by the manufacturer. The product must not be used as an incinerator. Using liquid fuel is strictly prohibited.
Do not put fuel other than wood pellets into the hopper.
Always follow the instructions in this manual to properly use the product and the electronic devices connected to it, and to prevent accidents.
The appliance may be used by children over the age of 8 and by people with physical, sensory or mental disabilities, or who lack the experience or necessary knowledge, as long as they are supervised or after they have been instructed on how to safely use the appliance and have understood its inherent risks. Children must not play with the appliance. Children must not clean or service the appliance unsupervised.
Before starting any operation, the user or whoever is working on the product must have read and understood all the contents of this installation and operating manual. Errors or improper settings can cause dangerous conditions and/or irregular operation.
Do not use the product as a ladder or supporting structure.
Do not dry laundry on the product. Any clothes drying racks or the like must be kept at the proper distance from the product. **Fire hazard.**
In the event of improper use of the product, the user is entirely responsible and relieves the manufacturer of all civil and penal liabilities.
Any type of tampering or unauthorised replacements using non-original spare parts can be dangerous for the safety of the user and relieves the company of all civil and penal liabilities.
Most of the product surfaces are very hot (door, handle, glass, smoke exhaust pipes, etc.). **Therefore, do not touch these parts without protective clothing or appropriate means like, for example, heat resistant gloves** or "cool touch" type activation systems.
Using the product with the door open or the glass broken is prohibited.
The product must be electrically connected to a mains equipped with an efficient earthing system.
Switch the product off in the event of a breakdown or poor operation.
The unburnt pellets that accumulate in the burner after every "failed ignition" must be removed before proceeding with another ignition. Make sure the burner is clean and positioned properly before re-igniting.
In the event of a breakdown or malfunction, switch the stove off and immediately contact a specialised technician.
Do not manually load pellets into the burner, as this could generate an unusual amount of unburnt gas, with the subsequent risk of explosion inside the chamber.
The unburnt pellets that accumulate in the burner after every "failed ignition" must be removed before attempting another ignition.
If the brazier is not cleaned and serviced, there can be malfunctions and explosions in the stove. Be sure to remove all traces of material or build-up from the holes in the brazier and clean them every time you empty the ashes from the stove or in the event of failed ignition. Make sure that the holes do not decrease in size, as this would negatively affect safe stove performance.
Do not wash the product with water. Water could get into the unit and ruin the electrical insulation, causing electrical shocks.
Should the flue catch fire, switch off the stove, disconnect it from the power supply and do not open the door. Then call the competent authorities.
Should the ignition system fail, do not ignite the stove with flammable material.
Do not stand in front of the product for long periods of time while it is operating. Do not overheat the room you are in and in which the product is installed. This could be physically harmful and cause health problems.
Install the product in rooms that are not at risk for fire and that have all the services including supplies (air and electrical) and smoke exhausts.
Should the chimney catch fire, switch off the appliance, disconnect it from the mains and never open the door. Then call the competent authorities.
The product must be covered and stored in rooms with no humidity and that are not exposed to the elements.
Do not remove the feet used to rest the body of the product on the floor to ensure appropriate insulation, especially if the floor is made of flammable material.
Should the ignition system fail, do not force ignition with flammable material.

Special maintenance must only be done by authorised qualified personnel.
Assess the static conditions of the floor that will bear the weight of the product and provide for appropriate insulation in the event it is made of flammable material (i.e. wood, carpet, plastic).
Live electrical parts: only power the product after having assembled it completely.
Disconnect the product from the 230V power supply before servicing it in any way.
SHOULD THERE BE SMOKE IN THE ROOM OR AN EXPLOSION IN THE APPLIANCE, SWITCH IT OFF, AIR OUT THE ROOM, AND IMMEDIATELY CONTACT THE INSTALLATION/CUSTOMER SERVICE TECHNICIAN.

2.2 INFORMATION

- If you have any issues, contact the retailer or a qualified technician authorised by Cadel; if repairs are required, ask them to use original spare parts.
- Only use the type of fuel recommended by Cadel (in Italy, 6mm-diameter pellets and in other European countries, 6-8mm-diameter pellets), which must be loaded solely via an automatic feed system.
- Periodically check and clean the smoke exhaust duct (connection to the flue).
- The unburnt pellets that accumulate in the burner after several failed ignitions must be removed before attempting another ignition.
- A pellet stove is not a cooking appliance.
- Always keep the fuel hopper cover closed.
- Keep this instructions manual, which is an essential part of the stove, for its entire service life. If you sell or transfer the stove to another user, always make sure the booklet goes with the product.
- If lost, contact Cadel or the authorised retailer for another copy.
- Based on EU regulation no. 305/2011, the "Declaration of Performance" is available online at :

www.cadelsrl.com / www.free-point.it.

2.3 INTENDED USE

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

2.4 WARRANTY CONDITIONS

The company guarantees the product, **with the exception of the elements subject to normal wear** listed below, for a duration of **2 (two) years** from the date of purchase, which is demonstrated by:
- a supporting document (invoice and/or receipt) showing the name of the retailer and the date of sale;
- the forwarded warranty certificate, filled out within 8 days of the purchase.

Furthermore, in order to make the warranty valid and operative, the appliance must have been installed and commissioned solely by qualified personnel, who, when necessary, must issue the user a declaration of conformity of the system and a declaration of proper product operation.
We recommend running a functional test of the product before completing the finishes (upholstery, painting the walls, etc.).
Installations that do not follow the standards in force invalidate the product warranty, as do improper use and failure to service as required by the manufacturer.
The warranty is operative as long as you follow the instructions and the warnings contained in the use and maintenance manual accompanying the appliance, so as to use it properly.
Replacing the entire appliance or repairing one of its components does not extend the duration of the warranty, which remains unchanged.
Warranty is intended as replacing or repairing **parts recognised as being flawed due to manufacturing defects, free of charge**.
To use the warranty in the event of a defect, the purchaser must keep the warranty certificate and present it along with the document issued at the time of purchase at the Customer Service Centre.

Malfunctions and/or damage to the appliance as a result of the following causes are excluded from this warranty:
- Damage due to transport and/or handling.
- All parts that are defective due to negligence or carelessness during use, improper maintenance, installation not in compliance with the manufacturer's specifications (always refer to the installation and operating manual supplied with the appliance).
- Improper sizing with respect to use or installation defects, that is, failure to take the necessary precautions to ensure the work is done properly.
- Inappropriate appliance overheating, that is, using fuels that do not comply with the types and amounts indicated in the

instructions provided.
- Further damage caused by the user tampering with the appliance in an attempt to resolve the initial malfunction.
- Increased damage caused by the user continuing to the use the appliance after the defect appeared.
- If there is a boiler, any corrosion, build-ups, or breakages caused by stray current, condensation, harsh or acidic water, inappropriate descaling treatments, lack of water, sludge or limescale deposits.
- Inefficient chimneys, flues, or parts of the system on which the appliance depends.
- Damage caused by tampering with the appliance, the elements, natural disasters, vandalism, electrical discharges, fires, defects in the electrical and/or hydraulic system.
- Failure to have the stove cleaned annually by an authorised technician or qualified personnel invalidates the warranty.

The following are also excluded from this warranty:
- Parts subject to normal wear, including gaskets, glass, coatings and cast iron grates, painted, chrome- or gold-plated details, handles and electrical cables, light bulbs, indicator lights, knobs, all the parts that can be removed from the firebox.
- Variations in the colour of the painted and ceramic/coiled parts, as well as cracks in the ceramic, as they are natural features of the material and of product use.
- Masonry work.
- System components (if any) not supplied by the manufacturer.

Any technical work on the product to eliminate any of the above defects and resulting damage must be agreed upon with the Customer Service Centre, which reserves the right to accept or refuse the task. In any case, the work will not be done under warranty but rather as customer service done under specifically agreed upon conditions and according to the rates in force for the work required.
Users will also be responsible for any expenses that may be necessary to resolve their improper technical manoeuvres, tampering or, in any case, damaging factors for the appliance that cannot be attributed to original defects.
Without prejudice to the limits imposed by laws or regulations, atmospheric pollution and noise containment are not covered by the warranty.

The company declines all liability for any direct or indirect damage to people, animals, or property as a result of failure to follow all the instructions contained in the manual, particularly regarding the warnings on appliance installation, use, and maintenance.

SPARE PARTS

Should the product malfunction, contact the retailer, who will forward the call to the technical customer service centre.

Only use original spare parts. The retailer or service centre will be able to provide you with all the necessary instructions for spare parts. We recommend not waiting for the components to be worn by use before replacing them; it is a good idea to periodically run maintenance checks.

The company declines all liability should the product or any of its accessories be used improperly or modified without authorisation.
Only original spare parts must be used for any replacements.

2.5 WARNINGS ON PROPER PRODUCT DISPOSAL

The owner is exclusively responsible and in charge of dismantling and disposing of the stove, following the laws in force in his/her country regarding environmental safety, respect, and protection.
The product must not be disposed of with normal rubbish at the end of its service life.
It can be brought to specific separate collection centres made available by the local administration or to retailers that provide this service. Appropriately disposing of the product prevents potential negative consequences on the environment and health caused by improper disposal. Furthermore, the materials with which the product is built can thus be recovered, leading to significant savings in energy and resources.

3 INSTALLATION

The instructions contained in this chapter refer explicitly to the Italian UNI 10683 installation standard. In any case, always respect the standards in force in the country where the appliance is installed.

3.1 INSTALLATION STANDARDS

The product in question is a wood pellet fuelled stove.
The following are some European reference standards for product installation:
EN 12828 Design for heating systems.
IEC 64-8 Electrical systems at a rated voltage not exceeding 1000V in alternating current and 1500V in direct current.
EN 1443 Chimneys. General requirements.
EN 1856-1 metal smoke ducts
EN 1856-2 metal smoke extraction channels
EN 1457 Chimneys - Clay/ceramic flue liners
EN 13384-1 Chimneys - Thermal and fluid dynamic calculation methods - Part 1: Chimneys serving one heating appliance
The following are some Italian reference standards:
UNI 10683:2012 Heat generators fuelled by wood or other solid bio-fuels - Verification, installation, checking and maintenance (for thermal-chemical power to the firebox not exceeding 35kW)
UNI/TS 11278 general technical standard for smoke duct/flue selection
UNI 10847:2000 Individual smoke systems for generators fuelled by liquid and solid fuels - Maintenance and checks - Guidelines and procedures
UNI 8065 water treatment in civil systems.
UNI 9182 Hot and cold (domestic) water supply and distribution systems.

The installation procedure requires a heating system diagram prepared according to the local standards and recommendations in force.
In any case, follow:
For the heating system -
Local requirements for connection to the chimney.
Local requirements for fire prevention standards.
For the electrical parts - **EN 60335 "Household and similar electrical appliances - Safety"**
Part 1 - General requirements
Part 2 - Particular requirements for appliances with gas, diesel and solid fuel burners equipped with electrical connections.

3.2 PELLETS

Wood pellets are manufactured by hot-extruding compressed sawdust which is produced during the processing of natural dried wood (without paints). 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 diameter varies between 6 and 8 mm, with a standard length ranging from 5 to 30 mm. Good quality pellets have a density that varies between 600 and over 750 kg/m3, with a moisture content that ranges from 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.
Good quality pellets guarantee good combustion, thereby decreasing harmful emissions into the atmosphere.

Fig. 1 - Pellet's bag

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

DINplus, Ö-Norm M7135 and Pellet gold are examples of the major quality certifications of pellets in the European market and guarantee that the following are complied with:

- calorific value: 4.9 kWh/kg.
- Water content: max 10% of the weight.
- Percentage of ash: max 0.5% of the weight.
- Diameter: 5 – 6 mm.
- Length: max 30 mm.
- Content: 100% untreated wood with no added binding agents (max percentage of bark: 5%).
- Packaging: in bags made from environmentally friendly or biologically decomposable material.

The company strongly recommends using certified fuel for its products (DINplus, Ö-Norm M7135 or Pellet Gold). Poor quality pellets or others that do not comply with that specified previously compromises the operation of your product and can therefore render the warranty and product liability null and void.

3.3 FOREWORD

The assembly position must be chosen based on the room, the exhaust, the flue. Check with the local authorities whether there are stricter provisions regarding the combustion air vent, the smoke exhaust system, including the flue and chimney cap. The manufacturer declines all liability in the event of installations that do not comply with the laws in force, improper local air exchange, electrical connection that does not comply with the standards, and inappropriate use of the appliance. The installation must be done by a qualified technician, who must issue the purchaser a declaration of conformity of the system and who will take on all liability of the definitive installation and subsequent proper product operation.
In particular, he/she must make sure that:

- there is an appropriate combustion air vent and smoke exhaust compliant with the type of product installed
- other stoves or installed appliances do not create a vacuum in the room where the product is installed (15 Pa of vacuum maximum is allowed only for airtight appliances)
- smoke does not flow back into the room when the product is on
- smoke is extracted in complete safety (sizing, smoke seal, distance from flammable materials).

In particular, be sure to check the flue plate data for the safety distances that must be respected when there are combustible materials and for the type of insulating material to use. These regulations must always be strictly followed to prevent serious harm to human health and damage to the home.
The appliance must be installed so as to ensure easy access to clean it, the smoke exhaust pipes, and the flue. **Installing stoves in rooms with a risk of fire is prohibited. Only airtight or closed appliances equipped with appropriate ducts to channel the combustion air directly to the outside can be installed in studio flats, bedrooms, and bathrooms. Always keep an appropriate distance and protection in order to prevent the product from coming into contact with water.**
Should several appliances be installed, the outside air vent must be sized accordingly.

3.4 MINIMUM DISTANCES

We recommend installing the stove away from any walls and/or furniture with minimum air circulation to efficiently ventilate the appliance and properly distribute heat in the room. Respect the distances from flammable or heat-sensitive objects (sofas, furniture, wood finishes, etc.), as specified below. The front distance from flammable materials must be at least the value shown in the product technical data table.
For objects that are considered particularly delicate, like furniture, curtains, sofas, increase the distance from the stove accordingly.

If there are wood floors, we recommend assembling a floor protector and, in any case, following the standards in force in the country.

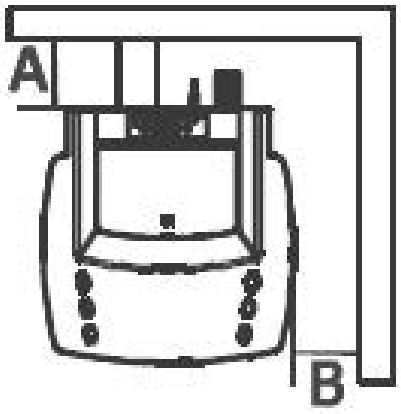


Fig. 2 - Safety distance

MODEL	NON-FLAMMABLE WALLS	FLAMMABLE WALLS
IDRO PRINCE^3 12	A = 5 cm / B = 5 cm	A = 20 cm / B = 20 cm
IDRO PRINCE^3 16-23-23 H2O	A = 5 cm / B = 5 cm	A = 20 cm / B = 20 cm
IDRO PRINCE 30-30 H2O	A = 5 cm / B = 5 cm	A = 20 cm / B = 20 cm
AQUOS^3 16-23-23 H2O	A = 5 cm / B = 5 cm	A = 20 cm / B = 20 cm
IDRON 16-22 AIRTIGHT	A = 5 cm / B = 5 cm	A = 20 cm / B = 20 cm
HIDROFIRE 22.8	A = 5 cm / B = 5 cm	A = 20 cm / B = 20 cm

If the floor is made of combustible material, we recommend using a protector made of incombustible material (steel, glass) that also protects the front part from any falling burnt particles during cleaning.
The appliance must be installed on flooring that has an appropriate load-bearing capacity.
If the existing construction does not meet this requirement, appropriate measures must be taken (for example, a load distribution plate).

3.5 FOREWORD

This Flue chapter was written in reference to European standard requirements (EN 13384 - EN 1443 - EN 1856 - EN 1457).
It provides some instructions on how to properly install the flue but it does not in any way replace the standards in force, of which the qualified manufacturer must be in possession. Check with the local authorities whether there are stricter standards regarding the combustion air vent, the smoke exhaust system, the flue, the chimney cap.
The company declines all liability regarding poor stove operation if it can be attributed to using an incorrectly sized flue that does not meet the standards in force.

3.6 FLUE

The flue or chimney is extremely important for forced draft heating appliances fired by solid fuels to work properly, as modern heating appliances are high performing with cooler smoke and, as such, less draft. Thus, it is fundamental for the flue to be built properly and always kept perfectly efficient. A flue serving a pellet/wood appliance must be at least category T400 (or above if the appliance requires it) and resistant to soot fire. Smoke must be extracted via individual flue with insulated steel pipes (A) or existing flue and must comply with the intended use (B).
A simple cement cavity must be appropriately ducted. Both solutions require an inspection cap (AT) and/or inspection door (AP) - FIG.1.
Do not connect more than one wood/pellet or other types (exhaust hood) of appliance (*) to the same flue.

(*) unless there are national exceptions (for example, in Germany), which allow more than one appliance to be installed in the same chimney under opportune conditions; in any case, scrupulously follow the product/installation requisites provided for by the corresponding standards/laws in force in the country

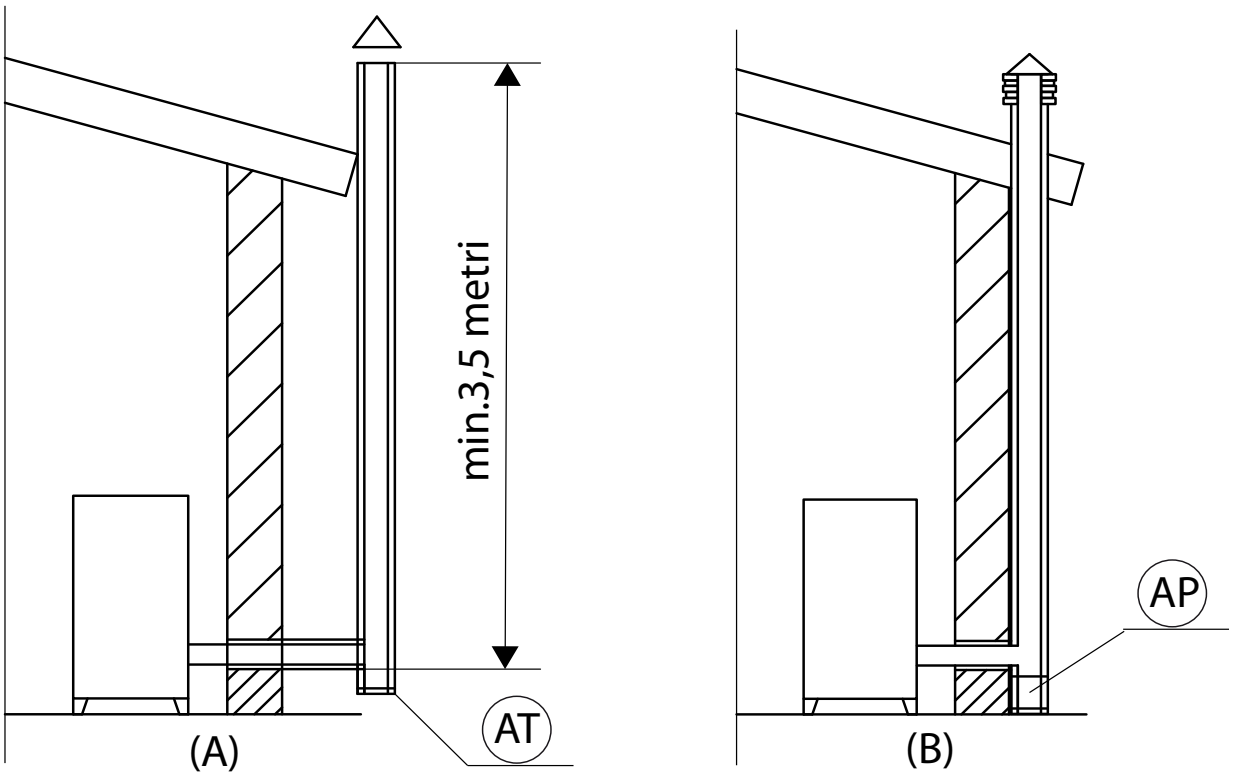


Fig. 3 - Flue

3.7 TECHNICAL FEATURES

Have a qualified technician check flue efficiency.
The flue must be airtight, vertical without constrictions, made with materials that are resistant to smoke and condensate, thermally insulated, and suited to resist normal mechanical stresses over time (we recommend circular section insulated twin wall chimneys in A/316 or refractory material). It must be externally insulated to prevent condensation and to reduce the smoke cooling effect. It must not be near combustible or highly flammable materials with an air or insulating material gap: check the chimney distance indicated by the manufacturer according to EN 1443. The chimney opening must be in the same room in which the appliance is installed or, at most, in an adjacent room and must have under the opening a soot and condensate collection chamber that can be accessed via an airtight metal door.

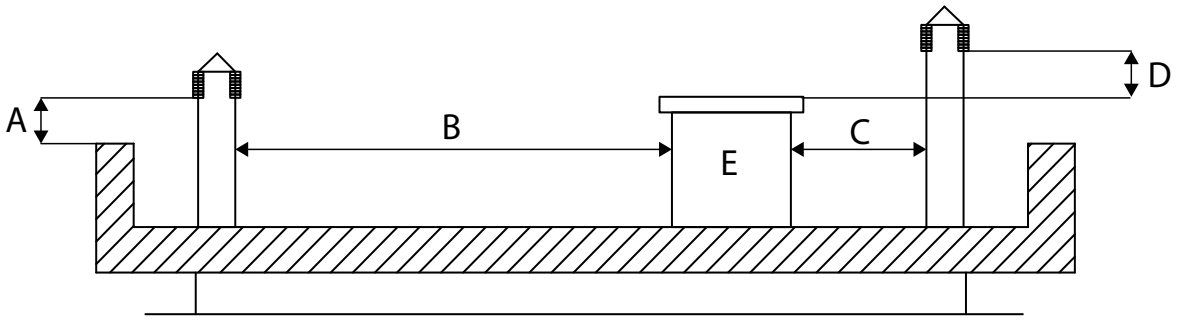


Fig. 4 - Flat roof

LEGEND	*Fig. 4*
A	*0.50 metres*
B	*distance > 2 metres*
C	*distance < 2 metres*
D	*0.50 metres*
E	*technical volume*

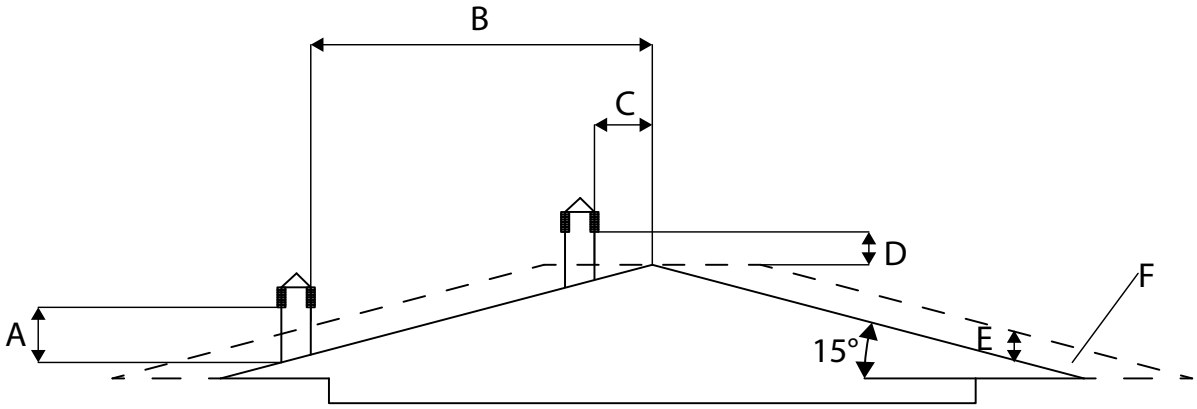


Fig. 5 - 15° roof

LEGEND	***Fig. 5***
A	*min. 1.00 metre*
B	*distance > 1.85 metres*
C	*distance < 1.85 metres*
D	*0.50 metres beyond the top*
E	*0.50 metres*
F	*backflow area*

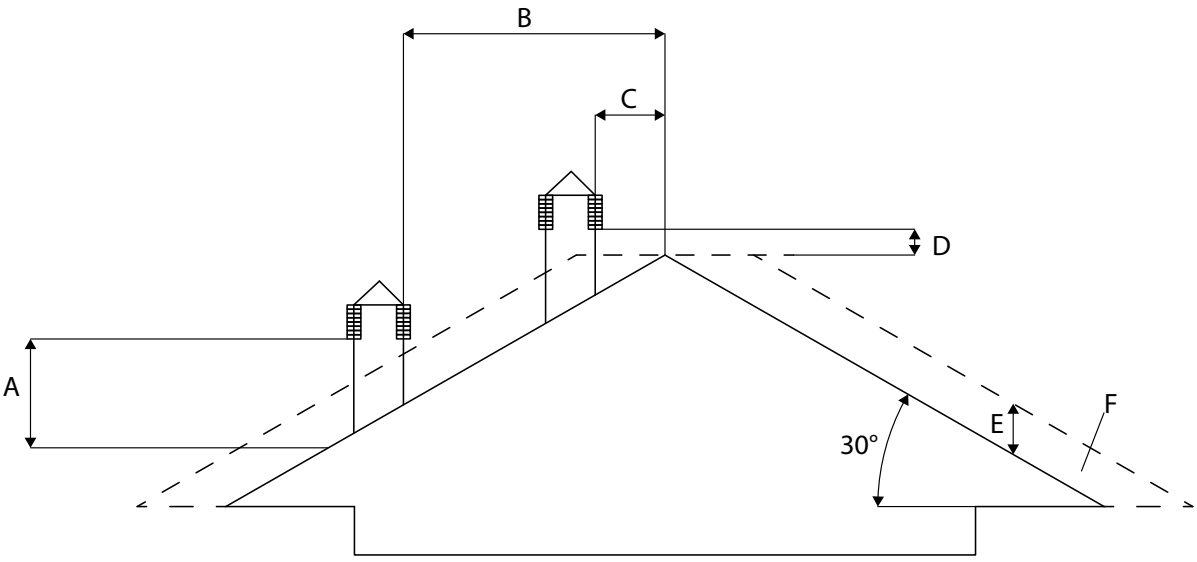


Fig. 6 - 30° roof

LEGEND	***Fig. 6***
A	*min. 1.30 metres*
B	*distance > 1.50 metres*
C	*distance < 1.50 metres*
D	*0.50 metres beyond the top*
E	*0.80 metres*
F	*backflow area*

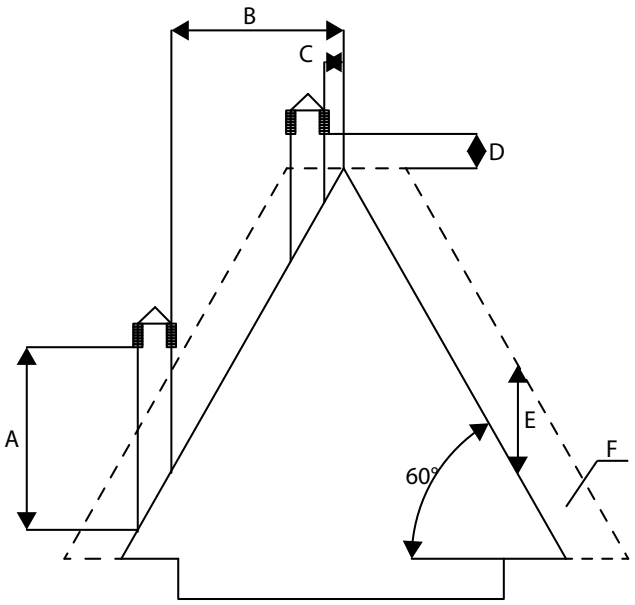


Fig. 7 - 60° roof

LEGEND	***Fig. 7***
A	*min. 2.60 metres*
B	*distance > 1.20 metres*
C	*distance < 1.20 metres*
D	*0.50 metres beyond the top*
E	*2.10 metres*
F	*backflow area*

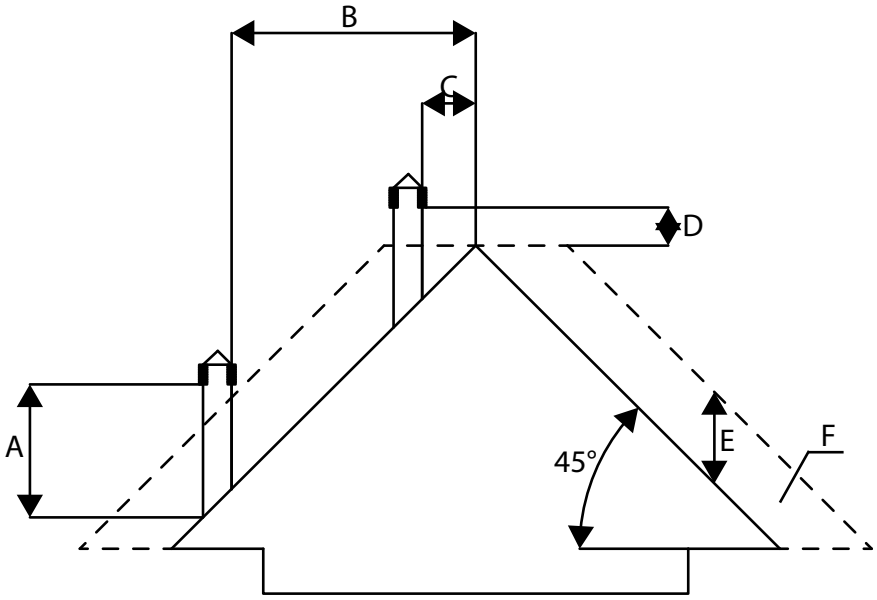


Fig. 8 - 45° roof

LEGEND	***Fig. 8***
A	*min. 2.00 metres*
B	*distance > 1.30 metres*
C	*distance < 1.30 metres*
D	*0.50 metres beyond the top*
E	*1.50 metres*
F	*backflow area*

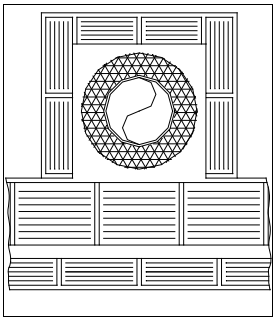
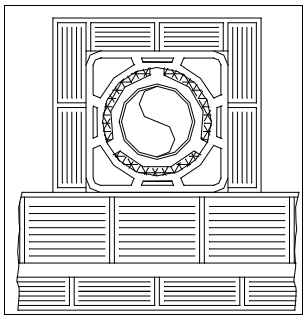
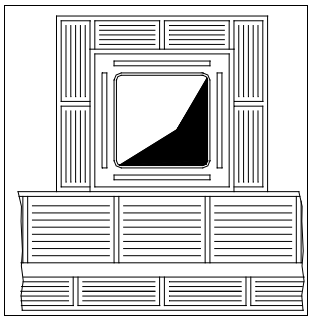
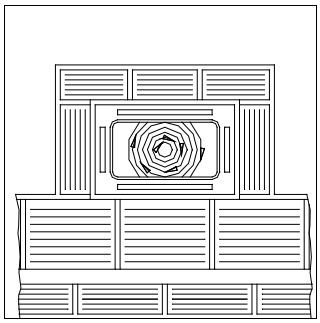
3.8 SIZING

The vacuum (draft) of a flue also depends on its height. Check vacuum with the values shown in the technical features. Minimum flue height is 3.5 metres.

The flue internal cross-section can be circular (best case), square, or rectangular (the ratio between the inner sides must be ≤1.5) with the sides coupled with a 20mm minimum radius. Minimum cross-section must be Ø100mm.

The sections/lengths of the chimneys must, in any case, be properly sized according to the general calculation method used in UNI EN13384-1 or other methods that have proven efficient.

Below are some examples of flues available on the market:

VERY GOOD	GOOD	POOR	VERY POOR
AISI 316 steel chimney with insulated twin walls with ceramic fibre or equivalent resistant to 400°C.	Refractory chimney with insulated twin walls and external sleeve in lightweight concrete with honeycomb materials, like clay.	Traditional clay square section chimney with hollow insulating inserts.	Avoid chimneys with rectangular inner section in which the ratio between the longer side and the shorter side is greater than 1.5 (for example, 20x40 or 15x30).
			

3.9 MAINTENANCE

Flues must always be clean, as build-ups of soot or unburnt oil reduce the cross-section, blocking draft, compromising proper stove operation, and, in large amounts, can catch fire. Have the flue and chimney cap checked and cleaned by a qualified chimney sweep at least once a year and, after the check/service, have them issue an undersigned report that the system is safe.
Failure to clean compromises system safety.

3.10 CHIMNEY CAP

A chimney cap is a crucial element for the heating appliance to work well: we recommend a wind resistant type (A) chimney cap, see **Fig. 9**.

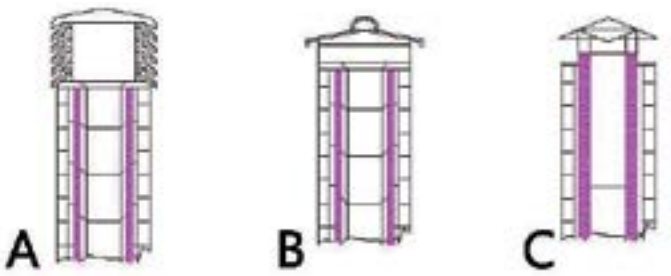


Fig. 9 - Examples of chimney caps

The area of the openings for smoke extraction must be at least twice the cross-section of the flue/ducted system and shaped so that, even in the event of wind, smoke is still extracted. It must prevent rain, snow, and any animals from getting in. The height of the opening must be beyond the backflow area cause by the shape of the roof or any obstacles that may be nearby (see **Fig. 4**, **Fig. 5**, **Fig. 6**, **Fig. 7** and **Fig. 8**).

3.11 CHIMNEY COMPONENTS

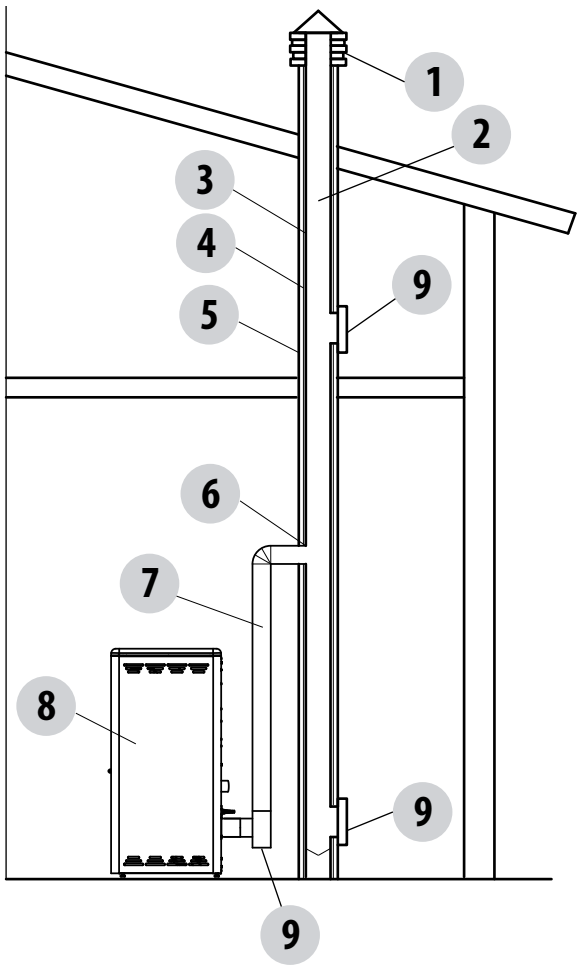


Fig. 10 - Chimney components

LEGEND	*Fig. 10*
1	*Chimney cap*
2	*Backflow duct*
3	*Smoke duct*
4	*Thermal insulation*
5	*External wall*
6	*Chimney fitting*
7	*Smoke channel*
8	*Heat generator*
9	*Inspection door*

3.12 OUTSIDE AIR VENT

It is mandatory to create an adequate outside air vent that supplies the combustion air necessary for the product to work properly. The flow of air between the outside and the installation room can be direct, via an opening on an external wall of the room (see "Solution 1" **Fig. 11**); or indirect, by drawing air from rooms that are adjacent and permanently communicating with the room in which the product is installed (see "Solution 2" **Fig. 12**). Adjacent rooms do not include bedrooms, bathrooms, garages, and rooms at risk for fire in general. During installation, you must check the minimum distances necessary to be able to draw air from the outside. Consider doors and windows that could interfere with proper air flow to the stove (see the diagram below).
The air vent must have an 80cm ^{2} minimum total net surface: said surface must be increased accordingly if there are other active generators in the room (for example, electric fan to extract foul air, range hood, other stoves, etc.) that can create a vacuum in the room. With all the appliances switched on, make sure the pressure loss between the room and the outside does not exceed 4 Pa (even for airtight appliances if the combustion air has not been appropriately ducted to the outside). If necessary, increase the air vent intake cross-section, which must be done near the floor and always protected by an external bird guard grate and such not to be clogged by any objects.

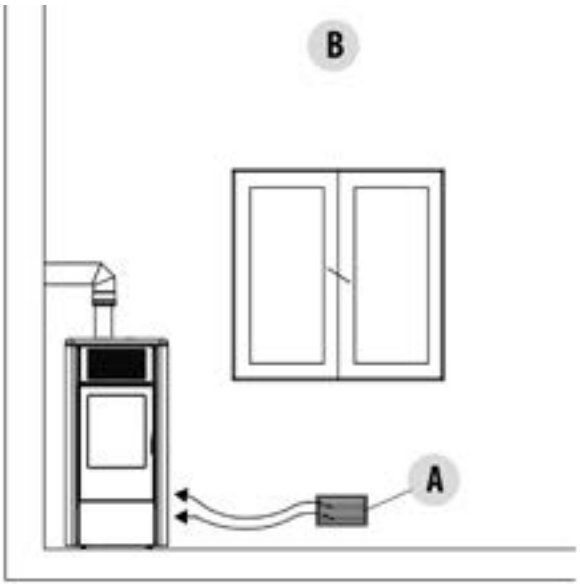


Fig. 11 - Solution 1 = directly from the outside

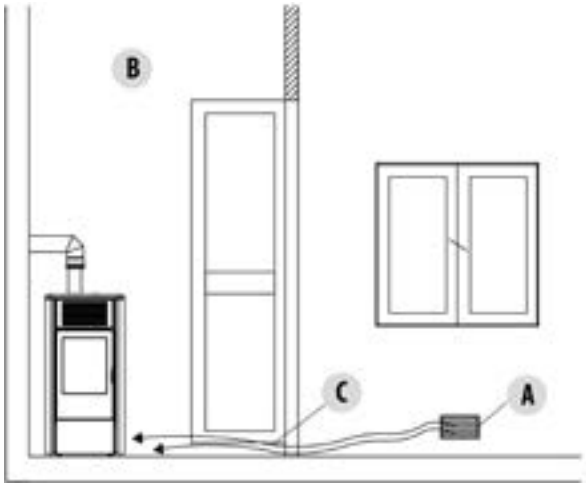


Fig. 12 - Solution 2 = indirectly from an adjacent room

LEGEND	*Fig. 11 - Fig. 12*
A	*Air vent*
B	*Room to ventilate*
C	*Increased space beneath the door*

The air needed for combustion can be directly connected to the outside air vent with a pipe of at least Ø50 mm, at most 3 linear metres long; every pipe elbow is to be considered equivalent to a linear metre. For the pipe coupling, see the back of the stove.
For stoves installed in studio flats, bedrooms, and bathrooms (where permitted), the combustion air must be connected to the outside. In particular, for airtight stoves, said connection must be airtight so as not to jeopardise the overall airtight feature of the system.

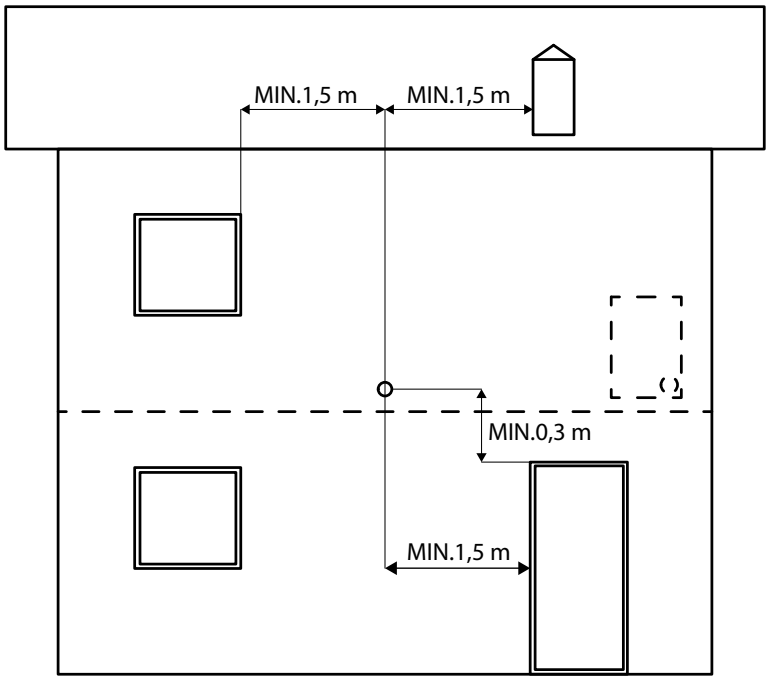


Fig. 13 - Example

DISTANCE (metres)	THE DISTANCE OF THE AIR VENT MUST BE:	
1.5 m	BELOW	Doors, windows, smoke exhausts, gaps...
1.5 m	HORIZONTAL TO	Doors, windows, smoke exhausts, gaps...
0.3 m	ABOVE	Doors, windows, smoke exhausts, gaps...
1.5 m	AWAY FROM	Smoke exhausts

3.13 CONNECTION TO THE FLUE

The appliance must be connected to the flue by a smoke duct compliant with EN 1856-2. The connection must be at most 4m long horizontally, with a minimum 3% slope and at most three 90° elbows (that can be inspected - the appliance outlet T-fitting does not count).
The diameter of the smoke duct must be greater than or equal to the appliance outlet (Ø 80 mm).

TYPE OF SYSTEM	SMOKE DUCT
Minimum vertical length	1.5 metres
Maximum length (with one 90° elbow that can be inspected)	6.5 metres
Maximum length (with three 90° elbows that can be inspected)	4.5 metres
Maximum number of 90° elbows that can be inspected	3
Horizontal sections (3% minimum slope)	4 metres

Use a smoke duct that meets the standards in force in the country where the product is installed and that is compatible with the product and installation features. The smoke duct temperature class must be greater than the operating temperature of the appliance.
Do not connect more than one appliance or the exhaust from overhead hoods to the same smoke duct. Do not directly vent combustion products either towards closed spaces or to the outdoors.
Specifically, it is recommended to check the safety distances on the flue plate data that must be complied with in the presence of combustible materials and the type of insulating material to be used. These regulations must always be strictly followed to prevent serious harm to human health and damage to the home.

3.14 EXAMPLES OF PROPER INSTALLATION

1. Ø120mm smoke duct installation with hole to allow for the passage of the pipe increased by:
- at least 100 mm around the pipe if it communicates with non-flammable parts like concrete, brick, etc.; or
- at least 300 mm around the pipe (or as per the plate data) if it communicates with flammable parts like wood, etc.

In both cases, put appropriate insulation between the smoke duct and the attic.
We recommend checking and following the data on the smoke duct plate, especially the safety distances from combustible materials.
The previous rules also apply to holes made in walls.
2. Old smoke duct, ducted minimum Ø100mm, creating an external door to clean the chimney.
3. External smoke duct made exclusively out of insulated stainless steel pipes, that is, with minimum Ø100mm twin walls: securely anchored to the wall. With wind resistant chimney cap (see type A **Fig. 9**).
4. Ducting system via T-fittings that allow the pipes to be cleaned easily without disassembling them.

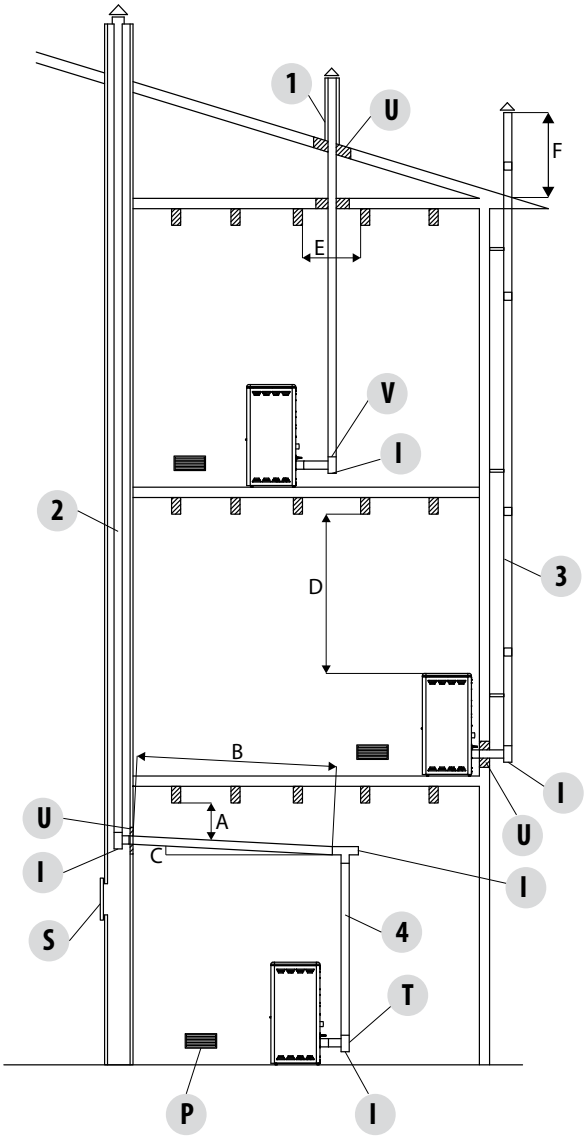


Fig. 14 - Example of proper installation

LEGEND	***Fig. 14***
U	*Insulation*
V	*Potential reduction from 100 to 80 mm*
I	*Inspection cap*
S	*Inspection door*
P	*Air vent*
T	*T-fitting with inspection cap*
A	*Minimum 40 mm*
B	*Maximum 4 m*
C	*Minimum 3°*
D	*Minimum 400 mm*
E	*Hole diameter*
F	*See* **TECHNICAL FEATURES a pag. 11**

4 DRAWINGS AND TECHNICAL FEATURES

4.1 IDRO PRINCE³ 12 DIMENSIONS

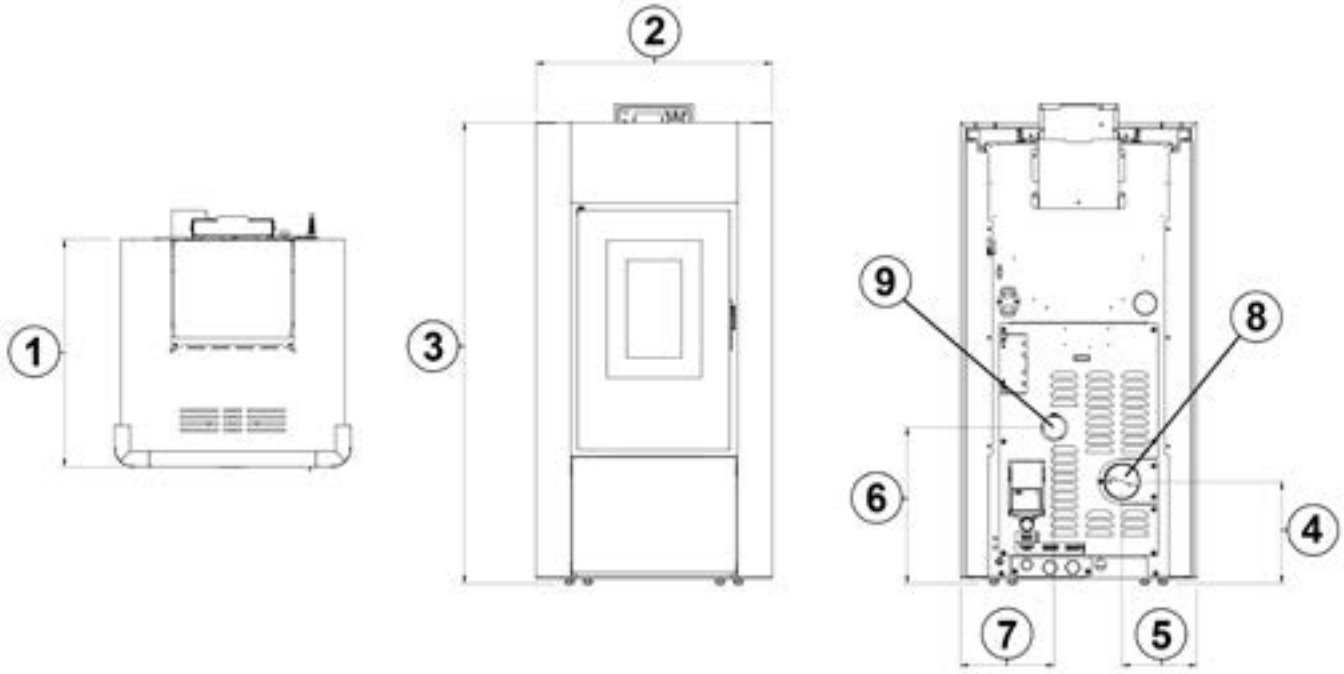


Fig. 15 - Idro Prince³ 12

LEGEND	*Fig. 15*
1	*52 cm*
2	*52,7 cm*
3	*100 cm*
4	*22,3 cm*
5	*15,5 cm*
6	*33,5 cm*
7	*20,8 cm*
8	*Exhaust fumes d.8 cm*
9	*Hole combustion air inlet d.5 cm*

4.2 IDRO PRINCE³ 16-23-23 H_2O DIMENSIONS

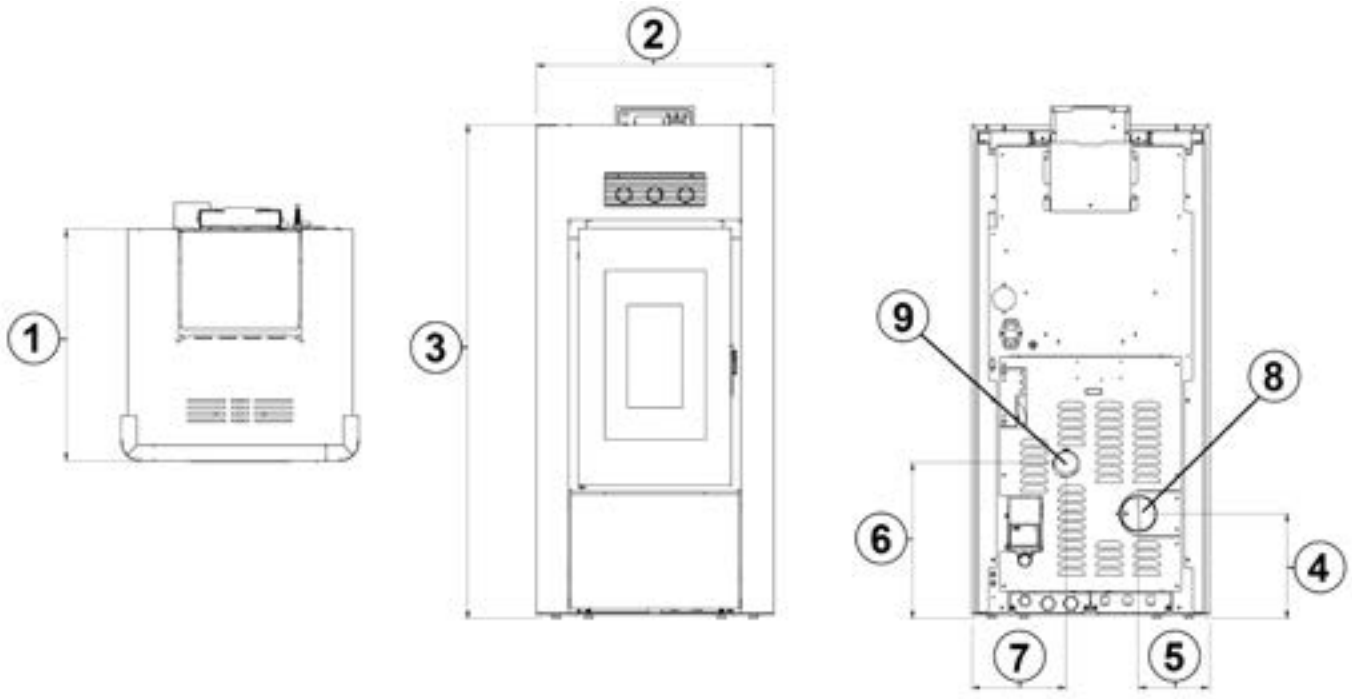


Fig. 16 - Idro Prince³ 16-23-23 H_2O

LEGEND	*Fig. 16*
1	*52 cm*
2	*52,7 cm*
3	*109,8 cm*
4	*22,3 cm*
5	*15,5 cm*
6	*33,5 cm*
7	*20,8 cm*
8	*Exhaust fumes d.8 cm*
9	*Hole combustion air inlet d.5 cm*

4.3 DIMENSIONI STUFA IDRO PRINCE 30 - 30 H_2O

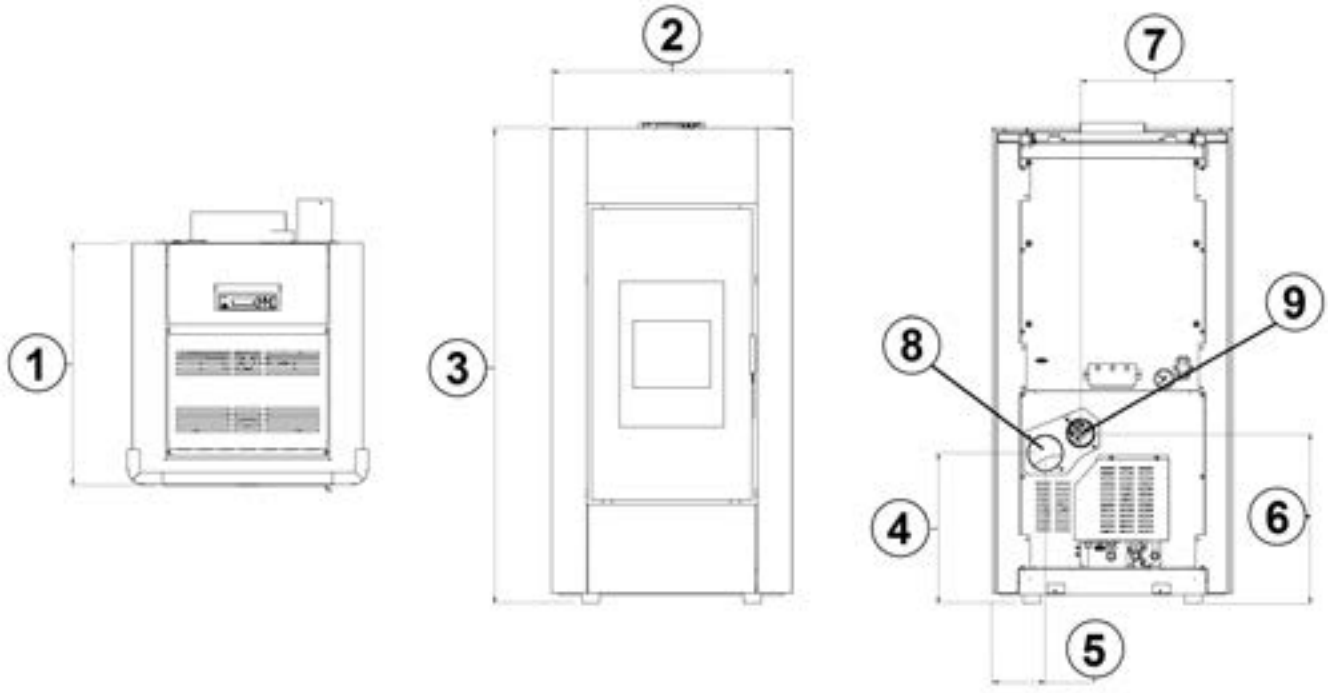


Fig. 17 - Idro Prince 30-30 H_2O

LEGEND	*Fig. 17*
1	*69 cm*
2	*68,5 cm*
3	*135,5 cm*
4	*42,8 cm*
5	*15,1 cm*
6	*48,6 cm*
7	*25,2 cm*
8	*Exhaust fumes d.10 cm*
9	*Hole combustion air inlet d.8 cm*

4.4 AQUOS³ 16-23-23 H_2O DIMENSIONS

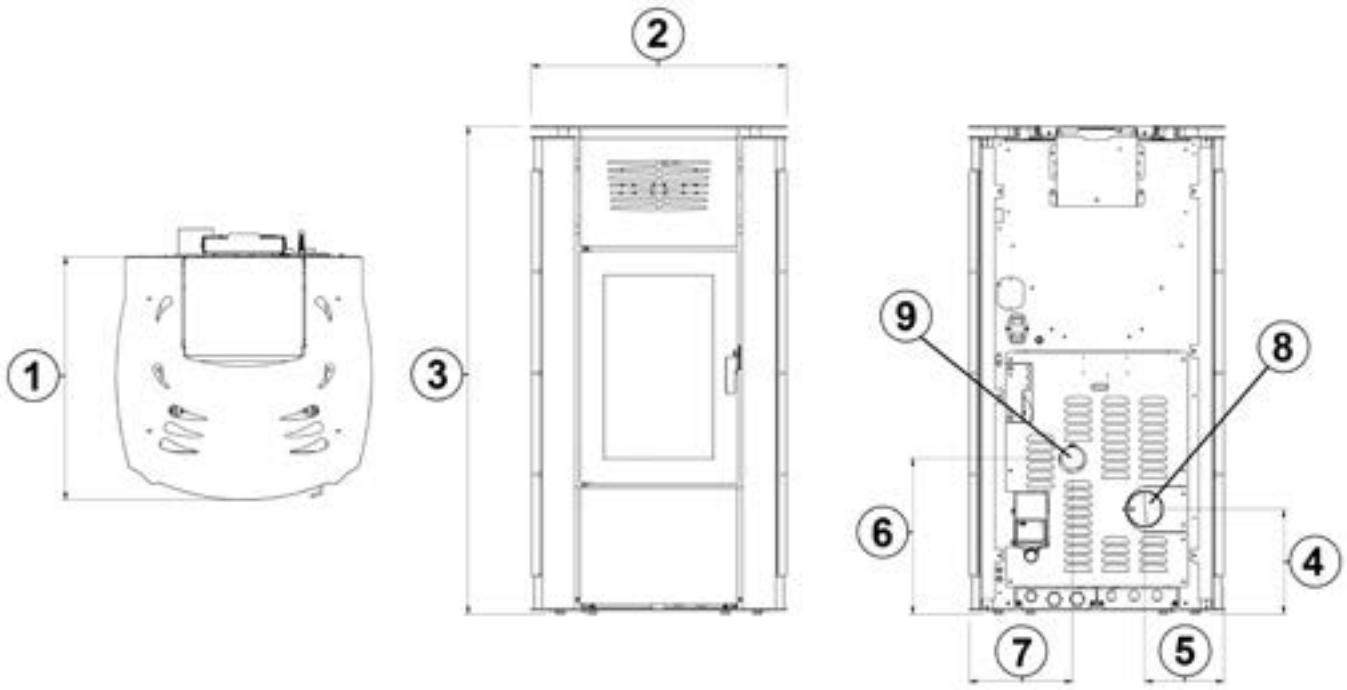


Fig. 18 - Aquos³ 16-23-23 H_2O

LEGEND	*XREF-2:10645]*
1	*54,6 cm*
2	*57,5 cm*
3	*109,5 cm*
4	*23 cm*
5	*17,3 cm*
6	*34 cm*
7	*22,5 cm*
8	*Exhaust fumes d.8 cm*
9	*Hole combustion air inlet d.5 cm*

4.5 IDRON 16-22 AIRTIGHT - HIDROFIRE 22.8 - MIRA 16-22 - TESIS 16-23 AIRTIGHT DIMENSIONS

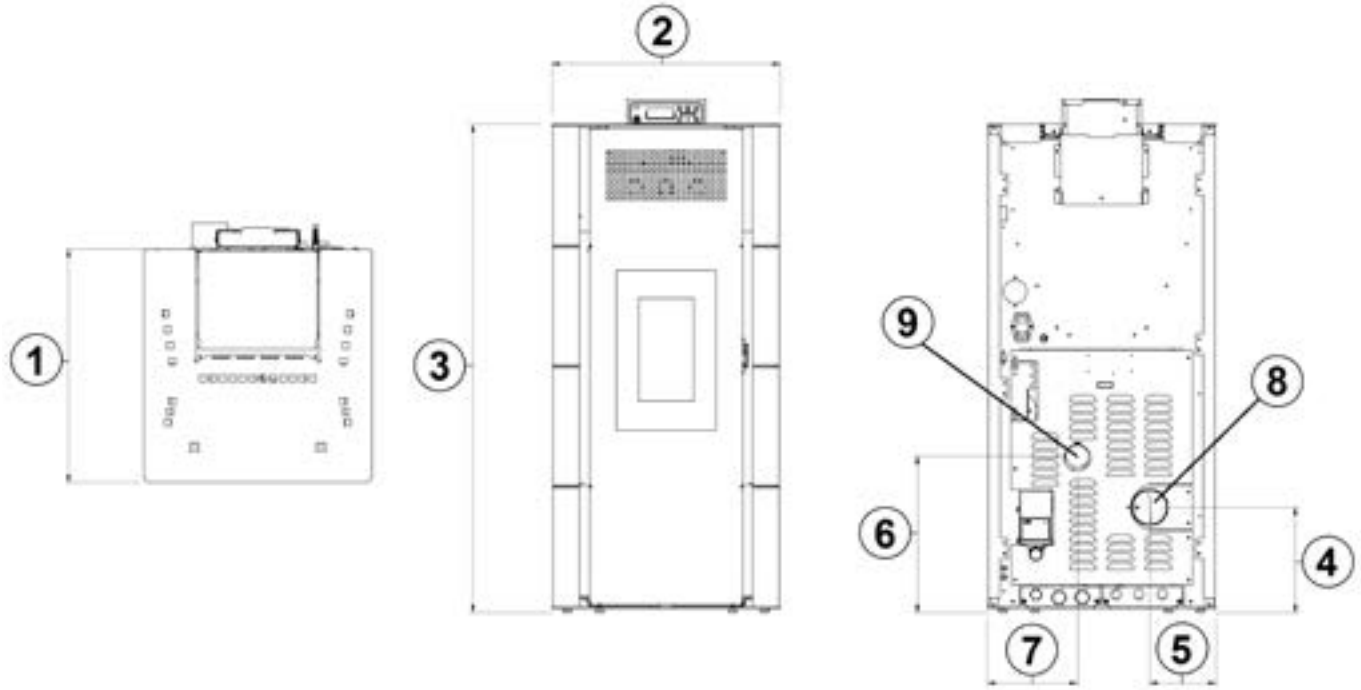


Fig. 19 - Idron 16-22 Airtight / Hidrofire 22.8 / Mira 16-22 /Tesis16-23

LEGEND	*Fig. 19*
1	*52,5 cm*
2	*51,5 cm*
3	*109 cm*
4	*23 cm*
5	*14,5 cm*
6	*34 cm*
7	*20 cm*
8	*Exhaust fumes d.8 cm*
9	*Hole combustion air inlet d.5 cm*

4.6 TECHNICAL FEATURES

DESCRIPTION	IDRO PRINCE³ 12	IDRO PRINCE³ 16	AQUOS³ 16
Effective rated power	11,8 kW (10.148 kcal/h)	16,2 kW (13.932 kcal/h)	16,2 kW (13.932 kcal/h)
Effective rated power (H_2O)	10,2 kW (8.772 kcal/h)	12,9 kW (11.094 kcal/h)	12,9 kW (11.094 kcal/h)
Minimum effective power	3,2 kW (2.752 kcal/h)	4,7 kW (4.042 kcal/h)	4,7 kW (4.042 kcal/h)
Minimum effective power (H_2O)	2,2 KW (1.892 kcal/h)	3,1 KW (2.666 kcal/h)	3,1 KW (2.666 kcal/h)
Performance at Max	91,8%	93,3%	93,3%
Performance at Min	92,4%	96,5%	96,5%
Exhaust smoke temperature at Max	114°C	118°C	118°C
Exhaust smoke temperature at Min	64°C	60°C	60°C
Particulate / OGC / Nox (13%O_2)	18 mg/Nm³ – 1,5 mg/Nm³ - 109 mg/Nm³	19 mg/Nm³ – 2,2 mg/Nm³ - 109 mg/Nm³	19 mg/Nm³ – 2,2 mg/Nm³ - 109 mg/Nm³
CO at 13% O_2 at Min and at Max	0,038 — 0,003%	0,011 — 0,006%	0,011 — 0,006%
CO_2 at Min and at Max	4,7% – 9,8%	7,7% – 11,7%	7,7% – 11,7%
Smoke mass	9,4 g/sec	10,5 g/sec	10,5 g/sec
Maximum operating pressure	2,5 bar – 250 kPa	2,5 bar – 250 kPa	2,5 bar – 250 kPa
Recommended draft at Max*** power	0,12 mbar – 12 Pa***	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***
Minimum draft permitted at Min power	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa
Hopper capacity	31 litri	40 litri	40 litri
Type of pellet fuel	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm
Hourly pellet consumption (min ~ max)	0,7 kg/h * ~ 2,6 kg/h *	1,0 kg/h * ~ 3,5 kg/h *	1,0 kg/h * ~ 3,5 kg/h *
Range (min ~ max)	29 h * ~ 8 h *	29 h * ~ 8 h *	29 h * ~ 8 h *
Heatable volume m³	254/40 – 290/35 – 338/30 **	348/40 – 398/35 – 464/30 **	348/40 – 398/35 – 464/30 **
Air intake for combustion	Ø 50 mm	Ø 50 mm	Ø 50 mm
Smoke outlet	Ø 80 mm	Ø 80 mm	Ø 80 mm
Air vent	80 cm²	80 cm²	80 cm²
Rated electrical power (EN 60335-1)	75W (max 390W)	115W (max 370W)	115W (max 370W)
Power supply voltage and frequency	230 Volt / 50 Hz	230 Volt / 50 Hz	230 Volt / 50 Hz
Net weight	141 kg	151,5 kg	136 - 145 - 181 kg
Weight with packaging	156 kg	167,5 kg	149 - 158 - 195 kg
Distance from combustible material (back/ side/bottom)	200 mm / 200 mm / 0 mm	200 / 200 / 0 mm	200 / 200 / 0 mm
Distance from combustible material (ceiling/front)	750 mm / 1000 mm	750 / 1000 mm	750 / 1000 mm

* Values that can vary depending on the type of pellet used
** Heatable volume depending on the power required per m³ (respectively, 40-35-30 Kcal/h per m³)
*** Value recommended by the manufacturer (not binding) for optimal product performance

Tested according to EN 14785 in compliance with the European Construction Product regulation (EU 305/2011)

DESCRIPTION	IDRON 16 AIRTIGHT	MIRA 16	TESIS 16 AIRTIGHT
Effective rated power	16,2 kW (13.932 kcal/h)	16,2 kW (13.932 kcal/h)	16,2 kW (13.932 kcal/h)
Effective rated power (H_2O)	12,9 kW (11.094 kcal/h)	12,9 kW (11.094 kcal/h)	12,9 kW (11.094 kcal/h)
Minimum effective power	4,7 kW (4.042 kcal/h)	4,7 kW (4.042 kcal/h)	4,7 kW (4.042 kcal/h)
Minimum effective power (H_2O)	3,1 KW (2.666 kcal/h)	3,1 KW (2.666 kcal/h)	3,1 KW (2.666 kcal/h)
Performance at Max	93,3%	93,3%	93,3%
Performance at Min	96,5%	96,5%	96,5%
Exhaust smoke temperature at Max	118°C	118°C	118°C
Exhaust smoke temperature at Min	60°C	60°C	60°C
Particulate / OGC / Nox (13%O_2)	19 mg/Nm^3 – 2,2 mg/Nm^3 - 109 mg/Nm^3	19 mg/Nm^3 – 2,2 mg/Nm^3 - 109 mg/Nm^3	19 mg/Nm^3 – 2,2 mg/Nm^3 - 109 mg/Nm^3
CO at 13% O_2 at Min and at Max	0,011 — 0,006%	0,011 — 0,006%	0,011 — 0,006%
CO_2 at Min and at Max	7,7% – 11,7%	7,7% – 11,7%	7,7% – 11,7%
Smoke mass	10,5 g/sec	10,5 g/sec	10,5 g/sec
Maximum operating pressure	2,5 bar – 250 kPa	2,5 bar – 250 kPa	2,5 bar – 250 kPa
Recommended draft at Max*** power	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***
Minimum draft permitted at Min power	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa
Hopper capacity	40 litri	40 litri	40 litri
Type of pellet fuel	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm
Hourly pellet consumption (min ~ max)	1,0 kg/h * ~ 3,5 kg/h *	1,0 kg/h * ~ 3,5 kg/h *	1,0 kg/h * ~ 3,5 kg/h *
Range (min ~ max)	26 h * ~ 8 h *	26 h * ~ 8 h *	26 h * ~ 8 h *
Heatable volume m^3	348/40 – 398/35 – 464/30 **	348/40 – 398/35 – 464/30 **	348/40 – 398/35 – 464/30 **
Air intake for combustion	Ø 50 mm	Ø 50 mm	Ø 50 mm
Smoke outlet	Ø 80 mm	Ø 80 mm	Ø 80 mm
Air vent	80 cm^2	80 cm^2	80 cm^2
Rated electrical power (EN 60335-1)	115W (max 370W)	115W (max 370W)	115W (max 370W)
Power supply voltage and frequency	230 Volt / 50 Hz	230 Volt / 50 Hz	230 Volt / 50 Hz
Net weight	140 kg	140 kg	140 kg
Weight with packaging	150 kg	150 kg	150 kg
Distance from combustible material (back/side/bottom)	200 / 200 / 0 mm	200 / 200 / 0 mm	200 / 200 / 0 mm
Distance from combustible material (ceiling/front)	750 / 1000 mm	750 / 1000 mm	750 / 1000 mm

* Values that can vary depending on the type of pellet used
** Heatable volume depending on the power required per m^3 (respectively, 40-35-30 Kcal/h per m^3)
*** Value recommended by the manufacturer (not binding) for optimal product performance

Tested according to EN 14785 in compliance with the European Construction Product regulation (EU 305/2011)

DESCRIPTION	IDRO PRINCE³ 23-23 H2O	AQUOS³ 23-23 H2O	IDRON 22 AIRTIGHT
Effective rated power	22,8 kW (19.608 kcal/h)	22,8 kW (19.608 kcal/h)	22,8 kW (19.608 kcal/h)
Effective rated power (H_2O)	18,7 kW (16.082 kcal/h)	18,7 kW (16.082 kcal/h)	18,7 kW (16.082 kcal/h)
Minimum effective power	4,7 kW (4.042 kcal/h)	4,7 kW (4.042 kcal/h)	4,7 kW (4.042 kcal/h)
Minimum effective power (H_2O)	3,1 kW (2.666 kcal/h)	3,1 kW (2.666 kcal/h)	3,1 kW (2.666 kcal/h)
Performance at Max	91,3%	91,3%	91,3%
Performance at Min	96,5%	96,5%	96,5%
Exhaust smoke temperature at Max	150°C	150°C	150°C
Exhaust smoke temperature at Min	60°C	60°C	60°C
Particulate / OGC / Nox (13%O_2)	19 mg/Nm³ – 3 mg/Nm³ – 114 mg/Nm³	19 mg/Nm³ – 3 mg/Nm³ – 114 mg/Nm³	19 mg/Nm³ – 3 mg/Nm³ – 114 mg/Nm³
CO at 13% O_2 at Min and at Max	0,011 — 0,014%	0,011 — 0,014%	0,011 — 0,014%
CO_2 at Min and at Max	7,7% – 12,5%	7,7% – 12,5%	7,7% – 12,5%
Smoke mass	13,9 g/sec	13,9 g/sec	13,9 g/sec
Maximum operating pressure	2,5 bar – 250 kPa	2,5 bar – 250 kPa	2,5 bar – 250 kPa
Recommended draft at Max*** power	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***
Minimum draft permitted at Min power	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa
Hopper capacity	40 litri	40 litri	40 litri
Type of pellet fuel	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm
Hourly pellet consumption (min ~ max)	1,0 kg/h ~ 5,0 kg/h *	1,0 kg/h ~ 5,0 kg/h *	1,0 kg/h ~ 5,0 kg/h *
Range (min ~ max)	26 h * ~ 5 h *	26 h * ~ 5 h *	26 h * ~ 5 h *
Heatable volume m³	490/40 – 560/35 – 654/30 **	490/40 – 560/35 – 654/30 **	490/40 – 560/35 – 654/30 **
Air intake for combustion	Ø 50 mm	Ø 50 mm	Ø 50 mm
Smoke outlet	Ø 80 mm	Ø 80 mm	Ø 80 mm
Air vent	80 cm²	80 cm²	80 cm²
Rated electrical power (EN 60335-1)	115W (max 370W)	115W (max 370W)	115W (max 370W)
Power supply voltage and frequency	230 Volt / 50 Hz	230 Volt / 50 Hz	230 Volt / 50 Hz
Net weight	151,5 kg	136 - 145 - 181 kg	140 kg
Weight with packaging	167,5 kg	149 - 158 - 195 kg	150 kg
Distance from combustible material (back/side/bottom)	200 / 200 / 0 mm	200 / 200 / 0 mm	200 / 200 / 0 mm
Distance from combustible material (ceiling/front)	750 / 1000 mm	750 / 1000 mm	750 / 1000 mm

* Values that can vary depending on the type of pellet used
** Heatable volume depending on the power required per m³ (respectively, 40-35-30 Kcal/h per m³)
*** Value recommended by the manufacturer (not binding) for optimal product performance

Tested according to EN 14785 in compliance with the European Construction Product regulation (EU 305/2011)

DESCRIZIONE	IDROFIRE 22.8	MIRA 22	TESIS 23 AIRTIGHT
Effective rated power	22,8 kW (19.608 kcal/h)	22,8 kW (19.608 kcal/h)	22,8 kW (19.608 kcal/h)
Effective rated power (H_2O)	18,7 kW (16.082 kcal/h)	18,7 kW (16.082 kcal/h)	18,7 kW (16.082 kcal/h)
Minimum effective power	4,7 kW (4.042 kcal/h)	4,7 kW (4.042 kcal/h)	4,7 kW (4.042 kcal/h)
Minimum effective power (H_2O)	3,1 kW (2.666 kcal/h)	3,1 kW (2.666 kcal/h)	3,1 kW (2.666 kcal/h)
Performance at Max	91,3%	91,3%	91,3%
Performance at Min	96,5%	96,5%	96,5%
Exhaust smoke temperature at Max	150°C	150°C	150°C
Exhaust smoke temperature at Min	60°C	60°C	60°C
Particulate / OGC / Nox (13%O_2)	19 mg/Nm^3 – 3 mg/Nm^3 – 114 mg/Nm^3	19 mg/Nm^3 – 3 mg/Nm^3 – 114 mg/Nm^3	19 mg/Nm^3 – 3 mg/Nm^3 – 114 mg/Nm^3
CO at 13% O_2 at Min and at Max	0,011 — 0,014%	0,011 — 0,014%	0,011 — 0,014%
CO_2 at Min and at Max	7,7% – 12,5%	7,7% – 12,5%	7,7% – 12,5%
Smoke mass	13,9 g/sec	13,9 g/sec	13,9 g/sec
Maximum operating pressure	2,5 bar – 250 kPa	2,5 bar – 250 kPa	2,5 bar – 250 kPa
Recommended draft at Max*** power	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***
Minimum draft permitted at Min power	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa
Hopper capacity	40 litri	40 litri	40 litri
Type of pellet fuel	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm
Hourly pellet consumption (min ~ max)	1,0 kg/h *~ 5,0 kg/h *	1,0 kg/h *~ 5,0 kg/h *	1,0 kg/h *~ 5,0 kg/h *
Range (min ~ max)	26 h * ~ 5 h *	26 h * ~ 5 h *	26 h * ~ 5 h *
Heatable volume m^3	490/40 – 560/35 – 654/30 **	490/40 – 560/35 – 654/30 **	490/40 – 560/35 – 654/30 **
Air intake for combustion	Ø 50 mm	Ø 50 mm	Ø 50 mm
Smoke outlet	Ø 80 mm	Ø 80 mm	Ø 80 mm
Air vent	80 cm^2	80 cm^2	80 cm^2
Rated electrical power (EN 60335-1)	115W (max 370W)	115W (max 370W)	115W (max 370W)
Power supply voltage and frequency	230 Volt / 50 Hz	230 Volt / 50 Hz	230 Volt / 50 Hz
Net weight	151,5 kg	136 - 145 - 181 kg	140 kg
Weight with packaging	167,5 kg	149 - 158 - 195 kg	150 kg
Distance from combustible material (back/side/bottom)	200 / 200 / 0 mm	200 / 200 / 0 mm	200 / 200 / 0 mm
Distance from combustible material (ceiling/front)	750 / 1000 mm	750 / 1000 mm	750 / 1000 mm

* Values that can vary depending on the type of pellet used
** Heatable volume depending on the power required per m^3 (respectively, 40-35-30 Kcal/h per m^3)
*** Value recommended by the manufacturer (not binding) for optimal product performance

Tested according to EN 14785 in compliance with the European Construction Product regulation (EU 305/2011)

DESCRIZIONE	IDROPRINCE 30	IDROPRINCE 30 H2O
Effective rated power	28,62 kW (19.608 kcal/h)	28,62 kW (19.608 kcal/h)
Effective rated power (H_2O)	26,99 kW (16.082 kcal/h)	26,99 kW (16.082 kcal/h)
Minimum effective power	7,76 kW (4.042 kcal/h)	7,76 kW (4.042 kcal/h)
Minimum effective power (H_2O)	6,28 kW (2.666 kcal/h)	6,28 kW (2.666 kcal/h)
Performance at Max	93,68%	93,68%
Performance at Min	94,79%	94,79%
Exhaust smoke temperature at Max	88,7°C	88,7°C
Exhaust smoke temperature at Min	56,8°C	56,8°C
Particulate / OGC / Nox (13%O_2)	17,2 mg/Nm^3 – 0,9 mg/Nm^3 – 82,1 mg/Nm^3	17,2 mg/Nm^3 – 0,9 mg/Nm^3 – 82,1 mg/Nm^3
CO at 13% O_2 at Min and at Max	0,018 — 0,008%	0,018 — 0,008%
CO_2 at Min and at Max	4,71% – 8,05%	4,71% – 8,05%
Smoke mass	25,2 g/sec	25,2 g/sec
Maximum operating pressure	2,5 bar – 250 kPa	2,5 bar – 250 kPa
Recommended draft at Max*** power	0,10 mbar – 10 Pa***	0,10 mbar – 10 Pa***
Minimum draft permitted at Min power	0,02 mbar – 2 Pa	0,02 mbar – 2 Pa
Hopper capacity	72 litri	72 litri
Type of pellet fuel	Ø 6 mm 3÷40 mm	Ø 6 mm 3÷40 mm
Hourly pellet consumption (min ~ max)	1,7 kg/h * ~ 6,33 kg/h *	1,7 kg/h * ~ 6,33 kg/h *
Range (min ~ max)	28 h * ~ 7 h *	28 h * ~ 7 h *
Heatable volume m^3	613/40 – 700/35 – 817/30 **	613/40 – 700/35 – 817/30 **
Air intake for combustion	Ø 80 mm	Ø 80 mm
Smoke outlet	Ø 100 mm	Ø 100 mm
Air vent	100 cm^2	100 cm^2
Rated electrical power (EN 60335-1)	92W (max 380W)	92W (max 380W)
Power supply voltage and frequency	230 Volt / 50 Hz	230 Volt / 50 Hz
Net weight	265 kg	265 kg
Weight with packaging	287 kg	287 kg
Distance from combustible material (back/side/bottom)	150 / 200 / 0 mm	150 / 200 / 0 mm
Distance from combustible material (ceiling/front)	750 / 1000 mm	750 / 1000 mm

* Values that can vary depending on the type of pellet used
** Heatable volume depending on the power required per m^3 (respectively, 40-35-30 Kcal/h per m^3)
*** Value recommended by the manufacturer (not binding) for optimal product performance

Tested according to EN 14785 in compliance with the European Construction Product regulation (EU 305/2011)

5 INSTALLATION AND ASSEMBLY

5.1 PREPARATION AND UNPACKING

The product is packaged in a recyclable cardboard box according to RESY standards, on a wood pallet. All the packaging materials can be reused for similar purposes or, in the event, disposed of as waste assimilable to urban solid waste, following the standards in force. After having removed the packaging, make sure the product is intact.

Handle the product with appropriate means, respecting the safety standards in force. Do not overturn the packaging and use caution for the ceramic details.

The stoves are delivered in a single package with ceramic panels or steel sides packaged along with the structure and positioned either on top or to the side. Open the packaging, remove the cardboard and any supporting polystyrene and place the stove in the selected location, making sure it complies with the requirements.
The stove body or single unit must always be handled upright exclusively using hand trucks. Be especially careful to protect the door and its glass from mechanical impacts that would compromise their integrity.
If possible, unpack the stove near the area in which it will be installed.
The packaging materials are neither toxic nor harmful.
To take the stove off the pallet, remove the two "U" screws and slide the "S" plate out from the stove foot. There are four "S" brackets (see below).

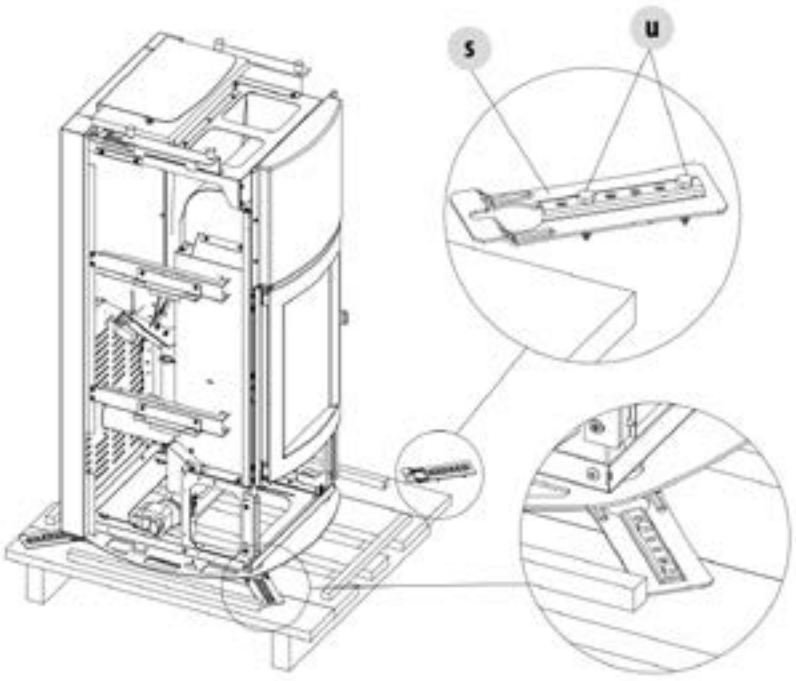


Fig. 20 - Remove the fastening brackets

Position the stove and connect it to the smoke duct. Adjust the 4 feet (J) to find the right level so that the smoke duct and pipe are coaxial. If the stove needs to be connected to an exhaust pipe that goes through the back wall (to go into the flue), be extremely careful not to force it.

Forcing the stove smoke exhaust or using it improperly to lift or position the stove will irreversibly compromise its function.

Turning the feet clockwise lowers the stove. Turning the feet anticlockwise raises the stove (see below).

Fig. 21 - Foot adjustment

5.2 IDRO PRINCE³ 12-16-23-23 H_2O-30-30 H_2 OR MIRA 16-22 - TESIS 16-23 AIRTIGHT - FRAME ASSEMBLY

To assemble the frame, proceed as follows:

Fig. 22 - Secure the strut

Fig. 23 - Secure the grate

Fig. 24 - Position the frame

- Secure the strut with screws (see **Fig. 22**). Work on a table.
- Secure the grate with screws on the upper front (see **Fig. 23**).
- Hook the frame to the stove (see **Fig. 24**).

Fig. 25 - Secure the frame

Fig. 26 - Put in the lower door

Fig. 27 - Close the door

- Secure the frame to the lower part of the stove (see **Fig. 25**).
- Fit the lower door by putting the pins into the specific holes (see **Fig. 26**).
- Turn the door and close it (see **Fig. 27**).

5.3 ASSEMBLING AQUOS SIDE PANELS³ 16-23-23 H_2O

To assemble the side panels, proceed as follows:

Fig. 28 - Remove the cover

Fig. 29 - Remove the compensator

Fig. 30 - Put in the finish

- Unscrew the screws on the cover and remove it (see **Fig. 28**).
- Remove the compensator from the side (see **Fig. 29**).
- Put in the painted / ceramic / stone panels, sliding them down the guides (see **Fig. 30**).

Fig. 31 - Bend the supports

Fig. 32 - Position the compensator

Fig. 33 - Fasten the compensator

- When you put in the finishes, bend the supports slightly to make up for any looseness in the metal/ceramic/stone panel. These supports are grooved along the guides (see **Fig. 31**).
- Reposition the compensator on the side (see **Fig. 32**).
- Secure the compensator (see **Fig. 33**) and reposition the cover with the screws.

5.4 ASSEMBLING THE IDRON 16-22 AIRTIGHT / HIDROFIRE 22.8 SIDE PANELS

To assemble the side panels, proceed as follows:

Fig. 34 - Remove the screws

Fig. 35 - Hook the side panel

- Unscrew the screws on the cover and remove it (see **Fig. 34**).
- Hook the teeth of the side panels into their grooves (see **Fig. 35**).

Fig. 36 - Secure the front side panel

Fig. 37 - Secure the rear side panel

- Secure the side panel on the front (see **Fig. 36**).
- Secure the side panel on the back of the stove (see **Fig. 37**).
- Reposition the cover with the screws.

6 LOADING PELLETS

6.1 LOADING PELLETS

Fuel is loaded from the top of the stove, lifting the door. Pour the pellets into the hopper.
To facilitate the procedure, do it two steps:
Pour half of the contents into the hopper and wait for the pellets to settle at the bottom.
Complete the operation by pouring in the second half.

If loading pellets while the stove is working, open the hopper door using the cool touch handle supplied with the stove.
Do not allow the bag of pellets to come into contact with hot surfaces while loading.

Never remove the protective grate inside the hopper.
Do not put any type of fuel into the hopper other than pellets in compliance with the previously described specifications.
Store extra fuel at an appropriate safety distance.
Do not pour pellets directly onto the brazier but only into the hopper.
While operating and switching off, most of the stove surfaces are very hot (door, handle, glass, smoke exhaust pipe, etc.). Do not touch these parts.

Fig. 38 - Pellet loading

6.2 SAFETY

PROCEDURE TO FOLLOW IN THE EVENT OF SMOKE IN THE ROOM OR AN EXPLOSION DAMAGING THE DEVICE: SWITCH IT OFF, AIR OUT THE ROOM AND IMMEDIATELY CONTACT THE INSTALLATION/CUSTOMER SERVICE TECHNICIAN.

6.3 USER TRAINING

The technician in charge of installation and commissioning MUST ALWAYS thoroughly brief the end owner/user on the device. The following subjects must be covered in detail so that the end user is satisfied. Otherwise, there is the risk the device will be used unsafely:

- Explanation of the device and how it works
- Need to keep the device ventilated and issues that could arise otherwise
- Fuel use and supply
- How to safely ignite the device
- What to do if it does not ignite
- What to do in the event of alarms (in particular, those generated by a lack of fuel in the device)
- How to service the device properly and the importance of doing so monthly
- It is a good idea to schedule the first annual service check
- Discuss using a potential secondary heating system
- Explain how the remote control or thermostat works and where to best position them

7 PLUMBING CONNECTION

7.1 PLUMBING SYSTEM CONNECTION

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.

7.2 CONNECTION DIAGRAM (IDRO PRINCE³ 12)

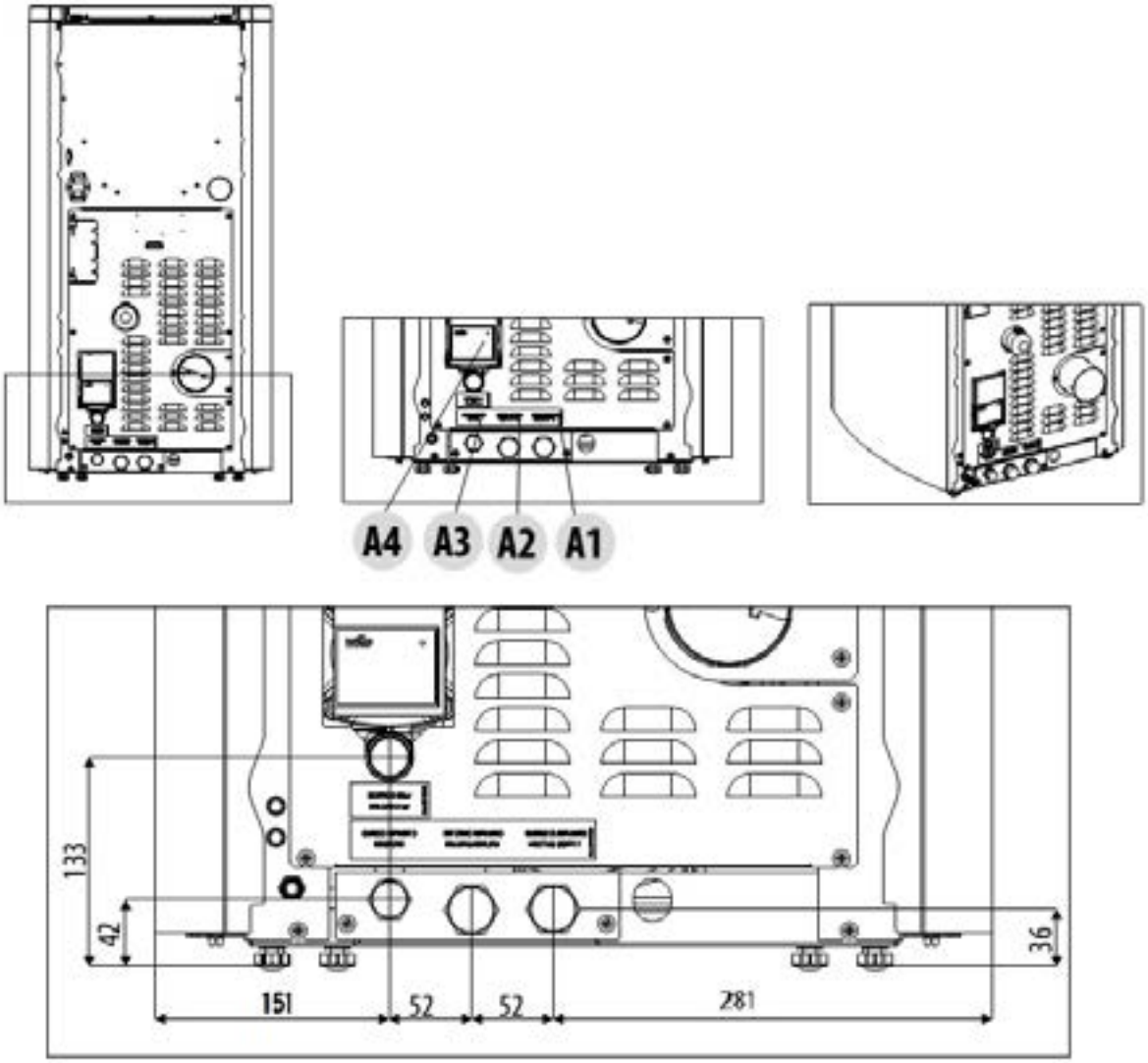
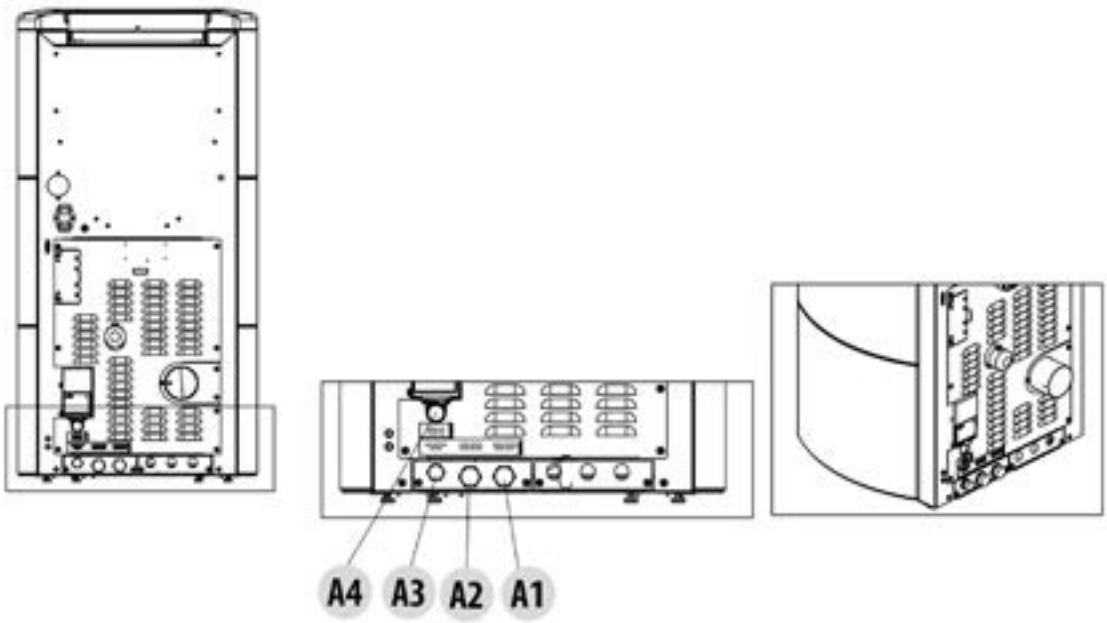


Fig. 39 - Connection diagram

LEGEND	*Fig. 41*
A1	*3/4"M heating water delivery*
A2	*3/4"M heating water return*
A3	*System filling*
A4	*System draining*

IMPORTANT!!!
WASH THE ENTIRE SYSTEM BEFORE CONNECTING THE STOVE IN ORDER TO REMOVE RESIDUE AND BUILD-UPS.
Always install gate valves upstream of the stove to isolate it from the hydraulic system should it be necessary to move it for routine and/or special maintenance.
Connect the stove using flexible hoses so as not to excessively bind the stove to the system and to allow it to be moved slightly.

7.3 CONNECTION DIAGRAM IDRO PRINCE³ 16-23 , AQUOS³ 16-23 , IDRON 16-22 AIRTIGHT, HIDROFIRE 22.8 - MIRA 16-22 - TESIS 16-23 AIRTIGHT



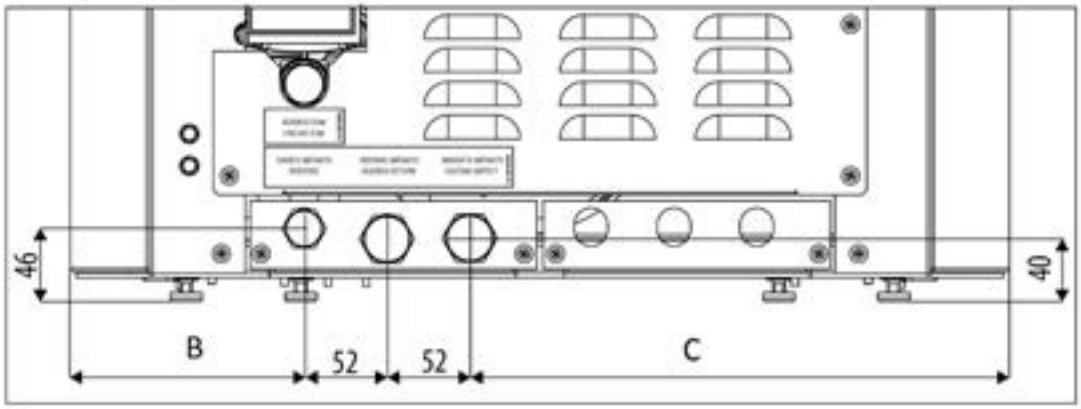


Fig. 40 - Connection diagram

LEGEND	*Fig. 40*
A1	*3/4"M heating water delivery*
A2	*3/4"M heating water return*
A3	*System filling*
A4	*System draining*
B=139 - C=330	*Aquos 3-16-23*
B=120 - C=312	*Idroprince 3-16-23*
B=106,5 - C=298,7	*Idron 16-22 Airtight*
B=106,5 - C=298,7	*Tesis 16-23 Airtight*
B=106,5 - C=298,7	*Mira 16-22*

IMPORTANT!!!
WASH THE ENTIRE SYSTEM BEFORE CONNECTING THE STOVE IN ORDER TO REMOVE RESIDUE AND BUILD-UPS.
Always install gate valves upstream of the stove to isolate it from the hydraulic system should it be necessary to move it for routine and/or special maintenance.
Connect the stove using flexible hoses so as not to excessively bind the stove to the system and to allow it to be moved slightly.

7.4 CONNECTION DIAGRAM IDRO PRINCE 30

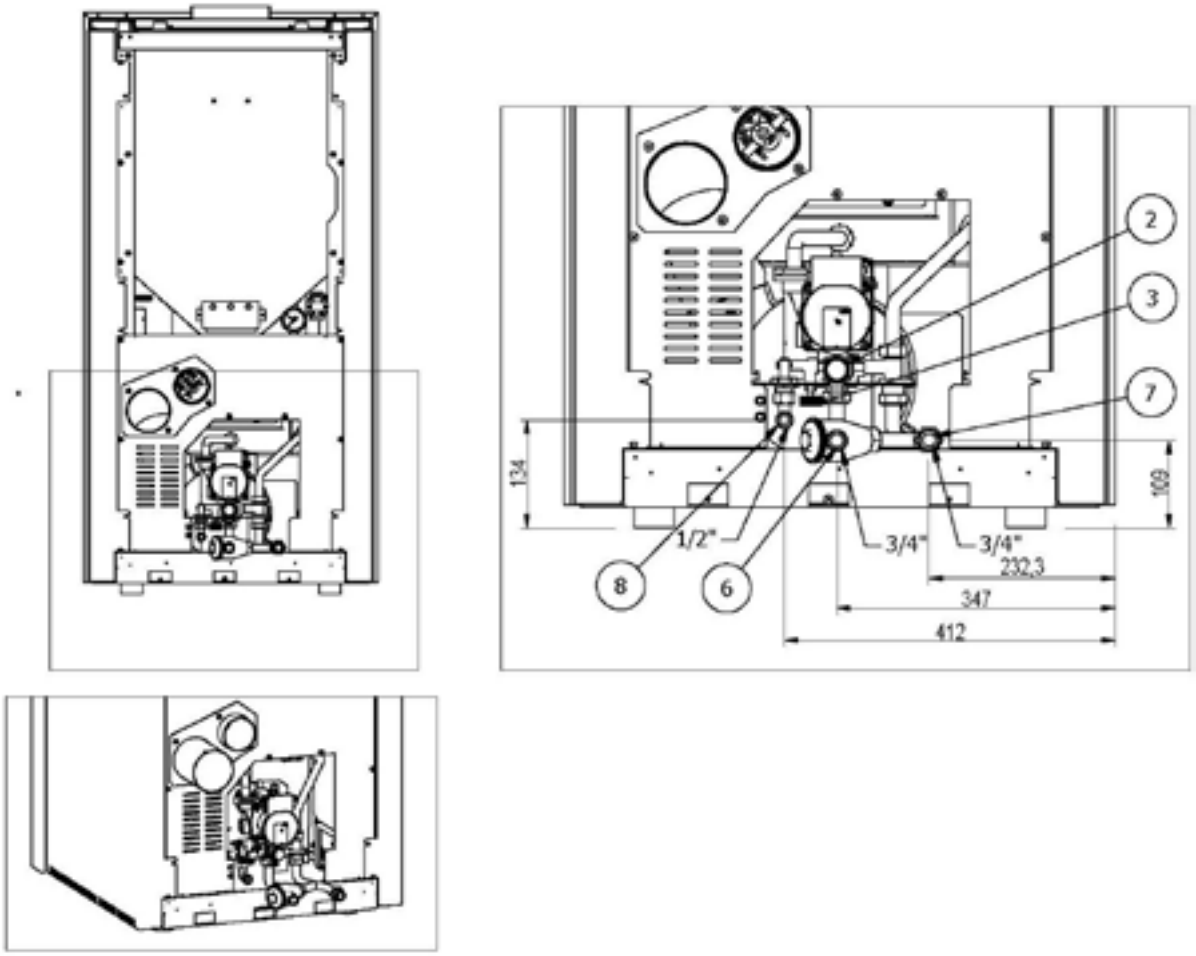


Fig. 41 - Connection diagram

LEGEND	***Fig. 41***
2	*Safety valve*
3	*Filling valve*
6	*Heating return*
7	*Heating delivery*
8	*System filling water inlet*

IMPORTANT!!!
WASH THE ENTIRE SYSTEM BEFORE CONNECTING THE STOVE IN ORDER TO REMOVE RESIDUE AND BUILD-UPS.
Always install gate valves upstream of the stove to isolate it from the hydraulic system should it be necessary to move it for routine and/or special maintenance.
Connect the stove using flexible hoses so as not to excessively bind the stove to the system and to allow it to be moved slightly.

7.5 CONNECTION DIAGRAM (IDRO PRINCE³ 23 H_2O, AQUOS³ 23 H_2O)

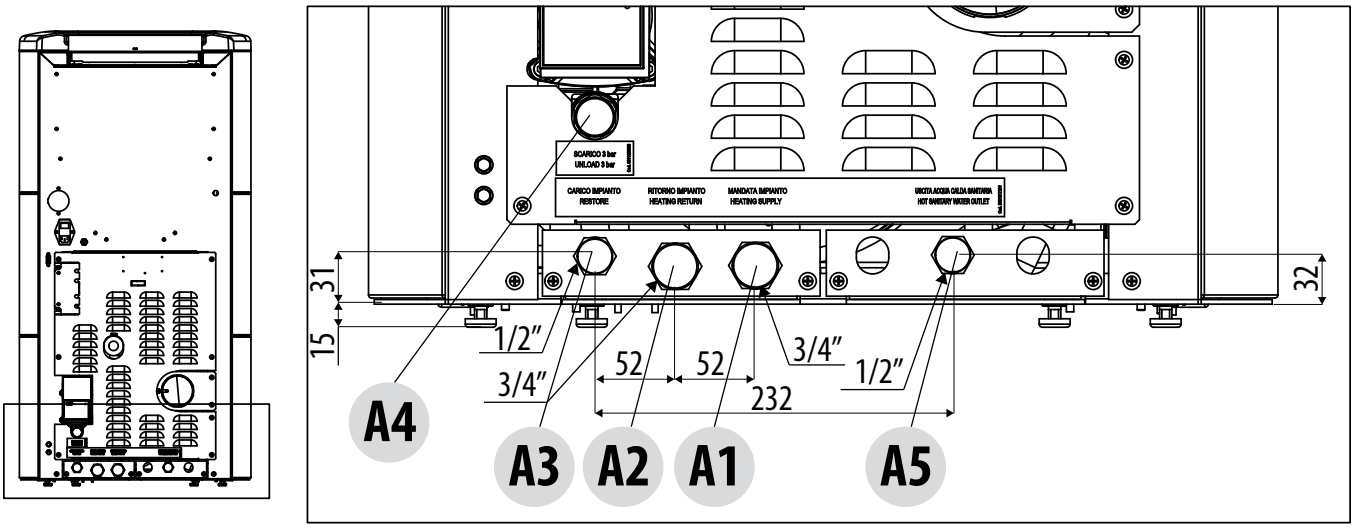


Fig. 42 - Connection diagram

LEGEND	*Fig. 42*
A1	*3/4"M heating water delivery*
A2	*3/4"M heating water return*
A3	*System filling / Domestic cold water inlet*
A4	*System draining*
A5	*Domestic hot water outlet*

7.6 CONNECTION DIAGRAM (IDRO PRINCE 30 H_2O)

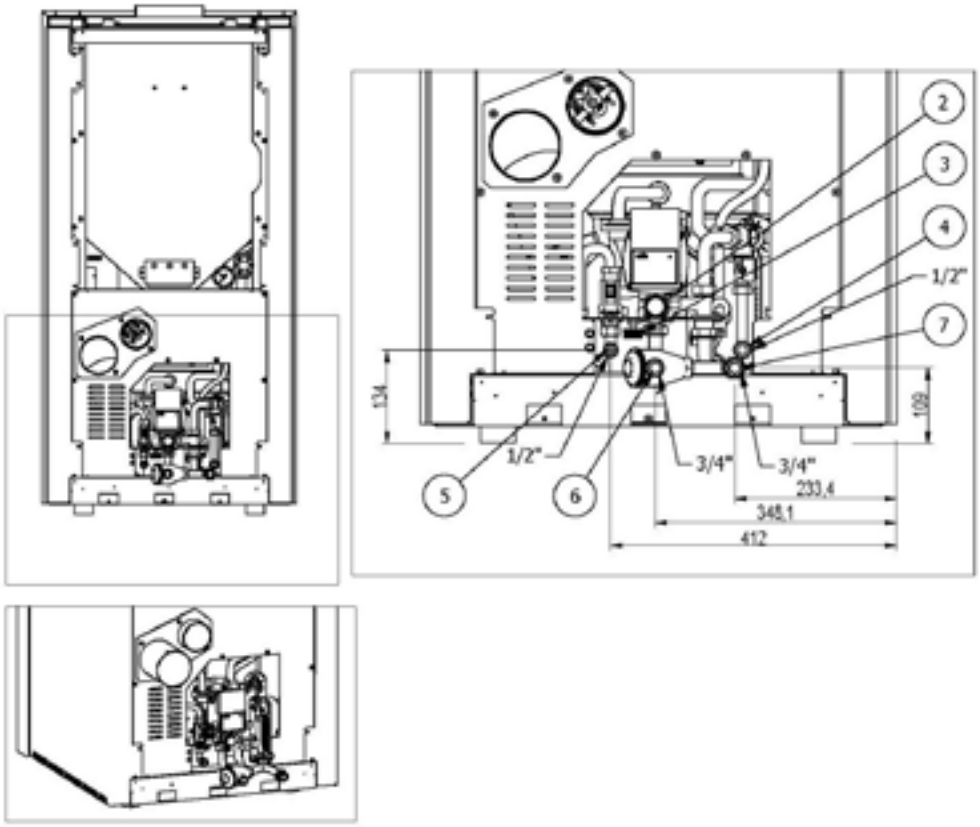


Fig. 43 - Connection diagram

LEGEND	Fig. 43
2	Safety valve
3	Filling valve
4	Domestic hot water outlet
5	Domestic hot water entry
6	Heating return
7	Heating delivery

7.7 3 BAR DISCHARGE VALVE

There is a safety valve that can be inspected on the back of the stove under the pump. IT IS MANDATORY to connect a rubber hose that is resistant to temperatures up to 110°C (not supplied) to the safety exhaust and run it to the outside in case water is discharged.

The manufacturer of the appliance is not liable for any flooding caused by the safety valves tripping if they are not properly coupled to the outside of the product or to an appropriate collection and extraction system.

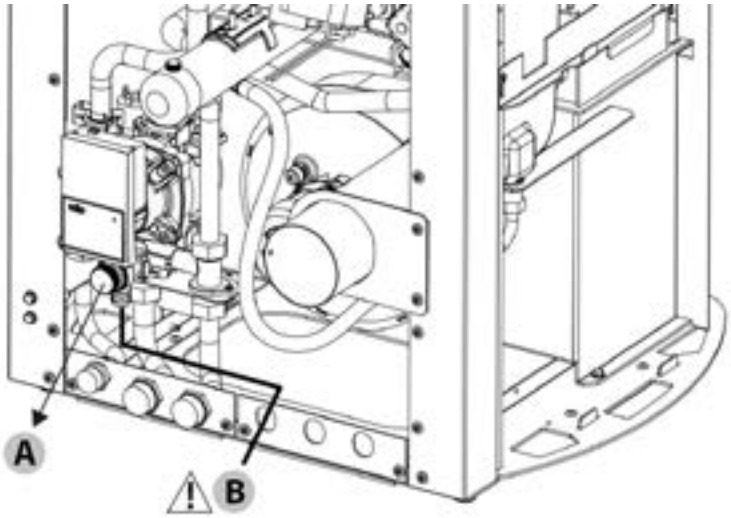


Fig. 44 - Discharge valve

LEGEND	Fig. 44
A	3 bar CE PN10, TMAX 110°C safety valve
B	ATTENTION: 110°C !!

7.8 SYSTEM CONNECTIONS

Make the connections to the corresponding fittings shown on the diagram on the previous page, taking care to avoid tension in the pipes and undersizing.

WE STRONGLY RECOMMEND WASHING THE ENTIRE SYSTEM BEFORE CONNECTING THE STOVE IN ORDER TO REMOVE RESIDUE AND BUILD-UPS.
Always install gate valves upstream of the stove to isolate it from the hydraulic system should it be necessary to move it for routine and/or special maintenance. Connect the stove using flexible hoses so as not to excessively bind the stove to the system and to allow it to be moved slightly.
The pressure discharge valve (C) must always be connected to a water discharge pipe. The pipe must be suitable to withstand the high water temperature and pressure.

7.9 WASHING THE SYSTEM

The connections must be easy to disconnect via pipe unions with swivel fittings.
Install suitable gate valves on the heating system pipes. A safety valve must be installed on the system.
To protect the heating system from harmful corrosion, build-ups or deposits, it is extremely important before installing the appliance to wash the system in compliance with the UNI 8065 standard (water treatment in heating systems for domestic use), using appropriate products.

7.10 FILLING THE SYSTEM

To fill the system, the stove may be equipped with a terminal (optional) with a non-return valve (D) to manually fill the heating system (if there is no terminal, use the filling valve on the main boiler). During this operation, the automatic bleed valve under the top ensures that any air in the system is expelled.
To allow the valve to bleed, we recommend loosening the grey cap by a turn and leaving the red cap tight (see figure). The filling pressure when the system is **COLD** must be **1 bar**. During operation, should system pressure drop (due to the gas dissolved in the water evaporating) below the above indicated minimum value, the user must bring it back to the initial value, using the filling valve.
For proper stove operation when it is **HOT**, pressure in the boiler must be **1.5 bar**.
To monitor system pressure, the terminal (optional) is equipped with a pressure gauge (M).
When filling is complete, always shut off the valve.

It is normal for there to be noises and gurgling until all the air in the system has been expelled.

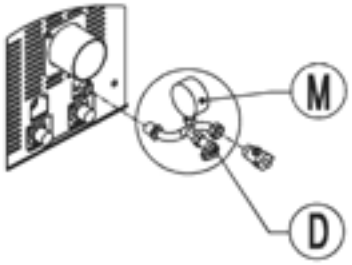


Fig. 45 - Terminal with filling valve (D) and pressure gauge (M)

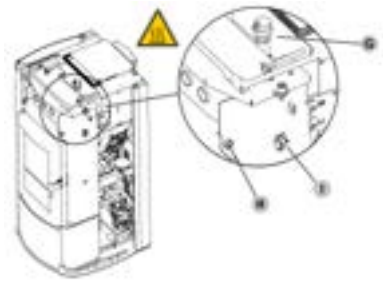


Fig. 46 - Manual bleed valve (located under the top) (Idro Prince³ 16-23-23 H2O, Aquos³ 16-23-23 H2O, Idron 16-22 Airtight, Hidrofire 22.8)

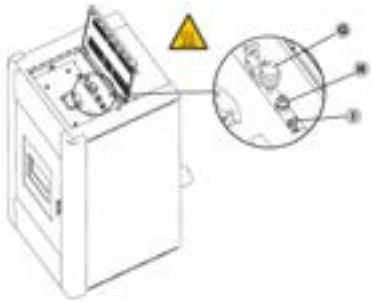


Fig. 47 - Manual bleed valve (located under the top) (Idro Prince³ 30-30 H2O)

7.11 WATER CHARACTERISTICS

The characteristics of the water used to fill the system are very important to prevent the build-up of mineral salts and the formation of incrustations along the pipes, in the boiler and in the heat exchangers.
Therefore, please ASK YOUR PLUMBER FOR HIS ADVICE CONCERNING:

Hardness of water circulating in the system, to prevent problems of incrustation and limescale, especially in the domestic water heat exchanger. (> 25° French).
Installation of a water softener (if water hardness exceeds 25° French).
Filling the system with treated water (demineralised).
Possibly providing an anti-condensation circuit.
Installation of hydraulic shock absorbers to prevent water hammering along the fittings and pipes.

If you have very extensive systems (with a large amount of water) or which require frequent refilling, the installation of water softening systems.

It should be remembered that incrustations drastically reduce performance due to their extremely low thermal conductivity.

8 ELECTRICAL CONNECTION

8.1 ELECTRICALLY CONNECTING THE STOVE

Connect the power cable first to the back of the stove, then to a wall plug.
Only use the main switch to turn on the stove; otherwise, it is a good idea to keep it off.

When the stove is not in use, it is advisable to unplug the power cable.

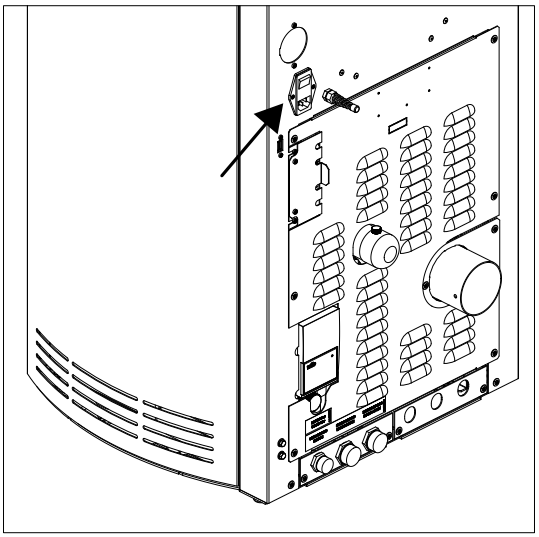


Fig. 48 - Electrically connecting the stove

8.2 STOVE POWER SUPPLY

Once the power cable is connected to the back of the stove, move the switch (also located on the back) to the (I) position.
The illuminated button of the switch will come on.
The switch on the back of the stove is used to power the system.
There is a fuse holder compartment on the back of the stove, under the power plug. Use a screwdriver to open the fuse holder compartment cover and, if necessary, replace the fuses (3.15 A time delay).

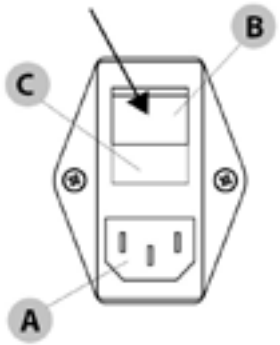


Fig. 49 - Switch

LEGEND	*Fig. 48*
A	*Stove power supply*
B	*Stove On/Off switch*
C	*Fuse holder compartment*

9 FIRST IGNITION WARNINGS

9.1 GENERAL WARNINGS

Remove all components that could burn (manual, various adhesive labels, and any polystyrene) from the product brazier and glass.
Make sure the brazier is positioned properly and rests solidly on the base.

The first ignition may fail, given that the feed screw is empty and is not always able to load the brazier in time with the amount of pellets needed to ignite the flame.

CLEAR THE FAILED IGNITION ALARM CONDITION. REMOVE THE PELLETS IN THE BRAZIER AND REPEAT IGNITION.

If after several failed ignitions, there is still no flame even with normal pellet supply, make sure the brazier is positioned properly, resting snugly in its housing without any ash build-up. If everything is as it should be, this means there might be a problem with the product components or caused by improper installation.

REMOVE THE PELLETS FROM THE BRAZIER AND REQUEST ASSISTANCE FROM AN AUTHORISED TECHNICIAN.

Do not touch the stove during the first ignition, as the paint hardens during this phase. Touching the paint could expose the steel surface.

If necessary, use the same colour spray paint for touch ups.

It is a good idea to ensure efficient ventilation in the room during the initial ignition, as the stove will give off some smoke and the smell of paint.

ATTENTION!
Make sure pellets and ash have not accumulated in the brazier due to failed ignition. If the brazier is not cleaned before reattempting, there is the risk of further failed ignitions and even explosions in some cases.

Keep away from the stove and, as previously mentioned, air out the room. The smoke and the smell of paint will dissipate after about an hour of operation; in any case, remember that they are not harmful to health.
The stove is subjected to expansion and contraction during the ignition and cooling phases; as such, it may make slight creaking sounds.
This is absolutely normal, as the structure is built in laminated steel, and is not to be considered a defect.
It is extremely important to make sure not to overheat the stove right away, but rather heat it gradually to the desired temperature, initially using low power.
This will prevent damage to the ceramic plates or coil, welding, and steel structure.

DO NOT IMMEDIATELY EXPECT HEATING EFFICIENCY!!!
ATTENTION!
If smoke flows into the room from the appliance or the flue during operation or initial ignition, switch off the device, air out the room, and immediately contact the installation/customer service technician.

10 CONTROL PANEL

10.1 CONTROL PANEL DISPLAY

Menu items.

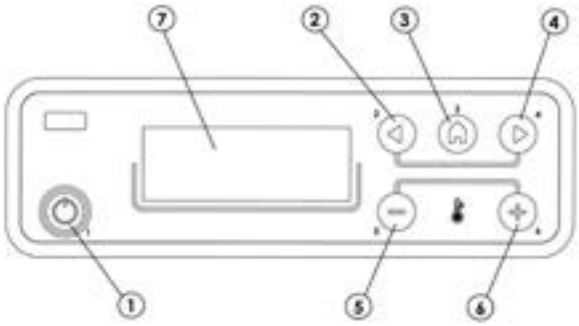


Fig. 50 - Display

LEGEND	*Fig. 50*
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.*

10.2 MAIN MENU

It is accessed by pressing key 3 (menu). The items that are accessed are:
- Date and Time
- Timer
- Sleep (only with the stove 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.

11 MENU HEADINGS AND FUNCTION

11.1 PROGRAMMED MODE (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					
on	off	day	on	off	day
08:00	11:00	mon	11:00	14:00	mon
Boiler on from 08:00 to 14:00					
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					

11.2 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.

11.3 SLEEP FUNCTION (MAIN MENU)

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.

11.4 ADJUSTMENTS MENU

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 Speed"
- Press "menu" to access the selected option.
- Modify with the + - keys.
- Press "menu" to confirm and "esc" to exit.

11.5 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 deactivated).
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.
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
To select "Cleaning" (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 "Cleaning" using the arrows.
- Press "menu" to confirm.
- Select "On" with the + - keys.
- Press "menu" to confirm and "esc" to exit.

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 (see relative chapter)
EXTERNAL THERMOSTAT (not included with the boiler, it is the user's responsibility)
The stove can also be temperature-controlled by an external room thermostat. It is positioned centrally with respect to the room where the appliance is installed and ensures greater consistency between the heating temperature requested of the stove and the actual temperature the stove supplies.
Connect the wires from the external thermostat to points 1-2 on the stove terminal board.
Once the thermostat is connected, it must be enabled.
Do so 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.

h - Pump On T

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

An additional (optional) module must be installed to allow an auxiliary boiler to be switched on should the stove be off or in alarm conditions. By default, this function is disabled; if necessary, activate it through the settings menu.

j - Pellet Recipe

This function is for adapting the stove 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

k - 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

l - Maximum power
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

m - Components test
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

n - Chimney sweep function
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/H20 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

o - 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.

p - 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) - if envisaged.
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.

q - 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", "DHW Parameters", "Meters memories", "Enable fan" and "Puffer data" with the + - keys.
- Press "menu" to confirm and "esc" to exit

11.6 AUTO ECO MODE (SEE SECTION F-G)

To activate the "Auto Eco" mode and adjust the time refer see section f-g.
The possibility to adjust the "ECO shutdown t" comes from the need to ensure proper operation in the various rooms the boiler can be installed in and prevent continuous shutdowns and start-ups in the event the temperature is subject to sudden changes (air currents, poorly insulated rooms, etc.).
The ECO shutdown procedure is activated automatically when all the power demand devices involved in the "system configuration" are satisfied: room probe/external thermostat, flow switch, puffer thermostat/ntc (10 kΩ ß3435) or boiler thermostat/ntc (10 kΩ ß3435). 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.
- TH2O < TSetH2O.
- If the domestic hot water (DHW) demands power - if envisaged - 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.

11.7 SYSTEM CONFIGURATION

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 probe on the stove or by enabling an external room thermostat.
2	2.1 Room temperature management via probe on the stove or by enabling an external room thermostat: instantaneous DHW production with plate exchanger.
	2.2 Room temperature management via probe on the stove or by enabling an external room thermostat; DHW production for boiler or storage tank with thermostat (optional). DISCONNECT ANY 3-WAY VALVES AND INTERNAL FLOW SWITCHES
3	Room temperature management via probe on the stove or by enabling an external room thermostat; boiler DHW production with ntc probe (10 kΩ ß3435). DISCONNECT ANY 3-WAY VALVES AND INTERNAL FLOW SWITCHES
4	External Puffer management controlled by thermostat.
5	External Puffer management controlled by ntc probe (10 kΩ ß3435).

11.8 SYSTEM WITH: DIRECT VENT PELLET STOVE AND ROOM PROBE

Settable settings :

SETTING	VALUES
ROOM TEMP.	5°C - 35°C
WATER TEMP.	30°C - 80°C

Parameters to set :

SETTING	VALUES
Configuration	1

Hydraulic diagram :

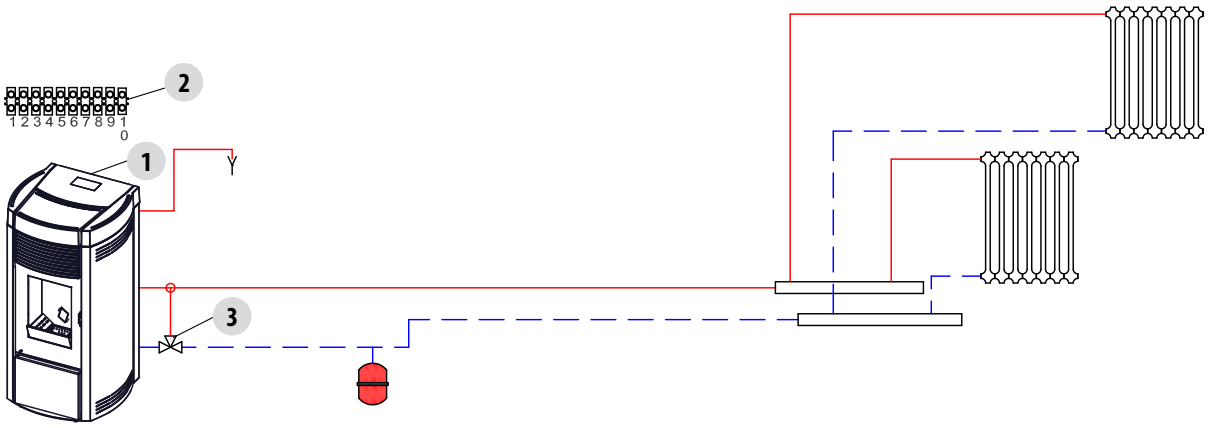


Fig. 51 - System with: direct vent pellet stove and room probe

LEGEND	*Fig. 51*
1	*Pellet Boiler*
2	*Rear terminal board*
3	*Anti-condensate valve*

11.9 SYSTEM WITH: DIRECT VENT PELLET STOVE AND ROOM THERMOSTAT

Settable settings :

SETTING	VALUES
WATER TEMP.	30°C - 80°C

Parameters to set :

SETTING	VALUES
Configuration	1
External thermostat	ON

Hydraulic diagram :

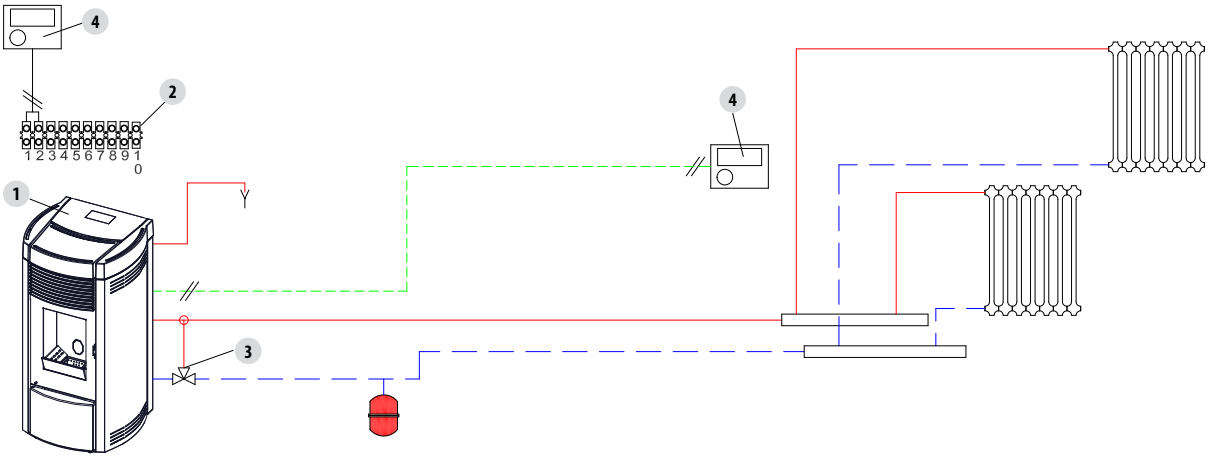


Fig. 52 - System with: direct vent pellet stove and room thermostat

LEGEND	*Fig. 52*
1	*Pellet Boiler*
2	*Rear terminal board*
3	*Anti-condensate valve*

LEGEND	Fig. 52
4	Room thermostat

11.10 SYSTEM WITH: DIRECT VENT PELLET STOVE, ROOM PROBE, AND DHW BOILER

Settable settings :

SETTING	VALUES
ROOM TEMP.	5° C - 35°C
WATER TEMP.	30° C - 80°C
BOILER TEMP.	30° C - 80°C

Parameters to set :

SETTING	VALUES
Configuration	3

Hydraulic diagram :

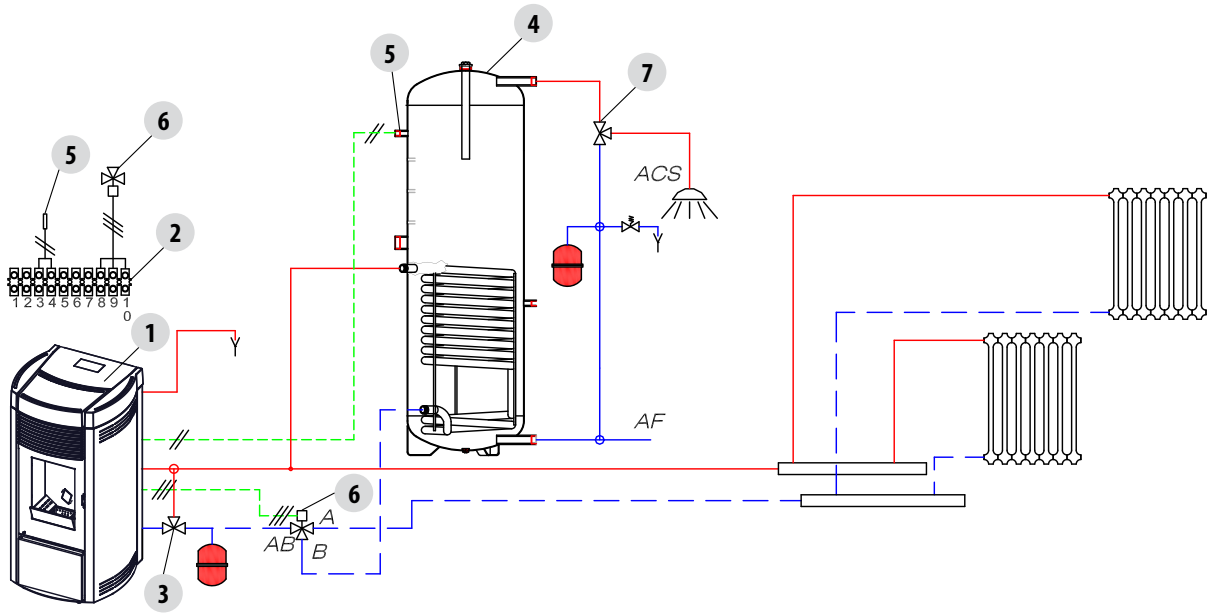


Fig. 53 - System with: direct vent pellet stove, room probe, and DHW boiler

LEGEND	Fig. 53
1	Pellet Boiler
2	Rear terminal board
3	Anti-condensate valve
4	DHW boiler
5	Boiler probe
6	3-way diverter valve
7	DHW Thermostatic Valve

11.11 SYSTEM WITH: DIRECT VENT PELLET STOVE, ROOM THERMOSTAT, AND DHW BOILER

Settable settings :

SETTING	VALUES
WATER TEMP.	30° C - 80°C
BOILER TEMP.	30° C - 80°C

Parameters to set :

SETTING	VALUES
Configuration	3
External thermostat	ON

Hydraulic diagram :

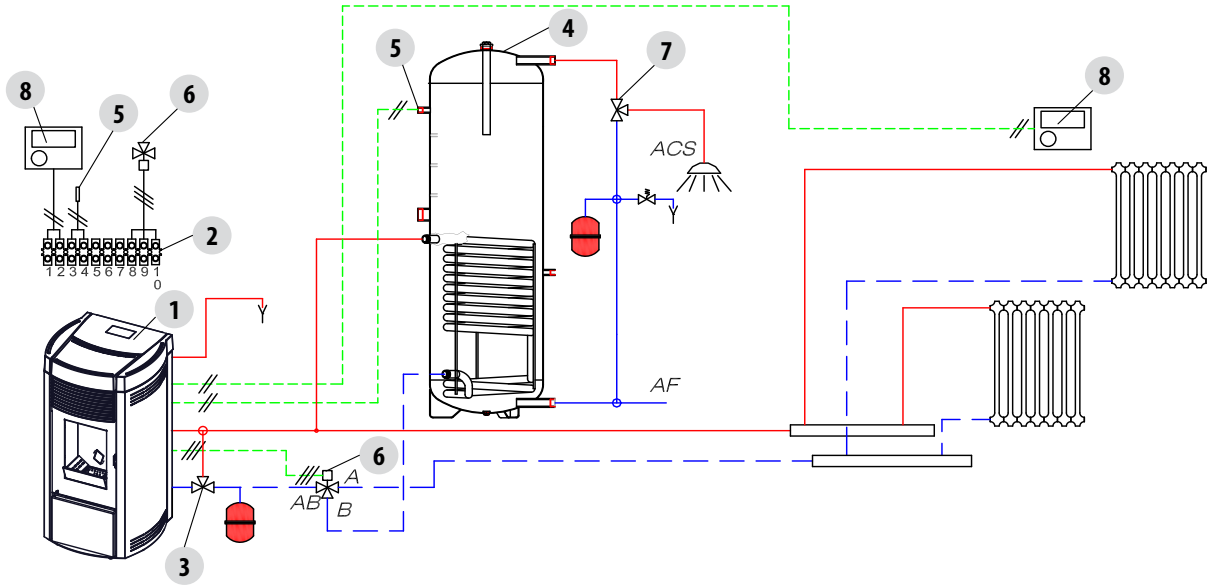


Fig. 54 - System with: direct vent pellet stove, room thermostat, and dhw boiler

LEGEND	*Fig. 53*
1	*Pellet Boiler*
2	*Rear terminal board*
3	*Anti-condensate valve*
4	*DHW boiler*
5	*Boiler probe*
6	*3-way diverter valve*
7	*DHW Thermostatic Valve*
8	*Room thermostat*

11.12 SYSTEM WITH: PELLET STOVE AND PUFFER

Settable settings :

SETTING	VALUES
PUFFER TEMP.	55° C - 75°C

Parameters to set :

SETTING	VALUES
Configuration	5

Hydraulic diagram :

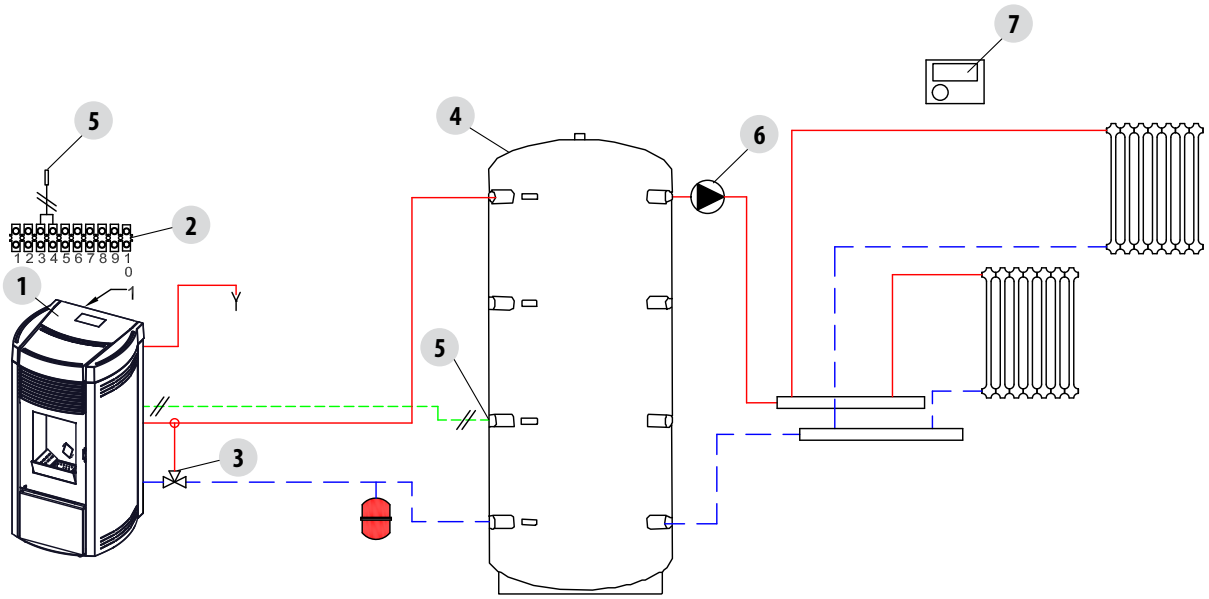


Fig. 55 - System with: pellet stove and puffer

LEGEND	*Fig. 55*
1	*Pellet Boiler*
2	*Rear terminal board*
3	*Anti-condensate valve*
4	*Puffer*
5	*Puffer probe*
6	*System pump*
7	*Room thermostat*

11.13 SYSTEM WITH: PELLET STOVE, PUFFER, AND AUXILIARY BOILER (WALL MOUNTED)

Settable settings :

SETTING	VALUES
PUFFER TEMP.	55° C - 75°C

Parameters to set :

SETTING	VALUES
Configuration	5
Auxiliary Boiler	ON

Hydraulic diagram :

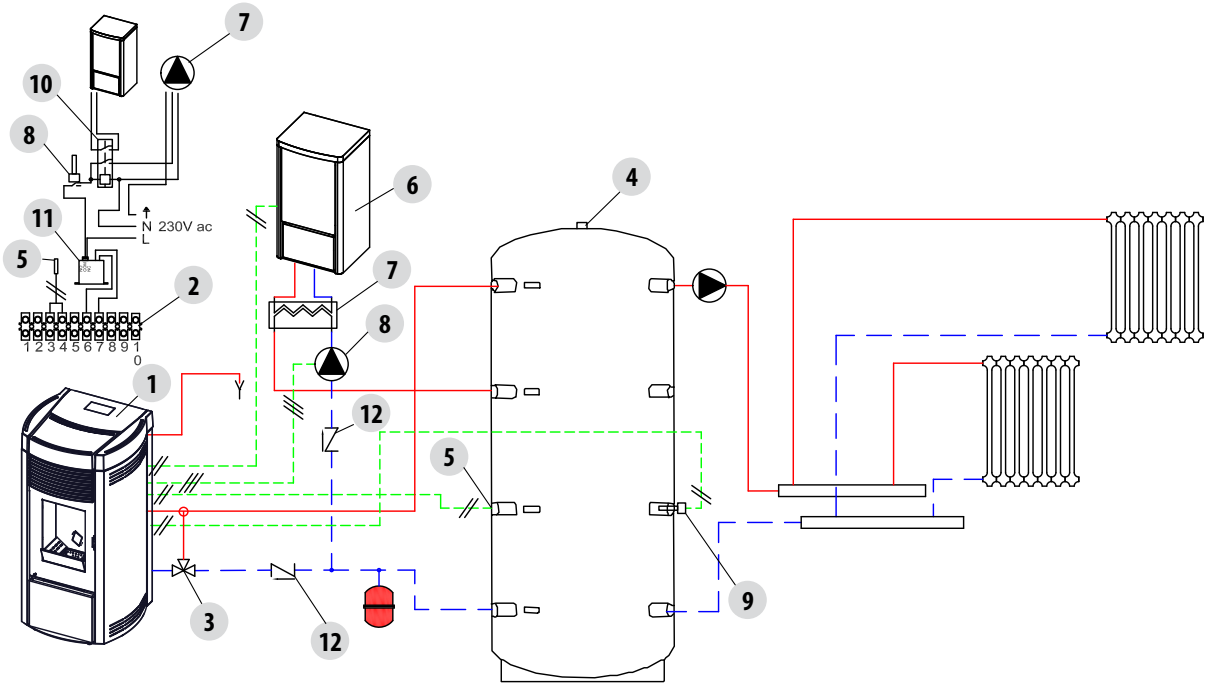


Fig. 56 - System with: pellet stove, puffer, and auxiliary boiler (wall mounted)

LEGEND	Fig. 56
1	Pellet Boiler
2	Rear terminal board
3	Anti-condensate valve
4	Puffer
5	Puffer Probe
6	Auxiliary boiler
7	Plate exchanger
8	System pump
9	Auxiliary boiler thermostat
10	Activation relay
11	Aux boiler connection module
12	Non-return valve

11.14 OPERATING MODE

The operating mode for hydro boilers is AUTOMATIC only (manual mode is not envisioned). 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.

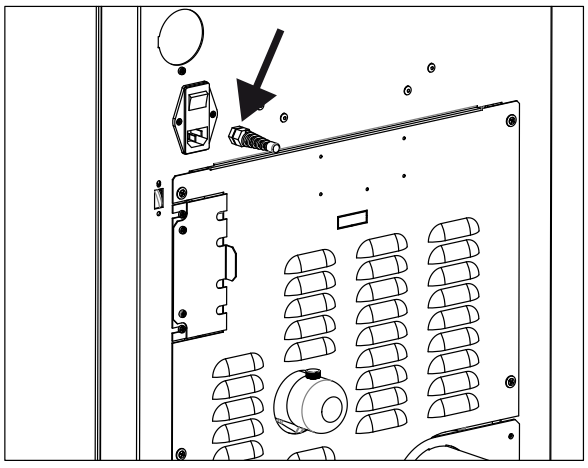


Fig. 57 - Probe position

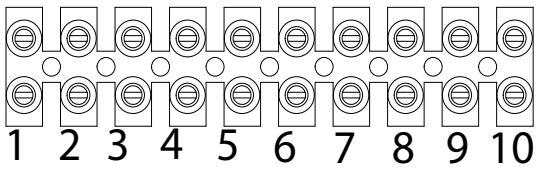


Fig. 58 - 10-pole terminal board

11.15 ELECTRICAL CONNECTIONS

Terminal board contacts (see **Fig. 58**):

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

To access the "W" terminal board, remove the cap as shown in part 1 of the manual (in the paragraph dedicated to removing the back), then loosen the two "z" screws and remove the "W" terminal board. Make the necessary connections and reassemble everything.

The connections to the terminal board must be made with cables with a maximum length of 3 metres (regardless of whether they are signal or power cables).

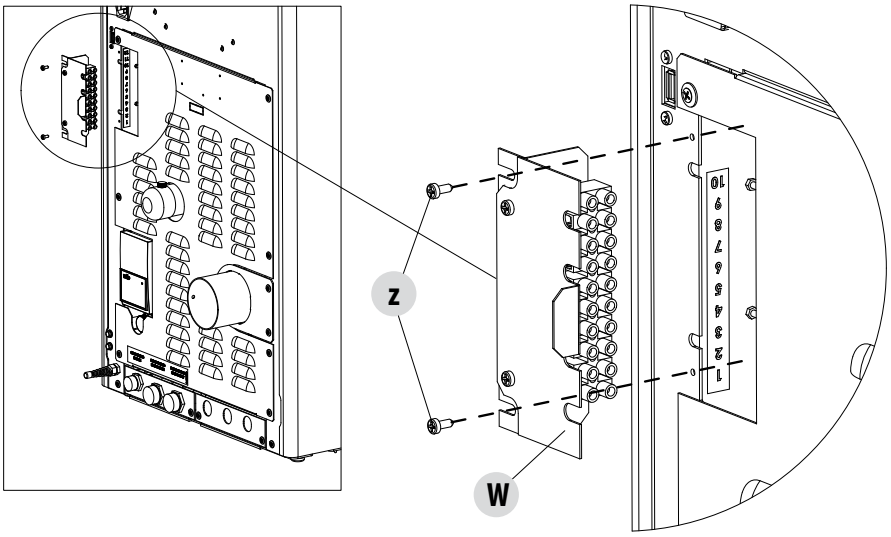


Fig. 59 - Connections

Note: FOR THE ELECTRICAL CONNECTIONS, REFER TO THE ELECTRICAL CONNECTION a pag. 40 CHAPTER.

- The water manostat cables that are prearranged in the boiler must be connected to the hydraulic kit (optional).
- The flow switch cables are prearranged in the boiler for connection to the hydraulic kit (optional) with domestic water.

11.16 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 (if envisaged). To activate external thermostat if any see the relative section.

11.17 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".

12 SAFETY DEVICES AND ALARMS

12.1 SAFETY DEVICES

The product is supplied with the following safety devices

12.2 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)

12.3 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.

12.4 CONTACT THERMOSTAT IN THE FUEL HOPPER

If the temperature exceeds the preset safety level, it immediately shuts down boiler operation.

12.5 CONTACT THERMOSTAT IN THE BOILER

If the temperature exceeds the preset safety level, it immediately shuts down boiler operation.

12.6 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.

12.7 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.

12.8 SMOKE FAN

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

12.9 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.

12.10 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.

12.11 FAILED START-UP

If during ignition no flame develops, the boiler will go into alarm condition.

12.12 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.

12.13 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.

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.

12.14 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 PANEL ALERTnot 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.

PANEL ALERT	TYPE OF PROBLEM	SOLUTION
A19	Water probe faulty.	Water probe disconnected / interrupted / defective / not recognised.
A20	Puffer probe alarm.	Puffer probe disconnected / interrupted / defective / not recognised.
A21	Triac alarm	The triac of the electronic card has stalled. Replace the card.
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.

12.15 ALARM RESET

NEVER open the stove door while it is starting up initially or switching off, as the pellets are still burning at this point and there may be volatile substances.

ATTENTION!
If smoke flows into the room from the appliance or the flue during operation or initial ignition, switch off the device, air out the room, and immediately contact the installation/customer service technician.

To reset the alarm, you must hold down key 1 (ESC) for a few seconds. The stove performs a check to determine whether what caused the alarm is still present.
If this is the case, the alarm will be shown again, otherwise the stove will switch OFF.
If the alarm persists, contact a service centre.

12.16 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.

12.17 BLACKOUT 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;

1) 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.

12.18 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).

13 RECOMMENDATIONS FOR SAFE USE

ONLY PROPER INSTALLATION AND APPROPRIATELY SERVICING AND CLEANING THE APPLIANCE CAN ENSURE PROPER OPERATION AND SAFE PRODUCT USE

We wish to inform you that we are aware of cases of malfunctioning domestic pellet heating products, essentially due to improper installations and inappropriate maintenance.
We wish to ensure you that all our products are extremely safe and certified according to the European reference standards. The ignition system was tested with extreme care to increase ignition efficiency and prevent any issues even in the worst operating conditions. In any case, as with any pellet product, our appliances must be installed properly and periodically cleaned and serviced in order to ensure safe operation. Our research suggests that these malfunctions are essentially due to a combination of part or all of the following factors:

- Clogged brazier holes or deformed brazier, due to poor maintenance. These conditions can cause delayed ignition, creating an abnormal production of unburnt gases.
- Insufficient combustion air due to a reduced or clogged air intake duct.
- Using smoke ducts that do not meet the installation standard requirements, such to fail to ensure appropriate draft.
- Partially obstructed chimney due to poor maintenance, such to reduce draft, making ignition difficult.
- Terminal chimney cap not compliant with the instructions manual, thus not suitable to prevent potential backdraft.
- This factor becomes crucial when the product is installed in particularly windy areas, like on the coast.

The combination of one or more of these factors could cause significant malfunctions.
To prevent this from happening, it is essential to ensure the product is installed in compliance with the standards in force.
Furthermore, it is essential to follow these simple rules:

- Every time it is removed for cleaning, the brazier must always be properly repositioned in the work position before using the product, thoroughly cleaning any residual dirt on the support base.
- Never load pellets into the brazier manually, either before ignition or during operation.
- Any unburnt pellets after a failed ignition must be removed before re-igniting the product. Also make sure it is properly positioned in its housing and check for normal combustion air intake/smoke extraction.
- If the product repeatedly fails to ignite, we recommend that you stop using it immediately and contact a qualified technician to check product operation.

Following these instructions is more than enough to ensure normal operation and prevent any issues with the product.
If the above precautions are not respected and there is a pellet overload in the brazier during ignition and subsequent abnormal smoke generated in the combustion chamber, carefully follow these instructions:

- Do not, for any reason, unplug the product from the electrical mains: this would stop the smoke extraction fan, resulting in smoke being emitted into the room.
- Pre-emptively open the windows to air any smoke out of the installation room (the chimney may not work normally)
- Do not open the fire door, as this would compromise normal operation of the smoke exhaust system to the chimney.
- Simply switch off the stove using the on/off button on the control panel (not the rear button of the power supply plug!) and move away from the product as you wait for the smoke to clear completely.
- Before any attempts to reignite the product, thoroughly clean the brazier and its air passage holes from build-up and any unburnt pellets; reposition the brazier in its housing, removing any residue from its support base. If the product repeatedly fails to ignite, we recommend that you stop using it immediately and contact a qualified technician to check product and chimney operation.

14 CLEANING AND MAINTENANCE

Fig. 60 - Example of a clean brazier

Fig. 61 - Example of a dirty brazier

Only appropriately servicing and cleaning the product can ensure its safety and proper operation.

ATTENTION!
All cleaning operations of all the parts must be done when the product is completely cold and with the electrical plug disconnected.
Disconnect the product from the 230V power supply before servicing it in any way.

The product requires little maintenance if used with certified, high quality pellets.

14.1 DAILY OR WEEKLY CLEANING (USER'S RESPONSIBILITY)

Ash drawer cleaning

Press door "H" to the bottom right and open it. Turn the handle of door "G" to the right and open it downwards.
Pull out and empty ash drawer "D". Remove any ash residue from the compartment before reinserting the drawer. Experience and pellet quality will determine the frequency of the ash drawer cleaning. In any case, it is advisable not to exceed 2 or 3 days.
When cleaning the ash drawer, we recommend removing part "C" near the brazier and using a vacuum cleaner nozzle to remove any ash build-up.

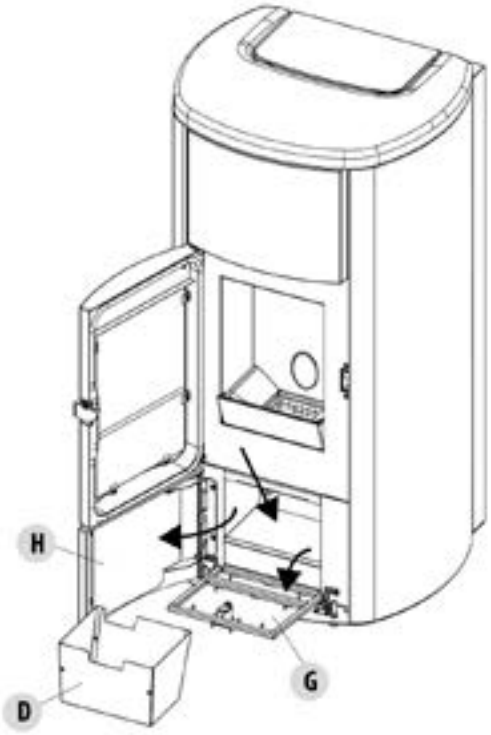


Fig. 62 - Drawer removal

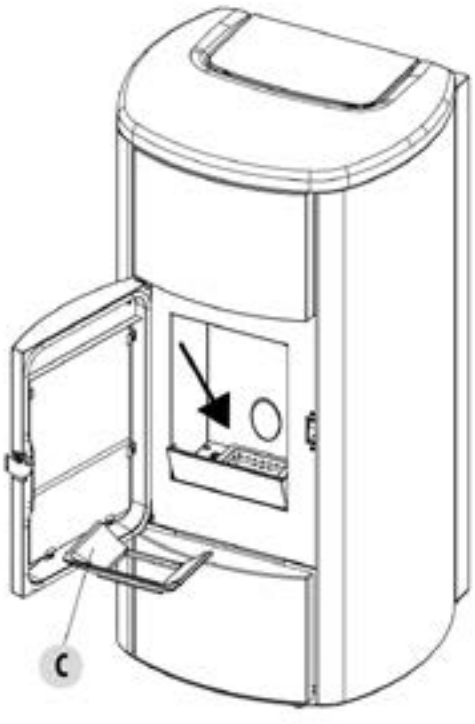


Fig. 63 - Brazier removal

14.2 CLEANING THE GLASS

It is recommended to clean the ceramic glass with a dry brush, or if it is very dirty, spray a little specific detergent and clean with a cloth.

ATTENTION!
Do not use abrasive products and do not spray the glass spray cleaner on the painted parts or the door gaskets (ceramic fibre cord).

14.3 CLEANING THE EXCHANGER AND THE COMPARTMENT UNDER THE BRAZIER EVERY 2/3 DAYS

Cleaning the exchanger and the compartment under the brazier is a simple task but very important to always maintain the declared performance.

As such, we recommend cleaning the internal exchanger every 2-3 days, following these simple tasks in order:

- **Activate "CLEANING" function** - when the boiler is off, press - menu, select "Settings", use the <> arrows to select "Cleaning", confirm with "Menu", active cleaning "ON" using the +- keys. This procedure activates the smoke extraction fan to the maximum, in order to expel the soot that is stirred up while cleaning the exchanger.
- **Clean the pipe unit** - Using lever "A", located under the tank cover, vigorously shake the turbulators 5-6 times. This removes the soot deposited on the exchanger smoke ducts during normal boiler operation.
- **Disable the "CLEANING" function** - this function is automatically disabled after two minutes. If you need to stop this function sooner, press the "Esc" key.
- **Clean the smoke conveyor compartment**(fig. on next page)
- The boiler is equipped with a removable ash drawer to collect any soot and ash build-up (previous page).
- Once cleaning is complete, close the cover and ash drawer.

If this cleaning is not done every 2-3 days, the stove could become clogged with ash after several hours of operation and go into alarm conditions.

Fig. 64 - Turbulator cleaning lever (Idro Prince³ 16-23-23 H2O, Aquos³ 16-23-23 H2O, Idron 16-22 Airtight, Hidrofire 22.8)

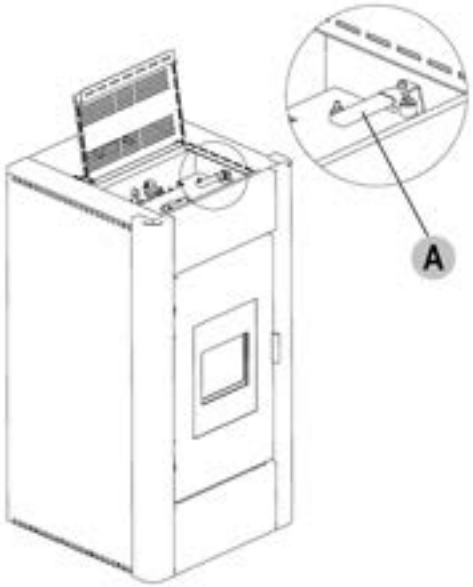


Fig. 65 - Turbulator cleaning lever (Idro Prince 30-30 H2O)

14.4 PIPE UNIT CLEANING

For improved boiler performance, once a month it is necessary to clean the pipes inside the combustion chamber.
Open the firebox door and use the supplied brush to clean the 5 pipes located at the top inside the combustion chamber. Do this several times so that the ash deposited inside these pipes falls into the lower area around the brazier.
Use a vacuum cleaner to remove all the fallen material.

Fig. 66 - Pipe unit cleaning

14.5 SMOKE EXTRACTOR COMPARTMENT CLEANING

At the back of ash drawer "D", you will find smoke cover "E", which must be removed to clean the smoke extractor. Therefore:

- loosen screws "s"
- remove smoke cover "E"

At this point, use a vacuum cleaner nozzle to remove the ash and soot that have accumulated in the lower exchanger shown by the arrow. Before reinstalling cover "E", we recommend replacing gasket "F"
Before vacuuming the ash, we recommend cleaning the inner walls of the stove with a scraper.

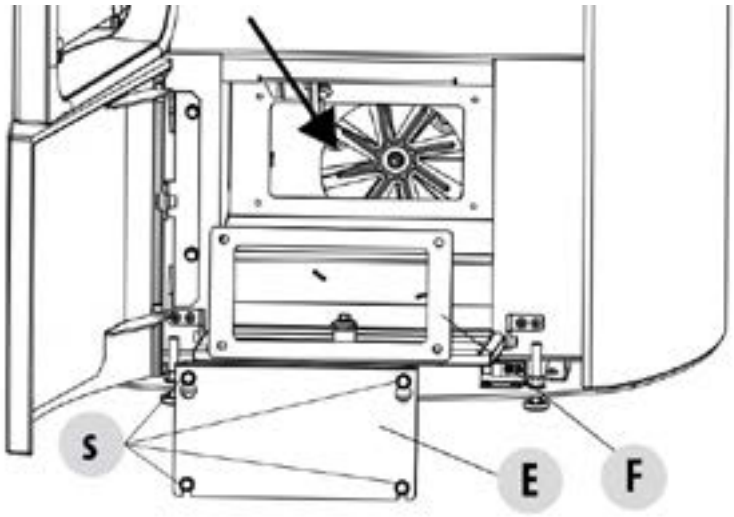


Fig. 67 - Lower compartment cleaning

14.6 CLEANING THE SMOKE EXTRACTION SYSTEM AND GENERAL CHECKS

Clean the smoke exhaust system especially near the "T"-fittings, elbows, and any horizontal sections of the smoke duct.
Contact a qualified chimney sweep to periodically clean the flue.
Check the ceramic fibre gasket seal on the stove door. If necessary, order new gaskets from the dealer for replacement or contact an authorised service centre to perform the entire operation.

ATTENTION:
The fume exhaust system cleaning frequency depends on stove use and its installation.
We recommend contacting an authorised service centre for the end-of-season cleaning and maintenance operations because the centre will perform an overall check of the parts, as well as the above-mentioned operations.

14.7 DOOR CLOSING FUNCTIONALITY PERIODIC CHECK

Check that door closing assures a correct seal (by means of the "paper sheet" test) and that when the door is closed, the closing block (X in the figure) does not protrude from the sheet metal it is fixed to. In some products it will be required to remove the aesthetic coating in order to evaluate any anomalous protrusion of the block with the door closed.

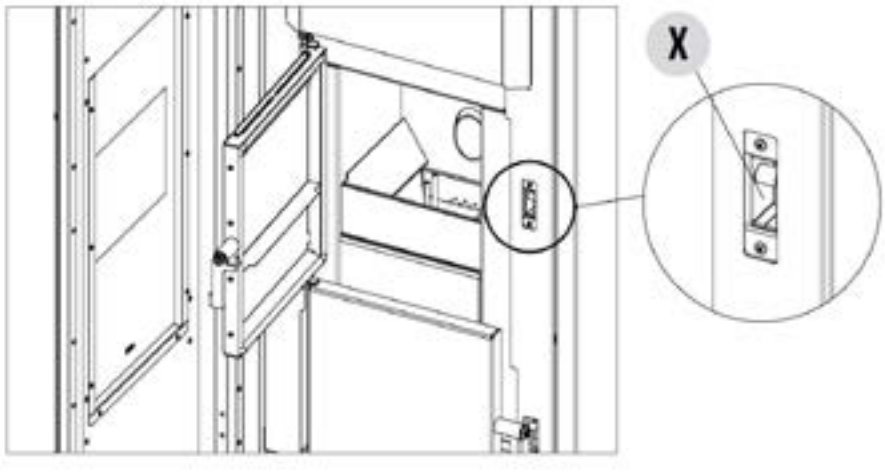


Fig. 68 - Door closing

14.8 SWITCHING OFF AT THE END OF THE SEASON

At the end of every season, before switching off the product, we recommend removing all the pellets from the hopper using a vacuum with a long hose.

We recommend removing the unused pellets from the hopper because they can trap moisture. Disconnect any combustion air ducts that can channel moisture into the combustion chamber, and above all, ask the specialised technician during the necessary annual scheduled maintenance appointment at the end of the season to touch up the paint inside the combustion chamber with specific silicone spray paints (that can be purchased at any retailer or customer service centre). This way, the paint will protect the internal parts of the combustion chamber, preventing rust from forming.

When not in use, the appliance must be disconnected from the electrical mains. For greater safety, especially when there are children, we recommend removing the power cable altogether.

When turning the stove back on, if the control panel display does not turn on when you press the main switch on the side of the product, it means you may need to replace the service fuse.
There is a fuse holder compartment on the back of the product, under the power plug. After having disconnected the plug from the mains, use a screwdriver to open the fuse holder compartment cover and, if necessary, replace the fuses (3.15 A time delay).

14.9 REPLACING THE OVERPRESSURE RELIEF VALVE FOR THE COMBUSTION CHAMBER

Combustion chamber overpressure rubber spacer "G" (fig.A) may become worn and/or damaged, thereby requiring replacement once a year to ensure proper system operation.
Replace by following the instructions below:

- Remove the top
- Remove the first ceramic or steel side panel (depending on the type of stove)
- Unscrew the screw-washer-rubber spacer-roller shown in fig.A/C (on both sides of the cover). Then assemble the new kit:
- Align the screw-washer-rubber spacer-roller as shown in fig.C and screw it into the structure.
- Tighten the screw completely.

Now make sure that rubber spacer compression is correct, using the template supplied with the kit:

- Place the template on the cover (fig.B); the head of the screw must barely touch the upper reference. Otherwise, tighten or loosen the screw until it does.

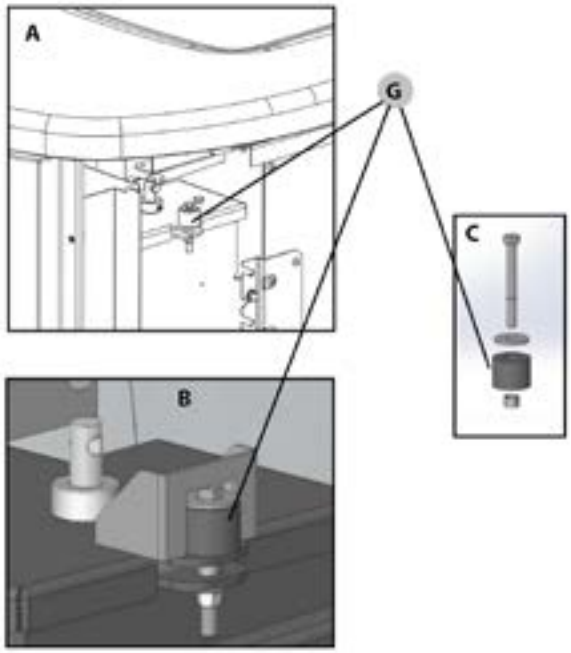


Fig. 69 - Rubber spacer (Idro Prince³ 16-23-23 H2O, Aquos³ 16-23-23 H2O, Idron 16-22 Airtight, Hidrofire 22.8)

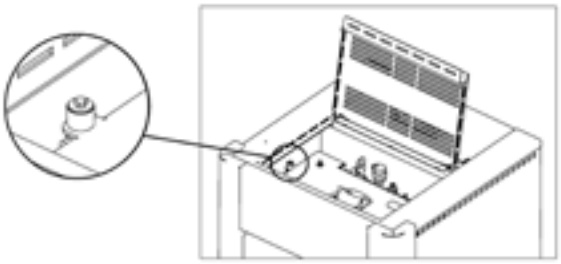


Fig. 70 - Rubber spacer (Idro Prince³ 30-30 H2O)

14.10 CHECKING THE INNER COMPONENTS

ATTENTION!
Only qualified personnel with technical knowledge of combustion and electricity can check the inner electrical-mechanical components.

We recommend this maintenance be done annually (with a scheduled service contract), which focuses on a visual and functional check of the inner components. Below is a summary of the checks and/or service that are essential for proper product operation.

- Gear motor
- Smoke extraction fan
- Smoke probe
- Ignition spark plug
- Pellet/water automatically rearming thermostat
- Room/water probe
- Motherboard
- Panel-board protective fuses
- Wiring

PARTS/FREQUENCY	EVERY DAY	EVERY WEEK	15 DAYS	60-90 DAYS	EVERY SEASON
Brazier cleaning *	X				
Ash compartment vacuum cleaning		X			
Ash pan cleaning	X				
Fire door and glass cleaning			X		
Turbulator cleaning	X				
Lower ash pan cleaning			X		
Exhaust "T"-fitting cleaning (outside the boiler)				X	

PARTS/FREQUENCY	EVERY DAY	EVERY WEEK	15 DAYS	60-90 DAYS	EVERY SEASON
Exchanger cleaning and ash and build-up removal					X
Smoke fitting cleaning					X
Circulation pump check					X
Hydraulic leak check					X
Door gasket check					X
Ignition spark plug check					X
Door closing functioning					X

** CLEANING MUST BE DONE MORE FREQUENTLY IF LOW QUALITY PELLETS ARE USED.*

ATTENTION: GUIDE INTENDED EXCLUSIVELY FOR SPECIALISED TECHNICIANS.
ATTENTION: All repairs must be done exclusively by a specialised technician when the boiler is off and the electrical plug is disconnected. The operations in bold must be done exclusively by specialised personnel. Failure to respect this condition relieves the manufacturer of all liability and voids warranty conditions.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Pellets are not fed into the combustion chamber	The pellet hopper is empty	Refill the pellet hopper
	The feed screw is clogged with sawdust	Empty the hopper and manually free the feed screw from the sawdust
	Broken gear motor	*Replace gear motor*
	Defective electronic board	*Replace the electrical board*
The fire goes out or the boiler automatically stops	The pellet hopper is empty	Refill the pellet hopper
	Pellets are not fed	See previous problem
	The pellet temperature safety probe has tripped	Let the boiler cool down, reset the thermostat until the problem is resolved, then switch the boiler back on; if the problem persists, contact customer service
	The door does not close perfectly or the gaskets are worn	*Close the door and have the gaskets replaced with other original ones*
	Unsuitable pellets	Change the type of pellets with one that is recommended by the manufacturer
	Poor pellet flow	*Have the fuel flow checked, following the instructions in the manual*
	Dirty combustion chamber	Clean the combustion chamber, following the instructions in the manual
	Clogged exhaust	Clean the smoke duct
	Faulty smoke extraction motor	*Check and, if necessary, replace the motor*
	Broken or defective manostat	*Replace the manostat*

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
The boiler works for a few minutes and then switches off	Ignition step is not completed	Repeat ignition
	Temporary power outage	Wait for automatic restart
	Clogged smoke duct	Clean the smoke duct
	Defective or broken temperature probes	*Check and replace probes*
	Faulty spark plug	*Check and, if necessary, replace the spark plug*
Pellets accumulate in the brazier, the glass on the door gets dirty, and the flame is weak	Insufficient combustion air	Clean the brazier and make sure all the holes are clear. Clean the combustion chamber and smoke duct. Make sure the air inlet is not obstructed
	Damp or unsuitable pellets	Change the type of pellet
	Broken smoke extraction motor	*Check and, if necessary, replace the motor*
The smoke extraction motor is not working	No power to the boiler	Check the mains voltage and the protective fuse
	The motor is broken	*Check the motor and capacitor and, if necessary, replace them*
	The motherboard is defective	*Replace the electronic board*
	The control panel is broken	*Replace the control panel*
In automatic position, the boiler always works at maximum power	Thermostat set to the minimum	Reset the thermostat temperature
	Room thermostat in a position that always detects cold	Change the position of the thermostat
	Faulty temperature detection probe	*Check and, if necessary, replace the probe*
	Defective or broken control panel	*Check and, if necessary, replace the panel*
The boiler does not start	Power outage	Make sure the power cable is plugged in and the main switch is in the "I" position.
	Blocked pellet probe	*Release it via the rear thermostat. If it happens again, call customer service.*
	Broken fuse	Replace the fuse
	Broken manostat (block signal)	Low water pressure in the boiler
	Clogged smoke duct or exhaust	Clean the smoke exhaust and/or smoke duct
	Water temperature probe has tripped	Call customer service
Temperature does not increase with the boiler working	Improper combustion adjustment	Check recipe and parameters
	Dirty boiler/system	Check and clean the boiler
	Insufficient boiler power	Make sure the boiler is appropriately proportional to the system requirements
	Poor quality pellets	Use quality pellets

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
Condensate in the boiler	Improper temperature adjustment	*Adjust the boiler to a higher temperature*
	Insufficient fuel consumption	*Check the recipe and/or technical parameters*
Radiators cold in the winter	Room thermostat (local or remote) adjusted too low. If remote thermostat, check whether it is defective	*Adjust it to a higher temperature. Replace it if necessary (if remote).*
	The circulator does not turn because it is blocked	*Release the circulator by removing the cap and turning the shaft with a screwdriver.*
	The circulator does not turn	*Check its electrical connections, replace it if necessary.*
	Air inside the radiators	*Bleed the radiators*

ATTENTION!
The operations in italics must be done exclusively by specialised personnel.
Failure to respect this condition relieves the manufacturer of all liability and voids warranty conditions.

15 ELECTRONIC BOARD

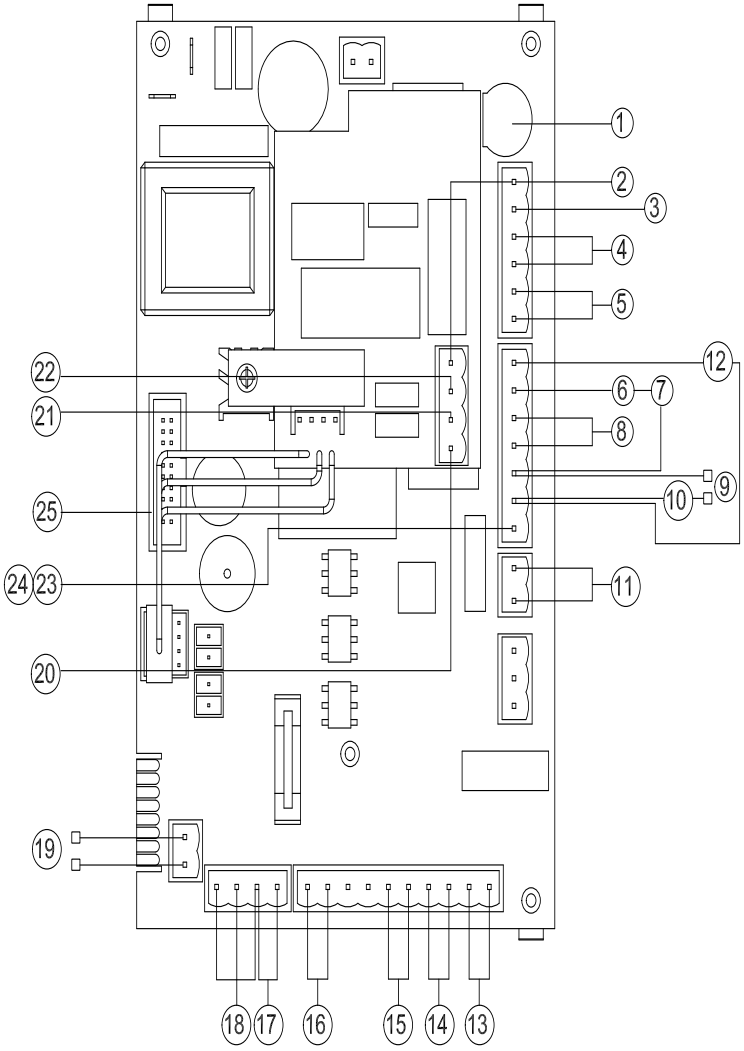


Fig. 71 - Electrical board

LEGEND	Fig. 71
1	FUSE
2	BOARD PHASE
3	BOARD NEUTRAL
4	SMOKE EXTRACTION FAN
5	ROOM FAN
6	PELLET SAFETY THERMOSTAT
7	WATER THERMAL PROTECTOR
8	SPARK PLUG
9	HYDRAULIC KIT WATER MANOSTAT
10	AIR MANOSTAT
11	ADDITIONAL BOILER CONNECTION (TERMINAL BOARD)
12	FEED SCREW
13	SMOKE PROBE
14	EXTERNAL THERMOSTAT CONNECTION (TERMINAL BOARD)
15	INTERNAL ROOM PROBE
16	PUFFER/BOILER PROBE CONNECTION (TERMINAL BOARD)
17	BOILER WATER TEMPERATURE PROBE
18	SMOKE EXTRACTION FAN RPM CONTROL
19	FLOW SWITCH (ONLY VERSIONS WITH EXCHANGER)
20	3-WAY VALVE PHASE (HEATING)
21	3-WAY VALVE PHASE (DHW)
22	PUMP PHASE
23	PUMP NEUTRAL
24	3-WAY VALVE NEUTRAL
25	CONTROL BOARD

NOTE

NOTE

NOTE

PELLET STOVES · WOOD STOVES · WOOD COOKING STOVES
THERMOSTOVES · PELLET FIREPLACE INSERTS

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