PASQUALICCHIO

Ecological heat

Wood and Pellets Boilers

Aspiro / Aspiro Combi / CL / CL Combi

Made in Italy

Catalog v.2
2014

WOOD AND PELLETS BOILERS
Aspiro » Aspiro Combi » CL » CL Combi
Catalog v.2

www.pasqualicchio.it | info@ctpasqualicchio.it

PASQUALICCHIO
Ecological heat

Pasqualicchio is ISO 9001
European Quality System Certified

Our Vision

‘To take energy efficiency into every home”

Our Mission

‘To identify solutions that respect the environment, creating products with reduced consumption, high efficiency and low emissions”

Paolisi, is situated in the heart of the South Italy, in the Province of Benevento.
A small municipality in the South of Italy that is home to **Pasqualicchio since the 70’s**. Offering biomass heating solutions for over 40 years.
Currently, our offer includes 7 product lines: compact boilers, industrial boilers, multi-fuel boilers, air generators, air stoves, fireplace heating system and thermo-stoves. The company can count on a structure of over **18000 square metres**, made up from a specialised research and development centre, three production plants and one state-of-the-art design department.
Throughout the years, the business genius of the brothers **Francesco** and **Ruggiero Pasqualicchio** has established itself firmly on national and international markets, thanks to the dynamic company policy, typical of the market-pull.
It has been the requests of satisfied customers that have given the correct imprinting to focus on higher product quality. Playing the **thermo-technical know-how** card as an integral part of the company’s DNA was indispensable. For **Pasqualicchio**, innovation, quality and know-how go hand-in-hand; all aimed at offering products increasingly closer to the customer’s requirements. It is for this reason that the company is constantly searching for synergies and collaborations with the main suppliers of state-of-the-art components and machinery.

VISION

To take energy efficiency into every home

MISSION

To identify solutions that respect the environment, creating products with reduced consumption, high efficiency and low emissions

Pasqualicchio has always used state-of-the-art materials for its eco-compatible solutions. We have come a long way since the creation of first product over 40 years ago. Our objective is to identify solutions that respect the environment, creating products with reduced consumption, high efficiency and low emissions. Our products are innovative, without neglecting the environment, thanks to the use of fuels deriving from renewable sources, in a way to reduce pollution.

OUR HISTORY

A tale started in the 70's

The Pasqualicchio family's passion for the domestic "**fireplace**" is the milestone of an entrepreneurial experience that has its roots in the artisan production of domestic wood-burning stoves. All of this was kicked-off over 40 years ago by **Vito Antonio Pasqualicchio**. Innovative ideas took shape in his small laboratory, which reached industrial levels during the 90's, when **Francesco Pasqualicchio** and, successively his brother, **Ruggiero**, took over the company. \

1971 - 1980

Vito Antonio Pasqualicchio started to create the first wood-burning stoves from his artisan laboratory. His products were a great success immediately. This encouraged **Vito Antonio** to introduce innovations and expand his business.

1981 - 1989

Thanks to an ever increasing number of satisfied customers and the desire to be brought into question, production started to expand to new products such as fireplace heating systems and boilers.

1990 - 1999

A high demand required a radical transformation of the activity: during the 90's the family business became a Company. In 1996 the Pasqualicchio brand name was created; Francesco and Ruggiero Pasqualicchio, the sons of Vito Antonio, took over the helm of the company.

2000 - 2007

The decades of experience in the thermo-technical field and the engineering of business processes give a strong input to the Pasqualicchio brand. The company became a leader in the production of boilers, thermo- stoves, fireplace heating systems and air generators.

2008 - 2012

The second establishment measuring over 14000 m² was built in 2008, provided with a centre specialising in Research and development and a state-of-the-art design department.

RESEARCH AND DEVELOPMENT CENTRE

THE CERTIFICATIONS

Research and development, one target: the absolute efficiency

Pasqualicchio Research and Development Centre

The Pasqualicchio R&D Centre has advanced technological laboratories and uses the professionalism of the expert researchers and talented young university students. Through these resources and structures, it develops the initiatives envisioned within the ambit of the G.E.Pro. (Green Energy Project) Company Research Programme, dealing with the analysis and development of technologies with the goal of producing clean energy at low cost.
The approach to the programme is mainly experimental. In a first step, the technologies, processes and systems within the laboratories are studied in-depth. The experimental area has test plants dedicated to the study and testing of flame aerodynamics, movement of solid biomasses, combustion and handling of fumes. In phase two there is a test at prototype level of the experimental machines, which then will reach industrial application once the various tests in the most important European Certification Institutes have been passed.

Increasing investments in Research & Development

Since 1996, Pasqualicchio has constantly increased the research and development of innovative technologies with an increase with respect to the previous year if about + 18%. The commitment in research and development has been broken down as follows, with approximately 60% going to innovation in the energy efficiency field, in order to reduce the environmental impact (reduction of the emissions and increase of the efficiency of the machines), 20% for the optimisation of combustion processes (with a focus on ecological double combustion) and 20% regarding thermal efficiency programs.

Supply

There is an experimental station for combustion tests for studies and research into potential solid biomasses suitable for combustion.
The centre has mobile grid boiler for experiments, suitable for the simulation of all operating conditions, including the continuous detection of the gaseous effects and emissions into the atmosphere. Monitoring the fumes allows to analyse the behaviour of the boiler and to set the excellent process parameters in order to reduce emissions and increase efficiency. Analysis of the ashes and dusts are an integral part of the tests.

The instruments used for the tests:

» Hydraulic circuit flow rate measuring device for the determination of the power transferred to the water
» Combustion analysers to measure CO, CO2, NO, NOx, dusts
» Isoperibolic calorimeter for measuring the upper heat value
» Truspec for Carbon, Hydrogen and Nitrogen Determinator
» TGA -701 to determine moisture, volatile substances and ashes
» Instruments for measuring fumes and air flow rate
» Multi-channel thermometers
» Scales

Pasqualicchio quality system

The Certifications

Pasqualicchio follows the most stringent and strict procedures envisioned by the international Standards in order to obtain the highest company management quality and environmental standards as well as products with a high thermal efficiency and low emissions of carbon monoxide into the atmosphere.

How is certification obtained?

In order to obtain certification, each of our products must follow a precise procedure:
Phase 1) Every model is tested in the laboratory. Continuous analysis and strict controls are performed in the innovative Pasqualicchio Research and Development Centre. This uninterrupted study means that our products are in compliance with the highest safety standards.
Phase 2) Once the laboratory tests have been passed, the models are sent to the most important European Certification Institutes.
Here, the products are subjected to official tests according to that envisioned by the strict international Standards.
Phase 3) If the product passes the test, the Certification is issued. This document officially attests that the "product has been controlled and type-approved according to that envisioned by International Standards".
Phase 4) The product can officially boast the Certification. This is synonymous of guarantee, quality, safety and reliability.

Our certificates

ISO 9001
International Standard that defines the requirements of a quality management system for an organisation.

ISO 14001
International environmental management Standard that certifies that the company has a management system suitable to keep the environmental impact of its own company under control and they systematically seek improvement in a coherent, effective and above all sustainable manner.

Product Certifications

EN 303-5*
European Standard applied to heating boilers - including the connected safety devices - powered by solid fuels. The Standard defines requirements and test methods for safety, quality of combustion, operational features, marking and maintenance.

EN 14785
European Standard that specifies the requirements relative to design, manufacture, construction, safety and performance (efficiency and emissions), instructions and markings, as well as the relative test methods and fuels for the type test, for the pellet-burning heating appliances, also fed mechanically.

EN 13229
European Standard that specifies the requirements relative to design, manufacture, construction, safety and performance (emissions and yield), instructions and markings as well as the relative test methods for the type test, for inserts and fireplace heating systems also fed with solid fuel.

CE
The CE mark indicates that the product is in compliance with all European Community provisions that envision its use ": from design to manufacturing, introduction onto the market, commissioning of the product up to disposal. The CE mark governs the entire life cycle of the product from the time it is introduced onto the market.

15a B-VG
Certification for the respect of environmental safeguard measures

BAFA
Certification issued by the German Federal Office for economy and the control of export under the jurisdiction of the Federal Ministry of Economics and Technology (BMWi).

WHY PASQUALICCHIO?

10 reasons to choose Pasqualicchio, ecological heat

1. ENERGY SAVING

Thanks to the use of innovative materials, we can propose suitable solutions, able to reduce emissions. Our products combine performance, high quality and energy saving.

2. RESEARCH

Our products are designed to last through time. It is for this reason that we are at the forefront of research and in the study of techniques. Able to meet the customer's requirements with respect for the environment. Years of experience have allowed us to offer the best efficiency.

3. QUALITATIVE STANDARDS

Pasqualicchio has always considered quality as one of its priorities.
To make quality available, for us means searching for reliable, strong and long-lasting materials, so that the price of the product reflects its effective value.

4. CERTIFICATIONS

Pasqualicchio is ISO 90001 and ISO 14001 European Quality System Certified.
All of our products are in compliance with the European Standards with CE mark, tested and approved by the TUV laboratory according to EN 303-05, EN 13229, EN 14785 Standards.

5. EXCLUSIVE DESIGN

EXCLUSIVE
design

Most of our products are exclusive own design. The efficiency, together with the design and our passion, form the three basic pillars that have kept our business as a regerence in the national and international market for 40 years. The most prestigious interior designers are among our clients.

6. MADE IN ITALY

Pasqualicchio is an all Italian company, founded from family passion and a magical union between ourselves, which produce, and the people who choose us. Tradition, commitment and ambition have been the passwords of our professional and human experience. Our strong point is a Made in Italy aimed at the requirements of our customers with respect to the environment.

7. ASSISTANCE

Our philosophy is to give maximum reliability to the customer. We propose our after-sales service with a network of highly qualified technicians, trained directly within our company.
They intervene immediately and efficiently to solve any type of problem.

8. WIDE RANGE OF PRODUCTS

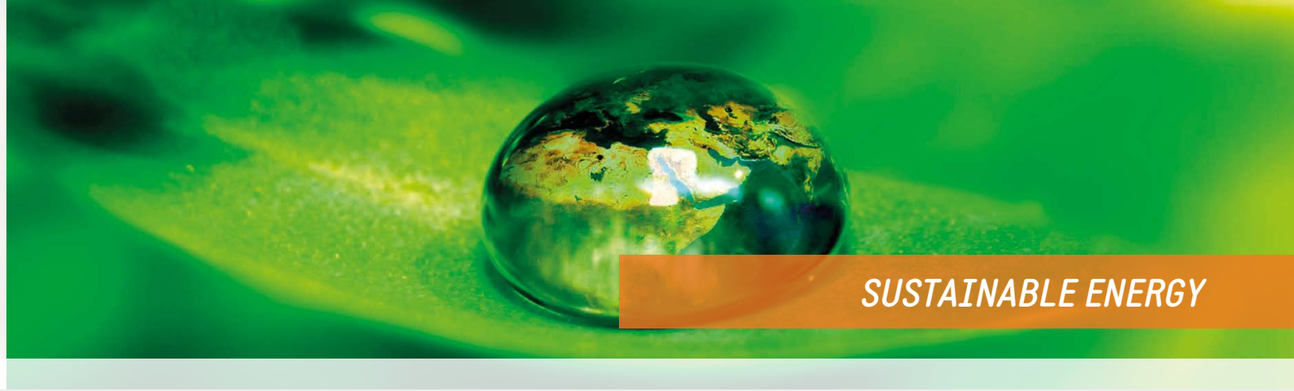
We currently have 7 product lines and over 100 models in the products portfolio. Choose from the wide range of Pasqualicchio products for your requirements, for your comfort, for yourself.

9. TECHNOLOGY

The Pasqualicchio products have the highest technology in the sector. It is the result of the in-depth research developed and perfected by the prestigious Pasqualicchio Research and Development Centre.

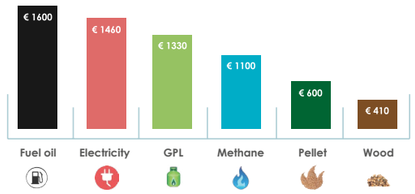
10. 5 YEAR WARRANTY

Our products are designed to last through time. As well as the legal warranty of 2 years, Pasqualicchio offers a warranty covering the boiler body for 5 years from the date of purchase.



SUSTAINABLE ENERGY

To identify solutions that respect the environment

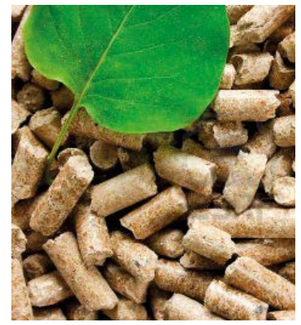


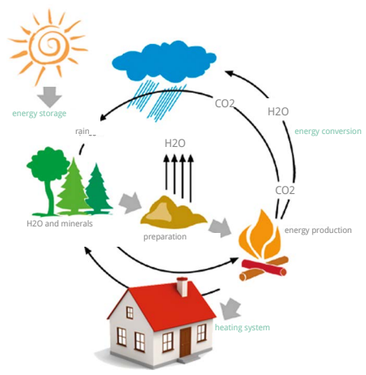
***Graphical notes**: annual yearly consumption for a house measuring 80 m² (average h 2.70 mt.) indicative value*

The use of alternative fuel costs much less with respect to traditional fossil fuels because with parity of heat produced, it is much less expensive with respect to petroleum or methane gas. Heating costs have a considerable weight at the end of the financial year. There are small changes suggested by the installers to lower the level, however remarkable results are not attained. If all of these solutions should integrate a Pasqualicchio product, which works exclusively with solid fuels, there would be a real saving. In fact, in terms of percentages, from 34% to 70% can be saved on home heating costs.

What is the biomass pellet of vegetable origin?

For various reasons, the pellet is surely one of the most used biomasses. They are obtained through simple mechanical processes, subjecting the finely worked sawdust to very high pressures. Pellet is manufactured starting from virgin sawdust remaining from the processing of the wood, suitably dried and pressed at high pressure in a way to obtain small cylinders of various sizes. Thanks to the binding capacity of lignin, a natural substance contained in wood, no type of additive is necessary and thus a natural, environmentally friendly and high efficiency fuel is obtained. Ideal for powering heating appliances, pellets are clean, non-pollutant and CO2 neutral. Burn completely with minimum ash residue, which can be used as a precious fertilizer for the garden. Given the pressing, in the production phase the energy density of the pellet is almost double that of wood. The pellets power the stoves for the heating of individual rooms and boilers for central heating. It is also used in district heating instead of wooden chips.





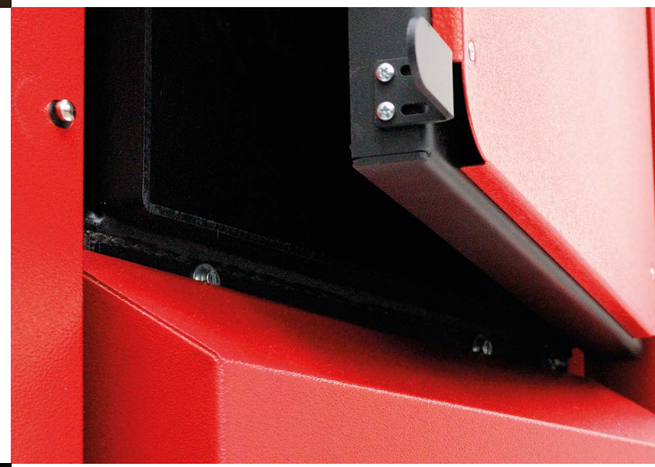
Why is the biomass ecological?

When talking about biomass it means any type of organic substance deriving directly or indirectly from the photosynthetic activity of plants. Its origin, both vegetable and animal, is in close correlation with the more general carbon cycle, which is one of the basic elements for metabolism and anabolism of all living organisms. This element enters the cycle in the form of carbon dioxide (CO2) and, thanks to the plants and their photosynthetic activity, is fixed in more complex compounds of an organic nature, which serve as base material for their growth and sustenance. Starting precisely from CO2, water and mineral salts, they use solar energy to process substances such as lignin, cellulose, hemicellulose, starches, sugars, etc.., which constitute the plant biomass. Through herbivores, a part of this material passes into the food chains of animals, to then be reprocessed in the form of fats, lipids, proteins, etc.., which instead constitute the animal biomass. The carbon cycle closes when all the carbon transformed into an organic compound via photosynthesis returns into the atmosphere as CO2, through a decomposition process. Biomass represents the most sophisticated form of accumulation of solar energy which, through photosynthesis is converted from light energy to chemical energy and stored in organic molecules. For this reason, it constitutes a renewable energy resource and respects the environment, as the carbon dioxide produced during combustion is reabsorbed by the plants during photosynthesis.

Wood and pellets Boilers

ENERGY SAVING

HIGH QUALITY MATERIALS



EFFICIENCY

EASY CLEANING

Aspiro

Certified product

CE

Description

A jewel of technology and design, the Aspiro reverse flame boiler is one of our flagship products. Suitable for heating civil and industrial environments, it is preferred to biomass fuel boilers in those areas where wood is widely available. Aspiro is the high efficiency floor-standing wood-burning boiler. It is supplied with a system that allows to reduce residues to a minimum, thus burning all fuel. It bases its operation on the gasification of wood. The solid fuel, positioned in the upper compartment of the boiler (wood store), develops gases on contact with the embers produced on the grill, which combining with the combustion agent air - primary air, create a combustible mixture. This mixture is sucked downwards from the refractory material burner slots, via a particular extraction system; this gives rise to the "reverse flame" characteristic.

Features

» **Access door to the shell and tube:** completely inspectable
» **Cast iron grid**
» **Stainless steel extractor:** with self-cleaning, radial vanes
» **Multi-stage electronic control unit**
» **Epoxy powder painted panelling**
» **Isolating panels to reduce heat loss**
» **Switch:** to attenuate flame intensity when door is opened

Powers

Available with the following rated thermal inputs:

ASPIRO 20 » 20.3 kW
ASPIRO 30 » 29.2 kW
ASPIRO 40 » 44.0 kW
ASPIRO 60 » 58.0 kW
ASPIRO 80 » 81.2 kW

Standard accessories di serie

- Electronic control unit
- Door switch

Optional accessories

- Domestic hot water
- ACS (Auto Cleaning System)
- Stainless steel combustion chamber
- Management modules
- Fumes withholding turbulators

Fuels

wood

Technical specifications

Parameters/Model	Aspiro 20	Aspiro 30	Aspiro 40	Aspiro 60	Aspiro 80
Rated power (kW)	20.30	29.26	44.08	58.00	81.20
Fuel Consumption Min / Max [kg / h]*	4.9	6.9	10.09	14.8	19.3
Width [mm]	600	600	690	690	690
Height [mm]	1460	1460	1530	1530	1530
Depth [mm]	1090	1240	1240	1390	1530
Chimney [mm]	180	180	180	200	200
Weight [kg]	120 330	500	610	720	720

Pasqualicchio reserves the right to make technical, dimensional and aesthetic modifications to its products for improvement, without forewarning. This does not constitute right of withdrawal for the customer. Notes: (*) The values have been calculated taking a fuel with calorific value below 5 [kW * h/kg] as a reference.

Aspiro » Operating layout

Fumes extractor: ensures simultaneous expelling of fumes and intake of combustion agent air into the combustion chamber.

Fumes pathway: before being expelled, the fumes transfer their heat energy to the water contained in the cavity

Copper coil: for the production of domestic hot water

Lagging: to reduce heat loss to the outside to a minimum

Gasification chamber: where combustible gases develop due to pyrolysis

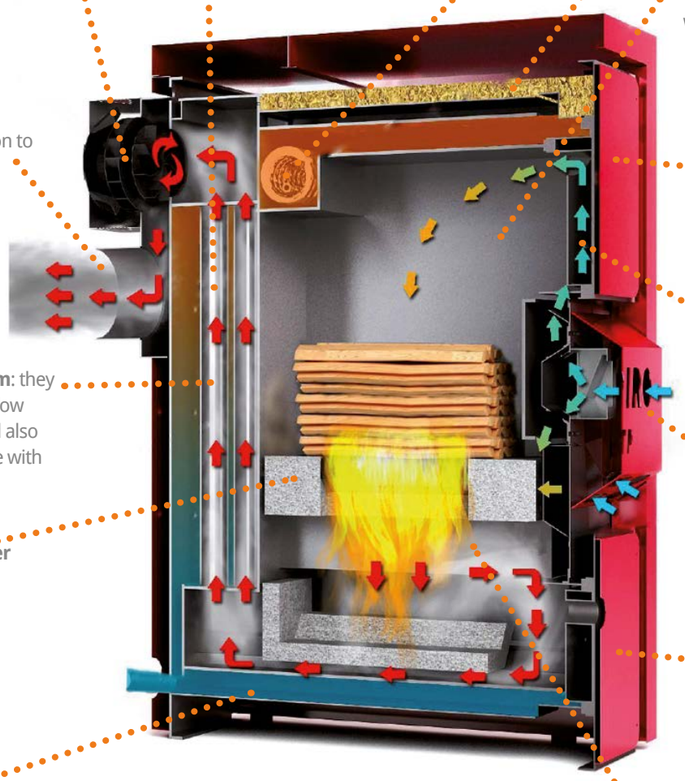
Smoke duct: for connection to the flue*.

Switch: to attenuate flame intensity when door is opened

Combustion agent air pipe: for combustion agent air inlet

ACS Auto Cleaning System: they have dual function; they allow to clean the exchanger and also increase the heat exchange with the hot fumes.

External air vent



Refractory cement burner

Switch: to attenuate flame intensity when door is opened

Water cavity: heat exchanger where the hot fumes are conveyed

Combustion chamber: lined with refractory material

The reverse flame boilers have this name due to the position of the combustion chamber, situated below the compartment where the wood is loaded. The circulation of the combustion agent air inside the combustion chamber is guaranteed by an extractor. The latter also expels the combustion fumes. The combustion agent air required for operation is divided through an internal pipe into two rates: primary and secondary air. The primary air, introduced into the boiler, allows the start of combustion. This is called the degasification phase and allows the formation of embers in contact with the burner itself. Moreover, it allows the development of combustible gases deriving from pyrolysis of the wood (the decomposition phase of the wood due to heat).

Aspiro » Further details regarding components

Automatic management

The new control unit has been created especially to control combustion. Developed through time and enhanced with new functionalities in order to make the boiler increasingly more user-friendly and intuitive. The board envisions extractor motor speed control, which varies according to the power of the boiler and the operating status of the same. The operating purpose of the board is to take the plant water to the temperature set, through the boiler. Once this has been reached, it goes into minimum operating status, i.e. maintenance. However, before reaching this last phase, it goes into a combustion transient status called modulation, within which the flame lowers so as not to give enormous thermal inertia to the system. Its interfacing with an external thermostat, allows the temperature of the plant puffer to be controlled.

Copper coil

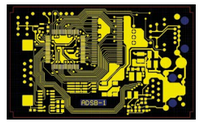
It is an optional that allows to produce domestic hot water. The coil is realised in finned copper to increase the heat exchange surface and has been designed to be installed also successively to purchase of the boiler.

Turbulators

The system is made up from helical steel bars. These modify the inner shape of the shell and tube in a way that the hot fumes lengthen their pathway inside the boiler body before reaching the flue, thus transferring a larger amount of heat to the water. It is an optional that can also be installed at a later date.

Extractor

The Pasqualicchio extractor is a fundamental part for machine operation. This allows to create the negative pressure inside the combustion chamber. It is in this way that the flame is sucked downwards. Made up from a motor and impeller, it is managed directly by the circuit board, which controls its speed in a way that every operating status manages to have the correct intake of air on combustion. The system has been created in a way that both the motor and impeller casing are not affected by the temperature of the fumes.



Modulation

Thanks to the modulation, the consumption of fuel reduces as the temperature set is approached.

Door switch

The boiler has two door switches, which are managed separately.
The first door switch is positioned in the top part of the boiler structure, i.e. where the wood is stored, while, the second is in the lower part where it is installed on the direct access door to the combustion chamber. Both of the devices allow to decrease the intensity of the flame and prevent the fumes escaping when the doors are opened.

Cleaning and Auto Cleaning System ACS

The high temperatures that are reached in the boiler mean that combustion residues are almost nil. A door situated in the lower part of the boiler has made cleaning even easier due to the simplicity of access to the shell and tube. Cleaned with the brush supplied as per standard, it will allow to maintain machinery efficiency. It is possible to request automatic cleaning of the shell and tube in order to make machinery cleaning operations even easier. A relevant motor, managed by the control unit, moves two rows of spring turbulators which, scraping the edges of the shell and tube, allows them to be cleaned perfectly in a way to leave machine efficiency unvaried.

The gases released are extracted downwards and reach the compartment where combustion takes place. The latter is completed with the arrival of the secondary air. Flame reversal allows progressive combustion of the wood, which is not "attacked" totally by the fire in the load compartment but, burns only when it approaches the bed. This allows the boiler to have more stable power and better controlled combustion, in a way to significantly increase efficiency and greatly reduce the pollutant emissions.

Bi-Fuel Technology

Aspiro Combi

Certified product

CE

Description

The Aspiro Combi boiler is suitable for heating civil environments.
It can be connected to existing plants and is suitable for anyone having access to a large amount of wood and wanting to exploit its energy potential to solve heating costs, without losing the possibility of connecting a pellet burner for automatic operation.

Features

» **Access door to the shell and tube:** completely inspectable
» **Cast iron grid**
» **Cleaning brush**
» **Stainless steel extractor:** with self-cleaning, radial vanes
» **Multi-stage electronic control unit**
» **Cradle burner**
» **Epoxy powder painted panelling**
» **Isolating panels to reduce heat loss**
» **Switch:** to attenuate flame intensity when door is opened
» **Pasqualicchio Bi-Fuel Technology**

Powers

Available with the following rated thermal inputs:
ASPIRO COMBI 20 » 20.3 kW
ASPIRO COMBI 30 » 29.1 kW
ASPIRO COMBI 40 » 44.0 kW

Standard accessories

- Electronic control unit
- Door switch

Optional accessories

- Domestic hot water
- ACS (Auto Cleaning System)
- Pellet burner (pellet set)
- Stainless steel combustion chamber
- Loading device and external tank (pellet set)
- Management modules
- Fumes withholding turbulators

Fuels

Wood

Pellets

Technical specifications

Parameters/Model	Aspiro Combi 20	Aspiro Combi 30	Aspiro Combi 40
Rated power (kW)	20.30	29.2	44.08
Fuel Consumption Min / Max [kg / h]*	4.9	6.9	10.09
Width [mm]	1010	1010	1100
Height [mm]	1460	1460	1530
Depth [mm]	1090	1240	1240
Chimney [mm]	180	180	180
Weight [kg]	420	630	730

Pasqualicchio reserves the right to make technical, dimensional and aesthetic modifications to its products for improvement, without forewarning. This does not constitute right of withdrawal for the customer. Notes: (*) The values have been calculated taking a fuel with calorific value below 5 [kW * h/kg] as a reference.

Aspiro Combi » Operating layout

Electronic control unit: for automatic management of wood and pellet operation

Additional combustion chamber to allow the combustion of pellets

Pellet burner horizontal flame burner for the combustion of pellets

Pellet loading device: for conveying the fuel from the tank to the burner

Large pellet tank: for storing the fuel

There are two combustion chambers in the Aspiro range of combi models. A second chamber for pellets is coupled to the existing chamber for wood. In this case, a horizontal flame develops from the automatic burner (optional), giving rise to combustion fumes which, through the heat exchanger, increase the temperature of the water inside the cavity. Moreover, by setting the circuit board on combined operation, passage from wood to pellets will be automatic.

Aspiro Combi » Further details regarding components

Automatic management

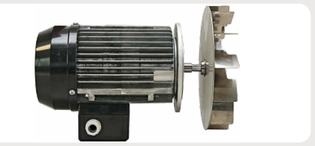
Designed especially to control combustion; it has been developed through time and enhanced with new functionalities in order to make the entire product increasingly more easy and intuitive to use. As well as managing combustion, it also manages the hydraulic part of the plant through the pump. For wood operation mode, the board envisions extractor motor speed control, which varies according to the power of the boiler and the operating status of the same. Instead, for pellet combustion, the board envisions management of a horizontal burner complete with electric resistor for automatic ignition and fan for the combustion agent air. The pellets inside the horizontal burner are taken through a loading device made up from a screw and an electric motor driven directly by the circuit board. Considering the structure of the boiler and the operating logic of the circuit board, it is possible to set the automatic passage from wood to pellets on the latter. In this case, the boiler must ignite manually with wood and once this has been burned there will be automatic passage to the horizontal burner.

Automatic loading device

This system is made up from a screw and a motor that must be connected electrically to the heat regulator. It will be the latter that governs the operating times and takes the pellets inside the automatic burner. The automatic loading device withdraws the pellets from an external storage silo and transports them inside the burner. The silo can be realised successively. It can contain over 200 kg of pellets.

Door switch

The boiler has two door switches, which are managed separately.
The first door switch is positioned in the top part of the boiler structure, i.e. where the wood is stored, while, the second is in the lower part where it is installed on the direct access door to the combustion chamber. Both of the devices allow to decrease the intensity of the flame and prevent the fumes escaping from when the door is opened..



Extractor

The Pasqualicchio extractor is a fundamental part for boiler operation. This allows to create the negative pressure inside the combustion chamber. It is in this way that the flame is sucked downwards. Made up from a motor and impeller, it is managed directly by the circuit board, which controls its speed in a way that every operating status manages to have the correct intake of air on combustion. The system has been created in a way that both the motor and impeller casing are not affected by the temperature of the fumes.

Copper coil

It is an optional that allows to produce domestic hot water. The coil is realised in finned copper to increase the heat exchange surface and has been designed to be installed also successively to purchase of the boiler.

Cleaning and Auto Cleaning System ACS

The high temperatures that are reached in the boiler mean that combustion residues are almost nil. A door situated in the lower part of the boiler has made cleaning even easier due to the simplicity of access to the shell and tube. Cleaned with the brush supplied as per standard, it will allow to maintain boiler efficiency. It is possible to request automatic cleaning of the shell and tube in order to make boiler cleaning operations even easier. A relevant motor, managed by the control unit, moves two rows of spring turbulators which, scraping the edges of the shell and tube, allows them to be cleaned perfectly in a way to leave boiler efficiency unvaried.

Horizontal pellet burner

Managed completely by the electronic control unit; it is an accessory that allows the boiler also to operate with pellets. It is made completely in steel and comprises an electric resistor for automatic ignition of the biomass fuels and a fan that blows combustion agent air. Thanks to the horizontal pellet burner, it is possible to use the product in the combined wood-pellet operating mode. If this optional is not present, the combi boilers can operate with a gas or diesel burner..

Turbulators

The system is made up from helical steel bars. These modify the inner shape of the shell and tube in a way that the hot fumes lengthen their pathway inside the boiler body before reaching the flue, thus transferring a larger amount of heat to the water. It is an optional that can also be installed at a later date.

In this case, the wood must be ignited manually inside its own combustion chamber and when this has been burned, the automatic burner will start-up.
Whether the machine operates in wood only or combined wood-pellet mode, its purpose is always that of taking the water in the cavity to temperature. The pump, managed by the electronic control unit, will then take the heat-carrying fluid inside the heating plant.

CL

Certified product

CE

Description

The CL wood burning boiler was developed from a simple idea: to make a traditional wood-burning boiler technologically advanced. Suitable for heating civil and industrial environments, it is preferred to biomass fuel boilers in those areas where wood and agricultural waste are widely available.

Features

» **Smoke 3-pass geometry:** allows excellent heat exchange
» **Large inlet:** suitable for the introduction of large pieces of wood
» **Adjustment damper**
» **Thermostat:** with mechanical adjustment of the boiler temperature
» **Firebox bottom in refractory material**
» **Epoxy powder painted panelling**
» **Isolating panels to reduce heat loss**

Powers

Available with the following rated thermal inputs:

CL 20 » 20 kW
CL 30 » 30 kW
CL 40 » 40 kW
CL 50 » 50 kW
CL 70 » 70 kW
CL 90 » 90 kW
CL 110 » 110 kW

Optional accessories

Fumes withholding turbulators

Management modules

Fuels

Wood

Technical specifications

Parameters/Model	CL 20	CL 30	CL 40	CL 50	CL 70	CL 90	CL 110
Min/Max Rated power (kW)	20.00	30.00	40.00	50.00	70.00	90.00	110.00
Fuel Consumption Min / Max [kg / h]*	4.8	6.8	8.8	11.0	15.5	20.0	24.4
Width [mm]	4.8	580	680	680	680	730	780
Height [mm]	1200	1200	1200	1200	1300	1300	1300
Depth [mm]	1020	1050	1060	1130	1250	1250	1250
Chimney [mm]	150	160	180	180	200	200	200
Weight [kg]	253	282	320	348	395	395	451

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CL » Operating layout

Fumes pathway: designed with 3-pass geometry to maximise efficiency

Wood combustion chamber: allows a large amount of fuel to be loaded

Water cavity: heat exchanger where the hot fumes are conveyed

Upper door: for inspection/maintenance of fumes pass

Lagging: to reduce heat loss to the outside to a minimum

The negative pressure that is created inside the flue allows the intake of combustion agent air inside the combustion chamber. The combustion agent air is taken in through a door connected to a draft thermostatic regulator and positioned in the lower part of the boiler.

CL » Further details regarding components

Automatic management

The boiler is managed in a completely mechanical manner by the damper that adjusts the intake of combustion agent air in the combustion chamber. The purpose of the system is always that of taking the water found inside the boiler cavity to temperature. The water will then be circulated in the plant by the thrust of a pump. The latter is managed by a thermostat.

Cleaning and Auto Cleaning System ACS

The high temperatures that are reached in the boiler mean that combustion residues are almost nil. A door situated in the lower part of the boiler has made cleaning even easier due to the simplicity of access to the shell and tube. Cleaned with the brush supplied as per standard, it will allow to maintain boiler efficiency. It is possible to request automatic cleaning of the shell and tube in order to make boiler cleaning operations even easier. A relevant motor, managed by the control unit, moves two rows of spring turbulators which, scraping the edges of the shell and tube, allows them to be cleaned perfectly in a way to leave boiler efficiency unvaried.

Inspection door

Kit 100

Boiler/wood-burning boiler module:
Allows separation between the primary and secondary circuit with the possibility of interfacing between closed vessel gas boiler and the wood-burning boiler

Kit 200

Domestic hot water production/central heating module
Connected to the boiler, it allows management of the central heating and the production of domestic hot water.

The heat produced by combustion is transferred to the water contained in the boiler cavity by both irradiation and convection. During the pathway to the flue, the fumes transfer heat energy to the heat-carrying fluid via the boiler heat exchanger.

CL Combi

Certified product

CE

Description

The CL Combi boiler was developed from a simple idea: to make a traditional wood-burning boiler technologically advanced. With respect to the CL it has a second combustion chamber to burn pellets or for operation with gas/diesel burners.

Features

» **Smoke 3-pass geometry:** allows excellent heat exchange
» **Large inlet:** suitable for the introduction of large pieces of wood
» **Thermostat:** with mechanical adjustment of the boiler temperature
» **Firebox bottom in refractory material**
» **Isolating panels:** to reduce heat loss
» **Epoxy powder painted panelling**
» **Adjustment damper**
» **Pasqualicchio Bi-Fuel Technology**

Powers

Available with the following rated thermal inputs:
CL COMBI 25 » 25 kW
CL COMBI 35 » 35 kW

Optional accessories

Pellet burner (pellet set)
Electronic control unit for burner (pellet set)
Loading device and external tank (pellet set)
Management modules
Fumes withholding turbulators

Fuels

Wood

Pellets

Technical specifications

Parameters/Model	CL Combi 25	CL Combi 35
Rated Power (kW)	25.00	35.00
Fuel Consumption [kg / h]*	5.7	8.0
Width [mm]	860	1000
Height [mm]	1230	1230
Depth [mm]	865	865
Chimney [mm]	150	160
Weight [kg]	360	415

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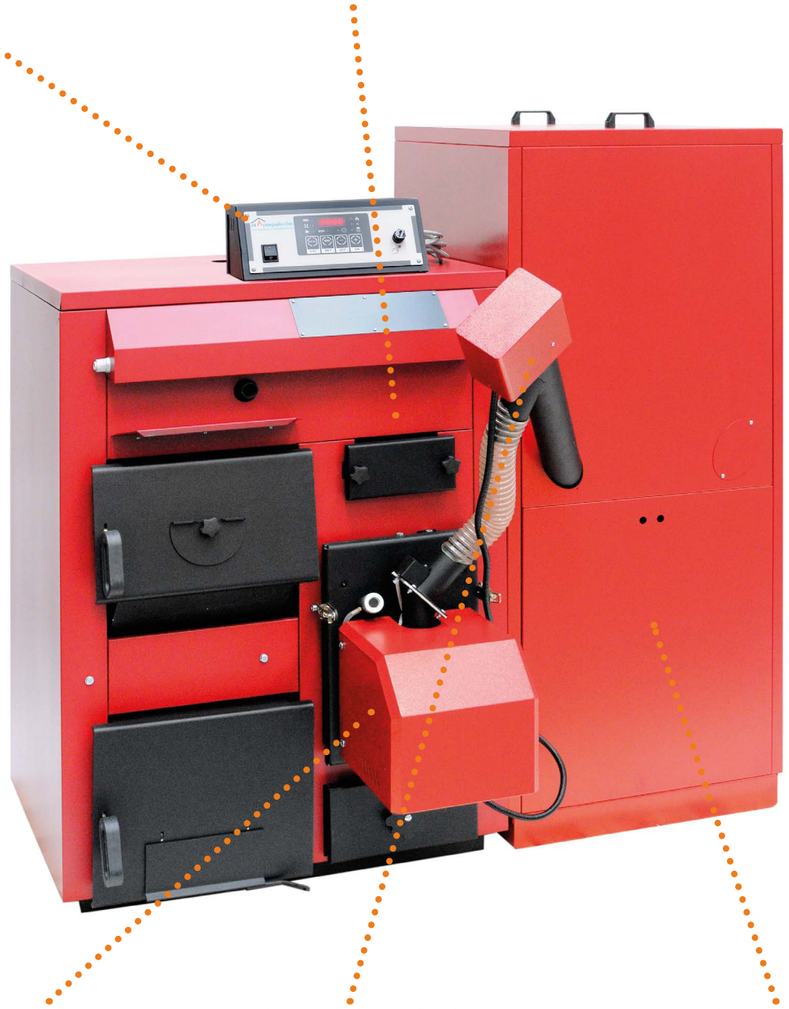
CL Combi » Operating layout

Electronic control unit: for automatic management of wood and pellet operation

Additional combustion chamber: to allow the combustion of pellets



Pellet burner: horizontal flame burner for the combustion of pellets

Pellet loading device: for conveying the fuel from the tank to the burner

Large pellet tank: for storing the fuel

The CL Combi model has two combustion chambers. A second chamber for pellets is coupled to the existing chamber for wood. In this case, a horizontal flame develops from the automatic burner (optional), giving rise to combustion fumes which, through the heat exchanger, increase the temperature of the water inside the cavity. Moreover, by setting the circuit board on combined operation, passage from wood to pellets will be automatic.

CL Combi » Further details regarding components

Automatic management

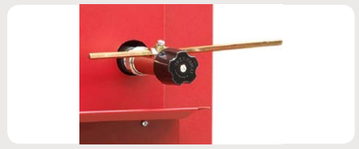
The boiler is fitted with an electronic control unit that envisions management of a horizontal burner complete with electric resistor for automatic ignition and fan for the combustion agent air. The pellets inside the horizontal burner are taken through a loading device made up from a screw and an electric motor driven directly by the circuit board. For both operating modes, the purpose of the system is always that of taking the water found inside the boiler cavity to temperature. The water will then be circulated in the plant by the thrust of a pump. The latter will be managed directly from the circuit board.

Pellet loading device

The boiler must be fitted with our pellet loading device to allow combined operation. This system is made up from a screw and a motor that must be connected electrically to the heat regulator. It will be the latter that governs the operating times and takes the pellets inside the automatic burner. The automatic loading device withdraws the pellets from an external storage silo and transports them inside the burner. The silo can be realised successively. It can contain over 200 kg of pellets. The compact shapes, the extraordinary capacity and easy loading make this the ideal optional for those users that cannot make it themselves.

Pellet burner

Managed completely by the electronic control unit, allows the boiler also to operate with pellets. It is made completely in steel and comprises an electric resistor for automatic ignition of the biomass fuels and a fan that blows combustion agent air. Thanks to this, it is possible to use the product in the combined wood-pellet operating mode. If this accessory is not present, a gas or diesel burner can still be used.



Damper

It is managed in a completely mechanical manner. It is realised with a thermostat which, depending on the change in water temperature allows the opening and closing of the air inlet door, via the rotating head connected to a chain and positioned under the combustion chamber.

Kit 100

Boiler/wood-burning boiler module:
Allows separation between the primary and secondary circuit with the possibility of interfacing between closed vessel gas boiler and the wood-burning boiler

Kit 200

Domestic hot water production/central heating module
Connected to the boiler, it allows management of the central heating and the production of domestic hot water.

In this case, the wood must be ignited manually inside its own combustion chamber and when this has been burned, the automatic burner will start-up. Whether the machine operates in wood only or combined wood-pellet mode, its purpose is always that of taking the water in the cavity to temperature. The pump, managed by the circuit board, will then take the heat-carrying fluid inside the heating plant.

combustion cham- ber

Aspiro » Technical specifications

Parameters/Model	Aspiro 20	Aspiro 30	Aspiro 40	Aspiro 60	Aspiro 80
Power					
Chimney [kW]	24,36	34,30	54,52	74,01	96,28
Nominal power [kW]	20,30	29,26	44,08	58,00	81,20
Chimney [kcal/h]	21000	30500	47000	63800	83000
Nominal power [kcal/h]	17500	26000	38000	50000	70000
Dimensions					
A [mm]	600	600	690	690	690
B [mm]	1460	1460	1530	1530	1530
C [mm]	840	990	990	1140	1280
D [mm]	875	875	945	945	945
E [mm]	130	130	130	130	130
F [mm]	1025	1025	1095	1095	1095
G [mm]	200	200	245	245	245
H [mm]			250		
Chimney [mm]		180		200	
Weight [kg]	300	500	641	720	920
Fuel					
Type			Wood		
Combustion chamber dimensions (Lu x La x H) [mm]	410 400 420	560 400 420	560 490 490	700 490 490	850 490 490
Hydraulics					
Water connection system [Inches]	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Water connection [Inches]	1/2"	1/2"	1/2"	1/2"	1/2"
Max pressure [bar]			3		
Water capacity [Lit]	100	120	140	171	190
Info					
Optionals	Domestic hot water, Fumes withholding turbulators, Auto Cleaning, Fumes withholding turbulators, Kit 100				
Electric power	115 W a 230 V 50 Hz				140 W a 230 V 50 Hz
Fuel consumption [kg / h]*	4,9	6,9	10,9	14,8	19,3

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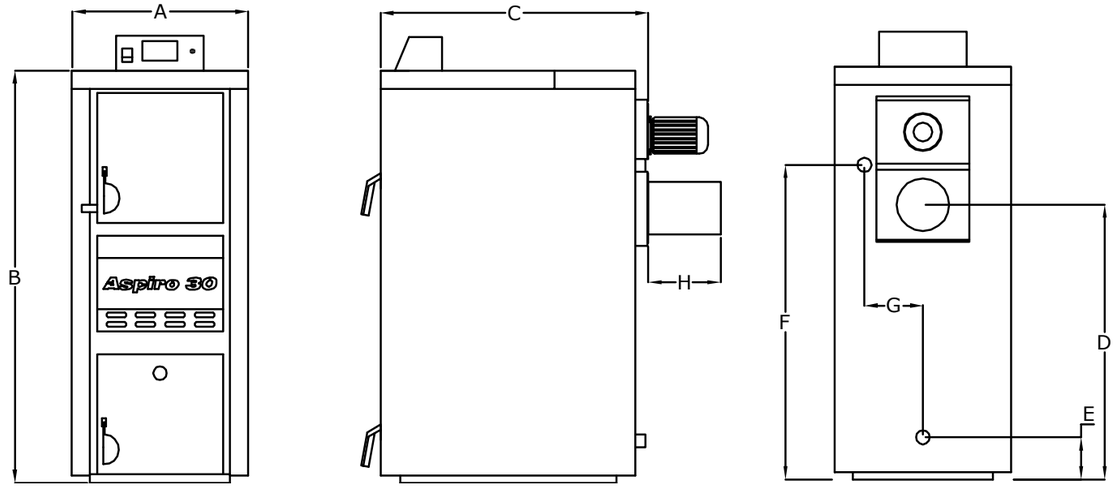

Aspiro Combi » Technical specifications

Parameters/Model	Aspiro Combi 20	Aspiro Combi 30	Aspiro Combi 40
Power			
Chimney [kW]	24,36	34,30	54,52
Nominal power [kW]	20,30	29,26	44,08
Chimney [kcal/h]	21000	30500	47000
Nominal power [kcal/h]	17500	26000	38000
Dimensions			
A [mm]	1010	1010	1100
B [mm]	1460	1460	1530
C [mm]	840	990	990
D [mm]	875	875	945
E [mm]	130	130	130
F [mm]	1025	1025	1095
G [mm]	200	200	245
H [mm]		250	
Chimney [mm]		180	
Weight [kg]	420	630	730
Fuel			
Type		Wood, Pellets	
Combustion chamber dimensions (Lu x La x H)	410 400 420	560 400 420	560 490 490
Hydraulics			
Water connection system [Inches]	1 1/2"	1 1/2"	1 1/2"
Water connection [Inches]	1/2"	1/2"	1/2"
Max pressure [bar]		3	
Water capacity [Lit]	170	190	215
Info			
Optionals	Domestic hot water, Fumes withholding turbulators, Auto cleaning, Fumes withholding turbulators, boiler kit 100		
Electric power	Max 600 Min 115 W a 230 V 50 Hz		
Fuel consumption [kg / h]*	4,9	6,9	10,9

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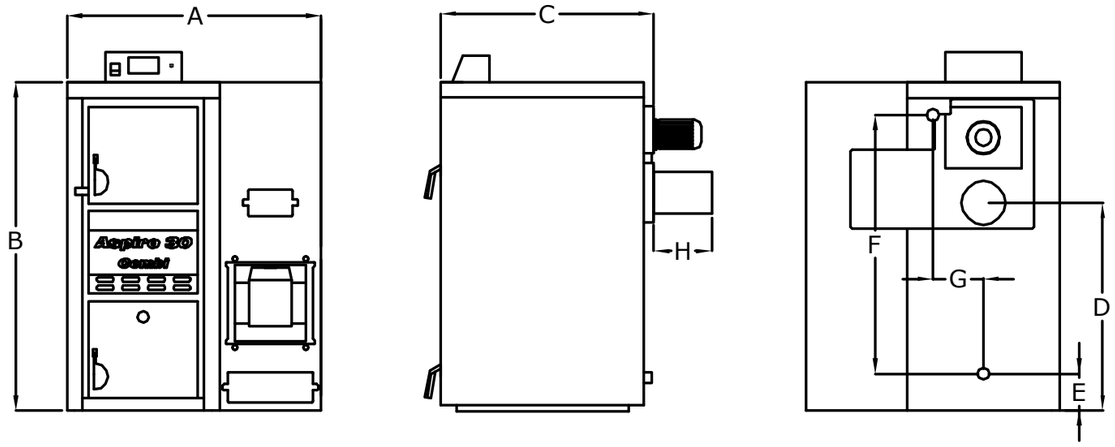

CL » Technical specifications

Parameters/Model	CL 20	CL 30	CL 40	CL 50	CL 70	CL 90	CL 110
Power							
Chimney [kW]	24,00	34,00	44,00	55,00	77,70	100,00	122,00
Nominal power [kW]	20,00/15,00	30,00/25,00	40,00/35,00	50,00/40,00	70,00/50,00	90,00/70,00	110,00/90,00
Chimney [kcal/h]	20700	29300	38000	47400	67000	86200	105370
Nominal power [kcal/h]	17200	25860	35000	43000	60350	77600	94830
Dimensions							
A [mm]	1200	1200	1200	1200	1300	1300	1300
B [mm]	530	580	680	680	680	730	780
C [mm]	1020	1050	1060	1130	1250	1250	1250
D [mm]	690	720	720	780	920	920	920
E [mm]	80	80	80	80	800	800	800
F [mm]	480	480	480	480	500	500	500
G [mm]	905	905	905	905	975	975	975
H [mm]	1070	1070	1070	1070	1170	1170	1170
I [mm]	135	135	135	135	135	135	135
L [mm]	100	100	100	100	100	100	100
Chimney [mm]	150	160	180			200	
Weight [kg]	253	282	320	348	395	423	451
Fuel							
Type	Wood						
Combustion chamber dimensions (Lu x La x H) [mm]	500 300 400	540 350 400	540 450 400	610 450 400	730 450 500	730 500 5000	730 550 500
Hydraulics							
Water connection system [Inches]	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	2"	2"
Max pressure [bar]	2,5						
Water capacity [Lit]	76	90	101	114	175	193	214
Info							
Standards	Combustion air control valve, kit interface for boiler gas						
Optionals	Domestic hot water, Turbolators, Auto Cleaning, Fumes withholding turbulators, Boiler kit 100						
Fuel consumption [kg / h]*	4,8	6,9	8,8	11,0	15,5	20,0	24,4

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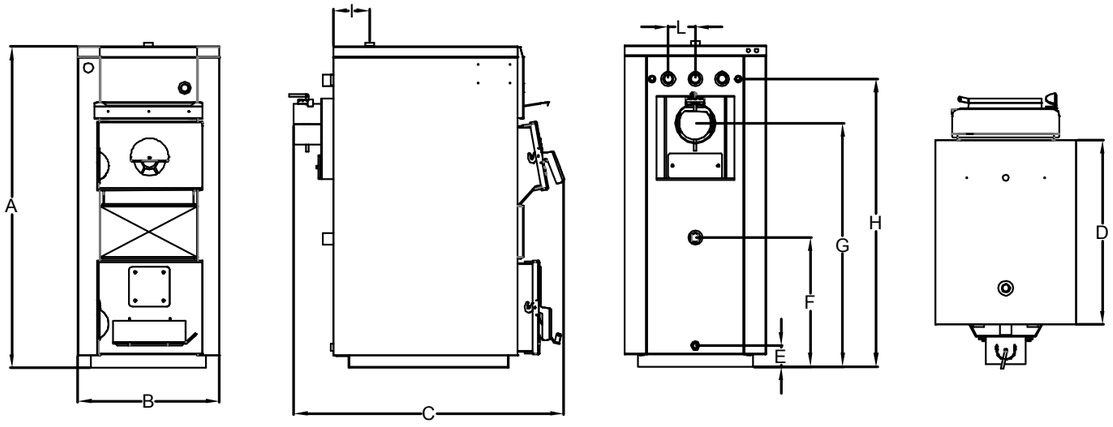

CL Combi » Technical specifications

Parameters/Model	CL-Combi 25	CL-Combi 35
Power		
Chimney [kW]	28,50	40,00
Nominal power [kW]	25,00	35,00
Chimney [kcal/h]	24600	35000
Nominal power [kcal/h]	21600	30000
Dimensions		
A [mm]	1230	1230
B [mm]	860	1000
C [mm]	865	865
D [mm]	910	910
E [mm]	470	470
F [mm]	1080	1080
G [mm]	80	80
Chimney [mm]	150	160
Weight [kg]	360	415
Fuel		
Type	Wood, pellets, gas, diesel fuel	
Combustion chamber dimensions (Lu x La x H) [mm]	540 400 400	540 450 400
Hydraulics		
Water connection system [Inches]	5/4"	5/4"
Water connection [Inches]	3/4"	
Max pressure [bar]	2,5	
Water capacity [Lit]	165	190
Info		
Optionals	Domestic hot water, kit interface for boiler gas, kit pellets	
Electric power	Damper	
Fuel consumption [kg / h]*	5,7	8,0

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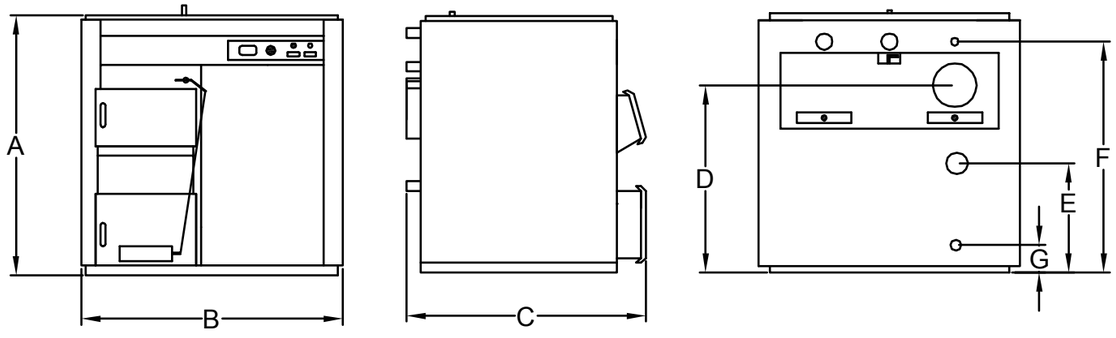

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Ecological heat

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