

Steam Pipes Deck Oven ZOOM



Steam Pipes Deck Oven Description

Zoom is a steam pipe oven with four overlapping baking chambers.

It is heated by a closed-circuit ring system: a compact band of pipes around the baking chambers fill with steam, radiating heat. The oven guarantees constant, optimal heat distribution and extraordinary stability once products have been put in the oven. This ensures homogenous baking, which helps to maintain the product's aroma and prolongs its shelf-life.

Due to its versatility, Zoom is suitable for the many needs of bakers and confectioners. Its construction system means it can be repositioned at any time. Its heat flexibility, enabling rapid temperature adjustment, allows you to bake different types of products (bread, cakes, pizza...). The result is a firm floor-based baking, which results in well-formed, soft and fragrant products.

The special heat exchange with channels for the recycling of hot combustion smoke, and efficient insulation give the oven its distinctive uniform heat distribution and low running costs. The system optimizes the heat exchange system, guaranteeing homogenous baking with limited fuel consumption.

Each chamber is made from stainless steel, and served by separate steam generators. Because of their technical conformation and high-performance materials, these generators allow instant expansion of the steam which is forced inside the baking chamber.

The loading doors, made from stainless steel and tempered glass, are designed for the use of special baking belts. The flooring made from a special high thermal performance compound with high mechanical resistance, suitable for food use.

The chambers are available in dimensions of 80x120 cm, 120x120 cm or 120x180 cm with a height of 23 cm for the top chamber and 17.50 cm for the others. The total baking surface area is 4, 6 or 9 sq m.

Zoom operates with liquid or gaseous fuels, or with electric power.

The system is available in two versions: with either an electromechanical or programmable digital control panel.

The machine complies with the latest CE regulations.



Steam Pipes Deck Oven Composition

1 – Structure

The oven is made of stainless steel AISI 430 and AISI 304, with thickness of mm 1; 1,5, 2 or 3, depending on the parts.

The façade has a thickness of mm 1,5 and inside any baking chamber, supplied with lighting, are panelled with stainless steel of 1 mm. The baking floors are made up of cement plates of a special mix, high performance materials suitable to get in touch with foods. The loading doors are made in thick temperate glass and easily removable for their cleaning. The heat channel is of stainless steel. The powerful and heavy steam generators and their metal bars are made of iron (Fe). The pipes are cold drawn without welding, in high strength steel, and tested one at a time. The standard outside covering is made of painted galvanized sheet iron.



2 – Pipes

The pipe bands are the real heart of the oven: the thermal "engine" that carries the heat to the products being baked. A dense network of closed circuit tubes in which steam circulates, the baking chambers are wrapped by these annular tubes that radiate heat, while the roof and the ceiling of each baking chamber are heated by transversal pipes. Any tube constitutes a completely independent circuit, it contains demineralised water for about half of its volume that became steam during the heating process. The tubes diffuse an absolutely uniform heat in every part of the baking chamber. Their dimension, the distance each other, the volume of water inside and the position, are the result of experience and know-how. They are made of high endurance steel, cold-drawn, without welding. They are tested one by one according to the rules UNI 663/68. The 20 tubes per each metre have a diameter of 21.3 mm.

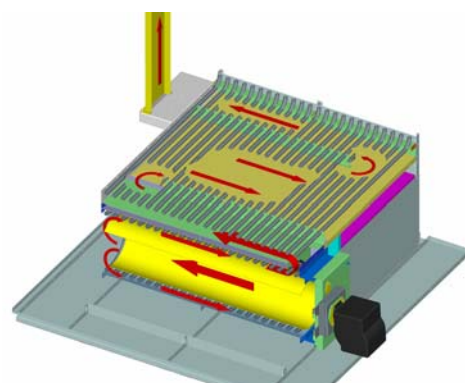


3 – Smoke ducts

The internal hot smoke ducts are made of stainless steel. Its perfectly sized is the result of research, experience and know-how.

These channels transmit the energy from the combustion to the band of pipes. This provides a high energy supply ensuring even cooking on all levels and an extraordinary stability after loading.

The oven is furnished completely disassembled. Thanks to its modular and preassembled components, the building is easy and the time is very restrictedly.



4 – Steam device

Each baking chamber is supplied from powerful steam generator that makes available repeated inlets of large quantities of steam. The powerful system is independent for each baking chamber, and its technical conformation and high efficiency materials, provides immediate steam expansion, penetrating into the baking chamber in large quantities.

It is necessary a large quantity of instant steam to optimise the baking of the crust. The rapidity and its abundance give to the bread a shiny crust, avoiding any de hydration problems and the formation of bubbles. The steam maintaining the dough's skin elasticity, this allowing the bread rising without tears, and causing the coagulation of the starch at the surface of the bread, resulting in a shinier look for a better conservation.

With the efficiency and efficacy of the device, the steam is instantaneous and available in large quantities any time. The bread is more developed, shinier, and keeps its look and aroma longer. The steam is perfectly evenly distributed in the baking chamber and fast successive loads of products requiring a short baking time and needing a lot of steam presents no problem at all.

The device is positioned lengthwise along the tubes in contact with the channels of the oven. Since this is the hottest place in the oven, it is always ready for producing great quantity of steam. Any steamer is made up of an iron box of 4 mm with a plate of 6 mm. thick, filled with section bars 16 mm. The water is sprayed inside in several points, with temporized solenoid valve adjustable with timers. Each chamber is supplied from an exhaust valve. Not only the quantity of steam increases thanks to a bigger surface of the steam generator, but also the transformation of the water happens instantly. A large surface is necessary to produce the most possible quantity, while the volume (mass) allows the heat keeping for a faster recovery of the temperature.



5 – Baking slabs

Sheets based on glass fibre reinforced concrete, which contain high quality raw-materials. The applied materials are exclusively mineral, the sheets are hygienic and include no health-damaging substances.

Fireproof cement baking plates 20 mm thick, extremely dense (1.900 kg/m³): capable of high heat storage with no risk of burning, high resistance mechanically very tough over time (resistant to abrasion) and an exclusive coating to allow easy maintenance.

For the bread it means homogeneity on the colour and uniformity on the baking in all the surface of the chamber: bread rises better during the loading, uniform and progressive colouring, nice shining bread, during the baking, a generous crust which keeps aromas and helps for a longer conservation, after the unloading, a production oven always ready for a load.



6 – Input mouths

The stainless steel input mouths are arranged for the use of the proper conveyor belts, and are made of tempered crystal glass and steel. The opening is towards the bottom, with a leverage and hooking system.

These doors can be easily removed from their seats, in order to allow an easy cleaning of the doors themselves and of the baking chamber.



7 – Steam extractor

It is an extractor installed above the hood that operates by pushing the on/off button during the operation of loading and unloading.

The ventilator (model type ECB300) has a power of kw 0,55 – r.p.m 1400, 25-30 m³/min.

The extractor works also on the steam evacuation valve of the chambers. Open the valve while the extractor is on, increase the outlet of the steam from the baking chamber.

8 – Insulation

A high insulation is assured using panel and flocks of rock wool. Our experience taught us that this system gives a heat barrier and thermic inertia. No toxic materials are employed.

9 – Control panel

The oven is provided with a control board very easy user impact, showing by means of ideograms all functions.

It has a digital thermoregulator, timers for steam device, on/off switches and emergency stop key.

On request the oven is available with the electromechanical controls or with digital panel.



Steam Pipes Deck Oven Performance

10 – Performance

- Maximum baking temperature 300°C.
- Time of continuous running is 24h/24h.
- Average gradient of temperature rise around 2°/3° C/min.
- Constant and excellent evenness of the temperature.
- Stability after loading.
- The temperature of external panels surface is not exceeding 25°C the ambient temperature.
- Independent steam generators for any chamber. Steam in fast successive loads requiring a short baking time.
- Steam device performing at every level and adapted to all types of uses (needing a lot of steam presents no problem at all).
- Thermal efficiency with energy saving.
- Silent, no moving parts: the oven is a static machine, one of the quietest ovens available.
- All technical parts have place in the front: easy access and reduced maintenance time. It is not request free space around the machine.
- The CE Declaration of Conformity is submitted with the machine.

11 – Guaranties

The guaranties are **1 year** on all the parts (except consumable) and **5 years** on the pipes.



12 – Protection and safety device

Safety thermostat: this device is installed in order to avoid the temperature inside the oven to go over the calibration value (300°C). If the oven reaches the calibration value, the thermostat disconnects automatically the burner.

Emergency push button: it is a mushroom-head push button, its colour is red on yellow background, it is placed on the control panel. When pushed, it stops immediately all the functions of the oven and of the burner. This device is quickly recognizable and can be easily reached by the operator from his working position.

Steam exhaust fan: it is an exhaust fan installed over the exhaustion hood and started manually by the operator before every unloading of the product, by means of the proper selector placed on the control board.

13 – CE compliant

The oven is complying with the CEE European norms:

98/37 EEC	Machine Directive
73/23 EEC	Regulation on Low Voltage
89/336 EEC	Directive concerning the Electromagnetic Compatibility
89/109 EEC	Directive concerning materials and the objects have to be in contact with alimentary products
90/396 EEC	Appliances burning gaseous fuels

To effect correct application of the safety and health requirements stated in the EEC Directives, the following Norms and Technical Specifications were consulted:

EN292-1	Fundamental concepts and general principles of projects
EN292-2	Fundamental concepts and general principles of projects
EN1673	Food processing machinery - Rotary rack ovens - Safety and hygiene requirement
EN294	Distances of safety for the superior arts
EN953	Projecting and construction of the Protection Devices
EN349	Minimum gaps to avoid crushing of parts of the human body
EN418	Emergency stop equipment, functional aspects - Principles for design
EN1088	Interlocking devices associated with guards - Principles for design and selection
EN1050	Safety of machinery - Principles for risk assessment
EN45014	General criteria for suppliers' declaration of conformity
EN203-1/2	Gas heated catering equipment
EN60204-1	Electrical equipment on the machines
prEN 563	Hot Surfaces which could be dangerous

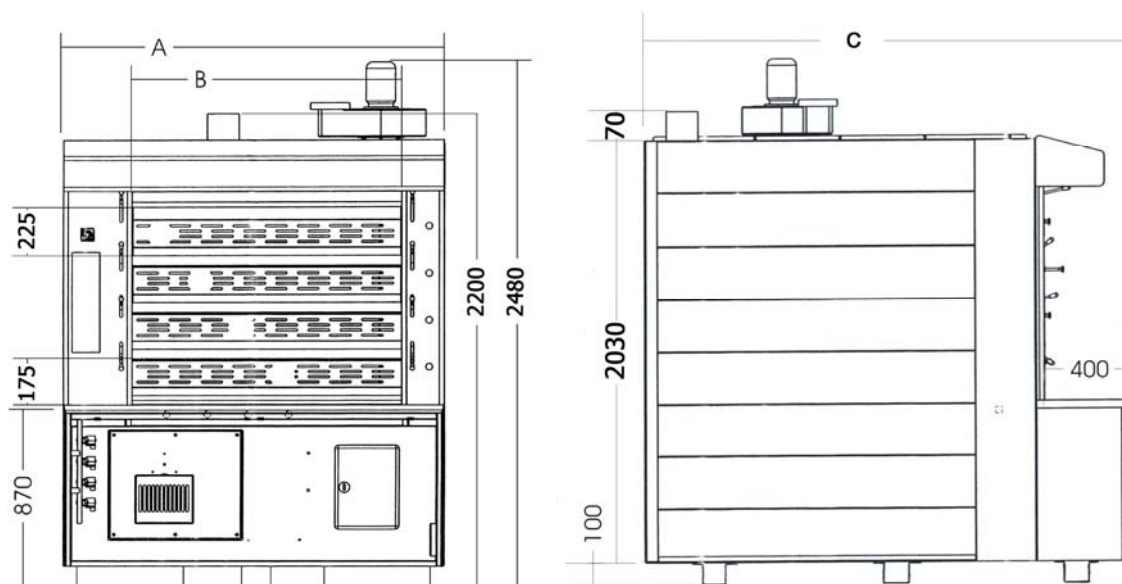
89/392/EEC; 91/368/EEC; 93/44/EEC; 93/68/EEC.



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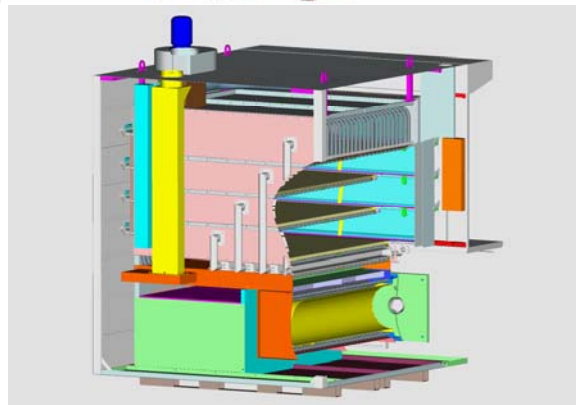
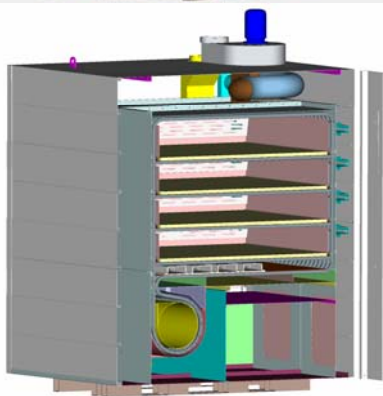
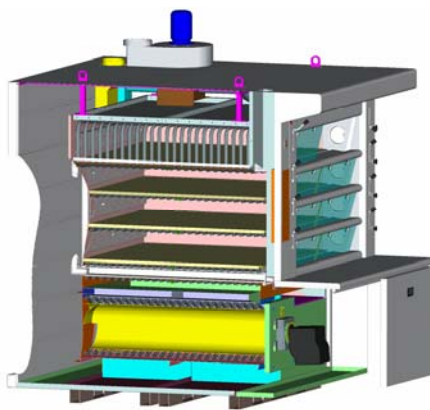
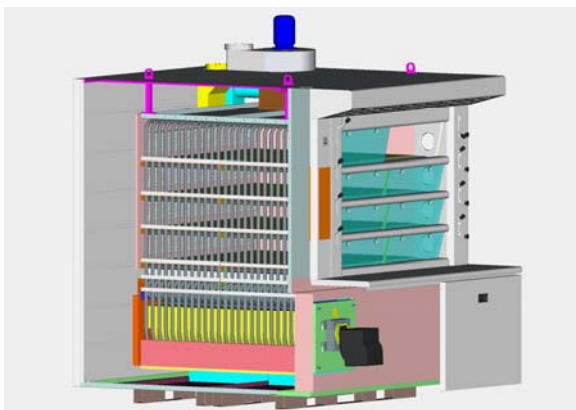
Technical features

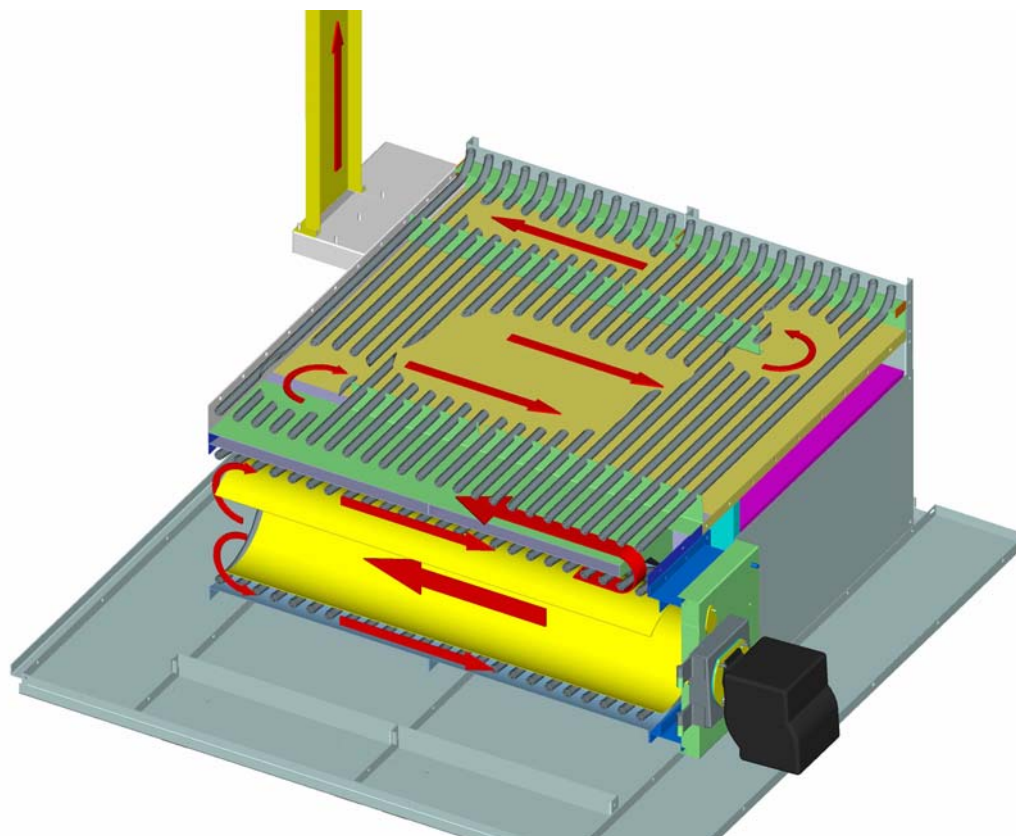
14 - Technical features



Model	Baking Surface	Dimension			
		mq	A mm	B mm	C mm
ZOOM 812	4	1380	845	2280	2480
ZOOM 1212	6	1800	1265	2280	2480
ZOOM 1218	9	1800	1265	2900	2480

Model	Baking Surface	Trays number	Inside dimensions		Outside dimensions			Power kcal/h	Electric power kw	Weight kg
			A mm	B mm	A mm	B mm	H mm			
812	4	n. 16 40x60	820	1230	1380	2280	2030	22000	1.0	1850
1212	6	n. 24 40x60	1230	1230	1800	2280	2030	30000	1.0	2250
1218	9	n. 36 40x60	1230	1840	1800	2900	2030	45000	1.0	2950





Steam Pipes Deck Oven Connection

15 – Connection

Hydraulic connection: the connection is necessary for the vaporizer of the oven and must be of a minimum diameter of 12 mm and provide filtered water. The outline connection is $\frac{1}{2}$ inc. The water pressure reaching the vaporizer is between 1 and 3.0 bar.

Steam exhaust to the draught hood: the exit diameter is 18 cm. In the coupling area with the exterior piping (this must have a min. section of 0.035 m² it is better to install a box with dimensions of mm 400 x 500 x 400).

The piping of steam exhaust must be slightly inclined to avoid the condensate return in the oven.

Evacuation of the combustion products: the exit diameter is 15 cm. It is necessary to consider that - in order to obtain a good functioning of the plant - on the base of the chimney there must be a depression within 0.3 ÷ 0.5 mbar. If possible avoid installing curves in the piping. If chimney and piping are outside the building, it is good standard to cover them with heat insulator materials to obtain a good draught also in the cold season and to avoid vapour condensations.

If the height of the room is under 6 mt, the chimney has to be 1,5 mt height over the roof.

Electrical connection: verify that the voltage of the electric line to the electric box corresponds to the voltage required in the electrical diagram and on the label inside the box.

Normally and if here isn't any different request, the connection is 3 phases + neutral, 400 voltage and 50 Hz.

Gas connection: the burner need a connection of $\frac{1}{2}$ or $\frac{3}{4}$ inch (see the its manual).

Steam Pipes Deck Oven Dimensions

16 – Package

The oven is delivered:

- fully **disassembled** with components in wooden crates with following dimensions in cm.:

cm. 160x225x225	Kg. 2050	Model Zoom 812;
cm. 160x225x225	Kg. 2450	Model Zoom 1212;
cm. 160x225x225x2box	Kg. 3350	Model Zoom 1218.
- **partially assembled** (semi assembled. Motors, fans, panel and electric box not installed. For container shipment or track long time transport);
- **fully assembled.**

Steam Pipes Deck Oven

Fuel

16 – Fuels

The oven is functioning with a burner using following fuels: (see the manual of the burner):

- DIESEL
- GAS METHAN
- LPG (LIQUEY PETROL GAS).

Fuel type	Burner type	Boost pressure Mbar	lower heating power
DIESEL	BLOWN	12	11.5 kW/kg
GAS METHAN (G20)	BLOWN	12 ÷ 14	10 kW/m3n
L. PETROL GAS -GPL (G30)	BLOWN	12 ÷ 14	13 kW/m3n

Oven model	Diesel burner	Burner brand	Nozzle	Kw min-max	Kg/h min-max
ZOOM 812	REG 3	RIELLO	0.65x 60°	21-38	1.8-3.2
ZOOM 1212	REG 3	RIELLO	0.65x 60°	21-38	1.8-3.2
ZOOM 1212	40 F 5	RIELLO	0.75x 60°	30-60	2.5-5.0
ZOOM 1218	40 F 5	RIELLO	0.75x 60°	30-60	2.5-5.0

Oven model	Gas burner	Burner brand	Kw min-max	Kcal/h min-max
ZOOM 812	40 FS 3	RIELLO	11-35	9.500-30.000
ZOOM 1212	40 FS 3	RIELLO	11-35	9.500-30.000
ZOOM 1212	40 FS 5	RIELLO	23-58	20.000-50.000
ZOOM 1218	40 FS 5	RIELLO	23-58	20.000-50.000
ZOOM 1218	40 FS 8	RIELLO	46-93	40.000-80.000

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