Service Manual

FAGOR INDUSTRIAL

ADVANCE SERIES OVENS

04/02/2020

SERVICE MANUAL
"ADVANCE" SERIES OVENS

MONDRAGON

1. INTRODUCTION

Dear customer,

We would like to thank you for the confidence you have placed in our brands and in our product. We are sure that this machine will meet your requirements.

This manual is designed to offer the information necessary for the installation, start-up, and maintenance of ADVANCE ovens.

The special installation and maintenance must be carried out by qualified technicians.

The equipment must only be used for the purposes established by the manufacturer. Inappropriate use of the same may result in risks to the integrity and safety of users and damage to the equipment. This machine may only be used by professionals or qualified personnel. Any other use will be in conflict with the intended use and is therefore hazardous.

The guarantee does not cover damage to glass components, or damage to insulation material or damage due to the incorrect installation of the equipment, or to inappropriate use, inadequate maintenance or poor repair processes.

This Service Manual is a guide to help in the maintenance of the machine.

This equipment is subject to changes and modifications for its technical progress.

2. OPERATING TESTS

The equipment you have purchased is prepared for its correct operation, the result of which is certified by a rigorous quality control test.

The equipment has been tested the outcome of which has been satisfactory after the tests established for its production.

The supplier may require the defective part to be returned for analysis and statistics.

The company will correct any possible errors or defects provided that the machine has always been used in accordance with the instructions in the manual.

IN THE EVENT OF REPAIR OR REPLACEMENT OF PARTS, ALWAYS PROVIDE THE CODE AND THE SERIAL NUMBER OF THE APPLIANCE, FOUND ON THE SPECIFICATIONS PLATE.

Please read the instruction manual closely as this contains safety directives that must be observed for your own safety.

Liability will not be accepted if the machine has not been handled as indicated in the manual or by unauthorised or unqualified personnel.

3. SAFETY INSTRUCTIONS

For your safety

Do not store or use inflammable and/or corrosive liquids or gases near the equipment.

The operation of the machine must never be entrusted to minors or individuals with physical, mental or sensory disability. Nor to individuals without the experience and/or necessary knowledge, unless under the supervision of a safety manager.

The machine must only be operated by hand. Any damage resulting from the use of sharp, pointed objects or similar will invalidate all warranty rights.

To avoid the risk of accidents and damage to the machine, operators must receive adequate safety training by means of relevant courses, seminars and programmes.

Warning: The incorrect adjustment, substandard cleaning or installation, or inadequate maintenance or service, together with the renovation of the machine may result in property damage and/or personal injury, or even loss of life. Please read the instructions in the manual supplied with the machine carefully before starting the machine.

What to do if you smell gas

- Immediately shut off the gas supply.
- Do not touch any of the components of the electrical connection.
- Make sure that the room in which the appliance is located is well-ventilated.
- Avoid naked flames and the formation of sparks.

- Report the incident to the corresponding gas supplier (if it is not possible to contact the gas supplier, call the local fire brigade).

Only for gas appliances

- If your appliance is installed below an extractor hood, keep this connected while the appliance is working (steam and combustion gases).
- If your appliance is connected to a fluepipe with a draught regulator, clean the pipe in accordance with the applicable local regulations (risk of fire). Please consult your installer.
- Do not place objects on the exhaust pipes of the appliance (risk of fire).
- The space below the back of the appliance must **NOT** be blocked by any objects or damaged in any way (risk of fire).
- Do not use the appliance in areas exposed to draughts or wind (risk of fire).

Safety measures for the use of the machine.

- Always open the door of the machine carefully.
- Use suitable protective clothing.
- Cleaning - Aggressive chemical action (risk of abrasion).
- When working with recipients filled with liquid or foods that melt while cooking, only insert them at a height that will allow the user to see the content of the recipients placed on the rack (burn hazard).
- Always open the door of the cooking chamber very slowly (hot steam) (burn hazard).
- Use protective clothing when inserting or removing accessories from the hot cooking chamber. (burn hazard).
- The exterior temperature of the appliance may reach over 60 °C. Only touch the control elements (burn hazard).
- The hand shower and the water may be very hot (burn hazard).
- Cool Down – Before activating the Cool Down function, make sure that the deflector plate is correctly locked in place (burn hazard).
- Do not interfere with the fan rotor (risk of injury).
- Cleaning - Aggressive chemical action (risk of abrasion).
- Do not store explosive or inflammable substances close to the appliance (risk of fire).
- Use the brakes to lock the wheels of multiple load appliances and mobile racks which are to always stay in the same place. If the surface of the floor is uneven, there is a risk of slipping (risk of injury).
- When the racks are used in mobile service, always lock the containers. The containers which contain liquids and secure correctly to prevent spills (burn hazard).
- Check that the transport trolley is securely fastened to the appliance when loading or removing the multiple load racks or plate racks (risk of injury).
- The multiple load racks and plate racks, the transport trolleys and the wheeled appliances may tip over when moving across uneven surfaces (risk of injury).

The following precautions should be adopted during cooking, and until all parts of the equipment have cooled.

- Only touch the control switches and the handle. The external parts may reach very high temperatures (>60 ºC).
- When opening the door, do so slowly, being careful to avoid the steam coming from the cooking chamber.
- Always use heatproof clothing when handling objects inside the cooking chamber.
- Take extreme care when removing the trays from the chamber.
- Remove the core temperature probe before removing the trays, and place it on its supporting bracket. Check that the cable is not in the way when removing the trays.

For cleaning

- Always use adequate protective clothing while working: protective goggles and gloves, face mask, etc.
- Observe the safety instructions given in the “Cleaning” section.
- Before handling any chemical cleaning product, read the product specification sheet carefully and use PPE as indicated.
- Do not open the oven door. Risk of injury to skin or eyes.

IMPORTANT: WAIT AT LEAST 10 MINUTES AFTER SWITCHING OFF THE MACHINE BEFORE CLEANING THE INSIDE OF THE APPLIANCE.

Others

The positioning and installation, and all repairs and/or modifications, should always be carried out by an **AUTHORISED TECHNICIAN**, in accordance with the applicable legislation of the country or geographical region. The manufacturer does not accept liability for the consequences if the machine is incorrectly installed.

- It is strictly forbidden to delete, alter, manipulate or suppress the safety devices. Failure to comply with this warning may result in severe risk for the health and safety of individuals.
- Use of spare parts other than original parts will cancel the guarantee.
- To prevent the contamination of recipients and to maintain hygiene standards, the elements in contact with food and surrounding zones should be cleaned after each use.
- Before switching on the newly installed appliance for the first time, the inside should be cleaned with a cloth soaked in soapy water to eliminate the odours associated with a new appliance.

This equipment has been designed for use in ambient temperatures between 5 and 40 ^{0}C.

Do not leave flammable products or objects inside the tub or in its vicinity.

- This appliance is intended to be used solely for cooking food. Any other use will be considered inadequate.

Abrasive or corrosive products, acids, solvents, or CHLORINE/HYPOCHLORITE-based detergents **must never be used.**

Never use the equipment for any of its components as a ladder or means of support, and do not deposit objects on top of the machine.

Do not open the door of the machine while the machine is operating. Switch off the appliance before accessing the inside of the machine.

Do not install the appliance in places exposed to jets of water.

RISK OF FIRE

Before use, make sure that there are no foreign objects inside the chamber (manuals, plastic, etc.) and that the smoke outlet is unobstructed.
Do not place sources of heat, inflammable substances or fuels close to the equipment.
Do not use highly inflammable food or liquids (for example alcohol) during cooking.
Clean the cooking chamber regularly. Food remains and fats may catch fire.

RISK OF ELECTRIC SHOCK

Do not open the compartments marked with this symbol. Access is restricted to qualified personnel authorised by FAGOR. Failure to comply with this regulation will render the guarantee void and expose the user to the risk of injury or even loss of life.

4. PICTOGRAMS

Danger Risk of imminent danger that may lead to serious physical injury or loss of life. Failure to observe this instruction may result in property damage or personal injury.

Warning Risk of potential hazard that may lead to serious physical injury or loss of life. Failure to observe this instruction may result in property damage or personal injury.

Caution Potentially hazardous situation that may lead to minor physical injury. Failure to observe this instruction may result in property damage or personal injury.

Caustic substance Failure to observe this instruction may result in property damage or personal injury.

Risk of fire Failure to observe this instruction may result in property damage or personal injury.

Burn hazard Failure to observe this instruction may result in property damage or personal injury.

Danger High voltage Failure to observe this instruction may result in property damage or personal injury.

Danger High voltage Failure to observe this instruction may result in property damage or personal injury.

5. UPKEEP

To maintain the quality of the stainless steel, ensure good hygiene and prevent the incorrect operation of the machine, it must be cleaned every day. Follow the instructions given in the "Cleaning" chapter.
If the machine is not cleaned correctly and as often as necessary, dirt, grease and traces of food may build up in the tub.

- To prevent the tub from rusting, clean away traces of food every day.
- Do not use high pressure cleaners.
- Do not clean the machine with products containing acid or expose it to the effects of acid vapours. Acid damages the passive layer of the steel and may result in discolouration.
- Use suitable cleaning products. The use of unsuitable products may damage the machine and invalidate warranty rights.
- Do not use abrasive cleaning products or scrubs.
- **Daily cleaning of the door seal with a small quantity of non-abrasive detergent will extend its useful life.**

6. PROLONGED PERIOD OF INACTIVITY

If the machine is going to be inactive or out of service for a long period of time (holidays, temporary closure, etc.), the following should be observed:

- The machine must be fully drained.
- The machine must be thoroughly cleaned.
- Leave the door of the machine open.
- Switch off the mains power switch.

- Disconnect the water supply.
- Disconnect the gas supply.
- The appliance must not be in left in environments with temperatures less than **5 °C.**
- Leave the door ajar to allow the air to circulate and to prevent the appearance of mould.

7. MAINTENANCE

With these guidelines, we aim to offer you assistance so that the equipment always works perfectly throughout its useful life.

- Inspection, maintenance and repair work must be performed by a specialised Official Technical Service.
- When performing cleaning, inspection, repair or maintenance work, the power supply to the machine must be disconnected.

- When changing the position of the equipment, make sure that the power cable and the water and drainage pipes have been correctly disconnected. When returning the machine to its original location, it must be immobilised again. Check that the power supply line and the water and drainage connection pipes are installed in accordance with the regulations.
- To ensure that the machine is in perfect technical order, it should be inspected at least once a year by an "**Official Technical Service**".

7.1. DAILY MAINTENANCE

The appliance should be cleaned every day.
For the correct working and maintenance of the appliance, it should be cleaned every day using degreasing products specifically designed for this.

IMPORTANT Sand-based or abrasive products must **Not** be used. Nor should a hose be used to clean the outside of the appliance as this could affect the internal components.
The appliance must always be switched off for **Manual Cleaning**.

ATTENTION: The detergents are highly active and therefore extreme caution should be taken as strictly they could cause irritation to the skin or eyes. The manufacturer's instructions must be observed.
When applying detergents and degreasing products, rubber gloves, face mask and protective goggles must be worn, in accordance with the applicable safety regulations.
If the oven is cleaned everyday, the operation can be completed quickly, giving an appliance in perfect condition and ready for use the next day.
NOTE: Do not use products or tools which may scratch the surface of the equipment.
As the door reverse is made of glass, it is very easy to clean, using the same products used to clean vitroceramic hobs.

- Use the scraper to remove any grease incrusted on the glass.
- Spray the product on the glass.
- Wipe the glass clean with a cloth.

NOTE: Do **not** use products or tools which may scratch the glass.

- **To ensure the stainless steel maintains its high quality, for hygienic reasons and to prevent the faulty operation of the machine, it must be cleaned every day.**
- **To prevent the tub from rusting, clean the machine every day.**
- Leave the machine door ajar if it is to be out of service for a length of time (e.g. overnight).
- **Never** clean the equipment with a high pressure cleaner.
- Do **NOT** clean the machine with products containing acid or expose it to the effects of acid vapours. This could damage the passivating chrome-plated steel coat, resulting in possible discolouration of the machine.
- To clean, use detergents suitable for use with products in contact with food.

- Do **NOT** use abrasive or corrosive products or acids, solvents and chlorine-based detergents as these may damage the components of the equipment.
- Observe the detergent instructions.
- Do **NOT** direct jets of pressurised water at the internal parts.
- Only use specific cleaning products. The use of unsuitable cleaning products may damage the machine and invalidate warranty rights.
- Do **NOT** use abrasive cleaning products or scrubs.

WARNING

• If the cleaning of the machine is inadequate, the build-up of grease and traces of food inside the tub may damage the stainless steel.

• Use protective clothing, protective gloves, goggles and face masks in accordance with local legislation.

• Do not store chemical cleaning products inside the machine.

It is essential to carry out all the necessary and relevant cleaning operations in order to increase the service life of the machine and to ensure its correct operation.

	**Contact a cleaning product distributor for detailed information about the methods and products available for the regular disinfection of the machine.** **Only use products suitable for use with industrial equipments.** **The guarantee does not cover damage caused by the incorrect use of chemical products.**
	**When handling chemical substances, the product safety instructions and recommended doses must be observed. Use protective clothing, gloves and safety glasses when handling chemical products.**

The machine is made of high quality stainless steel. However, under certain conditions, corrosion may appear.
To keep the stainless steel surfaces permanently free of corrosion, only use suitable cleaning products.
To ensure the correct operation of the equipment, Fagor Industrial recommends the following maintenance tasks are performed daily:

- The machine should be cleaned at the end of each working day.
- **ATTENTION** Do **NOT** use jets of water, pressure or steam cleaners to clean the machine or its environment
- Do **NOT** use abrasive or corrosive, materials, solvents, chlorine or chlorine-based products or hypochlorites to clean the machine.

After switching off and draining the machine every day:

- Disconnect the power switch.
- Remove the frames and clean with a brush under a strong jet of water.
- Replace all the parts correctly.
- Thoroughly clean the chamber; attached food waste should be removed with a brush.
- At the end of the day, the door of the machine should be left open.

Before carrying out any cleaning operations, **the appliance must be disconnected at the mains.**
Some models are equipped with a drainage pipe for cleaning, as well as for collecting the possible flow of liquids from the food. It is essential to remove and clean the drain lid during the cleaning operation, to prevent it from being blocked up with solid waste. This is so that any liquids present do not become stagnant. **It should be installed again after cleaning.**
The appliance must be switched off if cleaning with water. Panels should not be moved to access electrical components except by technical staff authorised to carry out maintenance and repair operations.

7.1.1. REGULAR CHECKS PERFORMED BY THE USER

- It is recommended that there are no heat sources near to the cooler.
- The appliance should be levelled to prevent excess vibrations.
- The door seal should be in good condition and the door should close with a hermetic seal.
- Check that the drainage pipe is not blocked.

7.2. SPECIALISED MAINTENANCE

To ensure that the equipment is in perfect and safe condition, it should be maintained and serviced by an Authorised Service Centre at least once a year.

DANGER
• High voltage
• Before removing the panel from the machine, accessing components and carrying out work on live components, disconnect the machine from the power supply.

Use the resources and tools suited to each operation on the machine.
Call the technical service twice a year to have the machine serviced:

- Cleaning of water filter.
- Cleaning of lime on the resistors, pipes and surfaces of the equipment. The use of phosphoric-based products is recommended.
- Inspection of the condition of the seals.
- Inspection of the condition of the parts.
- Checking the correct operation of the dispensers.
- Tightening of the electrical connections on the terminals, once a year.
- Check that the temperature of the premises does not exceed that indicated for your machine.
- The guarantee will be made void if there is insufficient ventilation.
- Check that the doors close properly.
- Do not disassemble the mobile components guards or front panels without first having turned the appliance off.
- Gloves must be worn before accessing the appliance area, given the existence of high temperatures of some components, with the resulting risk of burns.
- If the supply hose is damaged, it should be replaced by authorised technical personnel in order to avoid risks.
- It if is replaced, the earth pin must be positioned again.
- If a cable requires replacement, the cross-section must never be reduced.
- If it is necessary to disassemble the inner lid of the electrical installation, it is extremely important to leave it exactly as it was when reassembling it.

7.3. CHECK POINTS FOR MAINTENANCE OF THE APPLIANCE

		APE	APG	ACE	ACG	AE	AG
Door	Door joint	Daily	Daily	Daily	Daily	Daily	Daily
	Upper hinge	6 months	6 months	6 months	6 months	6 months	6 months
	Lower hinge	6 months	6 months	6 months	6 months	6 months	6 months
	Lever	6 months	6 months	6 months	6 months	6 months	6 months
	Door closed	6 months	6 months	6 months	6 months	6 months	6 months
	Door sensor	6 months	6 months	6 months	6 months	6 months	6 months
	Inner glass	Daily	Daily	Daily	Daily	Daily	Daily
	Outer glass	Daily	Daily	Daily	Daily	Daily	Daily
Chamber	Chimney	6 months	6 months	6 months	6 months	6 months	6 months
	Electromagnet	6 months	6 months	6 months	6 months	6 months	6 months
	Turbine motor	6 months	6 months	6 months	6 months	6 months	6 months
	Inverter	6 months	6 months	6 months	6 months	6 months	6 months
	TC	6 months	6 months	6 months	6 months	6 months	6 months
	TN	6 months	6 months	6 months	6 months	6 months	6 months
	Turbine	6 months	6 months	6 months	6 months	6 months	6 months
	Inverter	6 months	6 months	6 months	6 months	6 months	6 months
Hydraulic	TG					6 months	6 months
	TV					6 months	6 months
	VDV					6 months	6 months
	VLV	6 months	6 months	6 months	6 months	6 months	6 months
	VHM	6 months	6 months	6 months	6 months	6 months	6 months
	Shower	6 months	6 months	6 months	6 months	6 months	6 months
	Lime on generator	6 months	6 months			6 months	6 months
	Level detecting rod	6 months	6 months			6 months	6 months
	Safety level rod	6 months	6 months			6 months	6 months
	Level ducts	6 months	6 months			6 months	6 months

	Grease collection tray	6 months	6 months	6 months	6 months	6 months	6 months
	Hoses	6 months	6 months	6 months	6 months	6 months	6 months
	Water leaks	6 months	6 months	6 months	6 months	6 months	6 months
Electricity	Contactors	6 months	6 months	6 months	6 months	6 months	6 months
	Contacts	6 months	6 months	6 months	6 months	6 months	6 months
	Chamber resistors	6 months		6 months		6 months	
	Steam resistors	6 months				6 months	
	Chamber light	6 months	6 months	6 months	6 months	6 months	6 months
	Terminals	6 months	6 months	6 months	6 months	6 months	6 months
	Fan	6 months	6 months	6 months	6 months	6 months	6 months
Pneumatics	Gas valves	6 months	6 months	6 months	6 months	6 months	6 months
	Ignition control	6 months	6 months	6 months	6 months	6 months	6 months
	Ignition electrodes	6 months	6 months	6 months	6 months	6 months	6 months
	Flame detectors	6 months	6 months	6 months	6 months	6 months	6 months
	Blowers	6 months	6 months	6 months	6 months	6 months	6 months
Cover	Exterior panels	6 months	6 months	6 months	6 months	6 months	6 months
	Control panel	6 months	6 months	6 months	6 months	6 months	6 months
	Legs	6 months	6 months	6 months	6 months	6 months	6 months

7.3.1. MAINTENANCE INTERVALS

7.3.2. MAINTENANCE POINTS

ACE	AE	APE		
X	X	X	DOOR SEAL	DOOR
X	X	X	JUNTA RACK (solo 201 y 202)	
X	X	X	HINGE	
X	X	X	LEVER	
X	X	X	LOCK	
X	X	X	DOOR SENSOR	
X	X	X	CHAMBER LIGHT	
X	X	X	FLUEPIPE CLOSING SEAL	FLUEPIPE
X	X	X	COIL	
X	X	X	MOTOR 1	TURBINE
X	X	X	MOTOR 2 (only 201 and 202)	
X	X	X	FAN 1	
X	X	X	FAN 2 (only 201 and 202)	
X	X	X	FREQUENCY VARIATOR 1	
X	X	X	FREQUENCY VARIATOR 2 (only 201 and 202)	
	X	X	DRAINAGE PUMP	CLEARING DRAINAGE
		X	CLEANING PUMP	
		X	CLEANING VALVE	
X	X	X	COOLING FAN 1	FAN
X	X	X	COOLING FAN 2	
	X	X	VDV SOLENOID VALVE	WATER SOLENOID VALVE
X	X	X	VCN SOLENOID VALVE	
X	X	X	VHM SOLENOID VALVE	
X	X	X	VD SHOWER SOLENOID VALVE	
X	X	X	WATER	LEAK
X	X	X	STEAM	
	X	X	LEVEL CONTROL DUCT	WATER LEVEL CONTROL
	X	X	LEVEL DETECTING RODS	
X	X	X	CONTACTS	ELECTRICITY
X	X	X	CONTACTORS	
X	X	X	CHAMBER RESISTORS	
	X	X	STEAM RESISTORS	
X	X	X	TERMINALS	
X	X	X	TN PRICK PROBE	PROBES
X	X	X	TC CHAMBER PROBE	
	X	X	TG BOILER PROBE	
X	X	X	TV STEAM PROBE	
	X	X	CAL CALDERA	
X	X	X	INSULATION	FAIRING
X	X	X	FAIRING	
X	X	X	CONTROL HOLDER	

ACG	AG	APG		
X	X	X	DOOR SEAL	DOOR
X	X	X	JUNTA RACK (solo 201 y 202)	
X	X	X	HINGE	
X	X	X	LEVER	
X	X	X	LOCK	
X	X	X	DOOR SENSOR	
X	X	X	CHAMBER LIGHT	
X	X	X	FLUEPIPE CLOSING SEAL	FLUEPIPE
X	X	X	COIL	
X	X	X	MOTOR 1	TURBINE
X	X	X	MOTOR 2 (only 201 and 202)	
X	X	X	FAN 1	
X	X	X	FAN 2 (only 201 and 202)	
X	X	X	FREQUENCY VARIATOR 1	
X	X	X	FREQUENCY VARIATOR 2 (only 201 and 202)	
	X	X	DRAINAGE PUMP	CLEARING DRAINAGE
		X	CLEANING PUMP	
		X	CLEANING VALVE	
X	X	X	COOLING FAN 1	FAN
X	X	X	COOLING FAN 2	
	X	X	VDV SOLENOID VALVE	WATER SOLENOID VALVE
X	X	X	VCN SOLENOID VALVE	
X	X	X	VHM SOLENOID VALVE	
X	X	X	VD SHOWER SOLENOID VALVE	
X	X	X	WATER	LEAK
X	X	X	STEAM	
	X	X	LEVEL CONTROL DUCT	WATER LEVEL CONTROL
	X	X	LEVEL DETECTING RODS	
X	X	X	CONTACTS	ELECTRICITY
X	X	X	CONTACTORS	
X	X	X	TERMINALS	
X	X	X	TN PRICK PROBE	PROBES
X	X	X	TC CHAMBER PROBE	
	X	X	TG BOILER PROBE	
X	X	X	TV STEAM PROBE	
	X	X	CAL CALDERA	
X	X	X	INSULATION	FAIRING
X	X	X	FAIRING	
X	X	X	CONTROL HOLDER	
X	X	X	CO BURNER 1	HEATING
	X	X	CO BURNER 2 (only 201 and 202)	
	X	X	CO STEAM BURNER	
X	X	X	BURNER 1 IGNITION	
X	X	X	BURNER 2 IGNITION (only 201 and 202)	
	X	X	STEAM BURNER IGNITION	
X	X	X	BURNER 1 FLAME DETECTOR	
X	X	X	BURNER 2 FLAME DETECTOR (only 201 and 202)	
	X	X	STEAM BURNER FLAME DETECTOR	
X	X	X	BURNER 1 BLOWER	
X	X	X	BURNER 2 BLOWER (only 201 and 202)	

	X	X	STEAM BURNER BLOWER	
X	X	X	BURNER 1 GAS VALVE	
X	X	X	BURNER 2 GAS VALVE (only 201 and 202)	
	X	X	STEAM BURNER GAS VALVE	
X	X		BURNER 1 IGNITION CONTROL	
X	X	X	BURNER 2 IGNITION CONTROL (only 201 and 202)	
	X	X	STEAM BURNER IGNITION CONTROL	
X	X	X	BURNER 1	
X	X	X	BURNER 2 (only 201 and 202)	
	X	X	STEAM BURNER	
X	X	X	BURNER 1 AIR INTAKE	
X	X	X	BURNER 2 AIR INTAKE (only 201 and 202)	
	X	X	STEAM BURNER AIR INTAKE	

7.4. EVERYDAY CLEANING

Before carrying out any cleaning operations, the appliance must be disconnected at the mains.
It is essential to remove and clean the drain lid during the cleaning operation, to prevent it from being blocked up with solid waste. This is so that any liquids present do not become stagnant. **It should be installed again after cleaning.**
The appliance must be switched off if cleaning with water. Panels should not be moved to access electrical components except by technical staff authorised to carry out maintenance and repair operations.
The inside of the cooler should be cleaned with great car.

- Do **NOT** wash the appliance with direct jets of water, as filtrations into the electrical components could affect the normal operation of the machine.
- We recommend cleaning the outside of the unit daily with a damp cloth and following the direction of the stainless steel honing. Dry thoroughly.
- Use neutral soaps and avoid chlorine-based or abrasive substances.
- Do **NOT** use tools that could cause cuts resulting in rust.
- Remove hard deposits by applying water and soap or neutral detergents, and using a plastic or wooden spatula if necessary.
- Clean the inside of the chamber to prevent the build-up of dirt with neutral chlorine-free non-abrasive detergents.
- The zones around the appliance should also be cleaned everyday with soap and water, avoiding chlorine-based or toxic detergents. Rinse with clean water and dry thoroughly.

8. HYGIENE REGULATIONS

- The equipment should be kept perfectly clean and maintained.
- Operators must strictly observe all hygiene requirements when handling food.

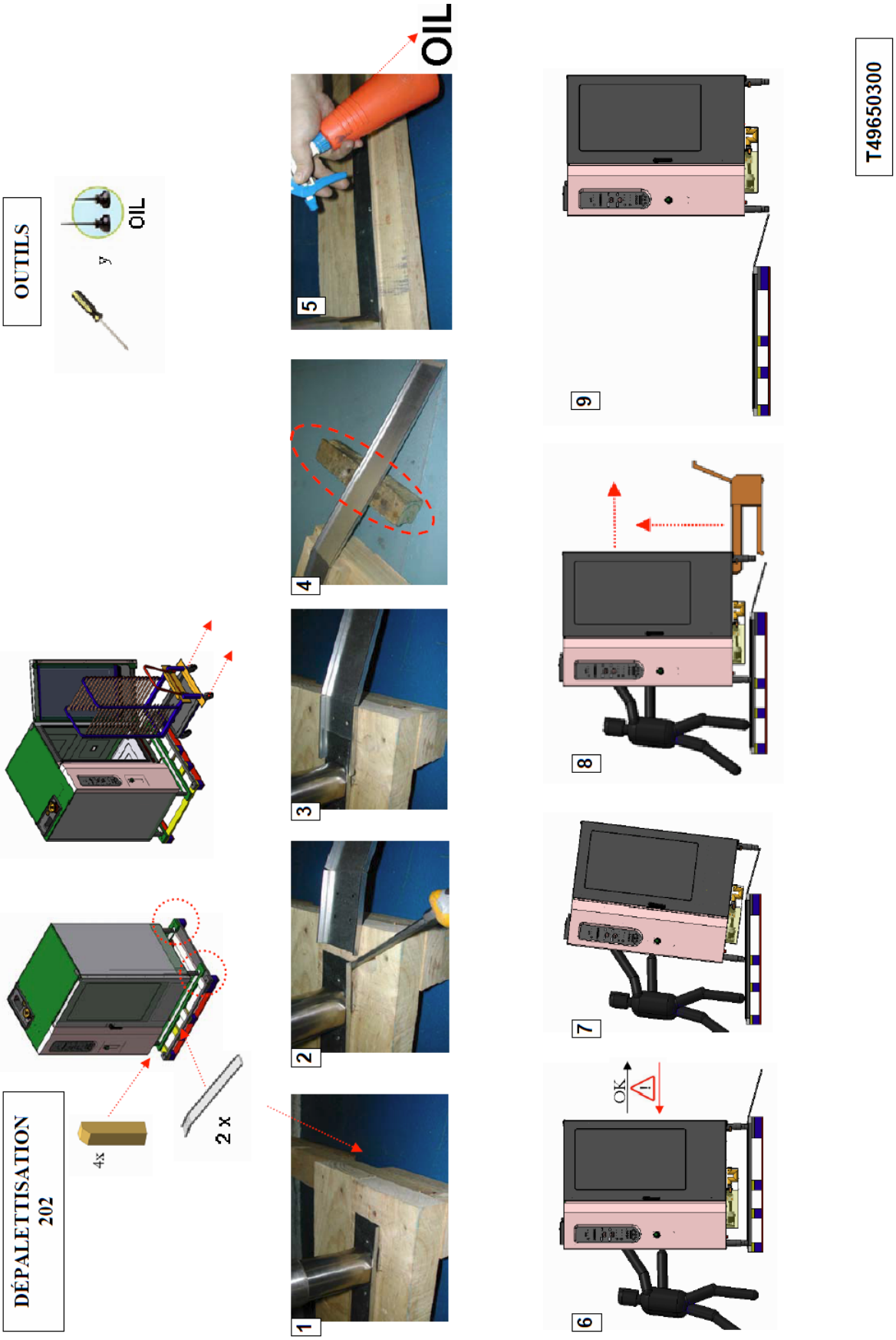
9. REMOVAL OF PACKAGING

Remove packaging from the equipment and check for damage during transportation. If any damage is observed, immediately notify the supplier and the transport company. In the event of doubt, do not use the equipment until the problem has been assessed.

Packaging (plastic, wood, staples, etc.) must not be left in the reach of children, it is a potential hazard. It is a potential hazard.

The appliance must be handled using a forklift or similar to prevent damage to the structure of the machine. Transport the equipment to the installation location and then remove its packaging.

9.1. RECYCLING



All the packaging can be recycled. Dispose of packaging correctly.
This machine does not contain components which may damage the environment if not correctly processed. The machine must not be disposed of in the municipal waste.
The machine must be disposed of in accordance with the current local legislation, which can be obtained from the local authorities.
Recycle packaging material correctly at the selective collection points.
Deposit packaging material in the correct bins for recycling.
Help to protect the environment and public health, and to recycle waste from electrical and electronic equipment. Do not dispose of the machine with domestic waste. Take the product to the local recycling centre or contact your local office.

Packaging (plastic, wood, staples, etc.) must not be left hazard.

in the reach of children, it is a potential

must not be thrown away in a standard rubbish bin, but electronic equipment collection point for correct disposal.

At the end of its useful life, this machine must be placed in an electrical waste and electronic equipment collection point for correct disposal. Depending on the features, the materials can be recycled. By recycling and other ways of processing electrical waste and electronic equipment, you can significantly contribute to protecting the environment.
Protect the environment by disposing of waste at the waste disposal points established for this purpose.
The European standard 2012/19/EU Directive on Waste Electrical and Electronic Equipment indicates that this appliance must not be disposed of as a domestic appliance. It must be correctly disposed of in order to optimise the recycling of materials and to protect the environment, as indicated by the **WEEE** symbol on the machine.
For further information on the correct disposal of the machine, please contact the nearest public waste disposal service or the distributor/supplier of the appliance.
The European standard 2012/19/EU Directive on Waste Electrical and Electronic Equipment indicates that this appliance must not be disposed of as a domestic appliance. It must be correctly disposed of in order to optimise the recycling of materials and to protect the environment, as indicated by the WEEE symbol on the machine.
For further information on the correct disposal of the machine, please contact the nearest public waste disposal service or the distributor/supplier of the appliance.

10. GENERAL INFORMATION AND WARNINGS

BEFORE INSTALLING AND STARTING THE APPLIANCE, PLEASE READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL CAREFULLY.

THIS APPLIANCE IS INTENDED EXCLUSIVELY FOR PROFESSIONAL USE AND MAY ONLY BE USED BY QUALIFIED PERSONNEL. IT MUST BE INSTALLED AND REPAIRED EXCLUSIVELY BY AN AUTHORISED AND QUALIFIED TECHNICAL SUPPORT SERVICE.

THE MANUFACTURER MAY NOT BE HELD LIABLE FOR ANY PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM THE INCORRECT INSTALLATION, USE, MAINTENANCE OR REPAIR, OR CAUSED BY FAILURE TO COMPLY WITH THE STANDARDS AND INSTRUCTIONS PROVIDED.

- The placement, installation, repairs and/or modifications must always be carried out by an **Authorised Technician** in accordance with the manufacturer's instructions and the applicable regulations.
- Any installations, adjustments or repairs carried out by unauthorised personnel, incorrect maintenance or use, the use of spare parts other than those supplied by the manufacturer and any other type of alteration to the appliance may cause damage or injury and result in loss of cover under the warranty.

- Ensure that the earth connection operates correctly and efficiently.
- If the appliance breaks down, please call the **Technical service centre.** Do **NOT** try to repair it or allow unauthorised or unqualified personnel to do so.
- Do not change the position of or handle the machine components, as this may affect the operating safety.
- The dishwasher must be correctly levelled and the electrical cables, water and drainage hoses must not be trapped or contain kinks.
- The appliance has been designed to operate at ambient temperatures ranging from 5 ^{0}C to 40 ^{0}C and must not be used at temperatures below 5 ºC.

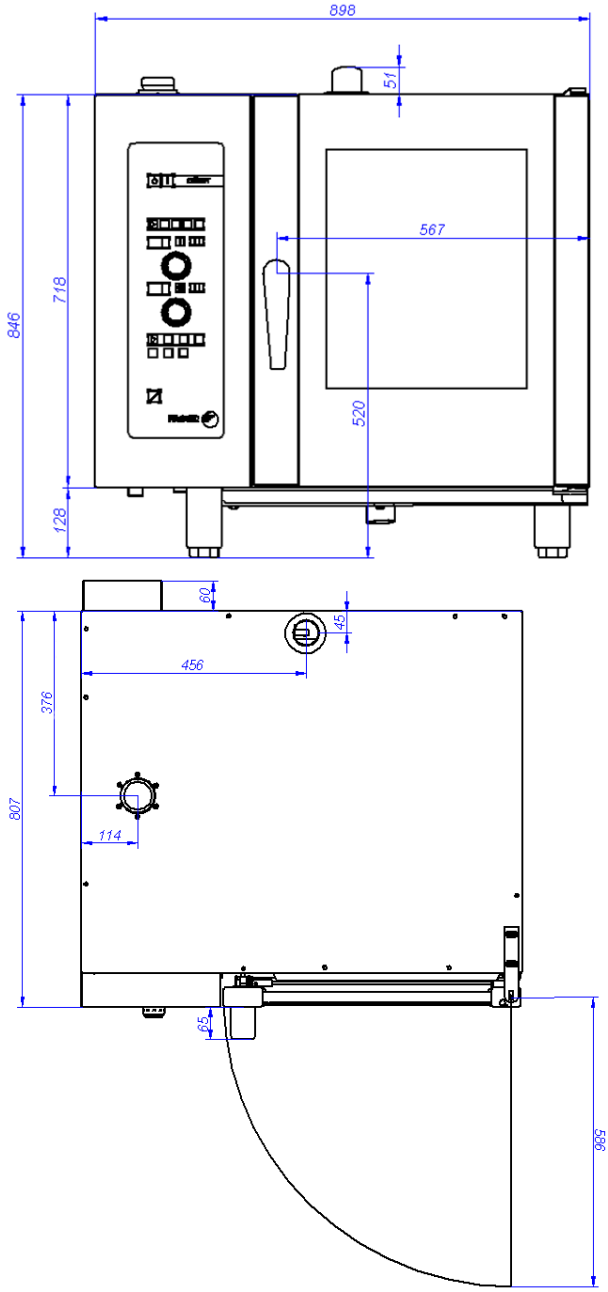
- **This equipment has been designed for processing food or similar. Any other use will be considered inadequate.**
- During cleaning or maintenance operations, the machine should be disconnected from the electricity supply at the mains and the water inlet tap closed.
- Abrasive or corrosive products, acids, solvents, or CHLORINE/HYPOCHLORITE-based detergents **must never be used.**
- The appliance or any of its parts **must never be used** as a support and objects must not be placed on top.
- Do not open the door of the machine while the machine is operating. Do not immerse hands in the washing solution. Switch off the appliance and drain the tub before accessing the inside of the machine.
- Do not install the appliance in places exposed to jets of water.

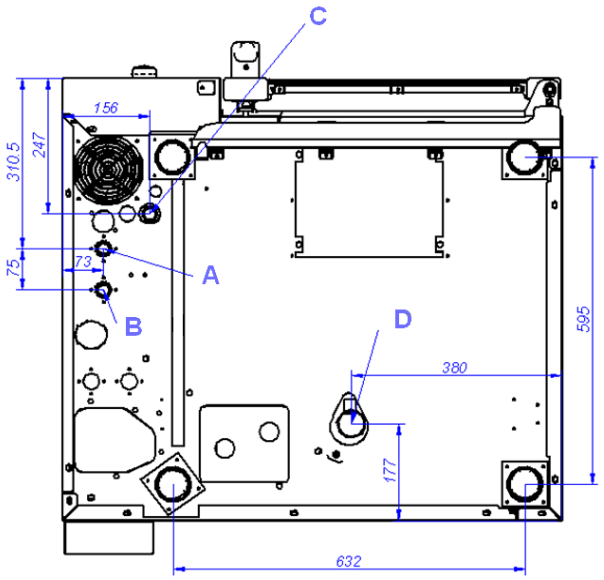
IMPORTANT: WAIT AT LEAST 10 MINUTES AFTER SWITCHING OFF THE MACHINE BEFORE CLEANING THE INSIDE OF THE APPLIANCE.

WARNING: DO NOT INSERT HANDS AND/OR TOUCH THE INTERNAL PARTS OF THE TANK WHILE THE MACHINE IS OPERATING AND WAIT 10 MINUTES AFTER THE WASH TANK HAS DRAINED.

11. DIMENSIONS

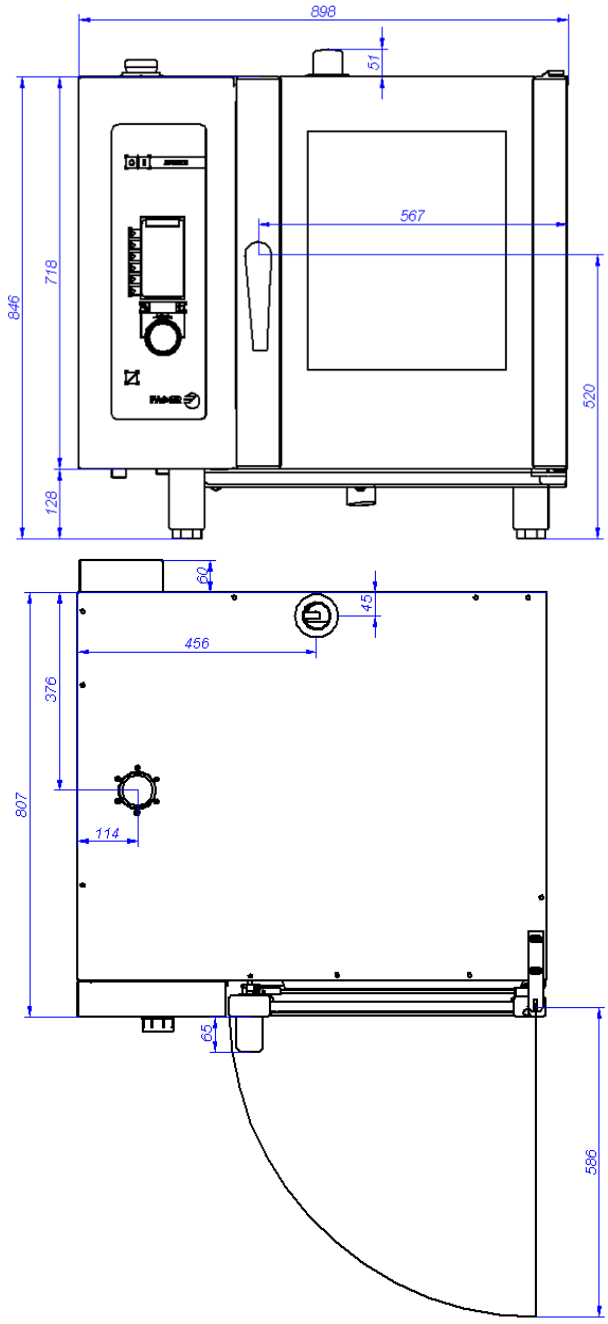
11.1. ACE-061

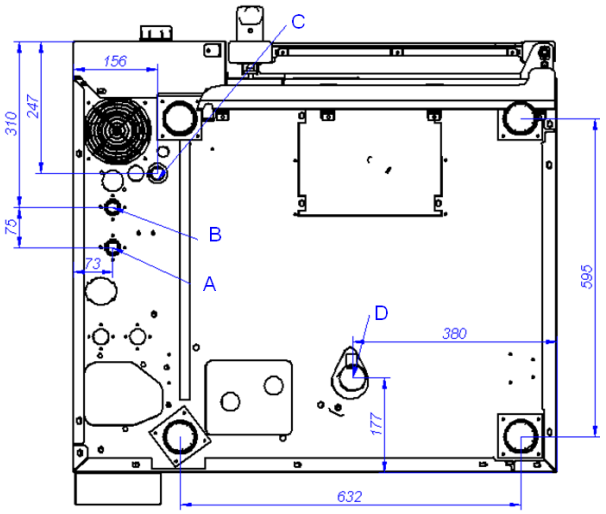




A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

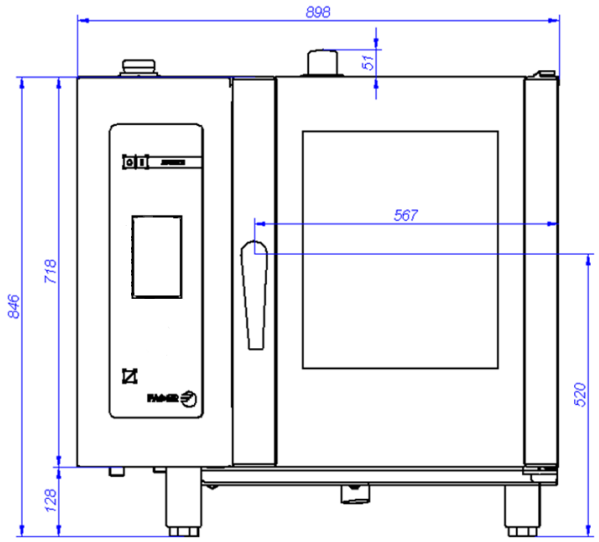
11.2. AE-061

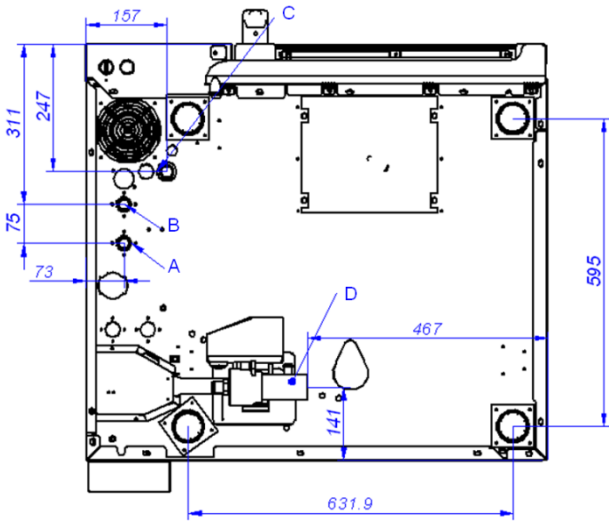




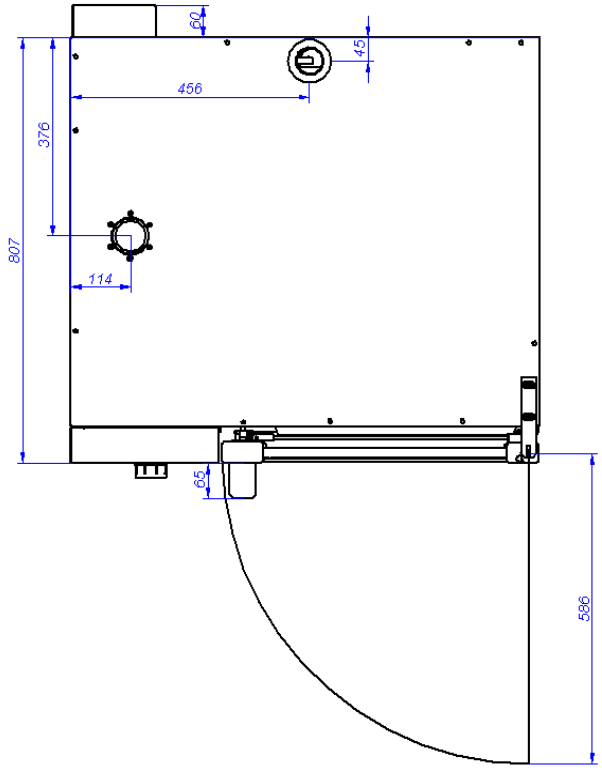
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.3. APE-061

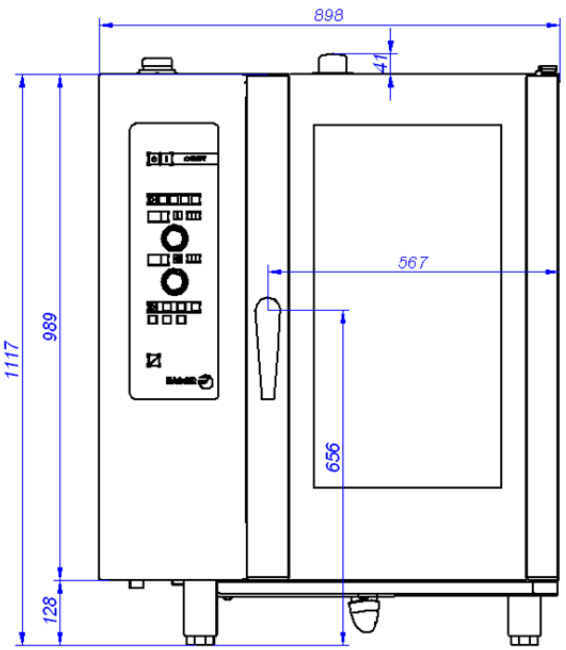


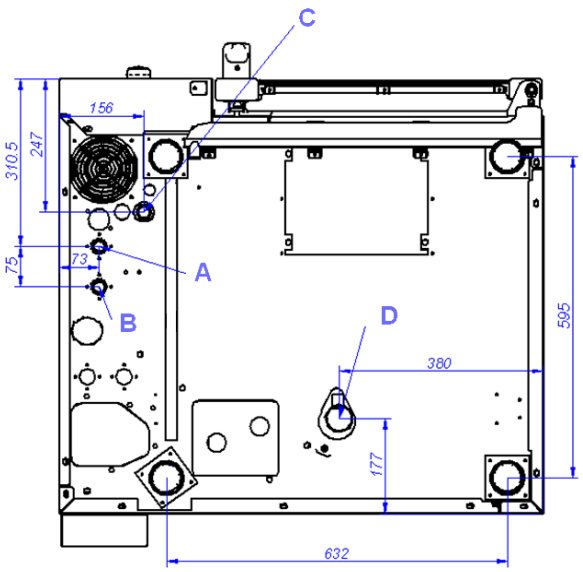


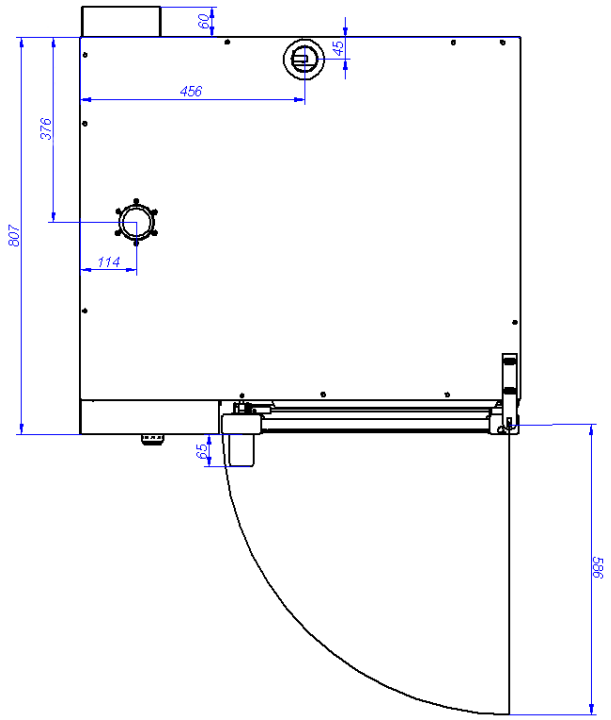
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage



11.4. ACE-101

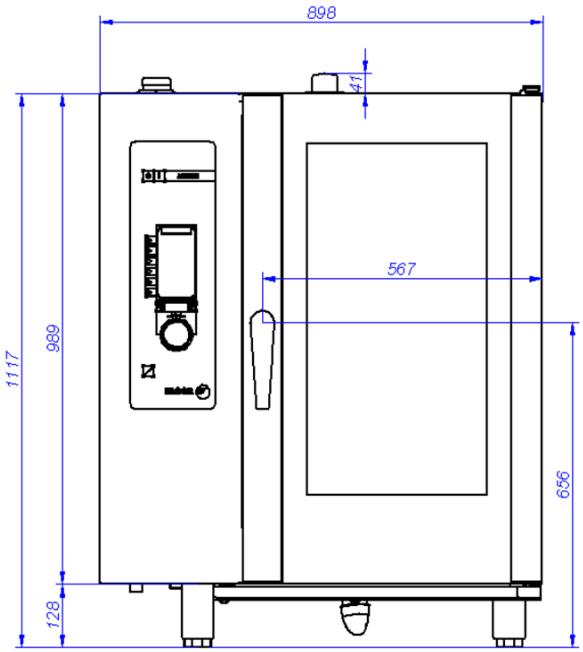


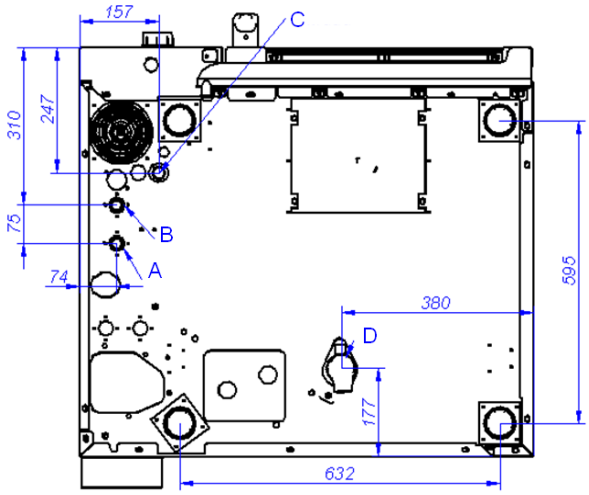


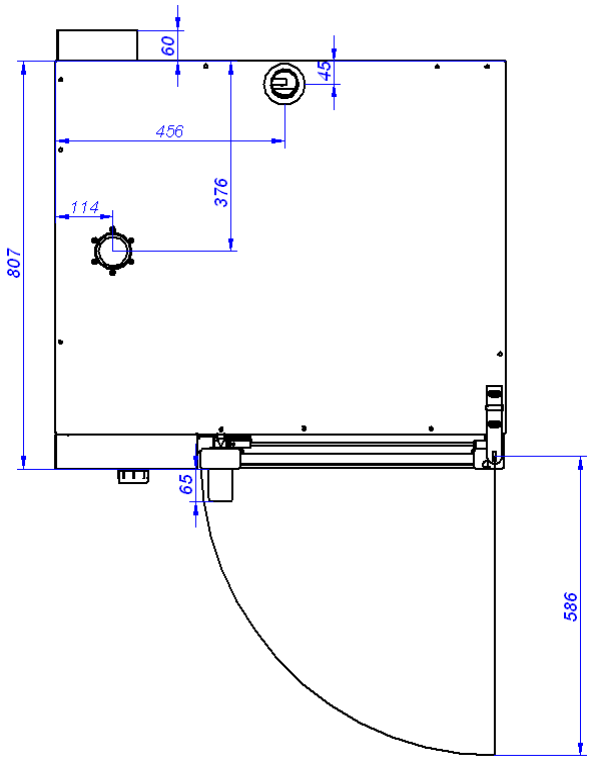


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.5. AE-101

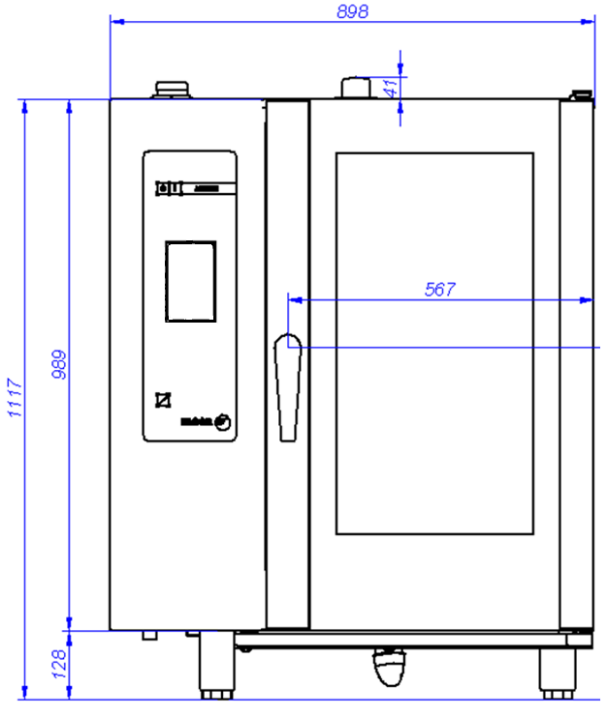


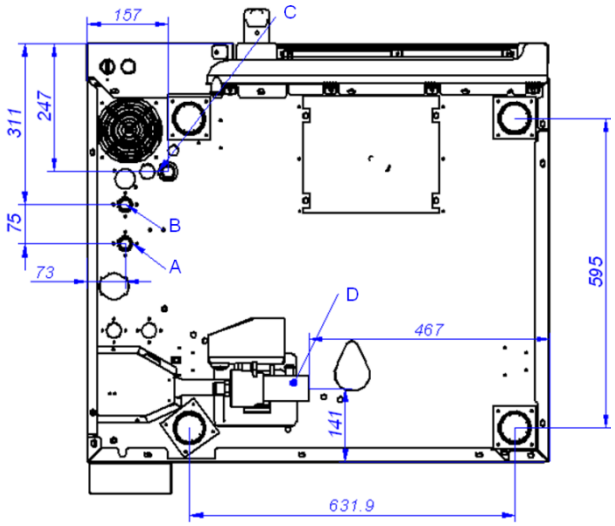


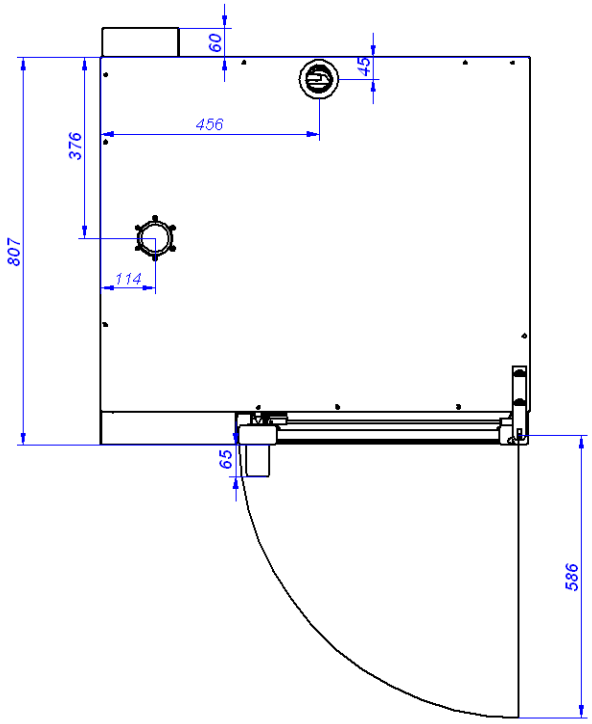


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.6. APE-101

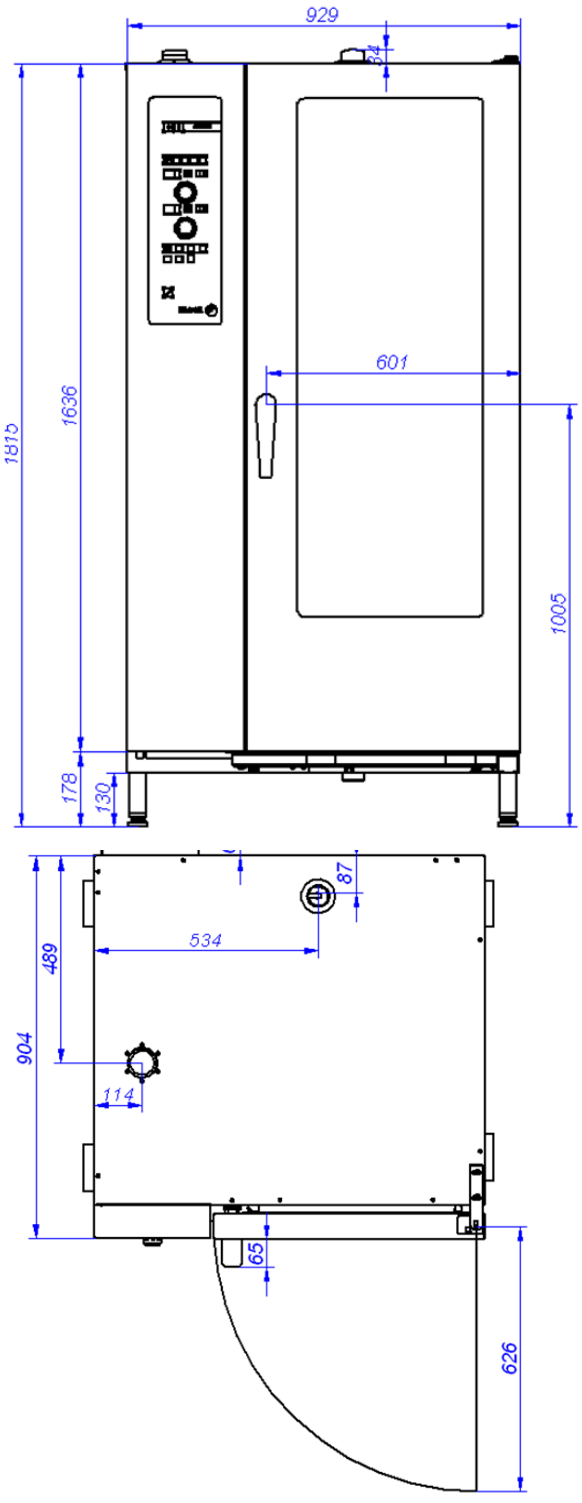




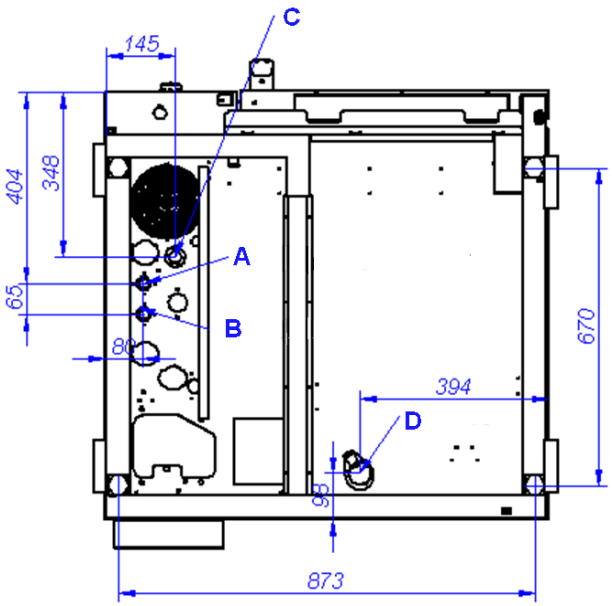


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.7. ACE-201

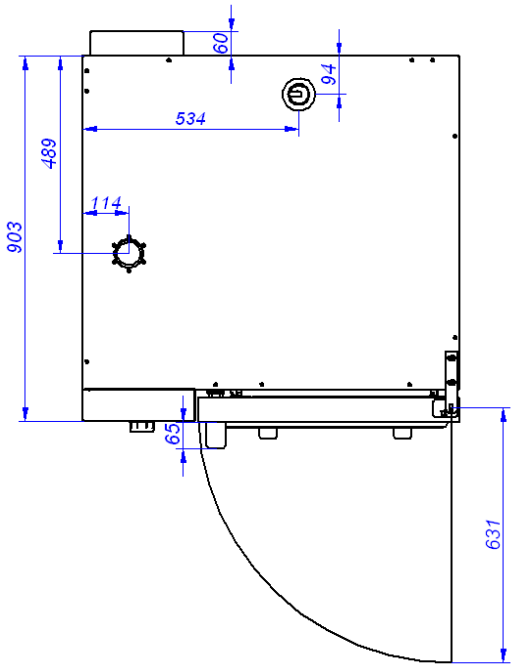


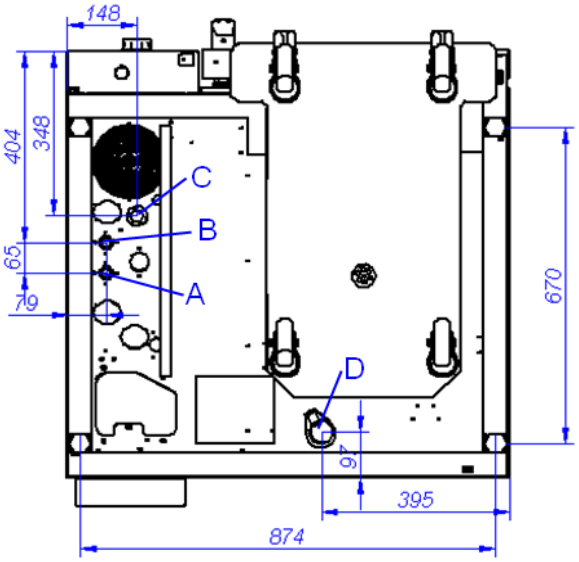
A: Soft water intake

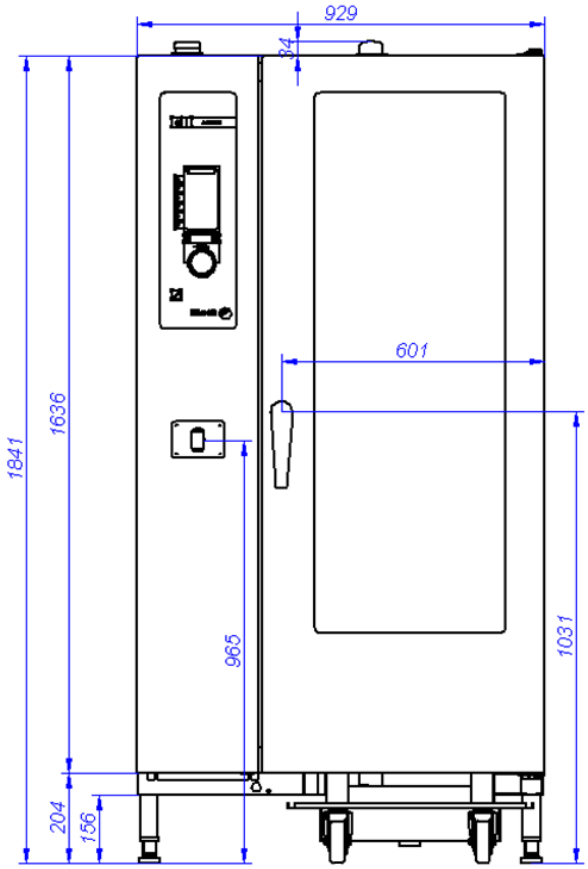


B: Hard water inlet
C: Electrical supply
D: Drainage

11.8. AE-201

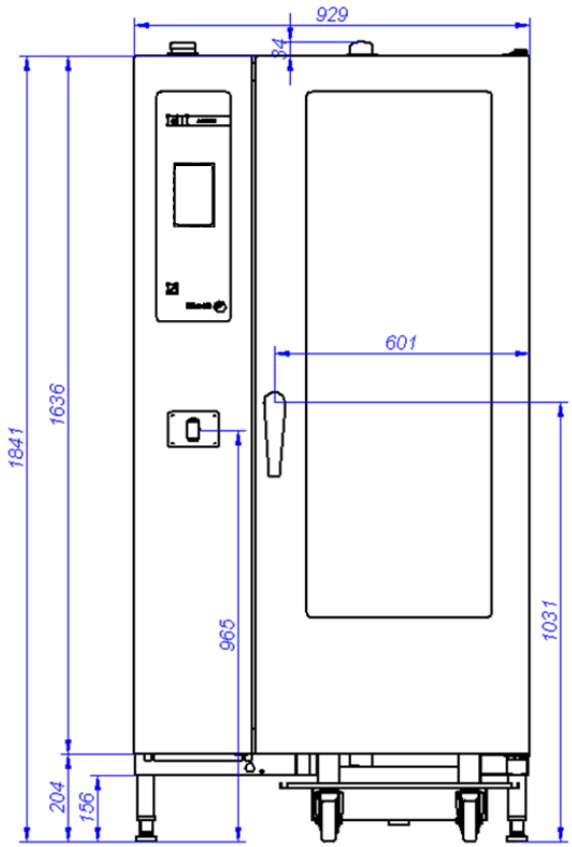


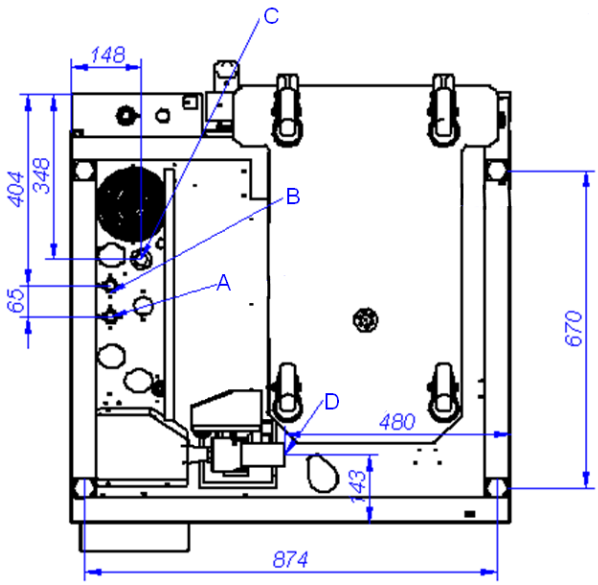




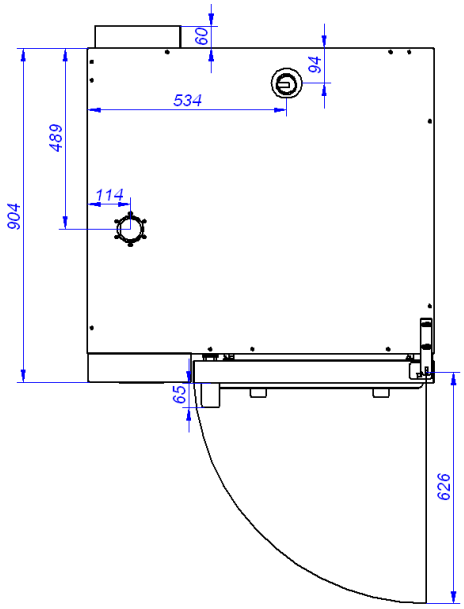
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.9. APE-201





A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage



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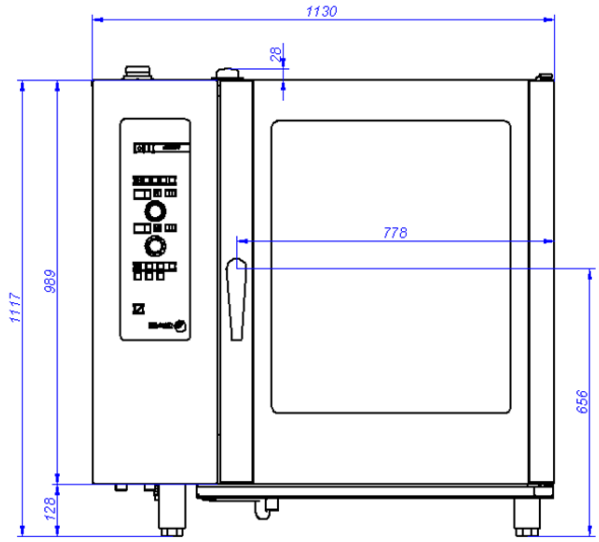
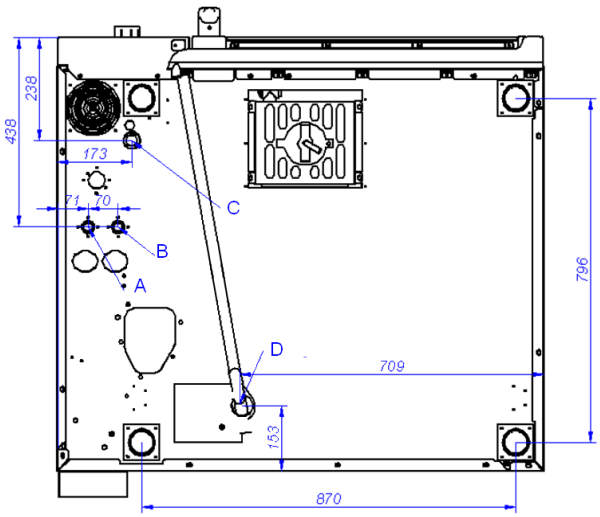
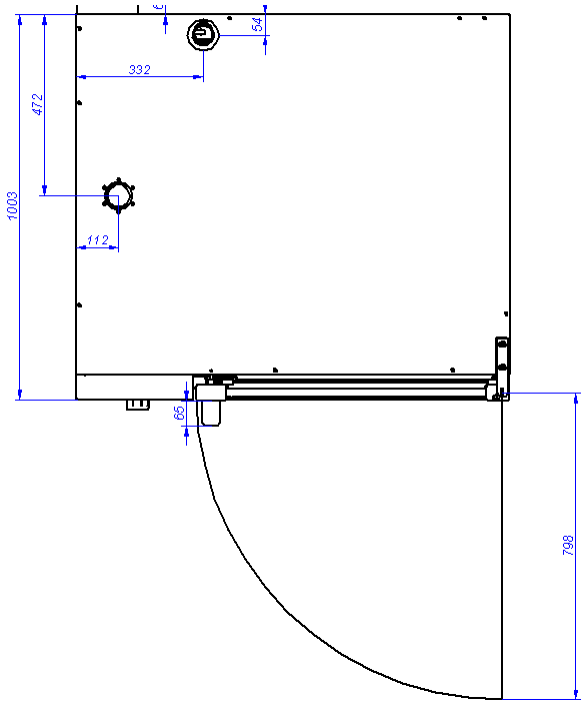
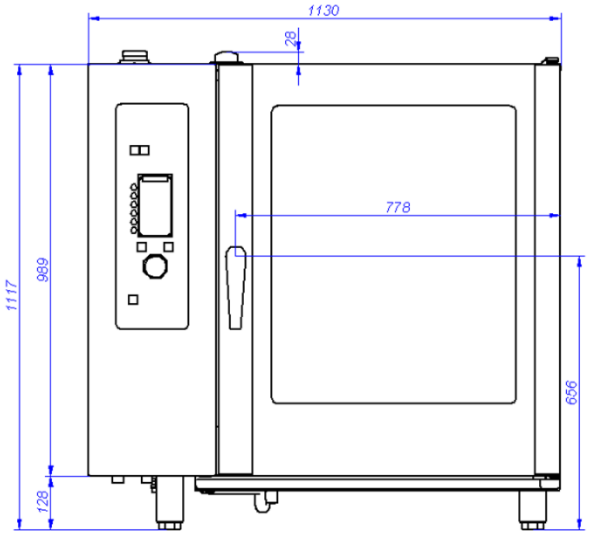


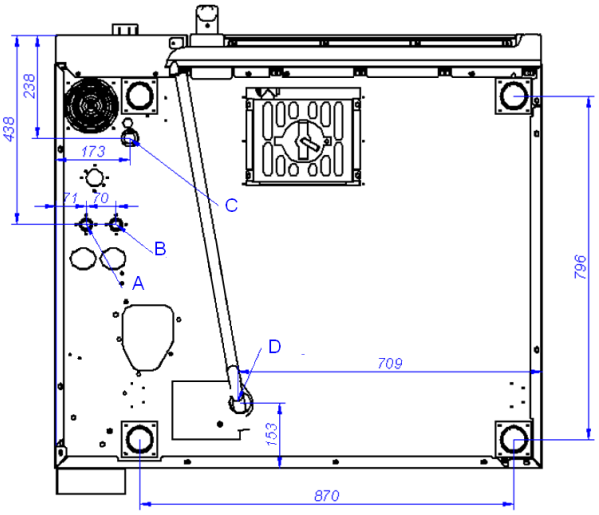


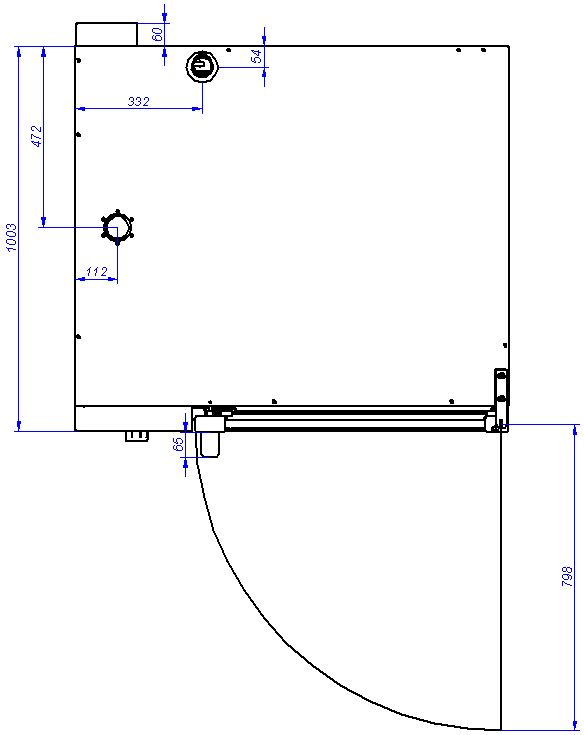


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.11. AE-102

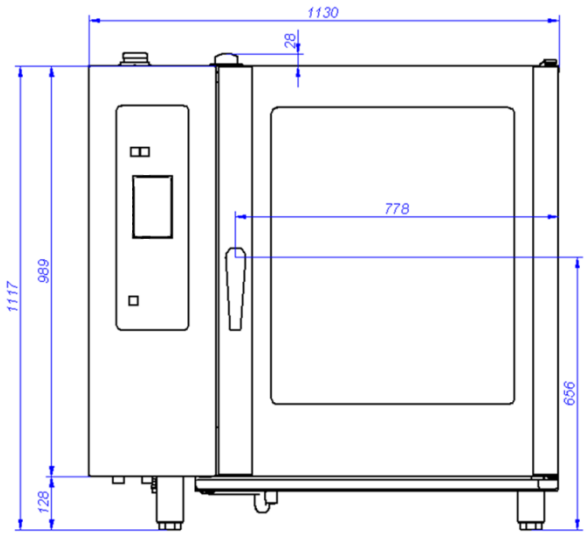


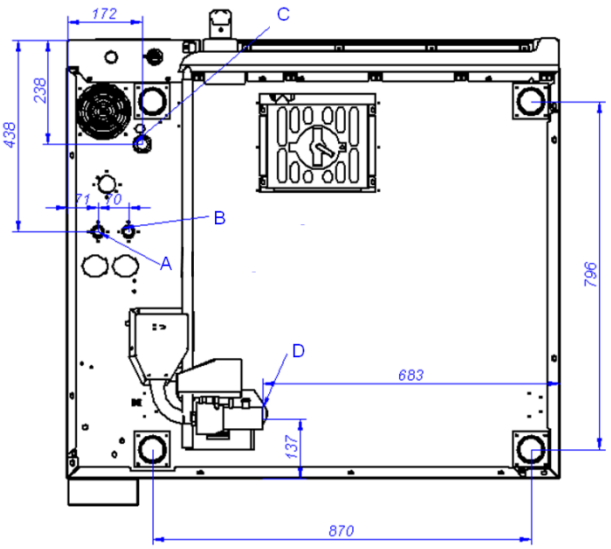


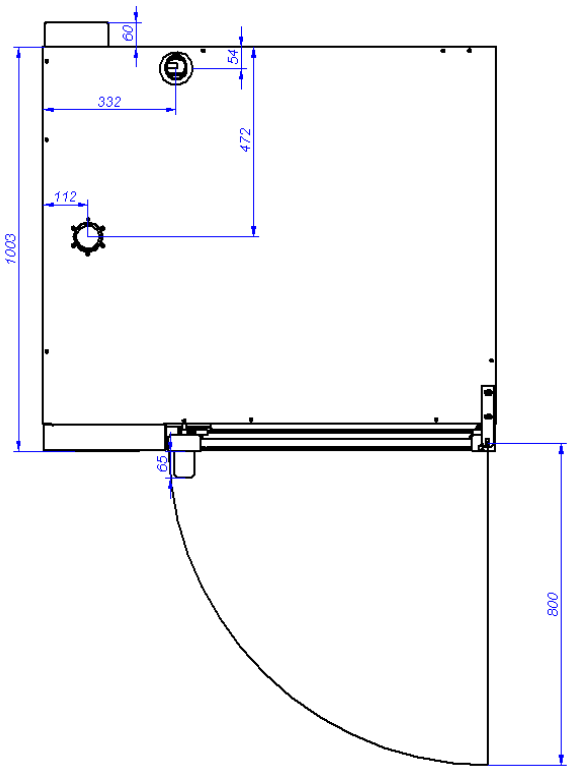


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.12. APE-102

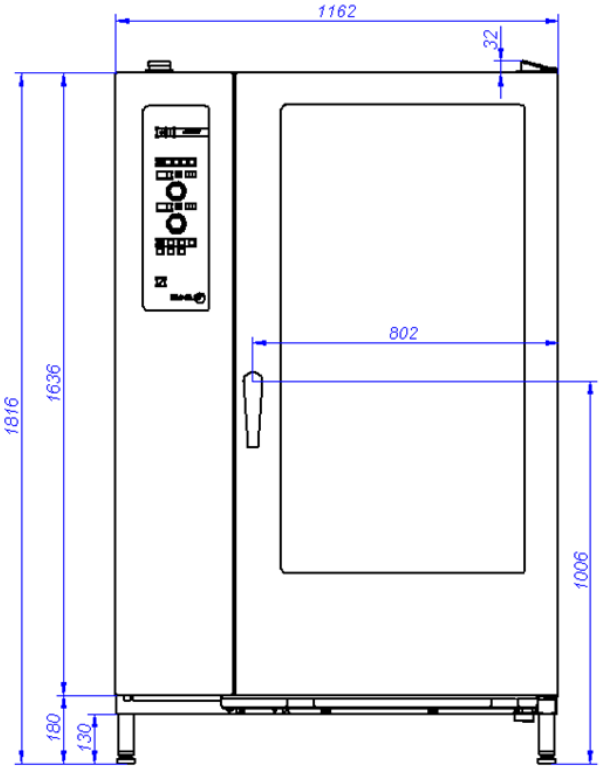


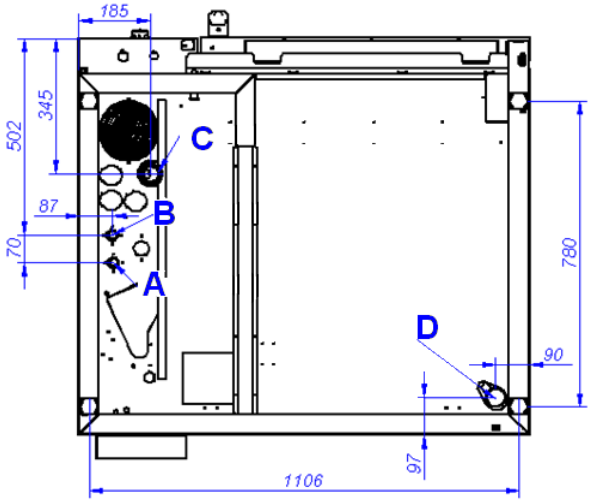




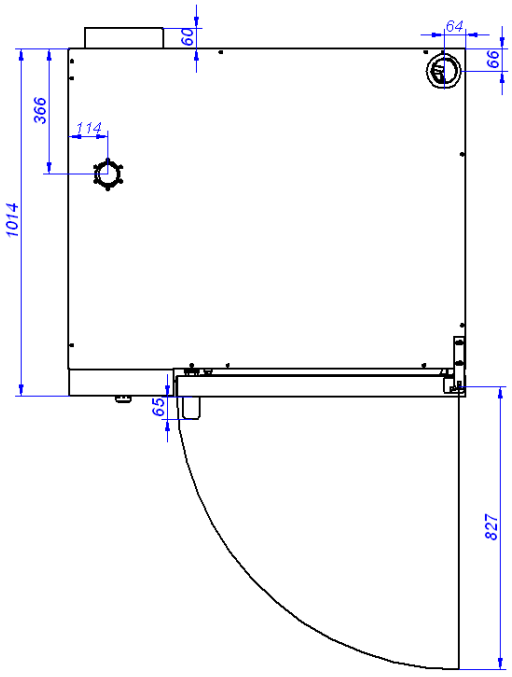
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.13. ACE-202

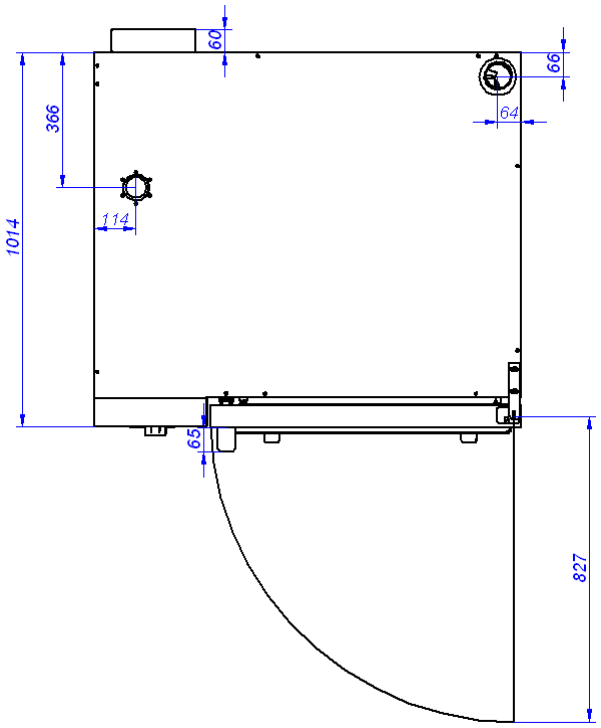


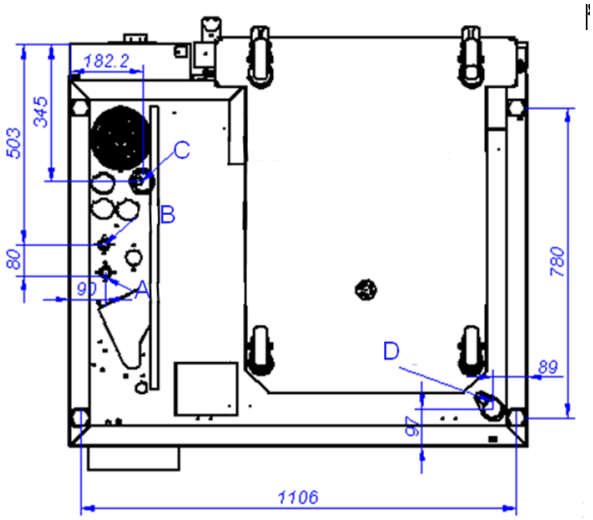


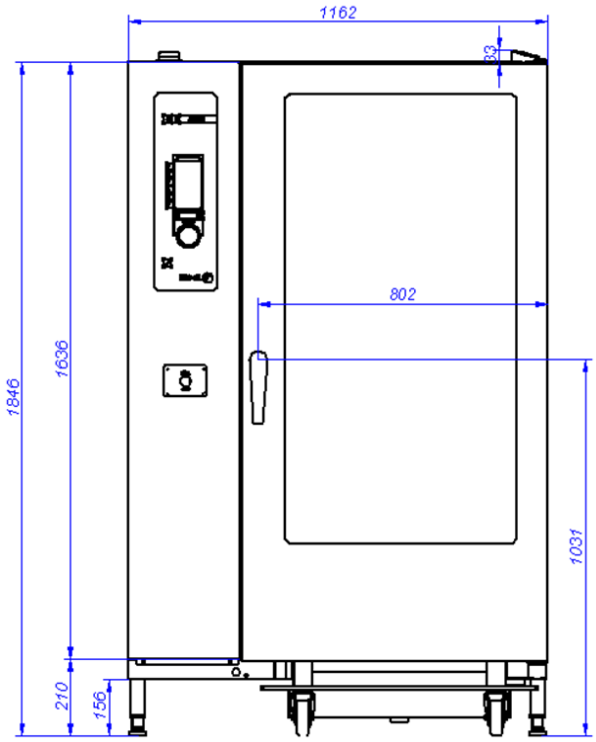
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage



11.14. AE-202

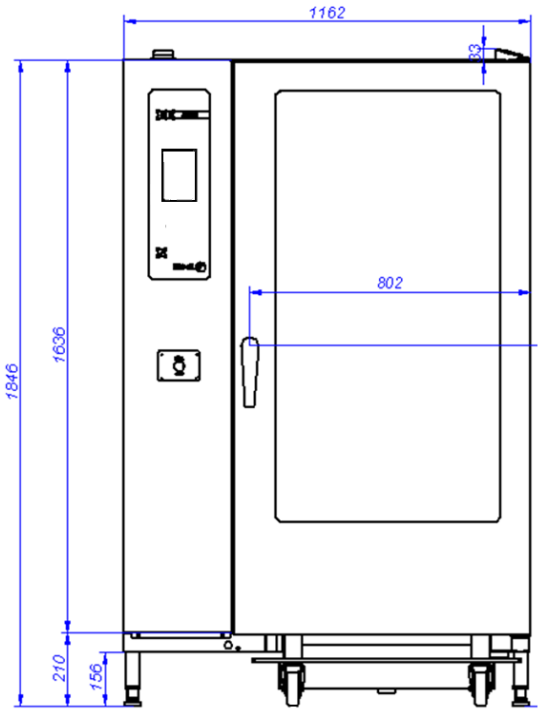


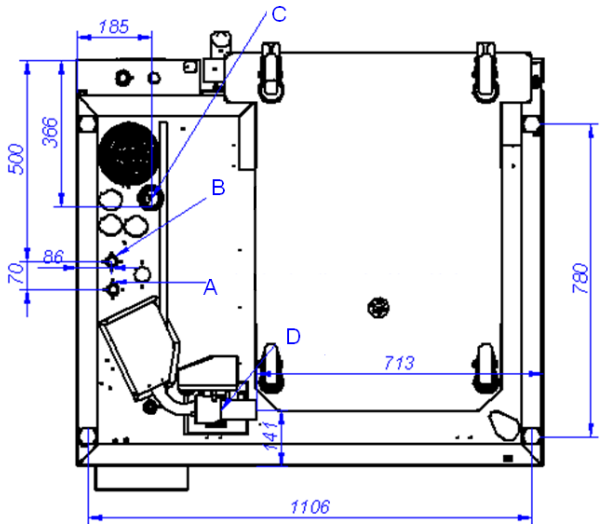


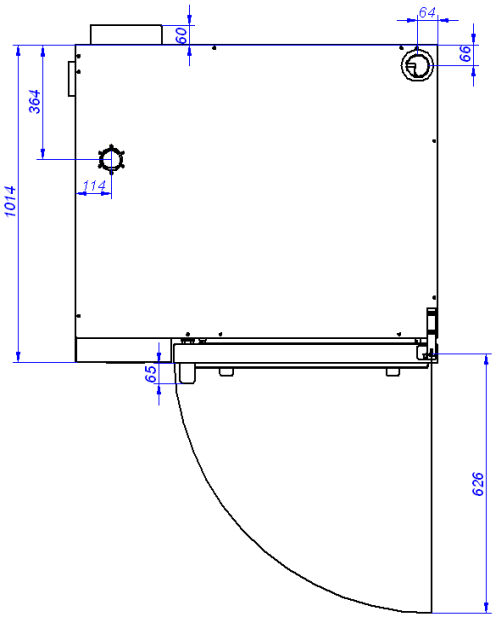


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.15. APE-202

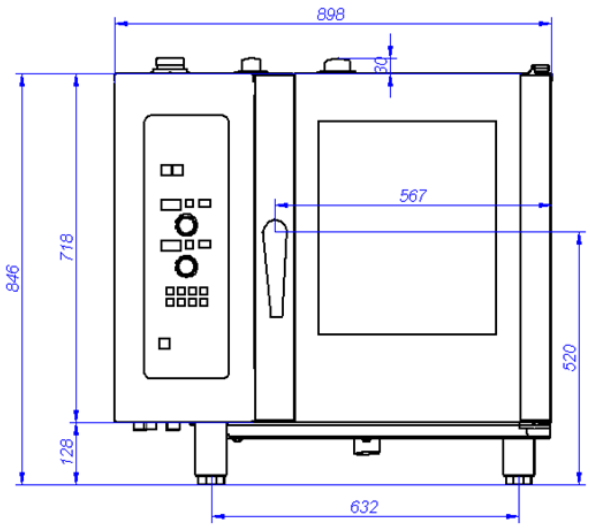


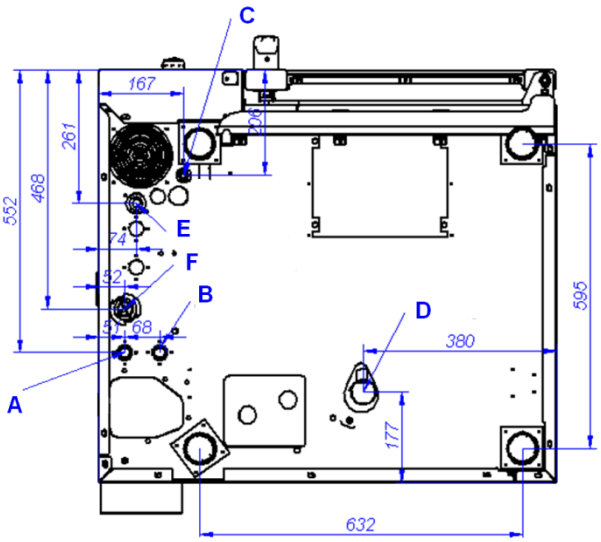




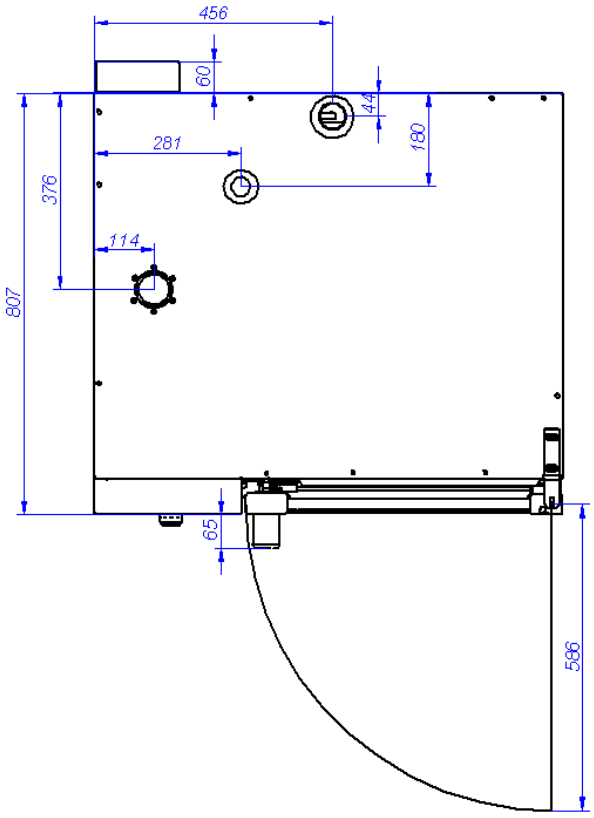
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage

11.16. ACG-061





A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet



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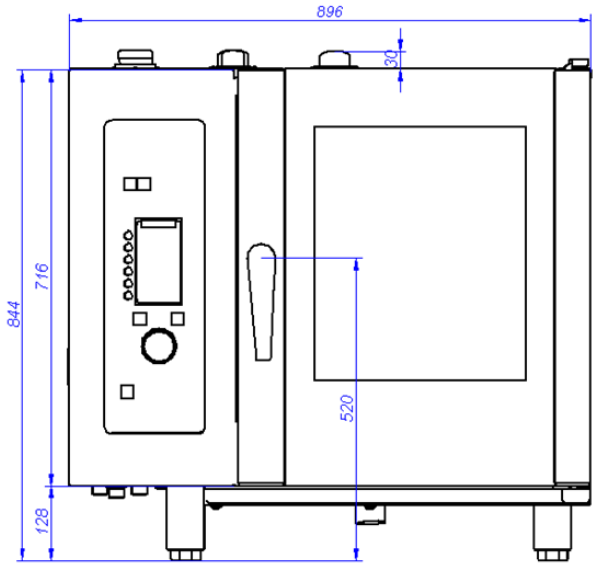
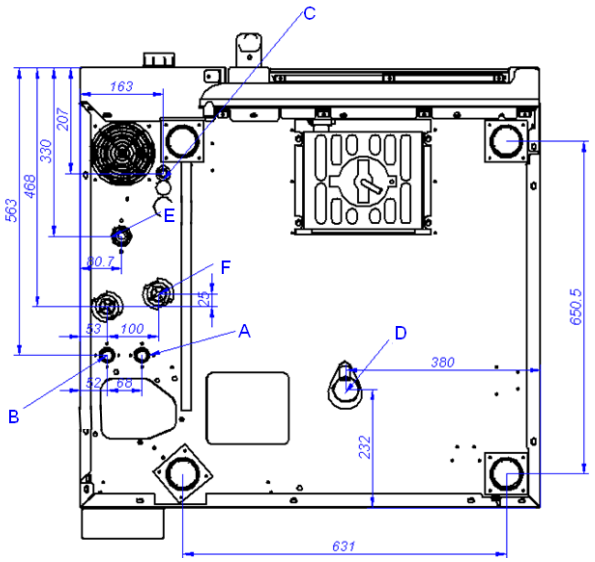
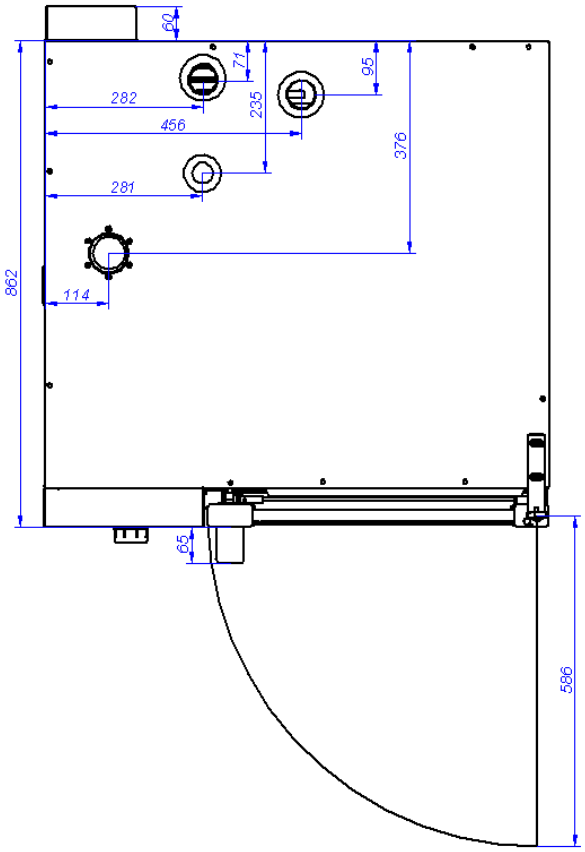
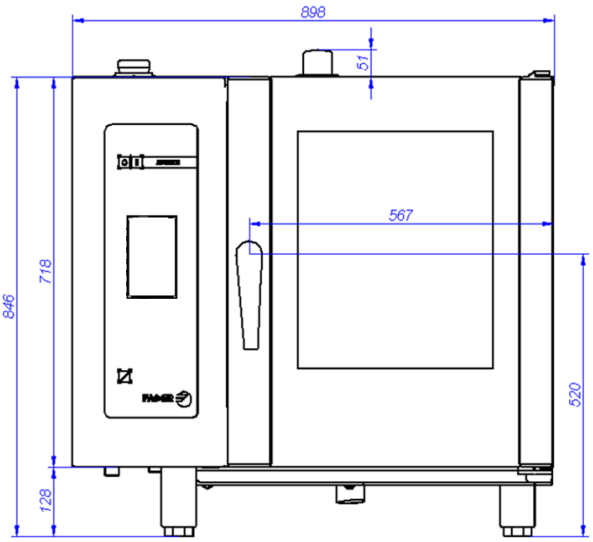


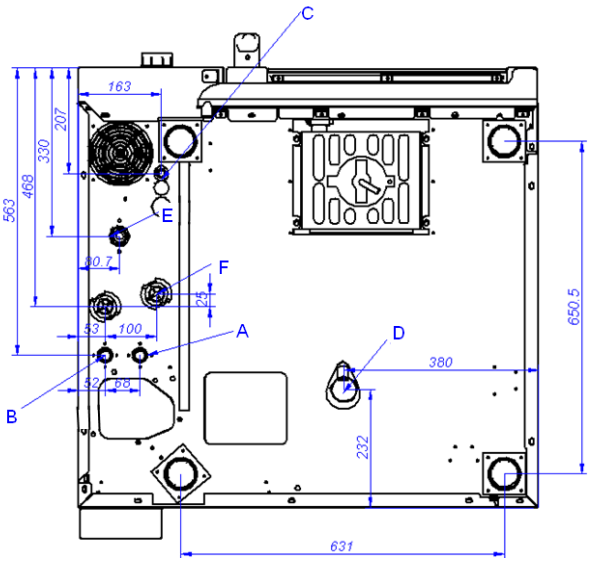


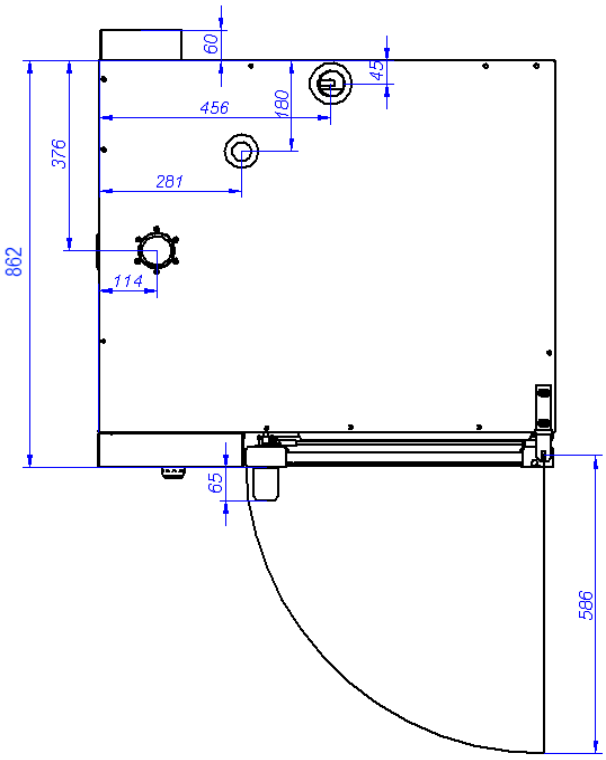


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.18. APG-061

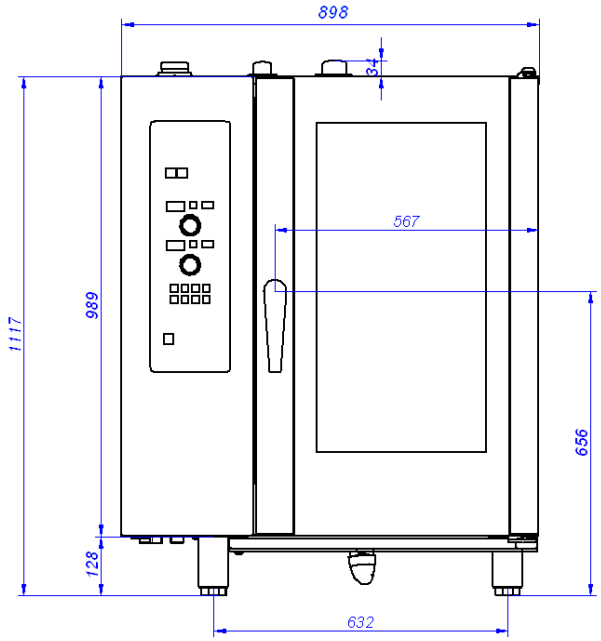


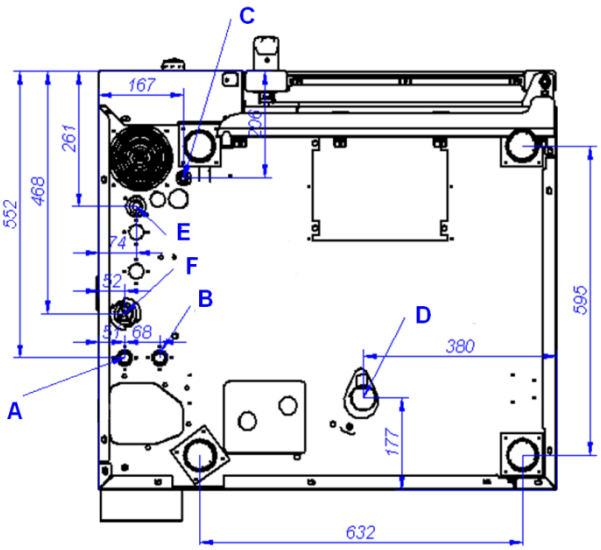


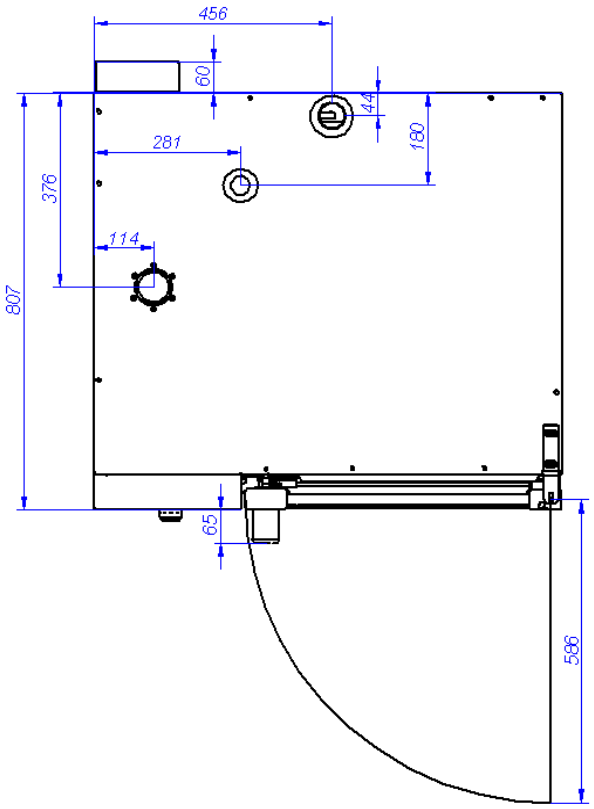


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.19. ACG-101

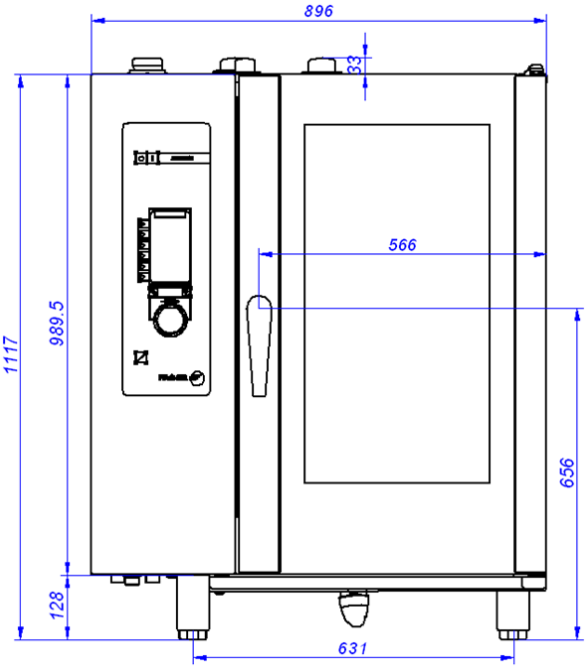


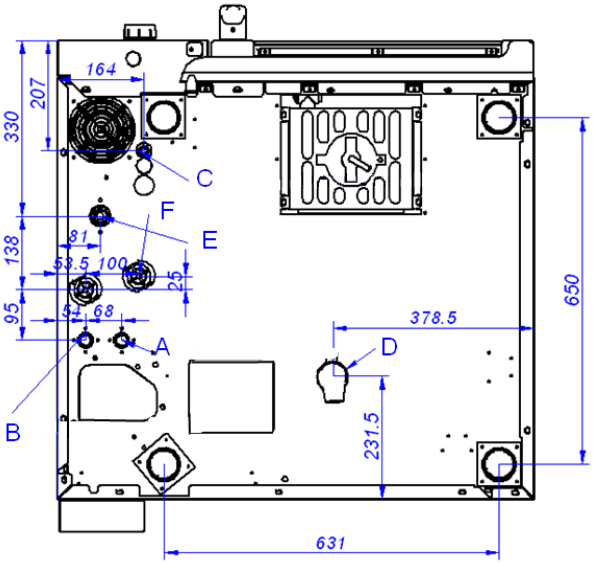


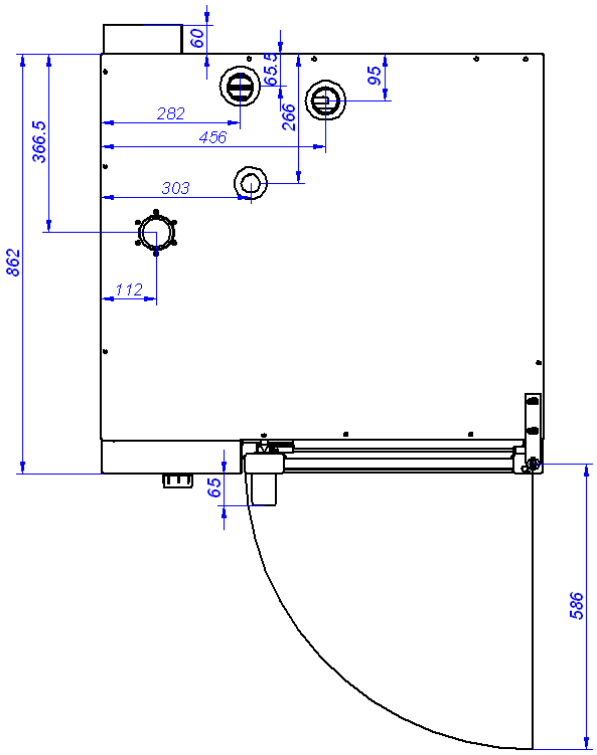


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.20.AG-101

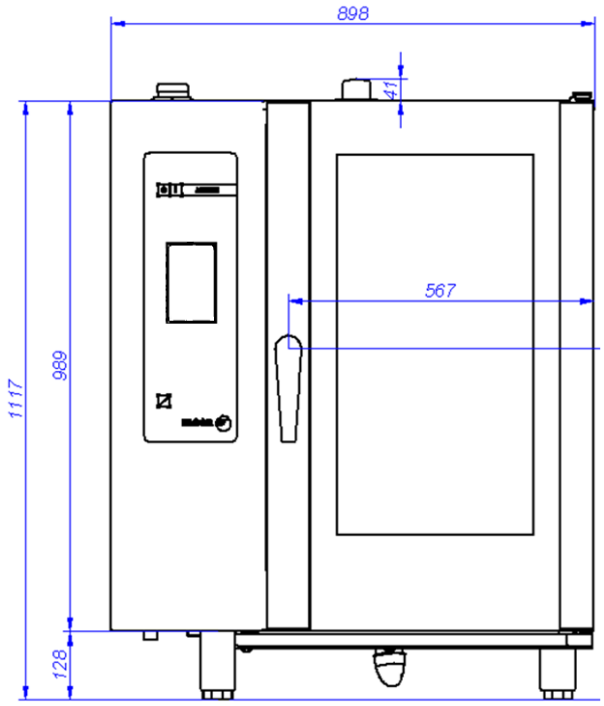


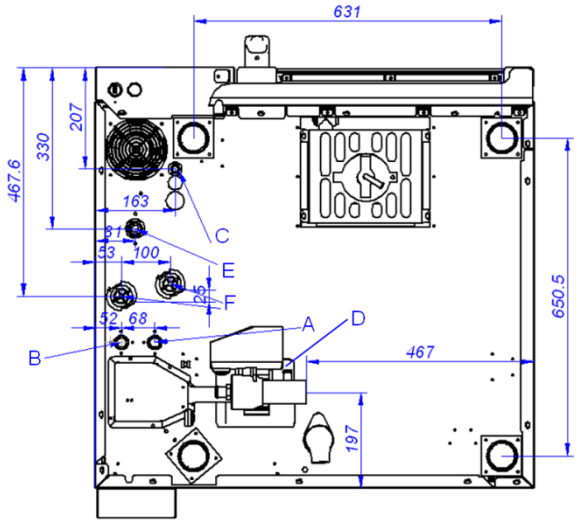


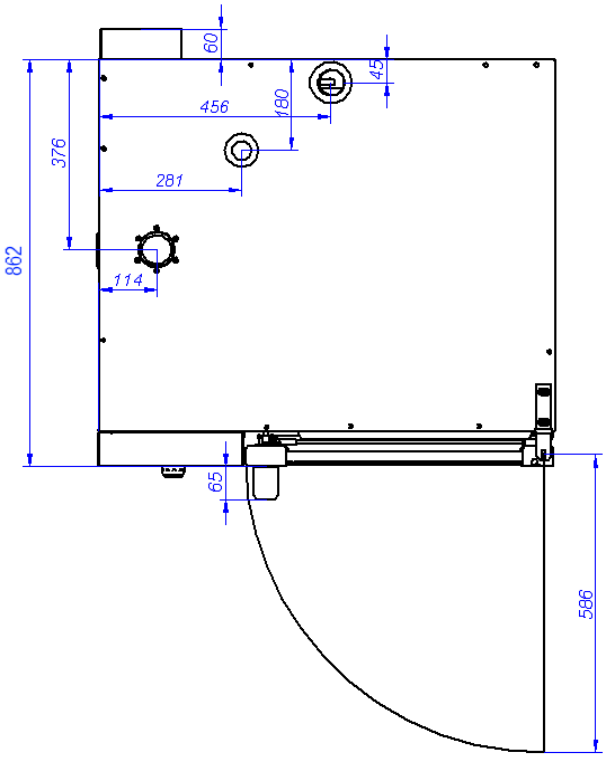


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.21. APG-101

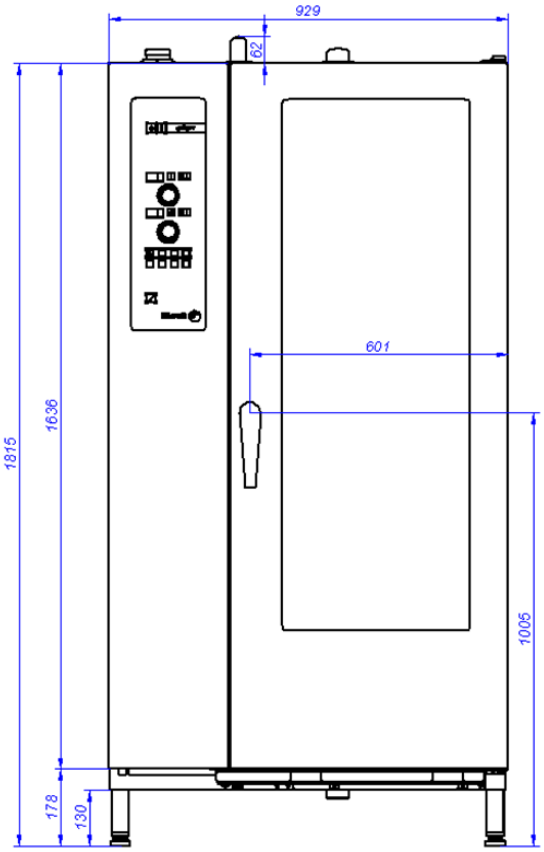


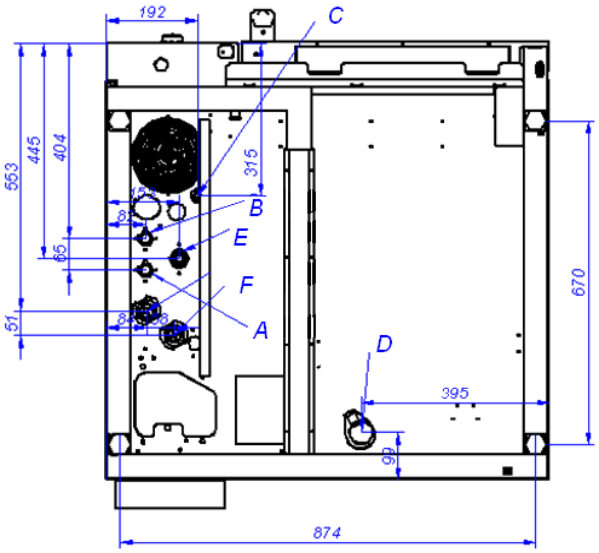




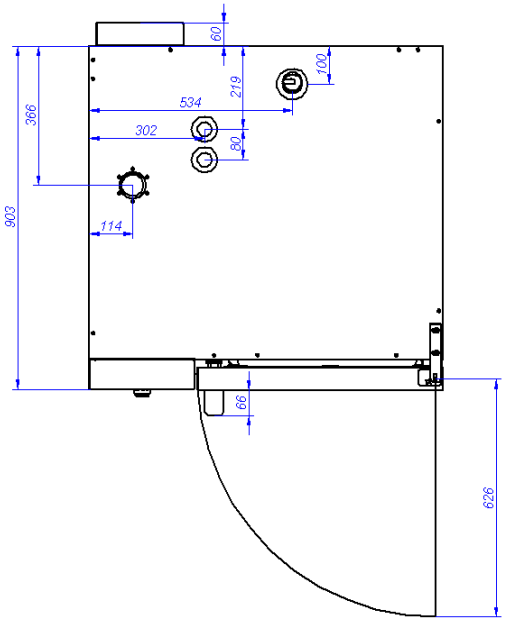
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.22. ACG-201

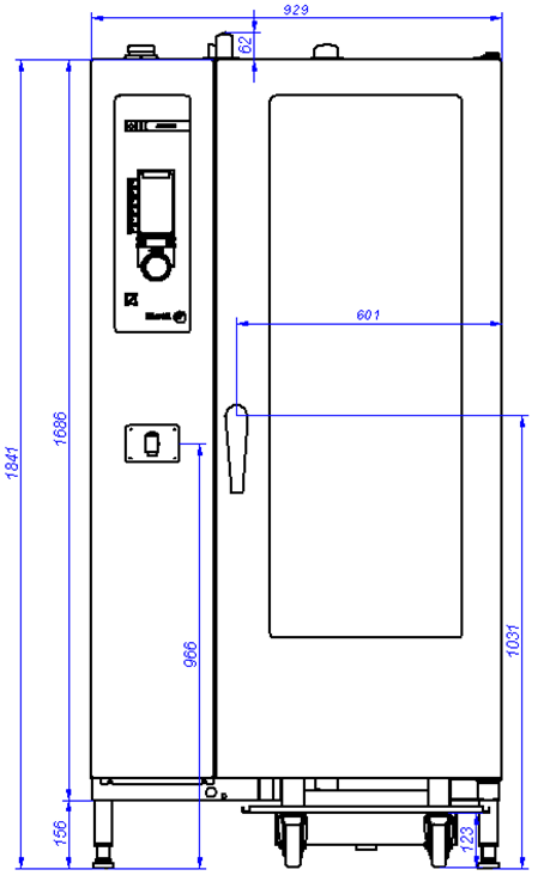


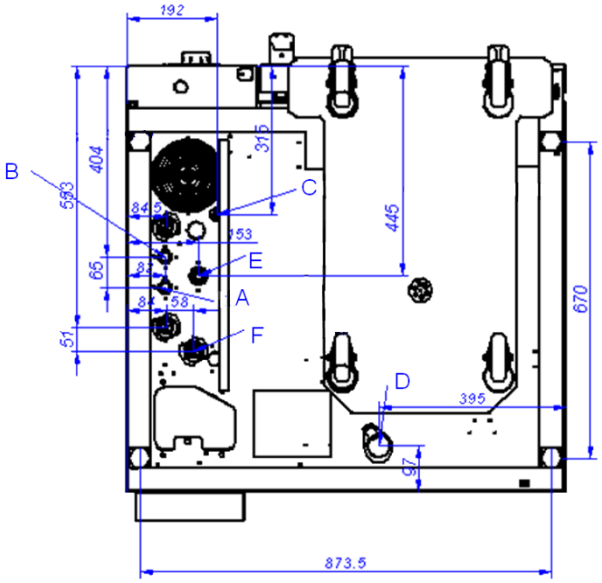


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

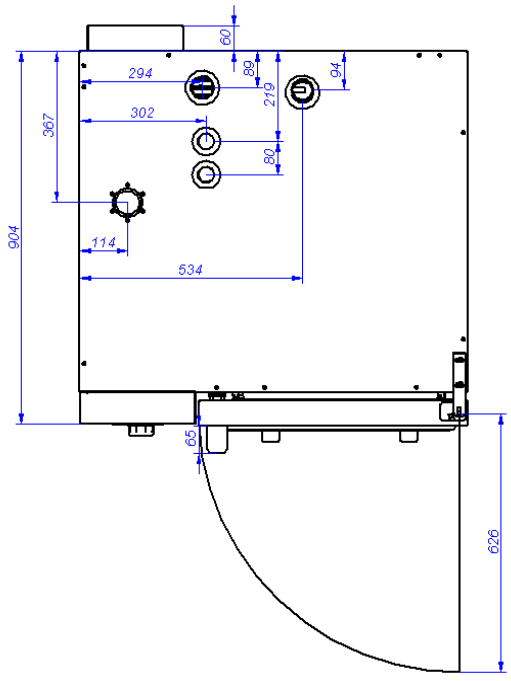


11.23. AG-201

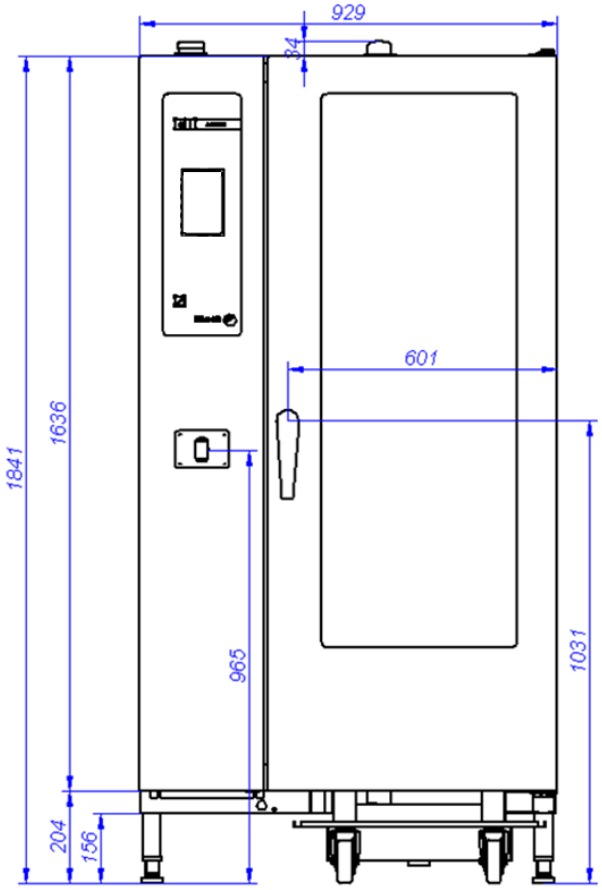


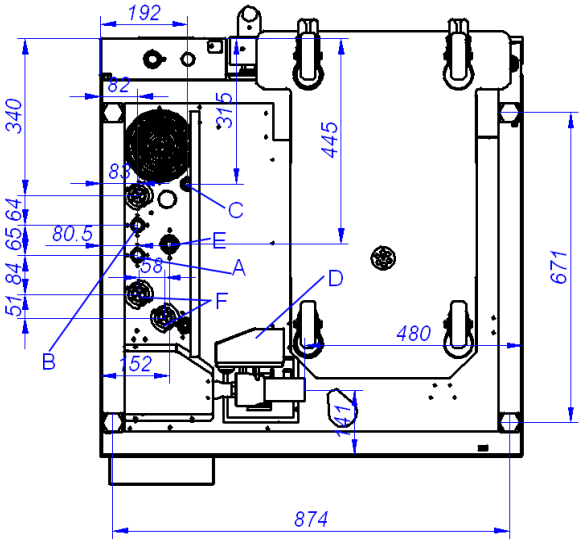


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

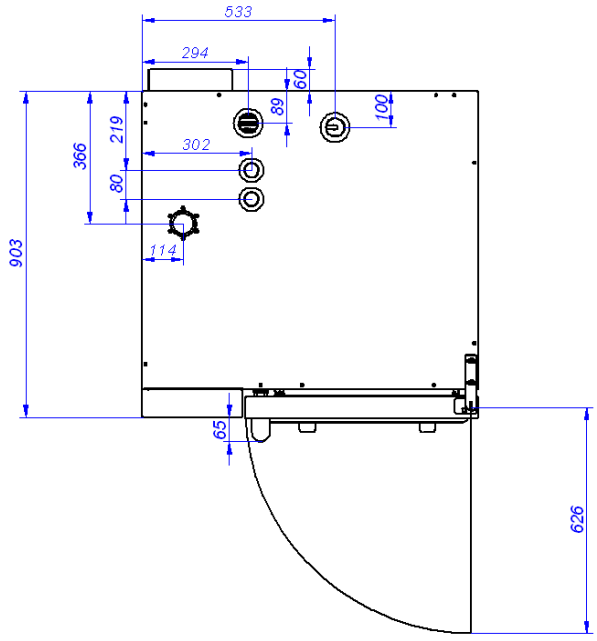


11.24. APG-201

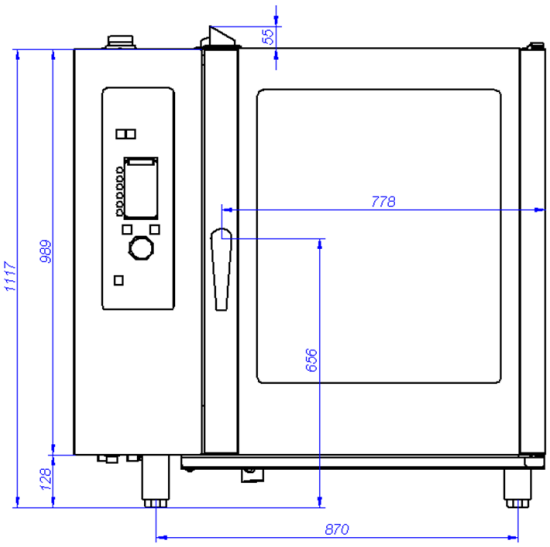


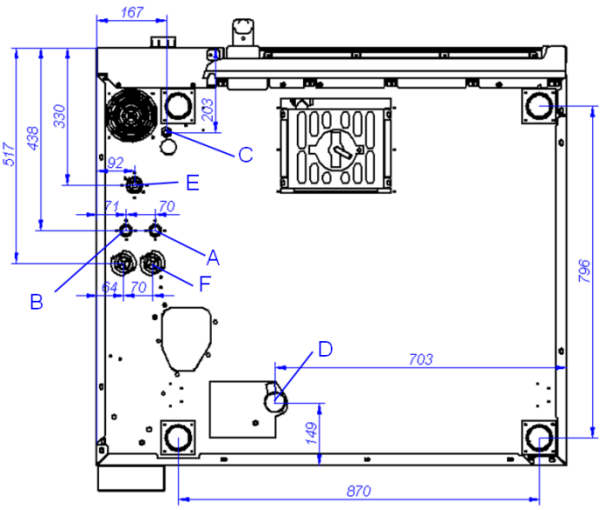


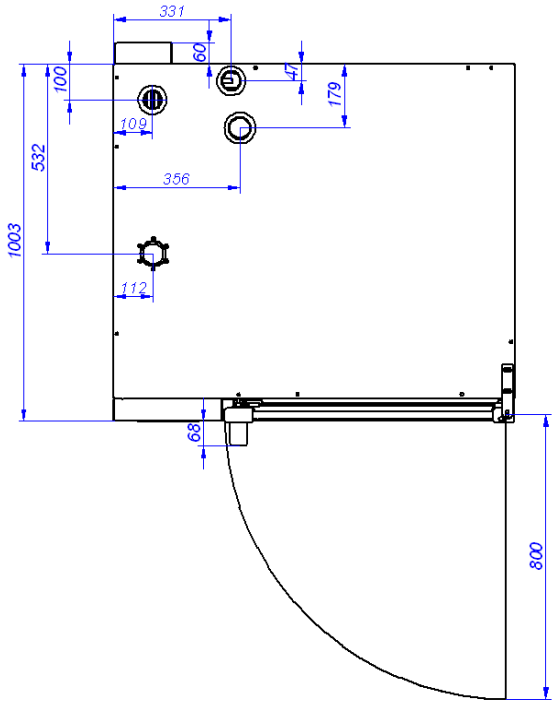
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet



11.25. AG-102

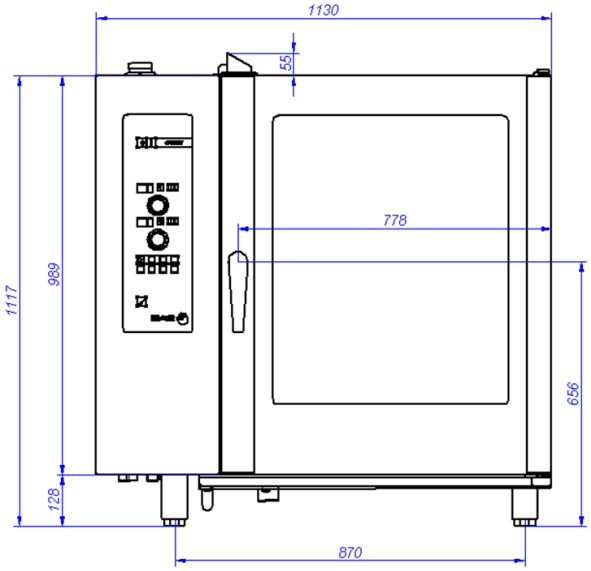


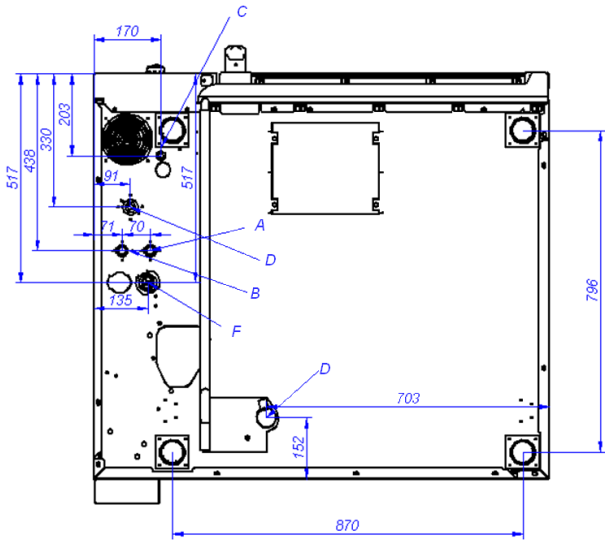


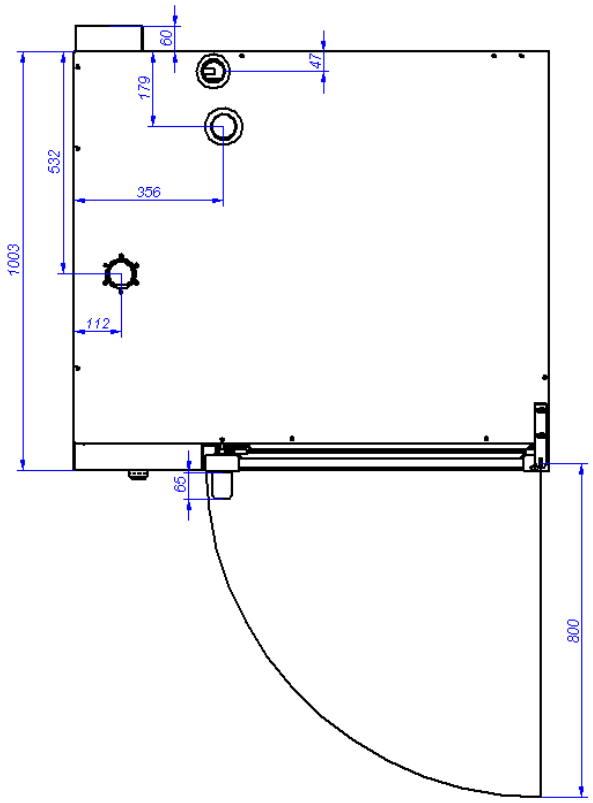


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.26. ACG-102

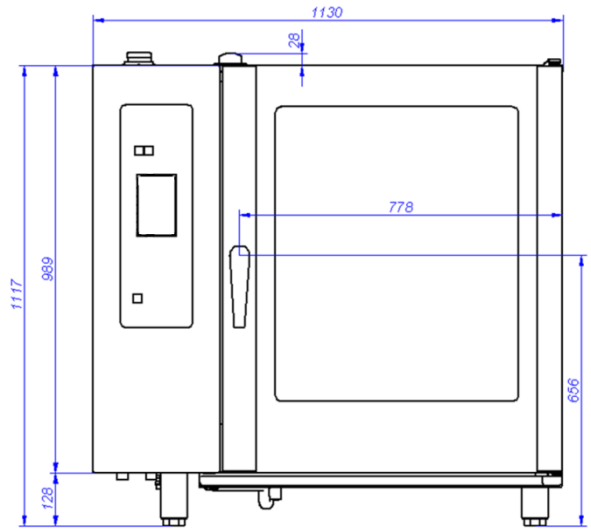


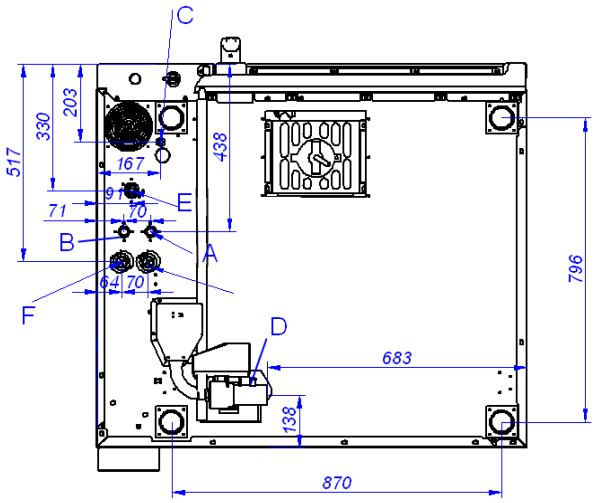


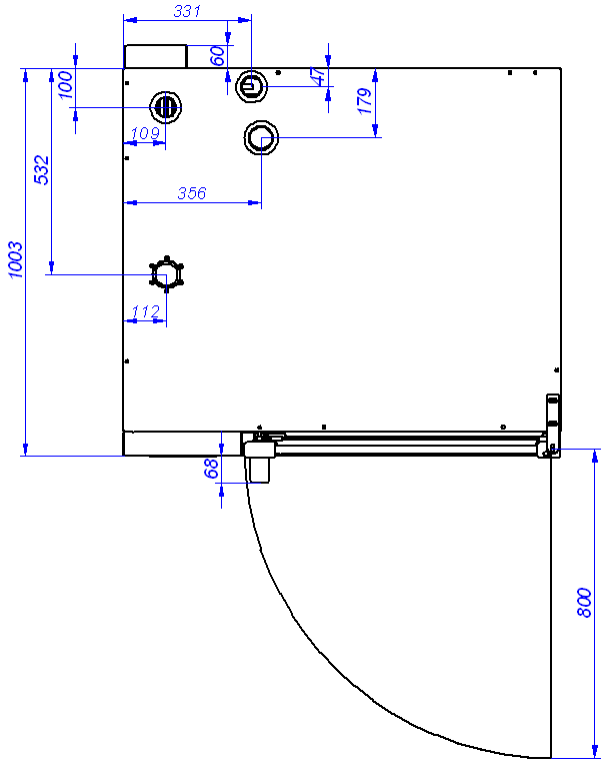


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.27. APG-102

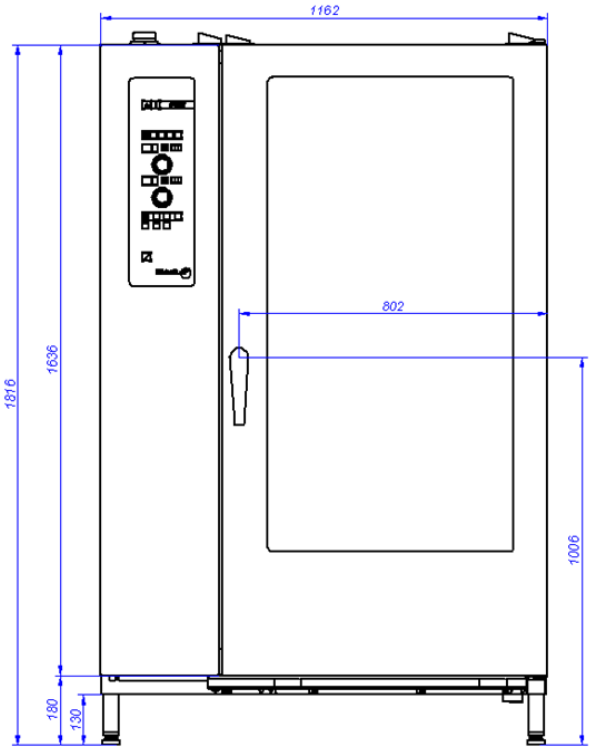


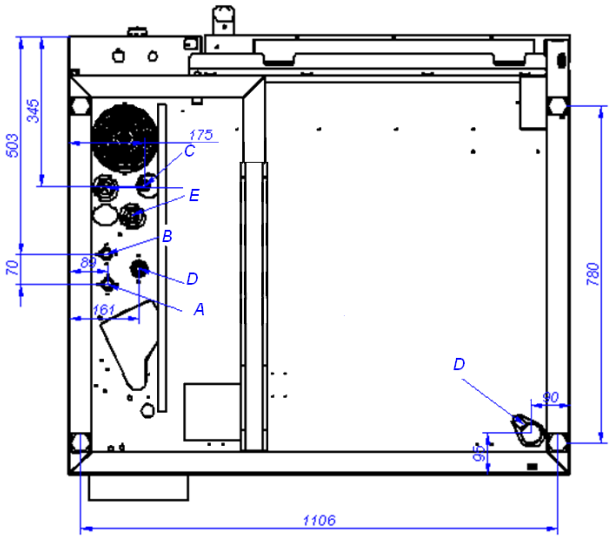


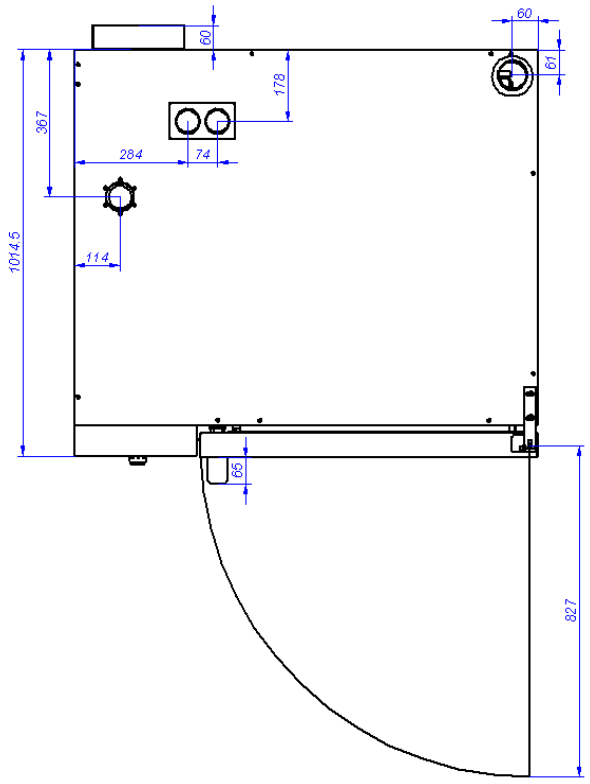


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.28. ACG-202

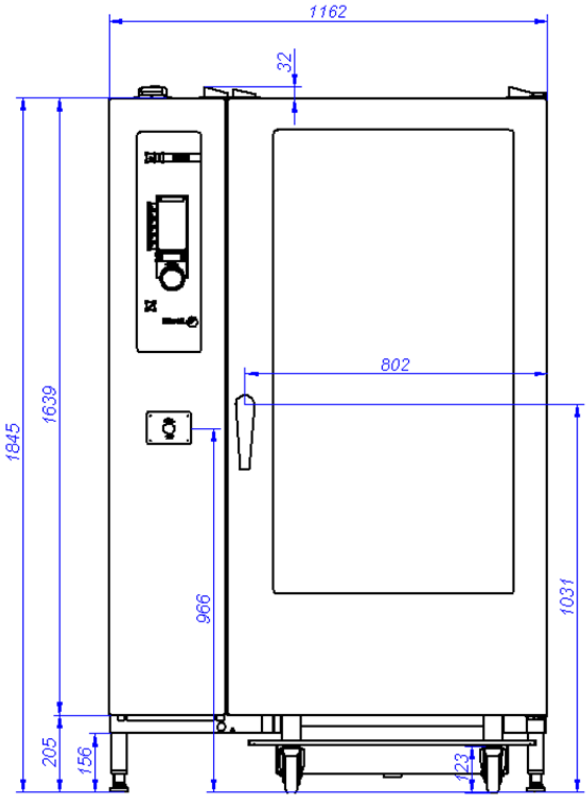


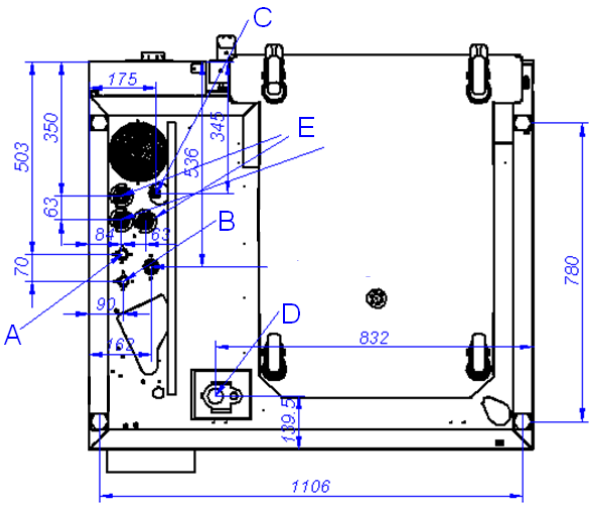


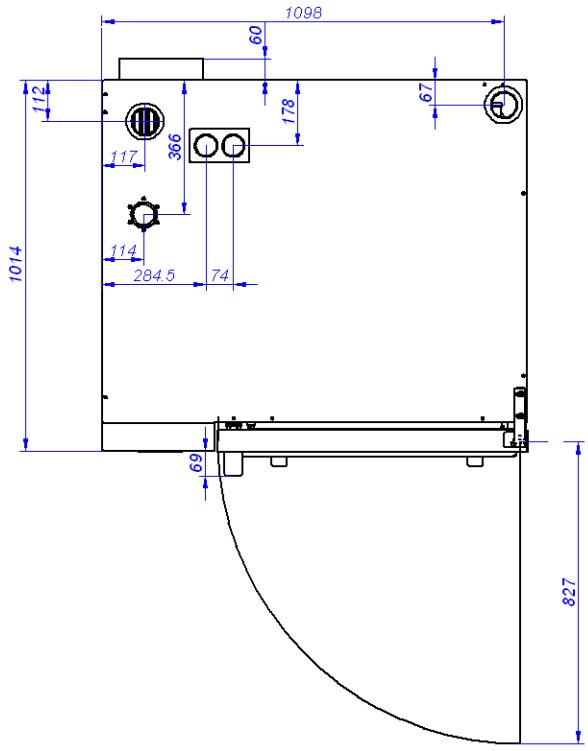


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.29. AG-202

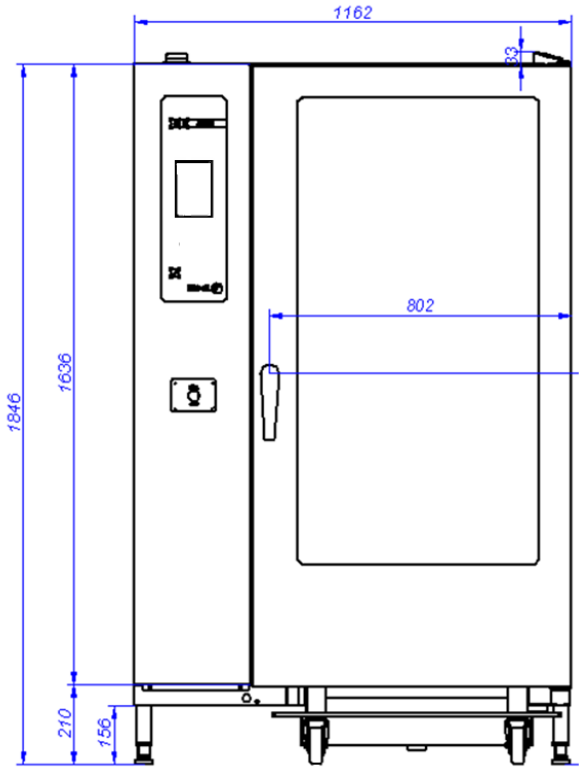


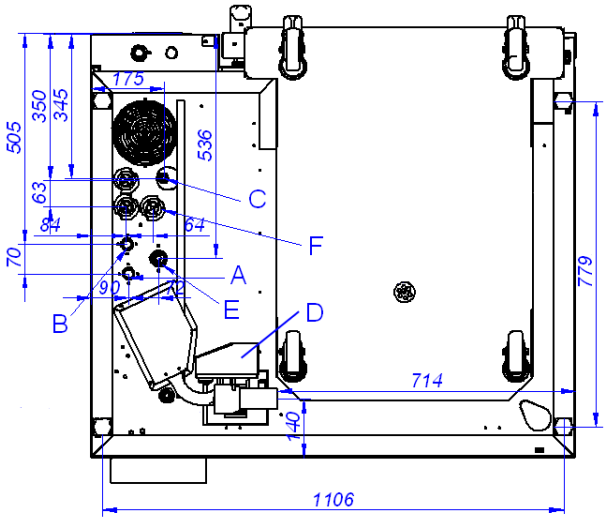


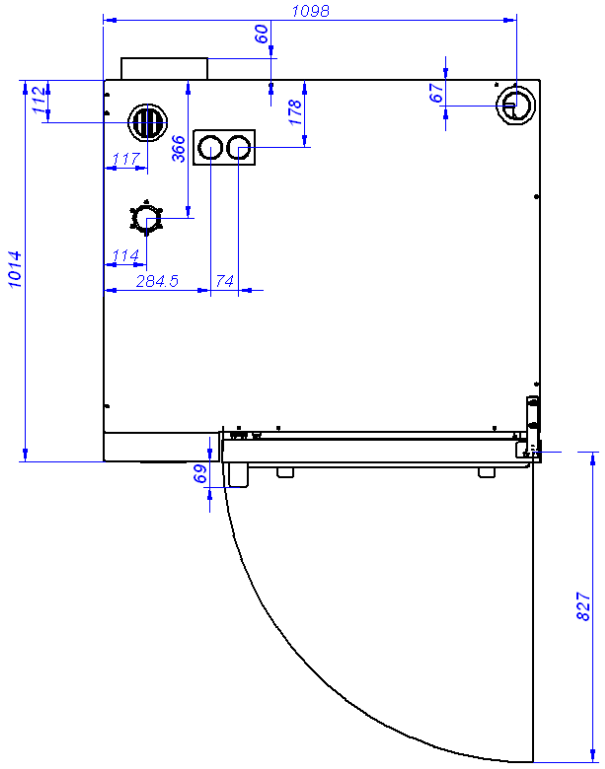


A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

11.30. APG-202







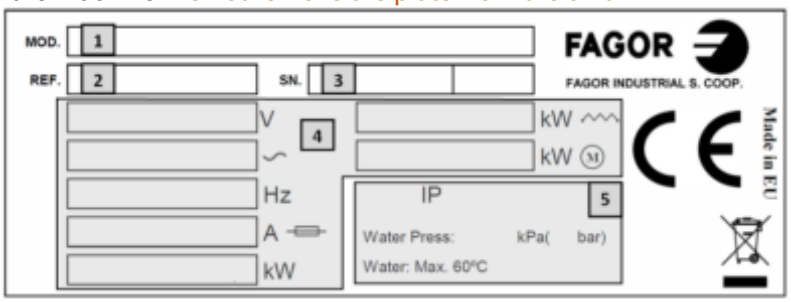
A: Soft water intake
B: Hard water inlet
C: Electrical supply
D: Drainage
E: Gas inlet
F: Air inlet

12. TECHNICAL DATA

12.1. MACHINE SPECIFICATIONS

The machine you have just purchased is a specialised product for the cooking of food, used in restaurants and hostelry. As it is an industrial product, it is characterised for having a high capacity.
All the appliances have a specifications plate which identifies the appliance and indicates its technical characteristics, it is located on one side of the machine. Do not remove the plate from the unit.

SPECIFICATIONS PLATE



1: NAME OF THE UNIT

2: CODE OF THE UNIT

3: SERIAL NUMBER + DATE OF MANUFACTURE

4: ELECTRICAL SPECIFICATIONS

5: WATER SPECIFICATIONS

These details should be quoted when the Technical service is called.

12.2. POWER

12.2.1. ACE (ADVANCE CONCEPT ELECTRIC)

MOD.	SUPPLY VOLTAGE	HOSE DIAMETER	POWER SWITCH GENERAL	TOTAL POWER kW
ACE-0623	400V 3N~ 50/-60Hz	3x1.5 mm^2 + N+T	10A	5.7
	230V 3~ 50/-60Hz	3x2.5 mm^2+T	16A	
	230V 1~ 50/-60Hz	2x4 mm^2+T	32A	
ACE-061	400V 3N~ 50/-60Hz	3x2.5 mm^2 +N+T	20A	10.2
	230V 3~ 50/-60Hz	3x4 mm^2+T	32A	
	230V 1~ 50/-60Hz	2x10 mm^2+T	50A	
ACE-101	400V 3N~ 50/-60Hz	3x6 mm^2 +N+T	32A	19.2
	230V 3~ 50/-60Hz	3x10 mm^2+ T	63A	
	230V 1~ 50/-60Hz	2x25 mm^2+T	100A	
ACE-201	400V 3N~ 50/-60Hz	3x16 mm^2 +N+T	80A	38.4
	230V 3~ 50/-60Hz	3x35 mm^2+ T	125A	
ACE-102	400V 3N~ 50/-60Hz	3x10 mm^2 +N+T	63A	31.2
	230V 3~ 50/-60Hz	3x25 mm^2+ T	100A	
ACE-202	400V 3N~ 50/-60Hz	3x35 mm^2 + N+T	125A	62.4
	230V 3~ 50/-60Hz	3x70 mm^2+ T	180A	

12.2.2. AE (ADVANCE ELECTRIC)

MOD.	SUPPLY VOLTAGE	HOSE DIAMETER	POWER SWITCH GENERAL	TOTAL POWER kW
AE-0623	400V 3N~ 50/-60Hz	3x1.5 mm^2 + N+T	10A	5.7
	230V 3~ 50/-60Hz	3x2.5 mm^2+T	16A	
	230V 1~ 50/-60Hz	2x4 mm^2+T	32A	
AE-061	400V 3N~ 50/-60Hz	3x2.5 mm^2 +N+T	20A	10.2
	230V 3~ 50/-60Hz	3x4 mm^2+T	32A	
	230V 1~ 50/-60Hz	2x10 mm^2+T	50A	
AE-101	400V 3N~ 50/-60Hz	3x6 mm^2 +N+T	32A	19.2
	230V 3~ 50/-60Hz	3x10 mm^2+ T	63A	
	230V 1~ 50/-60Hz	2x25 mm^2+T	100A	
AE-201	400V 3N~ 50/-60Hz	3x16 mm^2 +N+T	80A	38.4
	230V 3~ 50/-60Hz	3x35 mm^2+ T	125A	
AE-102	400V 3N~ 50/-60Hz	3x10 mm^2 +N+T	63A	31.2
	230V 3~ 50/-60Hz	3x25 mm^2+ T	100A	
AE-202	400V 3N~ 50/-60Hz	3x35 mm^2 + N+T	125A	62.4
	230V 3~ 50/-60Hz	3x70 mm^2+ T	180A	

12.2.3. APE (ADVANCE PLUS ELECTRIC)

MOD.	SUPPLY VOLTAGE	HOSE DIAMETER	POWER SWITCH GENERAL	TOTAL POWER kW
APE-061	400V 3N~ 50/-60Hz	3x2.5 mm^2 +N+T	20A	10.2
	230V 3~ 50/-60Hz	3x4 mm^2+T	32A	
	230V 1~ 50/-60Hz	2x10 mm^2+T	50A	
APE-101	400V 3N~ 50/-60Hz	3x6 mm^2 +N+T	32A	19.2
	230V 3~ 50/-60Hz	3x10 mm^2+ T	63A	
	230V 1~ 50/-60Hz	2x25 mm^2+T	100A	
APE-201	400V 3N~ 50/-60Hz	3x16 mm^2 +N+T	80A	38.4
	230V 3~ 50/-60Hz	3x35 mm^2+ T	125A	
APE-102	400V 3N~ 50/-60Hz	3x10 mm^2 +N+T	63A	31.2
	230V 3~ 50/-60Hz	3x25 mm^2+ T	100A	
APE-202	400V 3N~ 50/-60Hz	3x35 mm^2 + N+T	125A	62.4
	230V 3~ 50/-60Hz	3x70 mm^2+ T	180A	

12.2.4. ACG (ADVANCE CONCEPT GAS)

MOD.	SUPPLY VOLTAGE	CABLE SECTION	POWER SWITCH GENERAL	
ACG-061	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 kW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	10,325
		BTU/h (Hi)	G30/G31/G20	40,975
		Kw (Hi)	G30/G31/G20	12
ACG-101	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	15,488
		BTU/h (Hi)	G30/G31/G20	61,460
		Kw (Hi)	G30/G31/G20	18
ACG-201	230V 50-60Hz	2 x 1.5 mm² + T	16A	
	ELECTRICAL OUTPUT 2.4 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	30,975
		BTU/h (Hi)	G30/G31/G20	122,920
		Kw (Hi)	G30/G31/G20	36
ACG-102	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	30,115
		BTU/h (Hi)	G30/G31/G20	119,505
		Kw (Hi)	G30/G31/G20	35
ACG-202	230V 50-60Hz	2 x 1.5 mm² + T	16A	
	ELECTRICAL OUTPUT 2.4 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	55,928
		BTU/h (Hi)	G30/G31/G20	221,938
		Kw (Hi)	G30/G31/G20	65

MAXIMUM CONSUMPTION WITH NOMINAL THERMAL LOAD

TYPE OF GAS		DYNAMIC PRESSURE REQUIRED (mbar)	MINIMUM PRESSURE (mbar)	MAXIMAL PRESSURE (mbar)	ACG-061	ACG-101	ACG - 201	ACG - 102	ACG - 202
G20 (m³/h)	Natural gas	20	17	25	1.270	1.905	3.809	3.704	6.878
G30 (kg/h)	Butane	28÷30	25	35	0.998	1.498	2.995	2.912	5.408
G31(kg/h)	Propane	37	25	45	0.984	1.476	2.951	2.869	5.329

12.2.5. AG (ADVANCE GAS)

MOD.	SUPPLY VOLTAGE	CABLE SECTION	POWER SWITCH GENERAL	
AG-061	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 kW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	10,325
		BTU/h (Hi)	G30/G31/G20	40,975
		Kw (Hi)	G30/G31/G20	12
AG-101	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	15,488
		BTU/h (Hi)	G30/G31/G20	61,460
		Kw (Hi)	G30/G31/G20	18
AG-201	230V 50-60Hz	2 x 1.5 mm² + T	16A	
	ELECTRICAL OUTPUT 2.4 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	30,975
		BTU/h (Hi)	G30/G31/G20	122,920
		Kw (Hi)	G30/G31/G20	36
AG-102	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	30,115
		BTU/h (Hi)	G30/G31/G20	119,505
		Kw (Hi)	G30/G31/G20	35
AG-202	230V 50-60Hz	2 x 1.5 mm² + T	16A	
	ELECTRICAL OUTPUT 2.4 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	55,928
		BTU/h (Hi)	G30/G31/G20	221,938
		Kw (Hi)	G30/G31/G20	65

MAXIMUM CONSUMPTION WITH NOMINAL THERMAL LOAD

TYPE OF GAS		DYNAMIC PRESSURE REQUIRED (mbar)	MINIMUM PRESSURE (mbar)	MAXIMAL PRESSURE (mbar)	AG-061	AG-101	AG - 201	AG - 102	AG - 202
G20 (m³/h)	Natural gas	20	17	25	1.270	1.905	3.809	3.704	6.878
G30 (kg/h)	Butane	28÷30	25	35	0.998	1.498	2.995	2.912	5.408
G31 (kg/h)	Propane	37	25	45	0.984	1.476	2.951	2.869	5.329

12.2.6. APG (ADVANCE PLUS GAS)

MOD.	SUPPLY VOLTAGE	CABLE SECTION	POWER SWITCH GENERAL	
APG-061	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 kW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	10,325
		BTU/h (Hi)	G30/G31/G20	40,975
		Kw (Hi)	G30/G31/G20	12
APG-101	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	15,488
		BTU/h (Hi)	G30/G31/G20	61,460
		Kw (Hi)	G30/G31/G20	18
APG-201	230V 50-60Hz	2 x 1.5 mm² + T	16A	
	ELECTRICAL OUTPUT 2.4 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	30,975
		BTU/h (Hi)	G30/G31/G20	122,920
		Kw (Hi)	G30/G31/G20	36
APG-102	230V 50-60Hz	2 x 1.5 mm² + T	10A	
	ELECTRICAL OUTPUT 1.2 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	30,115
		BTU/h (Hi)	G30/G31/G20	119,505
		Kw (Hi)	G30/G31/G20	35
APG-202	230V 50-60Hz	2 x 1.5 mm² + T	16A	
	ELECTRICAL OUTPUT 2.4 KW			
	POWER HEATING	kcal/h (Hi)	G30/G31/G20	55,928
		BTU/h (Hi)	G30/G31/G20	221,938
		Kw (Hi)	G30/G31/G20	65

MAXIMUM CONSUMPTION WITH NOMINAL THERMAL LOAD

TYPE OF GAS		DYNAMIC PRESSURE REQUIRED (mbar)	MINIMUM PRESSURE (mbar)	MAXIMAL PRESSURE (mbar)	APG-061	APG-101	APG - 201	APG - 102	APG - 202
G20 (m³/h)	Natural gas	20	17	25	1.270	1.905	3.809	3.704	6.878
G30 (kg/h)	Butane	28÷30	25	35	0.998	1.498	2.995	2.912	5.408
G31(kg/h)	Propane	37	25	45	0.984	1.476	2.951	2.869	5.329

13. INSTALLATION OF THE MACHINE

THE MANUFACTURER MAY NOT BE HELD LIABLE FOR ANY PROPERTY DAMAGE OR PERSONAL INJURY RESULTING FROM THE INCORRECT INSTALLATION, USE, MAINTENANCE OR REPAIR, OR CAUSED BY FAILURE TO COMPLY WITH THE STANDARDS AND INSTRUCTIONS PROVIDED.

13.1. LOCATION

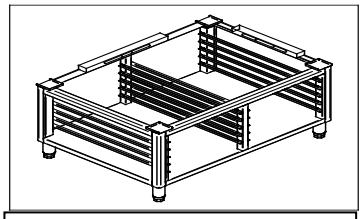
It is necessary to install an extraction hood for the optimum operation of the appliance.
Place the equipment in a sufficiently ventilated room, in accordance with the current regulations, to prevent the formation of unacceptable concentrations of harmful substances in the installation site.
The equipment should be installed in accordance with its dimensions. Appliances must only be installed on and/or against fireproof surfaces.
Inspect final location of the equipment prior to installation to prevent damage during use.
Unless otherwise indicated, the parts that have been protected by the manufacturer must not be manipulated by the installer.

- The placement, installation, repairs and/or modifications must always be carried out by an Authorised Service Technician in accordance with the manufacturer's instructions and the applicable regulations.
- Do not change the position of or handle the machine components, as this may affect the operating safety.
- The appliance must be correctly levelled and the electrical cables, gas pipes, water and drainage hoses must not be trapped or contain kinks.
- The appliance has been designed to operate at ambient temperatures ranging from 5 ^{0}C to 40 ^{0}C and must not be used at temperatures below 5 ºC.
- The appliance or any of its parts **must never be used** as a support and objects must not be placed on top.
- Do not install the appliance in places exposed to jets of water.
- This appliance must be installed in accordance with the current applicable legislation. It may only be installed on premises which are correctly ventilated in order to prevent the formation of unacceptable concentrations of substances harmful to human health.
- You must check that there are no gas leaks. **NEVER** use a flame to check for leaks.
- The gases leaving the fluepipe are at high temperatures and may cause burns. Do **NOT** obstruct the fluepipe output.
- The parts which are protected must not be handled.

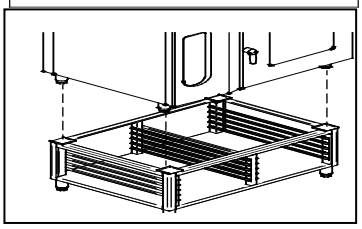
If there is a smell of gas:

- Immediately close the gas mains tap.
- Try to ventilate the premises.
- Avoid the formation of sparks or flames.
- Leave the room and contact your gas supplier.

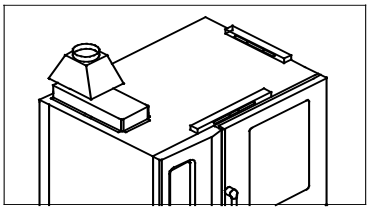
13.2. INSTALLATION OF TABLE TOP MODELS



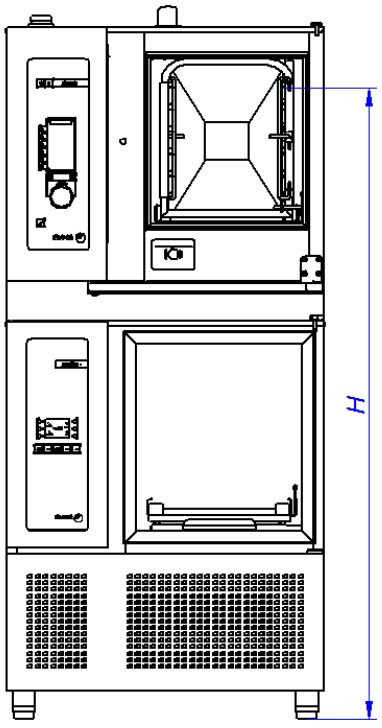
Level the frame horizontally before placing the oven on the frame.

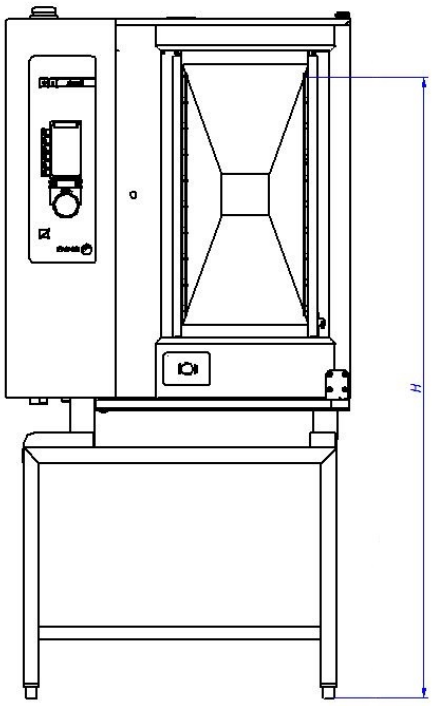


Rest the oven on the frame and line up the supports with the holes on the frame.



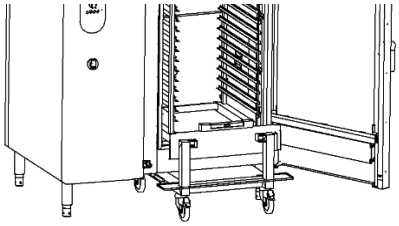
The appliance must be horizontally level.





The trays are placed in the oven at a maximum height of 1.60 m, provided the original accessories are used (except in superimposed ovens).
For superimposed ovens or in any other case in which this height is exceeded, they should be placed at the front of the oven, at a height of 1.6 m from the ground.

13.3. INSTALLATION OF FLOOR-MOUNTED MODELS



The mobile load trolley (optional) must be horizontal on the appliance.

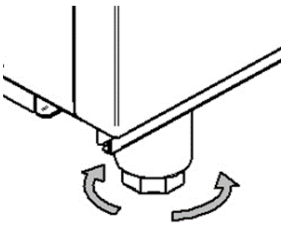
13.4. LEVELLING

Fagor Industrial recommends that the place where the appliance is to be installed should be analysed prior to installation to check that it is suitable.

For optimum operation, it is essential that the appliance is correctly levelled.

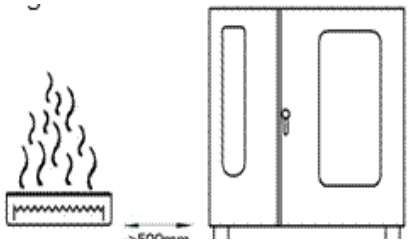
The appliances have adjustable legs to ensure they are correctly levelled. Turn the leg to obtain the required height. The flooring on which the appliance is to be installed must be able to bear its full weight.

The installation location must be able to withstand the weight of the appliance.
The height of the legs can be adjusted by turning them to ensure that the appliance is correctly installed. It is essential that the machine is correctly levelled.
Electrical cables, water and drainage hoses must not be trapped or contain kinks.
Turn the leg clockwise to extend and anticlockwise to shorten.



The installation of this appliance requires electrical and hydraulic connections, and an adequate ventilation/extraction system due to the steam emitted by the machine.

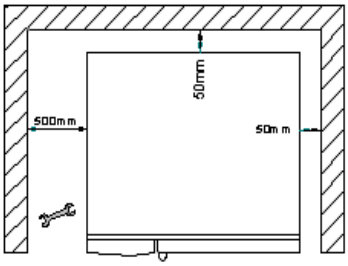
13.5. MINIMUM DISTANCES



Minimum distance from other sources of he
the left side 500 mm.

Warning: An excessive room temperature on the left-hand side of the appliance may activate the appliance's safety disconnection.

Fig.2



Fagor Industrial recommend a distance of 500 mm on the left-hand side of the equipment to leave room for repair and maintenance work.

14. CONNECTIONS

14.1. ELECTRICAL CONNECTION

Before connecting the machine to the power connection, check that the network voltage and frequency correspond to those indicated on the appliance nameplate. Check that the cross-section of the power cable is appropriate for the required consumption.

It is essential that the electrical installation where it is going to be connected has an EARTHING SOCKET, in addition to the appropriate protection of the magneto-thermal switch and differential.

An AUTHORISED TECHNICIAN should always carry out the appliance's electrical connection.

The legal standards in force in each country on connections to the mains should be taken into account.

- The specifications plate indicates the maximum power in kilowatts (kW) and amperes (A) for the correct sizing of the installation components (line, power supply cable…). If the configuration is changed, the values must be revised.
- Check that the mains voltage corresponds to that indicated on the appliance nameplate.
- The electric cable should be flexible, with an oil-proof covering, and it should not weigh less than the cable in an ordinary sleeve made of standard polychloroprene or an equivalent synthetic elastomer (H05RN-F or H07RN-F).
- The electrical cord must correspond to standard **EN 60335-1:2002** "ordinary polychloroprene sheathed flexible cable"
- The cross-section of the power cable must be suitable for the rated current of the machine.
- The machine must be connected to earth using the connection on the machine connection strip.
- The manufacturer will not be held liable for possible damage originated by failure to observe this requirement.
- Near the appliance and easily accessible to the user, between the power supply and the appliance, a suitable omnipolar cut-off Circuit Breaker with a minimum contact separation of 3 mm must be installed. This device should be used to disconnect the appliance during installation, repair, cleaning and maintenance work. The manufacturer will not be held liable for damage originated by failure to observe this requirement.
- A suitable safety switch / Residual current device must be installed near the appliance between the power supply and the appliance. The manufacturer will not be held liable for damage originated by failure to observe this requirement.
- If any faults are observed during the installation of the equipment, the supplier should be notified immediately.

To access the connection strip, release the front panel, pass the cable sleeve through the stuffing box on the lower exterior base and connect as shown on the strip.

VERY IMPORTANT: Before installing the left side panel, attach the electrical supply hose securely to the stuffing box.

When several appliances are installed in series, they should be earthed to each other using the point assigned for this purpose, located in the oven base, at the back. The connection is represented by the symbol.

The voltage configuration of the machine is stipulated on the nameplate (FACTORY ELECTRICAL CONNECTION). All the machines are equipped with a terminal box for configuring voltage and power/amperage options (230 V 1 N~, 230 V 3~ o 400 V 3 N~).

To access the connection strip, remove the front cover. This allows the power cable to be connected and the machine configuration to be changed if required.

If the configuration is modified, this should be indicated on the side of the nameplate using the labels supplied.

The power cable must be secured using the packing glands.

14.2. HYDRAULIC CONNECTION

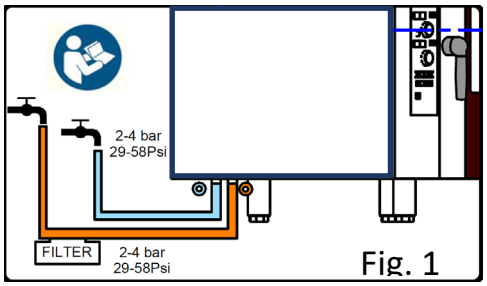
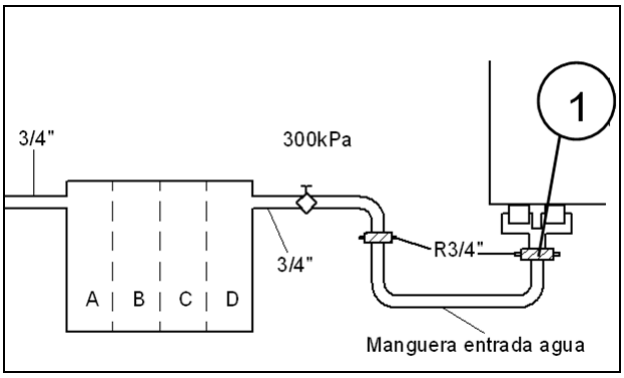


Fig. 1

Connect the machine to the mains water supply at the points indicated, using the hose supplied.
The pressure of the incoming water should be between 200 and 400 kPa (2÷4 kg/cm^2 = 2÷4 bar). We recommend 250 kPa.

pH: 6,5 ÷ 7,5
Total water hardness: 5 ÷ 10 ºfH
3.5 ÷ 7 ºeH
2.8 ÷ 5.6 ºdH
Impurities: Ø < 0.08 mm
Chlorides: ≤ 150 mg/l
Chlorine: 0.2 ÷ 0.5 mg/l
Conductivity: 400 ÷ 2,000 µS/cm



The incoming water must have the following specifications:

EQUIVALENCES OF THE DEGREE OF WATER HARDNESS					
	CaCO3	ºD	ºF	ºA	ºE
	Ppm: Parts per million	ºD: German degrees	ºF: French degrees	ºA: American degrees	ºE: British degrees
ºF	10	0.56	1	10	0.7
ºA	1	0.056	0.1	1	0.07
ºE	14.26	0.8	1.47	14.26	1
ºD	17.85	1	1.785	17.85	1.25

If the water quality does not meet the specified requirements, contact a professional able to advise on the water treatment systems necessary to make the water suitable and to provide a solution.
If the water hardness is higher than that indicated, a descaler should be installed to prevent the build-up of lime on the machine and to permit optimum results.
In addition to water quality, the pressure of the mains water supply must be considered. This is important to ensure the machine operates correctly. The dynamic pressure of the water inlet must be within the values indicated in the following table.

DYNAMIC PRESSURE OF WATER INLET					
"A" MOD.	**Min.**	200 kPa	2 bar	2 kg/cm^2	29 psi
	Max.	400 kPa	4 bar	4.1 kg/cm^2	58 psi
"B", "C" MOD.	**Min.**	100 kPa	1 bar	1 kg/cm^2	14.5 psi
	Max.	400 kPa	4 bar	4.1 kg/cm^2	58 psi

If the water pressure is higher than the recommended pressure, a pressure regulator must be mounted.
If the water pressure is lower than the recommended, a pressure pump must be installed. Please contact your supplier or the manufacturer to request the PRESSURE PUMP KIT.
The water inlet temperature is also important. Hot water should be used to optimise the machine operation, as the use of cold water will increase the times required to reach the operating temperatures and productivity will be reduced. If using hot water, the water temperature must not exceed 60 ^{0}C / 140 ºF.

WATER INLET TEMPERATURE	Min.	Max.
Cold Water	15 ºC / 59 ºF	40 ºC / 104 ºF
Hot Water	40 ºC / 104 ºF	60 ºC / 140 ºF

For the correct hydraulic installation of the machine, you must:

- Connect the appliance to a water supply which complies with the requirements specified above. All the machines have a ¾" screw-on water hose connection. Old or used hoses must **NOT** be used.
- Install a shut-off valve on the water supply close to the machine in an accessible position.
- Check that the mains pressure is within the range indicated above.
- Check that there are no leaks

STANDARD FILTER SYSTEMS

A) Fine filter
If the water contains impurities such as sand, iron particles or floating substances, we recommend the use of a fine filter at the water input.

B) Activated carbon filter
If the water has a high chlorine content over 0.2 mg/l (this information can be obtained from the relevant water board), an activated carbon filter should be installed.

C) Installation of osmosis recirculation
When the chloride concentration is above 150 mg/l (this information can be obtained from the relevant water board), an osmosis recirculation installation should be mounted. In this case, please remember that the minimum conductivity value is 400 µS.

D) Water descaling
For water with a high level of lime scale (without chloride load) the water should be treated. Systems: H+. Interchange of ions or Kleensteam. We strongly advise against the use of sodium/ion exchangers (normally used in dish washers) due to the formation of sodium sediment and the delay in boiling with common salt.
When selecting filter systems (A, B, C, D), we recommend you contact a specialist water treatment company (for example: BRITA).

14.2.1. HYDRAULIC CONNECTION (only UK: IRN R160)

To be carried out by the installer: a certified double check valve, or other device suitable for preventing the return of the water, of at least "fluid category 3", must be fitted on each of the drinking water connections to the appliance.
Never use detergents which represent a risk higher than the category 3 fluids.
Mount a mains tap on each appliance.
Rinse the water pipe before connecting it to the appliance.

14.3. WASTE WATER CONNECTION

The machine drainage hose must be connected to the drain so that water draining from the machine flows freely under gravity; therefore, the drain must be lower than the drainage hose of the appliance with a slope of at least ≈ **5 ÷ 3%**.
The machine drainage hose must be connected to a sump with a drain trap to prevent the return of bad odours.
Check that the drainage system operates correctly and is not blocked.
Incorrect installation of the appliance may result in the incorrect operation.
The installation should be in such a way as to ensure that the installed drainage outlet is below the oven outlet with a suitable slope to ensure drainage (≈ **5 ÷ 3%**).
Ensure the measurements for the drainage are correct:
The average temperature of the waste water from the machine is 55 ºC.

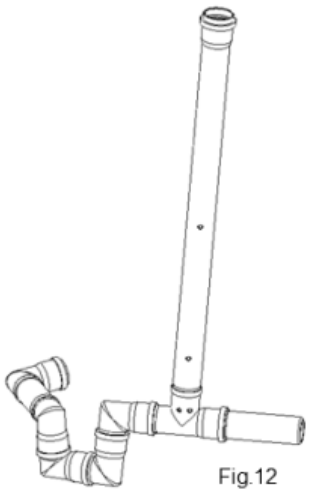


Fig.12

Incorrect installation of the oven may result in the incorrect operation of the appliance.
Therefore, the drainage Kit supplied (DN50) by the manufacturer should be installed (Fig. 12). This drainage system should be connected to an open tank or grille.
Installation (Fig. 13- Fig.14.) should be in such a way as to ensure that the installed drainage outlet is below the oven outlet with a suitable slope to ensure drainage (>5% or 3º).
Make sure that the holes on the rising pipe face the side opposite the rear panel to prevent condensation.
Ensure the measurements for the drainage are correct:

- Steam generator pumping volume in a reduced space of time: 0.7 l/s.
- Average temperature of waste water: 65 ºC.

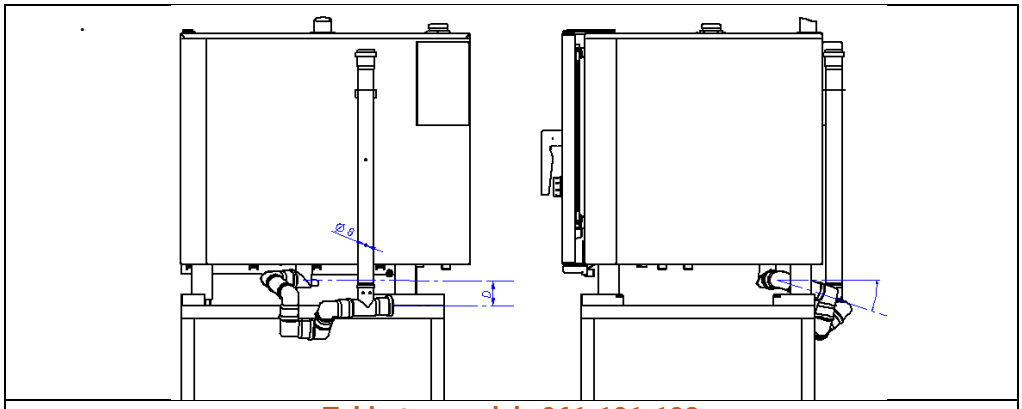
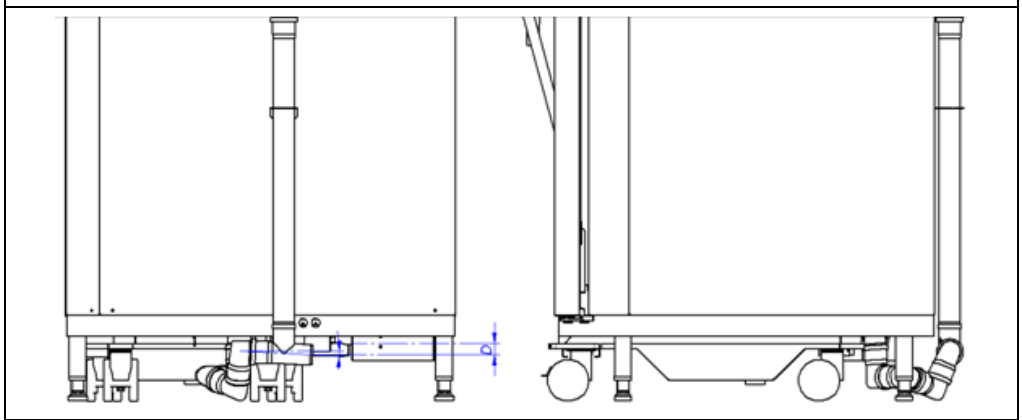


Table-top models 061-101-102

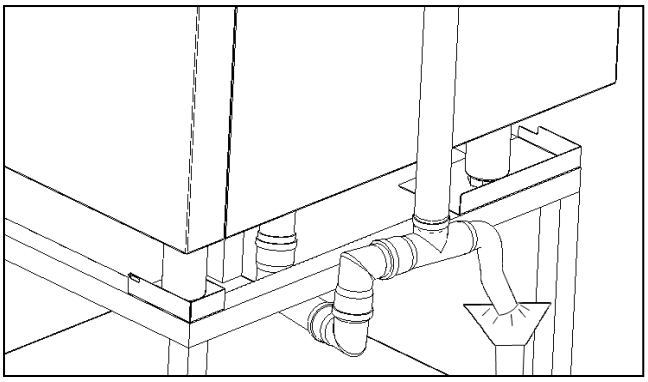


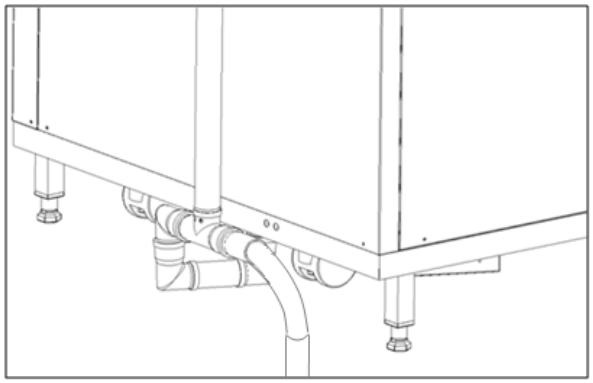
Floor-mounted models 201 and 202

Once the drainage KIT has been installed, the discharge to the general drainage must be via a type `AA`, `AB` or `AD` air gap in accordance with EN 1717.

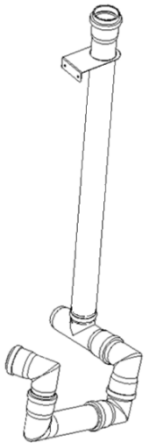
ADVANCE DRAINAGE KIT

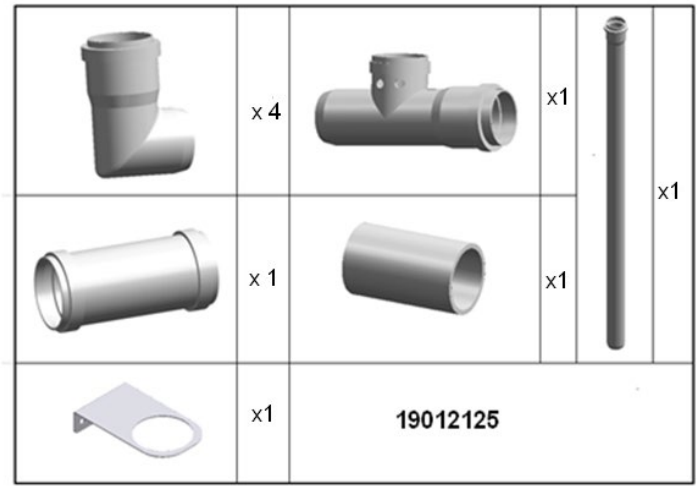
The drainage system may be installed using a standard siphon pipe connected to an open tank or grille. For optimum operation, we recommend you use the manufacturer's drainage KIT, reference 19012125.

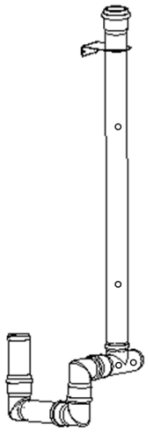




El kit contains the following units, which can be assembled in various ways, depending on where the oven is installed.

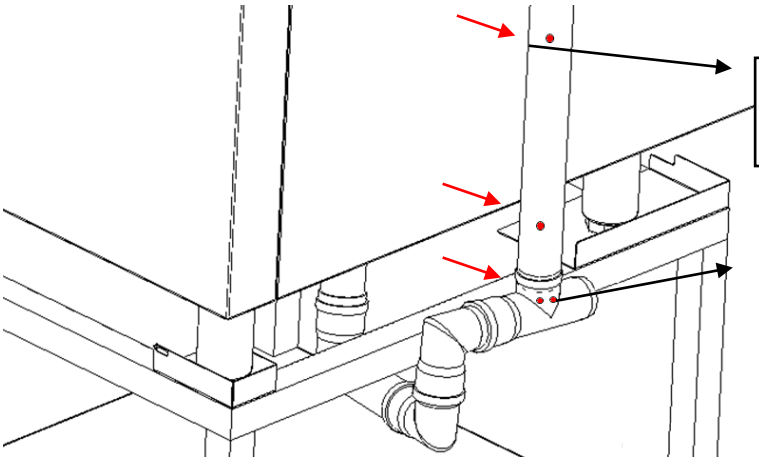






Advance Plus oven configuration

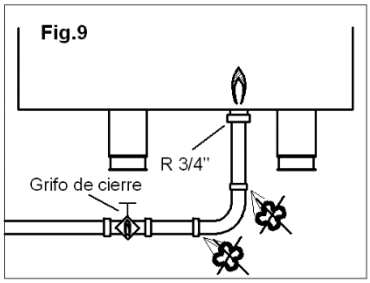
Advance/ Concept oven configuration

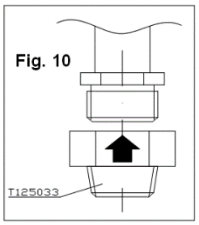


During assembly, care should be taken to ensure that the holes are facing the opposite side to the oven panel

14.4. GAS PNEUMATIC CONNECTION

It is essential to ensure that the gas supply pipes and the connection pipes for the corresponding measurement systems are the correct diameter.
Once the appliance has been connected, check that there are no leaks using a gas detector (spray, etc.). **NEVER** use a flame to check for leaks.





Warning

- The gas installation may only be connected by an authorised local gas technician.
- It is essential to ensure that the gas supply pipes and the connection pipes for the corresponding measurement systems are the correct diameter.
- Check that the gas supply is correctly sealed.

MAXIMUM CONSUMPTION WITH NOMINAL THERMAL LOAD

Type of gas	Pressure Required fluidity (mbar)	ACG-061 AG-061 APG-061	ACG-101 AG-101 APG-101	ACG-201 AG-201 APG-201	ACG-102 AG-102 APG-102	ACG-202 AG-202 APG-202
Natural gas H G20 (m³/h)	20	1.270	1.905	3.809	3.704	6.878
Butane gas G30 (kg/h)	30	0.998	1.498	2.995	2.912	5.408
Propane gas G31 (kg/h)	37	0.984	1.476	2.951	2.869	5.329

The air required for the combustion is 2 m^3/h per kW of power.

Remarks:

- Observe the regulations issued by the local gas company.
- Observe the regulations for the installation.
- Check that the gas indicated in the section is identical to that supplied.
- A pipe of at least Ø 12 x 10 mm should be used for the gas connection to the appliance, together with a ¾" nut to connect to the oven.
- Gas shut-off valve in front of each appliance.

Warning

If the pipe pressure is different to the fluid pressure, please contact the gas company. For natural gas, the appliance must not be started at pressures above 30 mbar. Close the gas inlet to the appliance.
Warning Service pressures exceeding 60 mbar are not allowed as some of the oven's components could become unusable.

We recommend the annual maintenance by an authorised technician of the components relating to the gas installation.

14.5. CATEGORIES, GASES AND OPERATING PRESSURES

COUNTRY	CATEGORY	PRESSURE (mbar)
AT	$II_{2H3B/P}$	20*50
AL - BG - DK - EE - FI - HR - LT - LV - MK - NO - RO - SE	$II_{2H3B/P}$	20*30
BE - FR	II_{2E+3+}	20/25*28-30/37
CH - CY - CZ - ES - GB - GR - IE - IT - PT - SI - SK - TR	II_{2H3+}	20*28-30/37
DE - LU	$II_{2E3B/P}$	20*50
PL	II_{2E3P}	20*37
HU - IS - MT - NL	$I_{3B/P}$	30

Fagor Industrial recommend the annual maintenance by an authorised technician of the components relating to the gas installation.

14.6. VENTILATION OF THE PREMISES

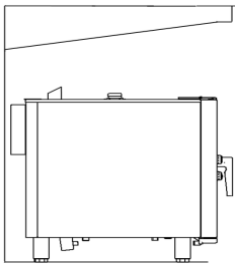
The machines must be installed in such a way as to allow adequate ventilation to prevent the unauthorised concentration in the premises of steam and products emitted during combustion, which may be harmful to health. The installation of an extraction hood is recommended for the extraction of smoke and steam in accordance with Standard **UNE–100165:2004**. It is advisable that the hood sticks out 200-400 mm from the front part of the appliance.

14.7. EXTRACTION OF COMBUSTION PRODUCTS

Gas appliances may be installed in different manners depending on the requirements of the installation.

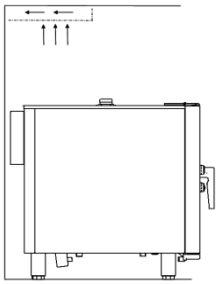
An incorrect connection could result in fire.

14.7.1. GAS OVEN INSTALLED IN PREMISES (TYPE A3)



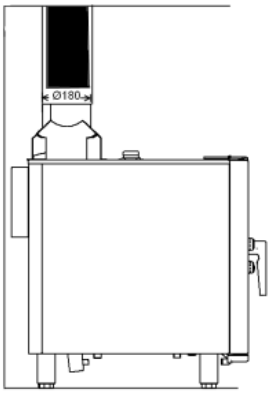
We recommend you install the gas oven below the smoke extractor hood.
Install in accordance with local regulations.
The gas supply to the appliance should only be switched on once the extraction system has been activated.

14.7.2. GAS OVEN BELOW VENTILATION CEILING (TYPE B23)



In this installation, extraction is through a natural draught connection, beneath an extractor hood or ventilation ceiling.
Install in accordance with local regulations.
The gas supply to the oven should only be switched on once the extraction system has been activated. If the extraction/ventilation system does not operate correctly, the gas supply to the oven will be disabled.

14.7.3. GAS OVEN CONNECTED TO EVACUATION FLUEPIPE (TYPE B13)



Convection/combined ovens with a non-return draught diverter system (special accessory) may be connected directly to the fluepipe. The draught diverter accessory can be ordered using the following references:

Oven model 061/101: 19012272 Oven model 201: 19012290

Oven model 102: 19012273 Oven model 202: 19012291

The gas supply to the oven should only be switched on once the extraction system has been activated.

The exhaust gases reach very high temperatures.

The exhaust pipes must provide a hermetic seal. The materials used should provide thermal stability up to temperatures of 400 °C.

Warning

- The exhaust gases may reach high temperatures, therefore exhaust gases and hot plate components may cause burns.
- Do not place combustible material on top of the appliance. Risk of fire!

- The exhaust gases may reach high temperatures, therefore exhaust gases and hot plate components may cause burns.
- Do not place combustible material on top of the appliance. Risk of fire!

14.8. CHECK LIST PRIOR TO START-UP

CHECKLIST FOR THE INSTALLATION AND START-UP OF FAGOR OVENS

This checklist should be completed separately for each oven in clearly legible writing.

To validate your rights to guarantee, please ask the Technical Service installing the oven to complete the present checklist and send it, duly completed, to the corresponding branch of Fagor Industrial, within 15 days of the installation and start-up of the oven.

Company or premises where oven is installed: _____
Contact person: _____
Position in the company: _____ email: _____
Address: _____
Town: _____Province: _____
POST CODE: _____ Telephone: _____ FAX: _____
Oven model: _____ Serial No: _____
Installing company: _____Technician: _____
Date of installation (D/M/Y): _____/_____/_____
Date of start-up (D/M/Y): _____/_____/_____

Installation **no complaints** ☐ **with complaints** ☐

Dear installer:

Please record the following information corresponding to the different fields. If the values obtained differ significantly from the data recommended by the manufacturer in the manual, please notify the customer and the corresponding branch of Fagor Industrial.

We hereby confirm that the start-up has been carried out in accordance with the attached checklist and conforms to current local /national specifications and legislation. The oven has been delivered free of defects. The user has been instructed in the use, cleaning and maintenance of the equipment.

Fagor Industrial recommends the establishment of regular preventive maintenance carried out by an official or authorized Technical Service.

_____ **Signed / Date / Installer**

_____ **Signed / Date / Customer**

1. Checking installation

	YES	NO
a) Is the floor level?	☐	☐
If "NO", what is the difference in level? _____ %		
b) Is there any source of heat at less than 500 mm from the oven?	☐	☐
If "Yes", the installation of heat protection is obligatory.		
c) Is there any other equipment at less than 500 mm from the oven?	☐	☐
If "Yes", what type of equipment? _____		
d) Has a hood/extractor system been installed?	☐	☐
e) Is there a genuine FAGOR extractor hood installed?		
If "Yes", what model is it? _____	☐	☐
If "Yes", what is the serial No? _____		
f) For floor models (201, 202), is there enough space for the trolley?	☐	☐
g) Is the oven level?	☐	☐
h) For table top models (061, 101, 102), is the table level?	☐	☐
i) For floor models, (201, 202), is the oven trolley level and adjusted?	☐	☐

2. Electrical Installation

a) What voltage is shown on the registration plate? _____ AC /_____ V /_____ Hz
b) What voltage is available at the installation? _____ AC /_____ V /_____ Hz
c) Measured voltage at the installation:

"U" ÷ "V" => _____V **"U" – Neutral** =>_____V
"U" ÷ "W" => _____V **"V" – Neutral** =>_____V
"V" ÷ "W" =>_____V **"W" – Neutral** =>_____V
Neutral – Earth =>_____V

d) Electrical consumption by phase:
"U" _____A **"V"**_____A **"W"**_____A

	YES	NO
e) Are there any electrical protections in the installation? If "Yes", what types?	☐	☐
Thermal magnetic switch_____A **Fuses**_____A **Differential switch**_____mA		
f) Can the electrical panel be accessed by the user?	☐	☐

3. Hydraulic Installation

	YES	NO
a) Is there a water filter installed?	☐	☐
If "Yes", what type and make of filter? _____		
b) Is the water supply to the oven independent?	☐	☐
CAUTION: Water intake ¾"		
c) Is the cut-off tap for the water supply to the oven independent?	☐	☐
c) Can the cut-off tap for the water supply to the oven be accessed by the user?	☐	☐
e) Is the drainage connection fixed?	☐	☐
If "Yes", is the drain trap independent for the oven?		
f) Is the drainage pipe material resistant to 110 ºC?	☐	☐

g) What material are the drainage pipes made from? _____
h) What is the slope of the drainage pipe? _____%
h) Water intake pressure _____bar
i) Water intake temperature _____ºC
j) Water quality:
Total H_____ºf **Carbonate H.**_____ºf **Conduct.**_____µs **pH**_____

4. Gas installation

	YES	NO
a) Is the gas supply to the oven independent?	☐	☐
b) Is the cut-off tap for the gas supply to the oven independent?	☐	☐
c) Can the cut-off tap for the gas supply to the oven be accessed by the user?	☐	☐
d) Has the oven been converted to gas?	☐	☐
e) Is the gas control to the oven independent?	☐	☐
If "Yes", what type and make of equipment?_____		
f) Is the gas pipe rigid?	☐	☐
If "Yes", what is the diameter of the gas pipe?_____ mm		

g) Type of gas specified on registration plate:
☐ LPG (B-G30) ☐ LPG (P-G31) ☐ NG (G20) ☐ NG (G21) ☐ Other G_____

h) Type of gas available in the installation:
☐ LPG (B-G30) ☐ LPG (P-G31) ☐ NG (G20) ☐ NG (G21) ☐ Other G_____

i) Height of installation_____ mts. above sea level.

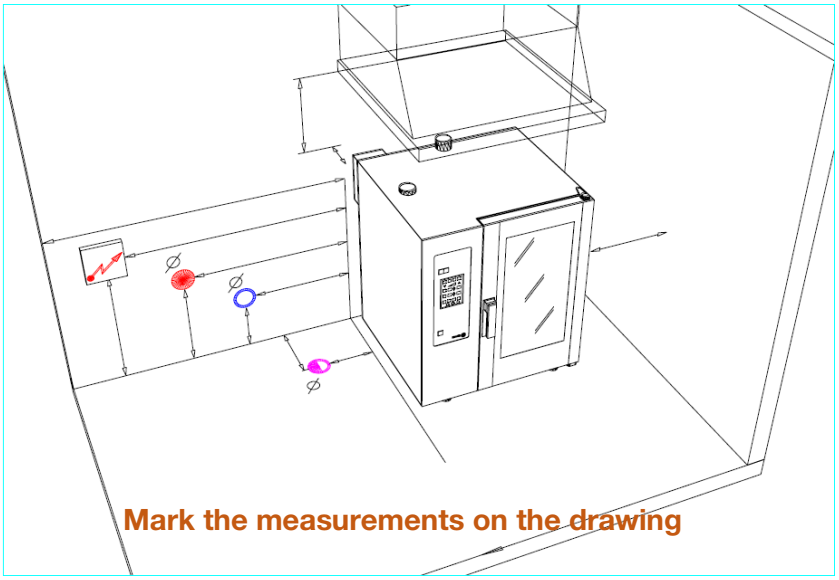
j) Pressure of gas connected:
Static pressure =>_____mbar **Dynamic pressure** =>_____mbar

k) Steam burner combustion:
CO_2 =>_____ % **CO** =>_____ppm λ => _____

l) Convection burner combustion:
CO_2 =>_____ % **CO** =>_____ppm λ => _____

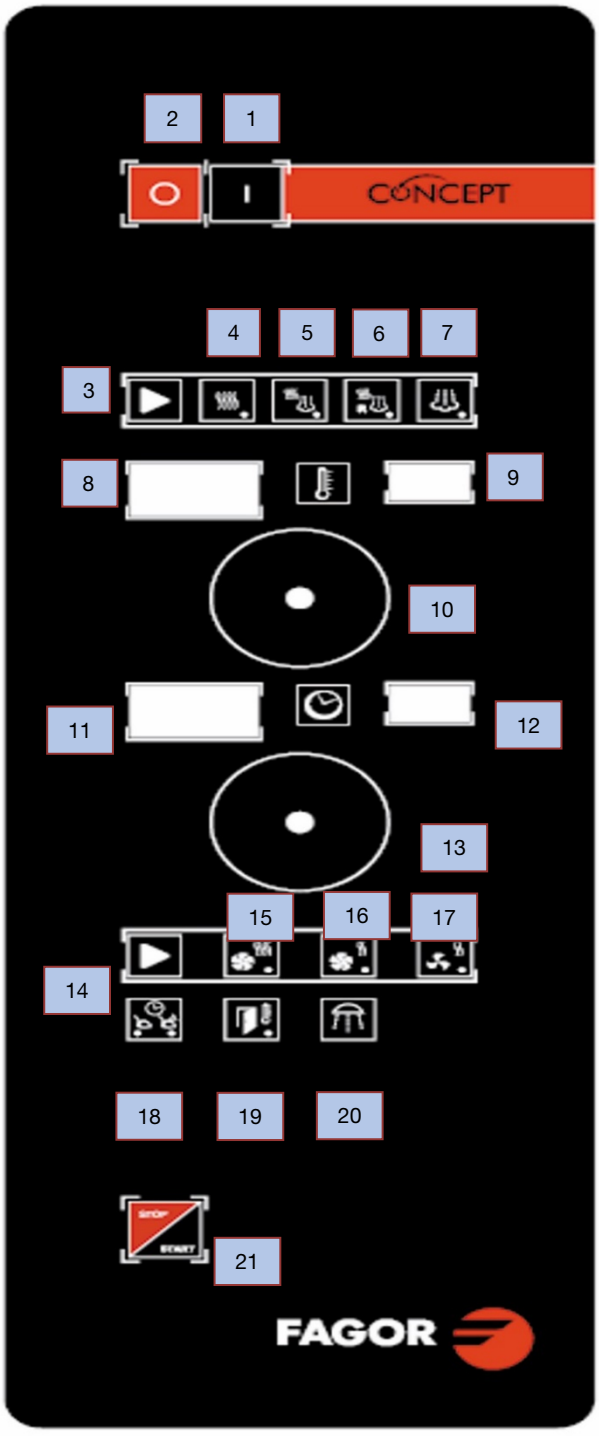
5. Operating tests and instructions for customer

	YES	NO
a) Are the electrical connections secure and in accordance with legislation?	☐	☐
b) Are the hydraulic connections watertight?	☐	☐
b) Are the gas connections water and airtight?	☐	☐
d) Has the oven configuration been checked?	☐	☐
e) Are all the oven operating modes operating correctly?	☐	☐
f) Have the temperature probes been calibrated?	☐	☐
g) Has the customer received instructions on the use and handling of the oven?	☐	☐
h) Has the customer received instructions on the daily cleaning of the oven?	☐	☐
i) Has the customer received adequate information on the maintenance of the equipment (de-scaling, cleaning air intakes, cleaning door seal, etc)?	☐	☐
j) Has the customer been given all the oven documentation (manuals, recipe book, etc)?	☐	☐

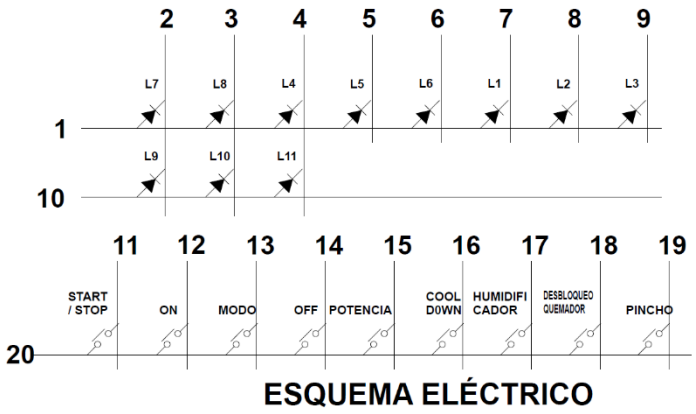


15. USE OF CONCEPT ACE & ACG OVENS

15.1. ACE ELECTRIC OVEN CONTROL PANEL (until 01/01/2016)

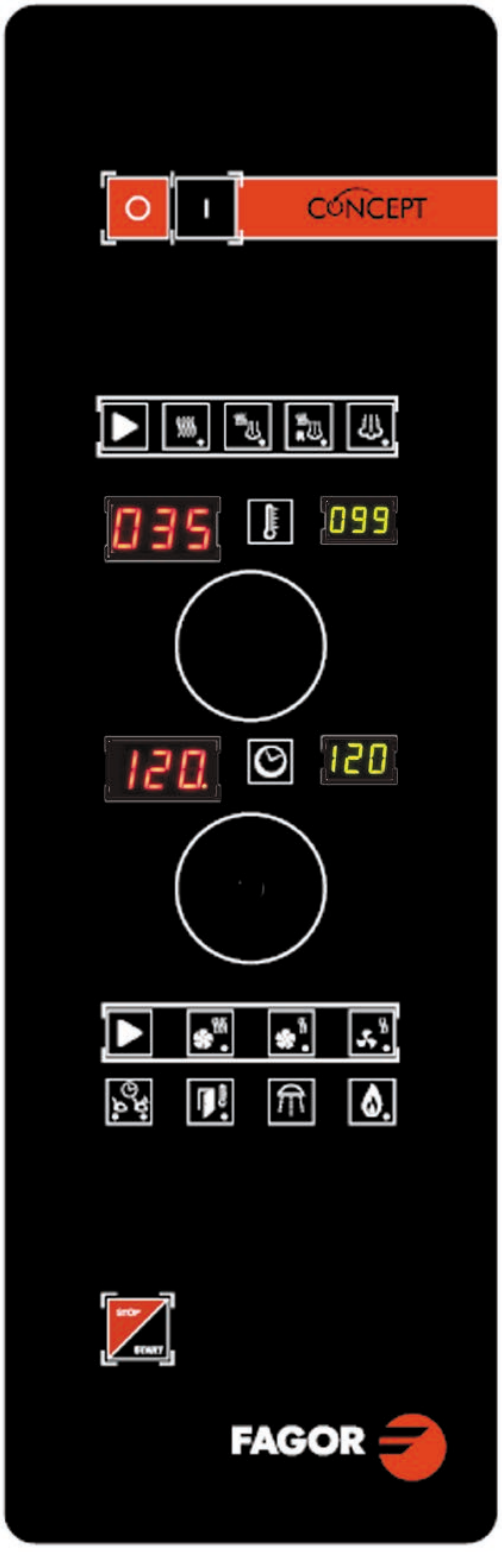


1. Oven ON switch
2. Oven OFF switch
3. Convection/Mixed/Regeneration/Steam operating mode Selector/Button
4. Convection mode display
5. Mixed mode display
6. Regeneration mode display
7. Steam mode display
8. Chamber true temperature
9. Temperature setting, chamber
10. Temperature selector encoder
11. Remaining cooking time
12. Cooking time set value
13. Time selector encoder
14. Power/Speed Selector/Button
15. Maximum power/Maximum speed display
16. Minimum power/Minimum speed display
17. Minimum Power/Minimum power display
18. Time/Spike/Delta function Display/Selector/Button
19. Button / Cool Down Display
20. Humidifier button
21. START/STOP button

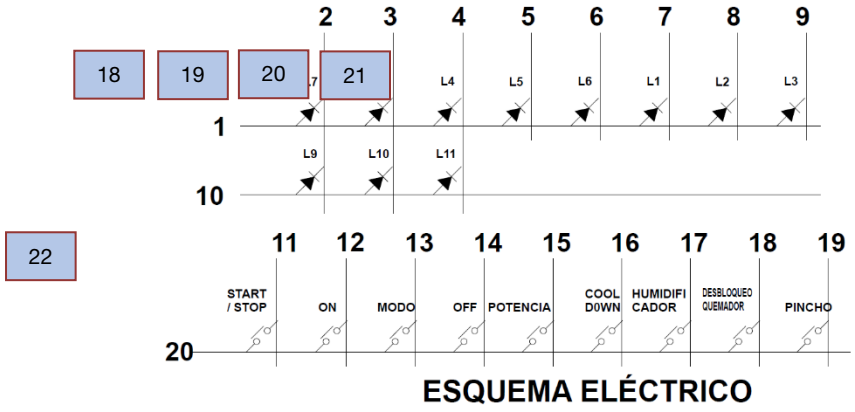


ESQUEMA ELÉCTRICO

15.2. ACG GAS OVEN CONTROL PANEL (until 01/01/2016)

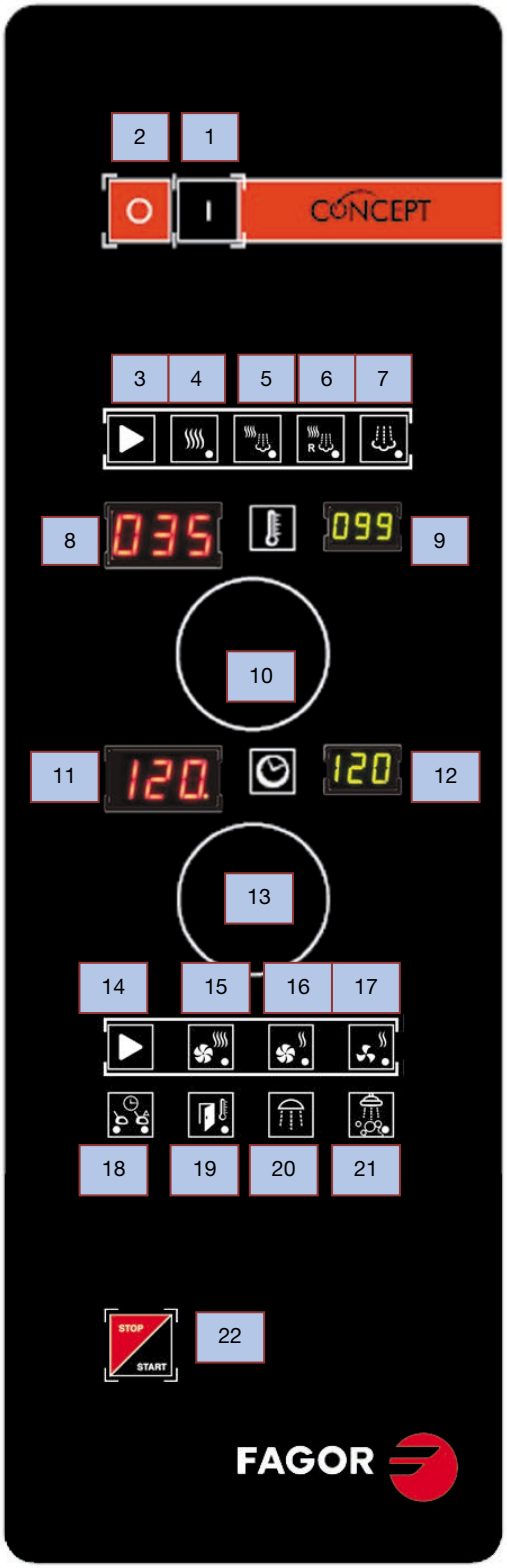


1. Oven ON switch
2. Oven OFF switch
3. Convection/Mixed/Regeneration/Stea
   operating mode Selector/Button
4. Convection mode display
5. Mixed mode display
6. Regeneration mode display
7. Steam mode display
8. True temperature, chamber
9. Temperature setting, chamber
10. Temperature selector encoder
11. Remaining cooking time
12. Cooking time set value
13. Time selector encoder
14. Power/Speed Selector/Button
15. M…num power/Maximum speed dis
16. M…um power/Minimum speed disp
17. Minimum Power/Minimum power disp
18. Time/Spike/Delta function
19. …Display/Selector/Button
20. …utton / Cool Down Display
21. Humidifier button
22. Gas unlock Button/Display
23. …T/STOP button

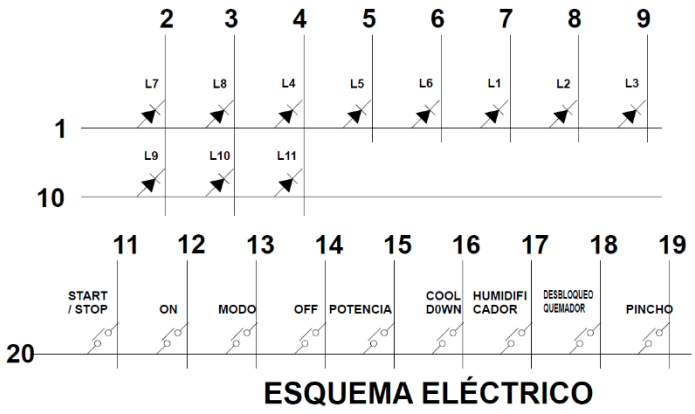


ESQUEMA ELÉCTRICO

15.3. ACE & ACG ELECTRIC OVEN CONTROL PANEL (from 01/01/2016)



1. Oven ON switch
2. Oven OFF switch
3. Convection/Mixed/Regeneration/Steam operating mode Selector/Button
4. Convection mode display
5. Mixed mode display
6. Regeneration mode display
7. Steam mode display
8. True temperature, chamber
9. Temperature setting, chamber
10. Temperature selector encoder
11. Remaining cooking time
12. Cooking time set value
13. Time selector encoder
14. Power/Speed Selector/Button
15. Maximum power/Maximum speed display
16. Minimum power/Minimum speed display
17. Minimum Power/Minimum power display
18.
19. Button / Cool Down Display
20. Humidifier button
21. Semi-automatic wash Display/Button
22. START/STOP button



ESQUEMA ELÉCTRICO

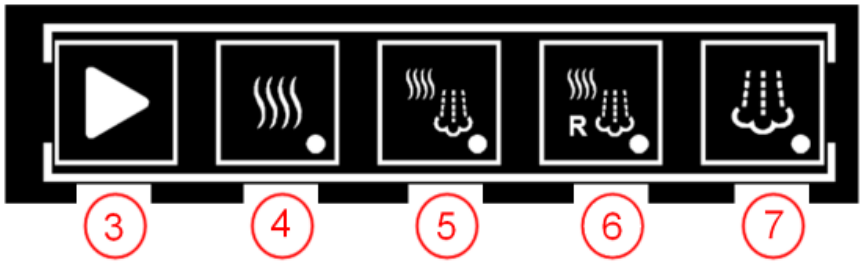
Wash

15.4. ON/OFF

To start the oven, press **ON** and to switch it off, press **OFF**. Each time that the oven is switched on, the last-used values are displayed. If this is the first time the oven is switched on, the defect values are displayed.

15.5. SELECTION OF COOKING MODE

Press  to access the different cooking modes. The selected option is identified by an LED beneath the corresponding icon.



3. Mode selector.
4. Convection mode display.
5. Mixed mode display
6. Regeneration mode display.
7. Steam mode

- **CONVECTION:** The oven is heated with hot air (dry heat)
- **MIXED:** The oven is simultaneously heated with hot air and steam
- **REGENERATION:** The oven is simultaneously heated with hot air and steam
- **STEAM:** The oven is usually heated with steam created by the injection of water.

In Convection mode the fluepipe remains open.
In Steam mode the fluepipe remains closed.
In Mixed and Regeneration mode the fluepipe is open and closed alternately.

- CONVECTION (100% dry heat): The oven is only heated with hot air.
  Where X=ºC is the setting:
  - Fluepipe open
  - The output CC stops when TC>=(X+1) ºC and is reset when TC<=(X-1) ºC.
  - The VCN output never operates.

- STEAM (100% damp heat): The oven is heated by steam generated by spraying (injecting) water over the heating system.

  Chamber setting = 99 ºC
  - Fluepipe closed
  - VCN is activated (Y s ON (10 s -Y)'' OFF), when VHM is activated, CC and TC>=90ºC
  - The output CC stops when TC>=100 ºC and is reset when TC<=98 ºC.
  - The VHM output operates if 50 ºC<TC<130 ºC

- MIXED (50% dry heat + 50% moist heat): Heating uses hot air and steam simultaneously, but with more power in the hot air.

  Where X=ºC is the setting:
  - Fluepipe closed
  - VCN is activated (Y s ON (10-Y) s OFF), only if: TC>=90 and ((CC and VHM operate) or (TV>=78+(TC*0.27)))
  - The output CC stops when TC>=(X+1) ºC and is reset when TC<=(X-1) ºC.
  - VHM operates as follows:
    - If X<96 ºC: Continuous cycles of 6 s 2 s ON, 4 s OFF)

- If 95 ºC <X<106 ºC: It operates continuously
- If 105 ºC <X<251 ºC: The output VHM stops when TV>=(TC/4+77 ºC) and is reset (6'' cycles (2'' ON, 4'' OFF)) when TV<=(TC/4+74 ºC)

- REGENERATION (40% dry heat + 60% moist heat): Heating uses hot air and steam simultaneously, but with more power in the steam.

Where X=ºC is the setting:

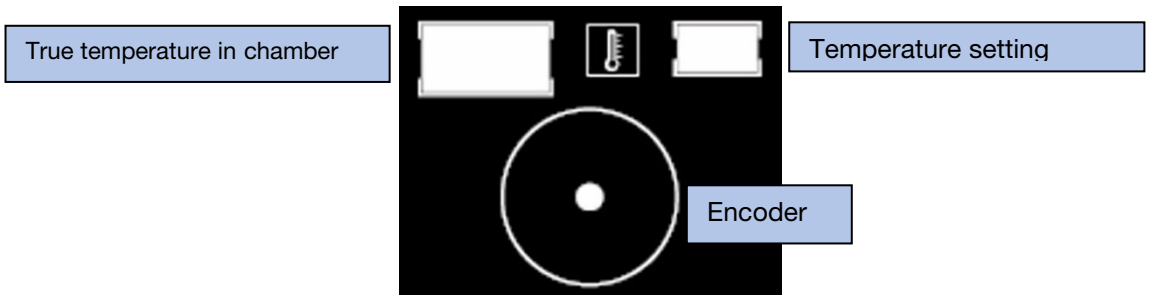
- Fluepipe closed
- VCN is activated (Y s ON (10-Y) s OFF), only if: TC>=90 and ((CC and VHM operate) or (TV>=78+(TC*0.27)))
- The output CC stops when TC>=(X+1) ºC and is reset when TC<=(X-1) ºC.
- VHM operates as follows:
  - If X<96: Continuous cycles of 6 s 4 s ON, 2 s OFF)
  - If 95<X<106: It operates continuously
  - If 105<X<181: The output VHM stops when TV>=(TC/4+77) and is reset (6'' cycles (4'' ON, 2'' OFF)) when TV<=(TC/4+74)

The fluepipe opens automatically in convection mode. In all other cooking modes it remains closed.

15.6. TEMPERATURE SELECTION

The encoder is used to increase /decrease the chamber temperature setting. This enables the increase/decrease of the chamber temperature setting in units. If it is turned quickly (more than half a turn per second), the increase/decrease is in steps of 10.
If the oven is in Delta function, turning the encoder will not have any effect, as the value of the setting depends directly on the core temperature.

.



The true temperature range of the chamber thermostat reading is from -5 ÷ 330 ºC
The temperature range and the default value for each operating mode is:

- **Convection:** Range 20 ÷ 300 ºC (160 ºC default setting)
- **Mixed:** Range 20 ÷ 250 ºC (140 ºC default setting)
- **Regeneration:** Range 20 ÷ 180 ºC (120 ºC default setting)
- **Steam:** Range 99 ºC (99 ºC default setting)

When you enter the operating mode, the last-used temperature setting in this mode is automatically loaded.

If the temperature setting and the true temperature of the chamber remain at more than 270 ºC for 30 minutes, the setting automatically changes to 270 ºC.

15.7. TIME SELECTION

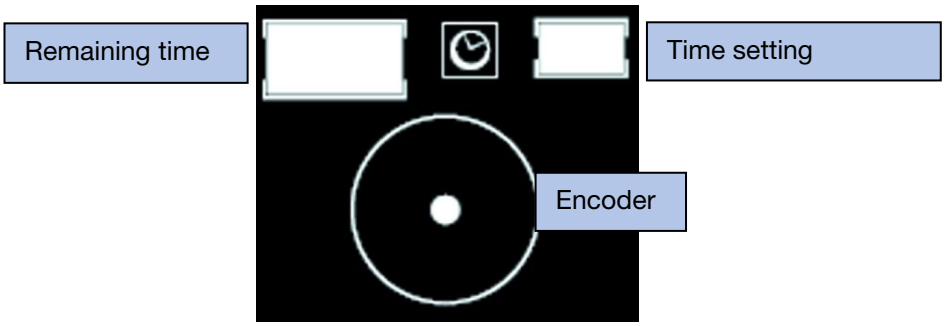
The encoder is used to increase /decrease the cooking time setting. This enables the increase/decrease of the cooking time setting in units.

- **Remaining time:** Displays the cooking time remaining. This time decreases every minute, displaying the final point if the countdown is active.

When the time reaches 0, the number flashes and the buzzer is heard until the START/STOP button is pressed, the door is opened or after 30 seconds. If the door is not opened, or if the START/STOP, button is not pressed, the acoustic/visual warning is repeated for 30 seconds every 3 minutes. When the door is opened or the START/STOP, button is pressed, the remaining time is automatically re-established, loading the stipulated times.

- **Time setting:** Time setting selected by the user. The maximum possible time is 300 minutes. When the operating mode is changed, the last-used value in this mode is automatically loaded. If it is turned quickly (more than half a turn per second), the increase/decrease is in steps of 10. If the encoder is turned more quickly, the time is infinite, both time markers indicating "---".

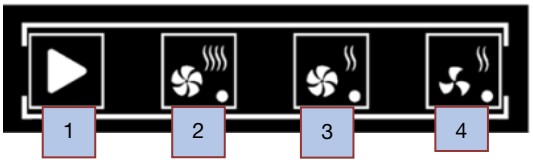
If the oven is on and the setting is increased/decreased, the remaining time will vary in proportion to the increase/decrease made.



15.8. HEATING POWER AND FAN SPEED

The heating powers that can be selected are Maximum Power and Medium Power. In electric ovens, this is performed by acting on the two chamber heating contactors (Maximum power) or by acting on only one of these (Medium Power). In the case of the ACE-061 ovens, this function is performed by the activation time of the only chamber heating contactor (30 seconds ON and 10 seconds OFF).

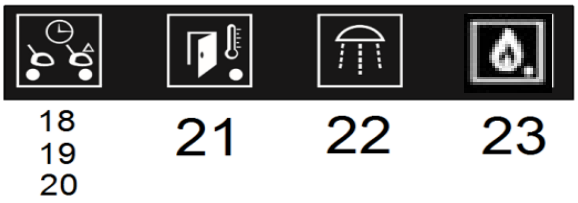
1. "Fan Power / Speed" selector button
2. "Maximum power/Maximum speed of fan" display
3. "Medium power/Maximum speed of fan" display
4. "Medium power/Medium speed of fan" display



In addition, the chamber fan speeds that can be selected are Maximum Speed and Medium Speed.
The options we can select for Heating Power and Fan Speed are:

- Maximum power / maximum speed
- Medium power / Maximum speed
- Medium power / Medium speed

15.9. AUXILIARY FUNCTIONS (until 01/01/2016)

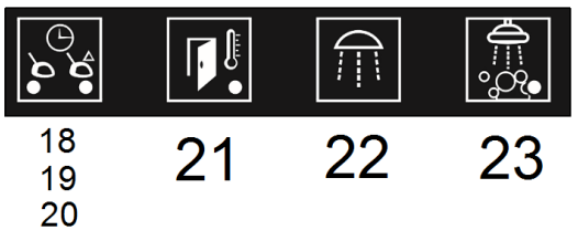


18/19/20-. Temperature / Spike / Delta selector button (optional)
21-Button / Cool down display
22-Humidifier button
23-Unlock gas

The appliance has Auxiliary Functions including:

1 Temperature / Spike / Delta selector button
2 Button / Cool down display
3 Humidifier button
4 Unlock gas (Only AGC)

15.10. AUXILIARY FUNCTIONS (from 01/01/2016)



18/19/20 Temperature / spike / delta (optional) selector button
21-Button / Cool down display
22-Humidifier button
23-Wash

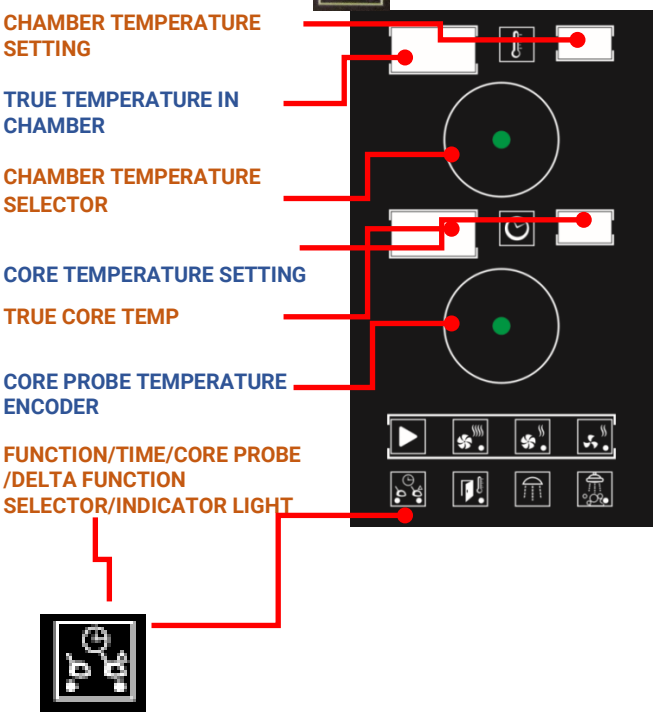
The appliance has Auxiliary Functions including:

1 Temperature / Spike / Delta selector button
2 Button / Cool down display
3 Humidifier button
4 Wash

15.11. PRICK PROBE FUNCTION

The Spike Probe function is an Auxiliary Function of the cooking process which uses the temperature reading taken from the core of the product being cooked to control the length of the cooking process.
For this, use the Spike Probe and select the relevant function.

Select by pressing the button  with the core probe display lit.



Turn the Core Probe Temperature Encoder to select the required core temperature

The display Core Temperature Setting indicates the selected core temperature (from 0 - 99 °C)

The display True Core Temperature indicates the true temperature on the core probe (from -10 - 330 °C)

Turn the Chamber Temperature Encoder to select the oven chamber temperature

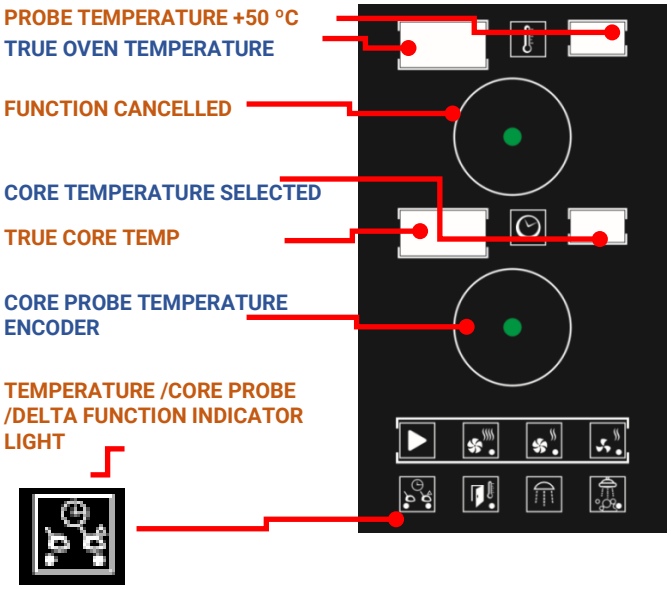
The display Chamber Temperature Setting indicates the selected oven temperature

The display True Chamber Temperature indicates the true temperature of the oven chamber

When the "True Core Temperature" reaches the "Core Temperature Setting" selected, the oven stops and the alarm will be heard.

15.12. DELTA FUNCTION

The DELTA Function is an Auxiliary Function which operates with the temperature difference between the true core temperature and the temperature of the chamber.
The Chamber Setting Temperature is always 50 ºC higher than the temperature recorded by the Core Probe. As the value of the True Core Temperature increases, the Chamber Temperature Setting also increases automatically by the same amount.



Turn the Core Probe Temperature Encoder to select the required core temperature (for example 70 °C) shown on the display Core temperature selected

Insert spike probe in food (for example 15 °C) indicated in the True core temperature.

The oven will heat up to 15 °C+50 °C = 65 °C and as the core temperature rises the Probe Temperature + 50°C will also rise, always with a difference of 50 °C.

When the core temperature reaches the selected temperature of 70 °C, the oven chamber temperature should be 120 °C and an alarm will be heard.

15.13. COOL DOWN

COOL DOWN is a system for rapidly cooling the chamber. To activate this function and cool the cooking chamber, proceed as follows:

- Close the door and press button COOL DOWN. Next open the door.
- The fan starts, but the heating is switched off and the COOL DOWN LED lights up. When the chamber temperature falls to 45ºC, the process stops automatically.
- The cooling cycle can be stopped by pressing the COOL DOWN button again OR by closing the door, and the COOL DOWN indicator will go out.

Warning: Do **not** cool the oven by directly applying cold water in the tub.

SAFETY MEASURES: During this cycle the fan cover and the tray guides should be securely fastened in their position.

15.14. HUMIDIFICATION

Humidification is an Auxiliary Function which provides moisture to the cooking process. This occurs by spraying water over the heating elements (resistor or heat exchanger of the chamber burner), causing the water to change to steam.
The moisture input only operates while the Humidification button is pressed in Start mode (in Stop mode the signal is ignored).
Bakery products rise very well using this function thanks to the rapid entrance of moisture.
Soft shine to baked products.
It should be used for short periods of time.

15.15. RESET GAS (until 01/01/2016)

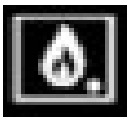
When the ignition control has tried unsuccessfully to complete the ignition operation 3 times, the appliance is blocked and the burner blocked signal is emitted. The Burner Blocked LED lights up until the user presses the Reset gas button. This will restart a new sequence of three ignition attempts.

15.16. RESET GAS (after 01/01/2016)

When the ignition control has tried unsuccessfully to complete the ignition operation 3 times, the appliance is blocked and the burner blocked signal is emitted. The appliance will display ERROR-14 until the user switches the appliance off and on by pressing ON/OFF, and a new sequence of three ignition attempts will be run.

15.17. WASH (from 01/01/2016)

The "Wash" function is activated by pressing Wash. The appliance must be in ON and Stop mode, the door of the chamber closed and the temperature of the chamber below 65 ºC. If the chamber temperature is more than 65 ºC, the message HIGH TEMP is displayed and the appliance requests that the door is opened to start a COOL DOWN cycle.



The cleaning programme starts with a dirt softening phase in Steam mode (to skip this phase, press Wash again), displaying the message WASHING. This process lasts 10 minutes. Next the oven displays the message ADD SOAP so that the user sprays detergent inside the chamber. After the detergent has been applied and the chamber door closed, the message PUSH START is displayed and the appliance continues with the cleaning process. Once the wash process has resumed, the appliance waits 4 minutes, displaying the message WASHING. After 4 minutes, the appliance moves on to the rinse phase during which it is in Steam mode, and the wash solenoid valve is activated for 5 seconds ON and 5 seconds OFF, and the message RINSING is displayed. The duration time of this phase depends on the size of the oven as follows:

- Model 061 – 8 minutes
- Model 101 – 8 minutes
- Model 102 – 10 minutes
- Model 201 – 15 minutes
- Model 202 – 20 minutes

On completion of the wash, the oven displays the message End.
To leave the wash programme, switch off the oven, pressing the OFF button or the Wash button. Otherwise, after one minute the oven will exit the wash mode automatically.
To abort the wash programme press the Star/Stop button and if the detergent spray phase has been reached, the oven will run a rinse cycle.
It is possible to abort the ongoing wash programme by pressing the START/STOP button at any point in the cycle. If it is pressed before adding the soap, the wash cycle will end automatically. If the soap has already been added, the rinse cycle will be run and the following messages displayed: "WASH STOP", "RINSE", "PUSH START"
When the START/STOP button is pressed, the wash programme resumes from the Rinse cycle.
If the oven has been switched off after the spraying of detergent, or there has been a power cut, the same procedure will apply and the rinse cycle will be resumed when the oven is switched on again.

There is a secret sequence for aborting the rinse cycle: VHM button pressed for 5 seconds.
Before using the oven to cook, make sure there are no traces of detergent or degreasing products inside the cooking chamber. Remove possible traces of chemicals and rinse the inside of the cooking chamber thoroughly with the hand shower.
Fagor Industrial recommends the use of the product KOIPERRE PLUS for this process. Other chemical processes may damage the appliance or its components.

15.17.1. KOIPERRE PLUS TECHNICAL SPECIFICATIONS

PRODUCT SPECIFICATIONS
Particularly suitable for the removal of fat and grease burnt onto the hot plates of industrial cookers, ovens, extractor hoods, etc.
Obtains a surprisingly quick and even removal of fat, eliminating the layers of grease.
The product should be used when the surface to be cleaned is warm to hot.
Spray product over the surface and leave to act for a few seconds.

REGISTRY
R. G. S.: 37.00043-BI
Reg. of Toxicology: SIT. A-532/01
Labelled in accordance with RD 255/03 and

COMPOSITION
*Amphoteric surfactant 4%
*Triacetic amine sodium salt 7%
*Excipient 9%

PICTOGRAM **C**

DOSAGE
It is dispensed: In a concentration of one part product and five parts water
If the oven is very dirty, use the product without diluting.

TECHNICAL DATA
*Physical State: Liquid
*Amber Colour
pH 13.8 (Alkaline)
*Density: 1.2
*Solubility: Completely soluble

PRESENTATION
6 Kg container, box of 5 containers
Keep in original packaging
Store away from direct sunlight

WARNING
R phrases:
R22 - Harmful if swallowed.
R35 - Causes severe burns.
S phrases:
S1/2 - Keep locked up and out of reach of children
S24/25 - Avoid contact with skin and eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S27 - Take off immediately all contaminated clothing.
S28 - In case of contact with skin, seek medical advice immediately (if possible, wash immediately with plenty of water)
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection
S45 - In case of accident or if you feel unwell, show the label
Biodegradable product, complies with legislation on biodegradable products

15.17.2. KOIPERRE PLUS SAFETY DATA SHEET

In accordance with standard ISO-11.014, RD 255/03 and RD 770/99
TOXICOLOGY REGISTRY: SIT NO. A-532/01
HEALTH REGISTRY No 37/0043- BI

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Name: Koiperre Plus.
Description: liquid detergent for removing burnt grease and fat on kitchen hot plates, ovens...
Manufacturer Identification: Jabones el Abra S.A.

2. PIPE IDENTIFICATION

Nature of hazard: Corrosive (highly alkaline).
Hazards for humans: Has corrosive action on skin and eyes, causing severe burns.
Environmental hazards: May make soil alkaline.
Effects on health: Burns on skin and eyes if not suitably rinsed.
Symptoms: Skin irritation, conjunctivitis.

3. COMPONENT COMPOSITION/INFORMATION

Components of risk

Substance	Nº CAS	Symbol	Frases R	Concentration Interval
Potassium hydroxide	1310-58-3	C	35.22	20-25%

Components: Amphoteric surfactant 4% Triacetic amine sodium salt 7% Excipient 9%.

4. FIRST AID

Contact with skin: Wash affected area with plenty of water.
Contact with eyes: Wash with plenty of water and seek medical advice.
If swallowed: Drink plenty of water and seek medical advice.

5. FIRE-FIGHTING MEASURES

Adequate fire-fighting resources: Plenty of water.
Specific hazards: Use protective clothing, goggles, suit, rubber boots, face mask to protect from flying objects.
Special fire-fighter protective equipment: Not inflammable or explosive.

6. MEASURES IN THE EVENT OF ACCIDENTAL SPILLS

Personal protection: Use face mask, rubber gloves and boots. Avoid contact with spilled product. Wear protective garments.
Environmental protection: Prevent the product from entering rivers or sewage network. Absorb with sand or earth. For final neutralisation, add very dilute acid.
Methods for disposal: After neutralising the product, take it to an authorised waste dump. Always use appropriate protective equipment.

7. HANDLING, STORAGE. AND USES

Handling: Personal protective equipment should prevent product coming into contact with the skin and eyes. Goggles, rubber gloves and boots.
Hazards due to
Contact with eyes: Conjunctivitis, burns.
Contact with skin: Burns.
Storage: Avoid moisture.
Incompatible materials: Aluminium, tin, zinc and chrome and lead alloys. It reacts with these elements dissolving them to produce aluminates, etc. This reaction results in wear and breaks in pipes, in kitchen equipment such as saucepans, etc.
Use: Use with spray.

8. CONTROLS AGAINST EXPOSURE/PERSONAL PROTECTION

Protection of hands: Protective rubber gloves.
Protection of eyes: Goggles or face screen.
Use suitable protective clothing, the product causes severe burns.
Personal exposure limit values:
VLA-EC:2 mg/m3
TLV-STEL:2 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Product: Liquid, amber colour.
Solubility: Totally soluble in water.
PH 13.8.

10. STABILITY AND REACTIVITY

Stability: Stable.
Incompatibilities: Reacts with aluminium, tin, zinc and its alloys.

11. TOXICOLOGICAL INFORMATION

Oral toxicity: LD 50 273 mg/Kg rat.
Dermal toxicity: LD 50 38 mg/Kg rabbit.
Inhalation: Irritation of respiratory tract. Pneumonitis and pulmonary oedema.
Contact with eyes: Causes severe burns. Damage may be irreversible. Causes conjunctivitis, pain and irritation.
Contact with skin: May cause ulcers or burns with tissue destruction.
Ingestion: Burns in mouth, throat and stomach. Causes vomiting of blood, abdominal pain, gastrointestinal perforation, diarrhoea, asphyxia and death.

12. ECOLOGICAL INFORMATION

Invertebrates
LC 50 2964 mg/l. 48 h. Daphnia.
Fish
LC 50 372 mg/l. 96 h rainbow trout.
LC 50: 1186 mg/l 96 h bluegill.
Algae
LC 50 2964 mg/l. 96 h chlorella vulgaris.
LC 50 1258 mg/l 96 h navicula.
Possible impact on, behaviour and destination in the environment: Makes soil and effluents alkaline. Prevent it from entering sewage network or reaching watercourses.

13. CONSIDERATIONS REGARDING ITS DISPOSAL

Product: Neutralise solutions with very dilute hydrochloric acid, flush effluent with plenty of water, controlling PH.
Containers: Wash with plenty of water. Never use for other products.

14. INFORMATION FOR THE USER

No special transport is required for this product. In line with current distribution.

15. REGULATORY INFORMATION

Labelled in accordance with RD 255/03 and RD770/99

Pictograms C
R phrases:
R22 Harmful if swallowed
R35 Causes severe burns

S phrases:
S1/2 Keep locked up and out of reach of children.
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S27 Take off immediately all contaminated clothing.
S28 In case of contact with skin, wash immediately with plenty of water.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (if possible, show the label).
Medical toxicology service: 915620420.

16. OTHER INFORMATION.

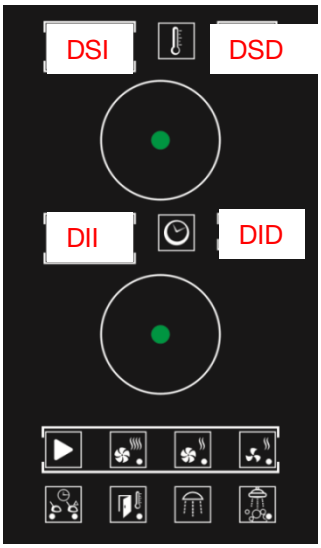
The information is based on our existing knowledge and the currently applicable laws in the EEC.
The recipient of this product must observe, under their own responsibility, the corresponding regulations and standards.
The product must not be handled under any circumstances.

15.18. DISPLAY STATE OF THE BURNER

In order to display the state of the convection burner, a dot lights up in the upper left display DSI whenever a flame is detected in the combustion box.

15.19. DISPLAY THERMOCOUPLE READING

When Cool Down, is pressed for more than 5 seconds, the value of all the thermocouples is displayed (Chamber probe, steam probe and core probe), together with the NTC, value. They are displayed as follows:
DSI = value TC
DSD = value TV
DII = value TN
DID = value NTC
The oven exits this function when the user releases the button, returning to the values with which it was operating.



DSI = Upper Left display
DSD = Upper right display
DII = Lower left display
DID = Lower right display

15.20. CALIBRATION

When this mode is entered, the following values are displayed:
DSI = [TC] / calibrated value of TC
DSD = [TV] / calibrated value of TV
DII = [TN] / calibrated value of TN
The thermocouple displays the calibrated value in flashing mode, indicating that the required value should be selected (-20÷20 ºC).
When the required value for a thermocouple has been selected, press Humidifier, to go the next thermocouple.
Then when the TN, value is confirmed, the selected values are saved and you return to the main menu.
In addition, press Cool Down to select the previous thermocouple, or to abort the operation if you are at the first thermocouple.

15.20.1. CALIBRATION PROCESS

To proceed to the Calibration process, an exterior temperature probe is used, mounted in the geometric centre of the cooking chamber. A grille installed in the centre of the tray guides can be used to secure the exterior temperature probe in place.

- Set the appliance to Steam mode until the temperature has stabilised. This phase may last 15 to 20 minutes. It is important that the temperatures of the components and hotplates of the cooking chamber are stabilised.
- Compare the reading from the exterior thermometer with the temperatures displayed and take into account the difference between the external thermocouple reading (external thermometer) and the reading shown on the display. The display should show values close to 99 ºC.
- The display shows the calibrated value in flashing mode, indicating that the required value should be selected (-20 ÷ 20). Apply the difference between the reading on the display and the external temperature probe.
- Enter SAT mode, pressing the Cool Down and Humidify buttons for more than 5 seconds.
- The display should show:
    - DSI – CAL

- DSD – Differential TC (-20 - 20 ºC)
- DII – TV
- DID – Differential TN (-20 - 20 ºC)

- Use the Humidify button to scroll forward through the different probes and the Cool Down button to scroll back.
- Use the Time Selection Encoder to allocate the difference observed between the reading from the exterior probe (exterior thermometer) and the temperature shown on the display.
- Example: Exterior probe reading (exterior thermometer) 97 ºC. Reading on display 99 ºC. Apply a correction factor of -2ºC using the Time Selection Encoder.
- After selecting the value, press the Humidify button and go to the next probe. Press Cool Down to select the previous probe or to cancel the operation if the first probe is selected.
- When the TN value is confirmed, the selected values are saved and you return to the Main Menu.

15.21. SETTINGS (Configuration)

This function is protected by a secret sequence. The Cool Down and Humidifier button should be held down for more than 5 seconds. Then disconnect the outputs and enter the configuration menu (option 1); the following values are displayed:

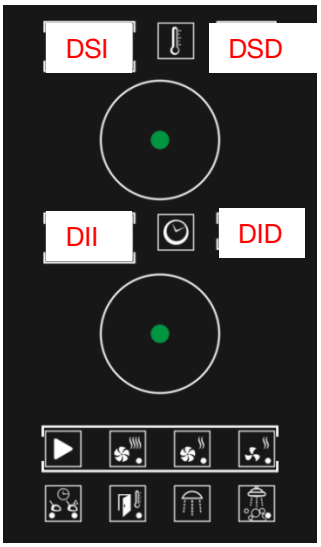
- DSI [OPT]
- DSD [OPX]
- DII [nomenclature]
- DID [value]

Use the Temperature selector, o browse through the menu and the Time selector to select the required option within each option. To confirm the selection, press the button Humidifier.
As a general rule, the meaning of each button when using the menus is given below:

o Humidifier: Enter / Confirm / Forward
o Cool down: Exit / Back
o Humidifier for 5 seconds: Change

To exit the menu, select the option EXIT. The oven returns to normal operating mode.

DSI – Upper Left display
DSD = Upper right display
DII = Lower left display
DID- Lower right display



15.21.1. SECTIONS AND OPTIONS OF SETTINGS MENU.

ELECTRIC/GAS
This configures the oven as electric or gas.
DSI = [OPT]
DSD = [OP1]
DII = [E-G]
DID = [ELE] (Electric oven. Default setting)
[GAS] (Gas oven)

MODEL
This configures the size of the oven.
DSI = [OPT]
DSD = [OP2]
DII = [MOD]
DID = [061]
[101]
[201] (Default setting)
[102]
[202]

ºC / ºF
This permits the selection of the required temperature scale.
DSI = [OPT]
DSD = [OP3]
DII = [C-F]
DID = [C] (ºC Default setting)
[F] (ºF)

CONDENSATION
Enables configuration of condensation cycle. It is possible to select how long the condensation is required to be active for every 10 seconds of the cycle
DSI = [OPT]
DSD = [OP4]
DII = [CND]
DID = [0 ÷10 seconds] (Default setting 2)

CALIBRATION
Option for starting the thermocouple calibration process. To enter, press Humidifier
DSI = [OPT]
DSD = [OP5]
DII = [CAL]
DID = [INI]

When this mode is entered, the following values are displayed:
DSI = [TC] / calibrated value of TC
DSD = [TV] / calibrated value of TV
DII = [TN] / calibrated value of TN

SAT TEST
Option allowing the oven to be set in SAT test mode. To enter, press Humidifier
DSI = [OPT]
DSD = [OP6]
DII = [SAT]
DID = [INI]
To exit this mode go to OUT and confirm with Humidifier

The available inputs/outputs in the oven can be checked and tested individually. When in this mode, select the required input/output using the temperature selector.
For outputs, use Humidifier to activate the output in question, and Cool Down deactivate it.
For inputs, the status of the selected input is displayed (Yes/No if it is an input which may be active/not active, the value of the input, etc.)

INPUTS FOR TESTING
If this is a thermocouple, the value it is measuring is shown, or OUT if it does not work. The DID is used to indicate the input status.

- Chamber probe (TC) DSI =[SAT], DSD=[E1], DII=[TC], DID=value
- Steam output probe (TV) DSI=[SAT], DSD=[E2], DII=[TV], DID=value
- Core probe (TN) DSI=[SAT], DSD=[E3], DII=[TN], DID=value
- Resistance NTC DSI=[SAT], DSD=[E4], DII=[NTC], DID=value
- Door contactor (IP). DSI=[SAT], DSD=[E5], DII=[IP], DID=[YES/NO]
- Gas control signal (HALL). To read the burner blower input, first activate the PWM output with the blower speed selected. (Only in gas ovens).
  DSI=[SAT], DSD=[E6], DII=[HAL], DID = fan speed x 100
- Variator frequency input (A.E.). To read the variator input, first activate the A.S. output with the speed selected.
  DSI=[SAT], DSD=[E7], DII=[AE], DID= fan speed x 100

OUTPUTS FOR TESTING

- Chamber heating (CC1) DSI=[SAT], DSD=[S1], DII=[CC1], DID=[YES/NO]
- Chamber heating (CC2) DSI=[SAT], DSD=[S2], DII=[CC2], DID=[YES/NO]
- Fan on (M/P) DSI=[SAT], DSD=[S3], DII=[MP], DID=[YES/NO]
- Fan direction (I/D) DSI=[SAT], DSD=[S4], DII=[ID], DID=[LEF/RIG]
- Condensation solenoid valve (VCN) DSI=[SAT], DSD=[S5], DII=[VCN], DID=[YES/NO]
- Humidifier solenoid valve (VHM) DSI=[SAT], DSD=[S6], DII=[VHM], DID=[YES/NO]
- Fluepipe motor (Ms/Mb) DSI=[SAT], DSD=[S7], DII=[MSB], DID=[MS/MB]
- Main supply relay (RG) DSI=[SAT], DSD=[S8], DII=[RG], DID=[YES/NO]
- Fan (VE) DSI=[SAT], DSD=[S9], DII=[VE], DID=[YES/NO]
- Oven lighting (LZ) DSI=[SAT], DSD=[S10], DII=[LZ], DID=[YES/NO]
- Buzzer (TA) DSI=[SAT], DSD=[S19], DII=[TA], DID=[YES/NO]

All the outputs are in OFF mode, and switch to ON when activated by the user.

LOG
Option for viewing the oven log. To enter, press Humidifier.
DSI = [OPT]
DSD = [OP7]
DII = [HIS]
DID = [INI]
The following data has been saved in the log. They should be displayed as follows if you enter view data. To go from one section to the next, use the temperature selector.

Steam hours Total hours of operation in Steam mod
DSI = [HIS], DSD = [HMS], DII+DID = value

Mixed hours Total hours of operation in Mixed mode
DSI = [HIS], DSD = [HMM], DII+DID = value

Convection hours Total hours of operation in Convection mode.
DSI = [HIS], DSD = [HMC], DII+DID = value

No CC1 Cycles Number of CC1 cycles.
DSI = [HIS], DSD = [CC1], DII+DID = value

No CC2 Cycles Number of CC2 cycles.
DSI = [HIS], DSD = [CC2], DII+DID = value

No VCN Cycles Number of VCN cycles.
DSI = [HIS], DSD = [CCN], DII+DID = value

No Ms/Mb Cycles Number of Ms/Mb cycles.
DSI = [HIS], DSD = [CMS], DII+DID = value

No VHM Cycles Number of VHM cycles.
DSI = [HIS], DSD = [CHM], DII+DID = value

No LZ Cycles Number of LZ cycles.
DSI = [HIS], DSD = [CLZ], DII+DID = value

No VE Cycles Number of VE cycles.
DSI = [HIS], DSD = [CVE], DII+DID = value

No RG Cycles Number of RG cycles.
DSI = [HIS], DSD = [CRG], DII+DID = value

No R/L Cycles Number of R/L cycles.
DSI = [HIS], DSD = [CDI], DII+DID = value

No M/P Cycles Number of M/P cycles.
DSI = [HIS], DSD = [CMP], DII+DID = value

No IP Cycles Number of IP cycles.
DSI = [HIS], DSD = [CIP], DII+DID = value

No of Cold Down cycles Number of Cold Down cycles.
DSI = [HIS], DSD = [CCD], DII+DID = value

Programme hours Reliability 1 Total hours in Reliability 1 programme
DSI = [HIS], DSD = [HF1], DII+DID = value (see pag. 14-22 for further Info)

Programme hours Reliability 2 Total hours in Reliability 2 programme
DSI = [HIS], DSD = [HF2], DII+DID = value (see pag. 14-22 for further Info)

Programme hours Reliability 3 Total hours in Reliability 3 programme
DSI = [HIS], DSD = [HF3], DII+DID = value

Programme hours Reliability 4 Total hours in Reliability 4 programme
DSI = [HIS], DSD = [HF4], DII+DID = value

TC Max Maximum temperature of TC. (Chamber thermocouple)
DSI = [HIS], DSD = [TCM], DII+DID = value

TV Max Maximum temperature of TV. (Steam output thermocouple)
DSI = [HIS], DSD = [TVM], DII+DID = value

TN Max Maximum temperature of TN (Core probe thermocouple)
DSI = [HIS], DSD = [TNM], DII+DID = value

Reset Option to reset all log parameters.
DSI = [HIS], DSD = [RST], DID = [INI]

EXHIBITION

Option allowing the oven to be set in Exhibition mode. To enter, press Humidifier.
DSI = [OPT]
DSD = [OP8]
DII = [SHO]
DID = [INI]
To exit this mode, return to the SETTINGS menu (Cool Down and Humidify together every 5 seconds), go to option 24 OUT and confirm by pressing Humidify.
When the oven is operating in Exhibition mode, only the Interface and the RG and LZ, outputs should operate, all other inputs/outputs are disabled and all errors are ignored. The values of the TC and TN probes are fixed.
To indicate that the oven is in exhibition mode, the last dot of the remaining time remains fixed. The behaviour of the interface is as in true mode.

SERIAL NO

Option allowing the serial number of the over to be entered or displayed. An alphanumeric sequence of up to 10 characters may be used.
DSI = [OPT]
DSD = [OP9]
DII = [SN]
DID = [INI]

To display, press Humidifier, press again to return to the main menu. The ten alphanumeric characters are distributed as follows:
DSI = [C1C2C3]
DSD = [C4C5C6]
DII = [C7C8C9]
DID = [C10]

To change the value already entered, hold down the Humidifier button for 5 seconds until the first character starts to flash. It is now possible to change the 10 pre-established characters. To change the character in question, use the time selector. Press the Humidifier button to confirm and move to the next character. To go to the previous character, press Cool Down. If you are at the first character this will take you to the main menu.

TEST No

Option enabling oven test number to be entered or displayed A 3-digit sequence can be entered.
DSI = [OPT]
DSD = [O10]
DII = [CN]
DID = [XXX]

SOFTWARE VERSION

This displays the software version included with the oven. The version uses 12 numbers, PPCCVVGGG'G', with the following meaning:

- PP Software version of the control holder card.
- CC Software version of the chamber card.
- VV Software version of the steam or boiler card. This card is not supplied with the CONCEPT range and therefore no value is displayed
- GG: Software version of the gas card. For electric ovens, no value is displayed

DSI = [OPT]
DSD = [O11]
DII = [VER]
DID = [INI]

To display the version, press Humidifier, and view as follows:
DSI = [PPC]
DSD = [CVV]
DII = [GG]
To exit this mode, press Cool Down.

GAS TYPE (ONLY AGC)

As different types of gas are used (LPG B/P, NG) the Burner Fan Speeds should be adapted to obtain optimum combustion. In this section select the gas to be used. Depending upon the model of oven and type of gas selected, certain default values are established for the starting speeds, minimum and maximum power .
DSI = [OPT]
DSD = [OP12]
DII = [GAS]
DID = [BP] (Butane-propane) (Default setting)
[NG] (Natural Gas)
[GV] (City Gas)

START-UP SPEED OF CC BLOWER (ONLY AGC)

Option for changing the pre-established starting speed of the chamber blower. This value may range between 0 and 8000 in multiples of 10.
DSI = [OPT]
DSD = [O14]
DII = [SC1]
DID = [0 ÷ 800] (Default settings, see table of default speeds)

MEDIUM SPEED OF CC BLOWER (ONLY AGC)

Option for changing the pre-established minimum speed of the chamber blower. This value may range between 0 and 8000 in multiples of 10.
DSI = [OPT]
DSD = [O16]
DII = [mC1]
DID = [0 ÷ 800] (Default settings, see table of default speeds)

MAXIMUM SPEED OF CC BLOWER (ONLY AGC)

Option for changing the pre-established maximum speed of the chamber blower. This value may range between 0 and 8000 in multiples of 10.
DSI = [OPT]
DSD = [O17]
DII = [MC1]
DID = [0 ÷ 800] (Default settings, see table of default speeds)

TABLE OF DEFAULT BLOWER SPEEDS

	NATURAL GAS (G20)	LPG (B/P) (G30/31)	CITY GAS (G-110)
ACG-061	Start-up: 4000 Medium: 4200 Maximum: 6500	Start-up: 4000 Medium: 3600 Maximum: 5400	Start-up: Medium: Maximum:
ACG-101	Start-up Speed: 5000 Medium: 4000 Maximum: 7500	Start-up: 5000 Medium: 3600 Maximum: 6000	Start-up: Medium: Maximum:
ACG-201	Start-up: 4000 Medium: 4200 Maximum: 8000	Start-up: 4000 Medium: 3800 Maximum: 6200	Start-up: Medium: Maximum:
ACG-102	Start-up: 4000 Medium: 4000 Maximum: 8000	Start-up: 4000 Medium: 3500 Maximum: 6100	Start-up: Medium: Maximum:
ACG-202	Start-up: 4000 Medium: 3800 Maximum: 8000	Start-up: 4000 Medium: 3500 Maximum: 6000	Start-up: Medium: Maximum:

RELIABILITY

Option permitting the oven to be changed to Reliability mode in order to check the reliability of the different components of the oven. To do so, one of the four pre-established programmes should be selected.
DSI = [OPT]
DSD = [O22]
DII = [FIA]
DID = [1÷ 5] (Default setting 1)
To exit this mode, press the Cool Down and Humidifier buttons together for 5 seconds.

Reliability programme 1

This is the sequence which should be repeated:
- 8 minutes Convection Mode at 120 ºC.
- 8 minutes Mixed Mode at 110 ºC.
- 8 minutes Steam Mode.

Display: True operating parameters
The true value of the thermocouples can be displayed by pressing Cool Down for 5 seconds..

Reliability programme 2

The oven will operate in Convection Mode at 300 ºC. The fluepipe is activated every 30 seconds, going up or down depending upon the initial position.
Display:
DSI = value TC
DSD = 300
DII and DID = No of fluepipe cycles
The true value of the thermocouples can be displayed by pressing Cool Down for 5 seconds.

Reliability programme 3

The oven operates in Convection Mode at 300ºC.
Display:
DSI = value TC
DSD = 300
DII = value NTC
DID = This indicates whether the VE output is active or not. [ON] / [OFF]
The true value of the thermocouples can be displayed by pressing Cool Down for 5 seconds.

Reliability programme 4

The oven operates in Mixed Mode at 250ºC. Every 30 seconds the direction of the fan is changed with R/L.
Display:
DSI = value TC
DSD = 250
DII = M/P
DID = R/L
The true value of the thermocouples can be displayed by pressing Cool Down for 5 seconds.

FACTORY PARAMATERS

Option to return to factory configuration of the oven.
DSI = [OPT]
DSD = [O23]
DII = [DEF]
DID = [INI]
These are the values which are reset (default values):
- Electric/Gas (Elec)
- Model (201)
- ºC/ºF (ºC)
- Condensation (2 seconds)
- Gas type (BP)
- Speed of blowers (Main. Sp. =30, Start Sp.=30, Min Sp.=30, Max Sp.=60)

EXIT

To exit the menu and return to the oven's normal operating mode, press Humidify
DSI = [OPT]
DSD = [O24]
DID = [OUT]

15.22. TYPES OF FAULT

When an error occurs:

- The bell rings intermittently.
- The code and error identification are displayed in the oven windows.
- If the START/STOP, button is pressed, the error message continues to be displayed but the bell stops ringing.
- When the fault causing the error is removed, the outputs return to normal operation.

The errors which may occur in the oven are listed below, together with the message displayed and the impact on the operation of the oven.

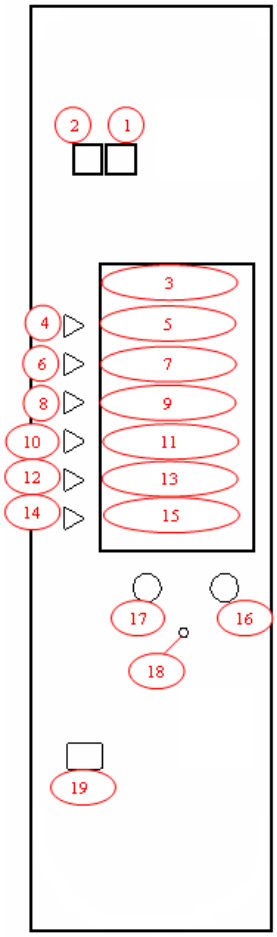
ERROR	DESCRIPTION	CONSEQUENCE
001	Camera probe broken. TC out of range (-5÷330 ºC).	The oven is completely disabled.
002	Core probe (TN) damaged. TN out of range (-10÷330 ºC).	The spike and delta function is disabled.
003	Steam outlet temperature probe (TV) faulty. TV out of range (-5÷330 ºC).	It is only possible to operate in Convection mode, omitting water condensation.
010	If the VHM outlet is activated and TV does not rise 3 or more degrees in 2 minutes, if TV<=75 ºC.	It is only possible to operate in Convection mode.
011	The CC output operates for 23 minutes and TC does not rise 3 or more degrees. (Tc=T Setting -10ºC).	The oven is completely disabled.
012	The NTC of controller reaches 60 ºC, but does not exceed 70 ºC.	The oven operates normally and the bell is not heard. This message should be displayed every 3 minutes for 30 seconds.
013 (only ACG)	Chamber blower error.	The oven is completely disabled.
014 (only ACG)	Chamber ignition control blocked.	The oven is completely disabled.
015 (ACG)	Fault in the chamber ignition circuit.	The oven is completely disabled.
022	The NTC of controller exceeds 70 ºC.	The oven is completely disabled.
024	Communication error. The chamber card does not respond.	The oven is completely disabled.
025	Communication error. The control holder card does not respond.	The oven is completely disabled.

15.23. ACRONYMS

TC: Chamber probe
TV: Steam output probe
TN: Core probe
IP: Door switch
HALL: Gas control signal
A.E.: Variator frequency input
CC: Chamber heating
M/P: Fan motor Start/Stop
R/L: Fan motor direction of rotation (left/right)
VCN: Condensation solenoid valve
VHM: Humidifier solenoid valve
Ms/Mb: Chimney motor
RG: Main supply relay
VE: Fan
LZ: Chamber light
TA: Warning bell
PWM: Gas control signal
A.S.: Variator frequency output
ACE: Electric injection oven
ACG: Gas convection oven

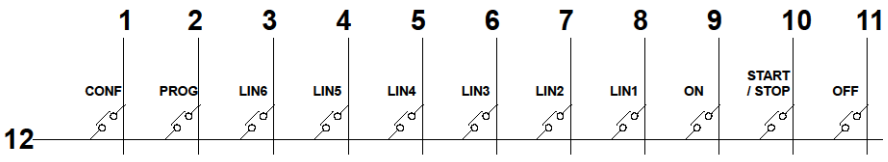
16. USE OF ADVANCE AE & AG OVEN

16.1. AE & AG ELECTRIC OVEN CONTROL PANEL (until 01/01/2016)



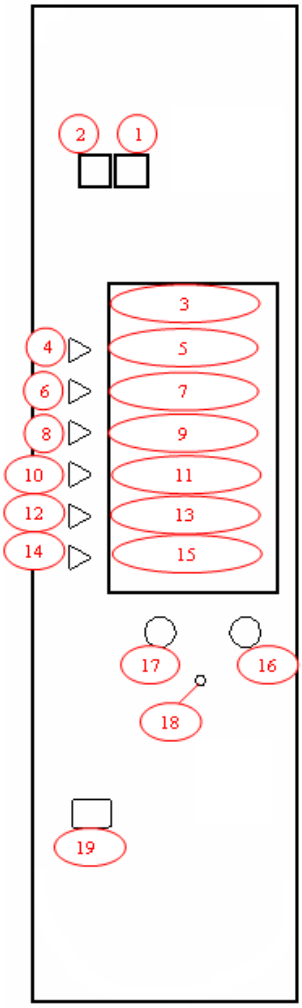
1-Turning the oven on
2- Turning the oven off
3 - General information text
4 - Cooking mode selector switch
5 - Cooking mode display
6 - Temp. setting selector
7 - Chamber temperature display / Chamber temperature setting
8 - Time or core temperature setting selector button
9 - Remaining time or Core temp./ time setting or core temp display
10 - (Time/Spike/Delta) function selector button
11- (Time/Spike/Delta) function display
12 - Power / Speed selector button
13 - Power / Speed display
14- Special options selector button
15 - Special Options display
16- Delayed programming selector
17- Configuration/Delayed Programming selector switch
18- General Option Knob
19 - Start / Stop button

The interface designed for **ADVANCE**, ovens, with 11 buttons, a wheel with general purpose button and a 153x89 mm display lit from behind with a white backlight.
There is a main ON/OFF switch for switching the oven on/off, in addition to the START/STOP button so that the oven starts or stops to adjust the settings.
There are also 2 buttons providing access to the Delayed Programming function or the Configuration of the System functions, listed below. The remaining buttons allow the selection of the required line, rotating between the icons on the row or selecting the display value shown using the available wheel. During the selection process, the icon or display selected flashes (the name of the selected icon is displayed in the upper text), while the other icons in the row are fixed. When the icon or required value has been selected, press the wheel to confirm the selection. If confirmation is not received within 10 seconds from the last rotation of the wheel or the selection of the row, the value or option selected will be confirmed.



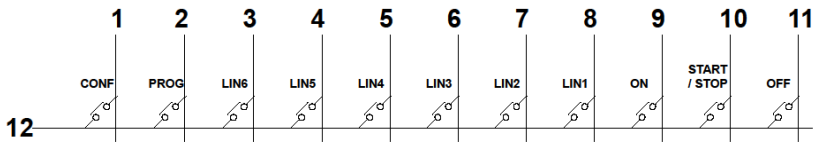
ESQUEMA ELÉCTRICO

16.2. AE & AG ELECTRIC OVEN CONTROL PANEL (from 01/01/2016)



1-Turning the oven ON
2 - Turning the oven "OFF"
3 - General information text
4 - Cooking mode selector switch
5 - Cooking mode display
6 - Temp. setting selector
7 - Chamber temperature display / Chamber temperature setting
8 - Time or core temperature setting selector button
9 - Remaining time or Core temp./ time setting or core temp display
10 - (Time/Spike/Delta) function selector button
11- (Time/Spike/Delta) function display
12 - Power / Speed selector button
13 - Power / Speed display
14- Special options selector button
15 - Special Options display
16 - Wash selector switch
17- Configuration/Delayed Programming selector switch
18- General Option Knob
19 - Start / Stop button

The interface designed for **ADVANCE**, ovens, with 11 buttons, a wheel with general purpose button and a 153x89 mm display lit from behind with a white backlight.
There is a main ON/OFF switch for switching the oven on/off, in addition to the START/STOP button so that the oven starts or stops to adjust the settings.
There are also 2 buttons providing access to Wash or System Configuration. The remaining buttons allow the selection of the required line, rotating between the icons on the row or selecting the display value shown using the available wheel. During the selection process, the icon or display selected flashes (the name of the selected icon is displayed in the upper text), while the other icons in the row are fixed. When the icon or required value has been selected, press the wheel to confirm the selection. If confirmation is not received within 10 seconds from the last rotation of the wheel or the selection of the row, the value or option selected will be confirmed.



ESQUEMA ELÉCTRICO

16.3. ON/OFF

To start the oven, press **ON** and to switch it off, press **OFF**. Each time that the oven is switched on, the last-used values are displayed. If this is the first time the oven is switched on, the defect values are displayed.

When the oven is off, only the clock icon and the first line of characters is visible, displaying the date and the time in DD-MM-YY HH:MM, format, and using the 15 available characters.

16.4. DISPLAY

The oven display has 4 numbers formed of 7-segment, 15-character displays used to provide information to the user and 17 icons, each of which can only be lit up or left shaded.

- Text (1st row centre) Text enabled to display varied information:
  - Configuration sections
  - Delayed programming
  - Warnings (Door open, load food)
  - Errors
  - Oven mode (Cooking or Stopped). This information is always displayed unless any of the above points are being displayed.

- Operating mode (2nd row) Select mode user requires for oven.

  The different available options:

  - Convection 
  - Mixed 

- Regeneration
- Controlled 
- Steam 

- Temperature selector button (3rd row) Selects operating temperature. Displays temperature setting selected by user and true temperature of chamber (chamber probe).

- Time selector button (4th row) Selects operating time in hours and minutes. Displays time selected (maximum 19 hours – 59 minutes) and remaining time.

- Time Function-Spike Function-DELTA Function selector button (5th row) Selects the different functions Time/Spike/DELTA.

  The different available options:
  - Time Function
  - Spike Function
  - DELTA Function

- Heating power and fan speed (6th row) Selects heating power and fan speed.

  The different available options:
  - Maximum power, Maximum speed
  - Medium power/ maximum speed
  - Medium power/ medium speed
  - Medium power/ minimum speed

- Special functions selector switch (7th row): Special function selector switch.

  The different available options:
  - Cool down
  - Humidifier
  - Descaling
  - Gas burner block (only gas models). The upper text indicates which burner is locked.

When the oven is switched on, it adopts the last used parameters.
If the function is changed, the values of the function being used are stored and are reloaded if you return to this function.

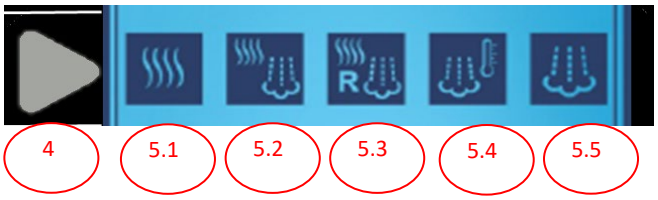
16.4.1. GENERAL INFORMATION TEXT

Text enabled to display a variety of information:
- Wash.
- Configuration sections.
- Delayed programming.

- Warnings (Door open, load food,…)
- Errors:
- Oven mode (Cooking or Stopped). This information is always displayed unless any of the above points are being displayed.

16.5. SELECTION OF COOKING MODES

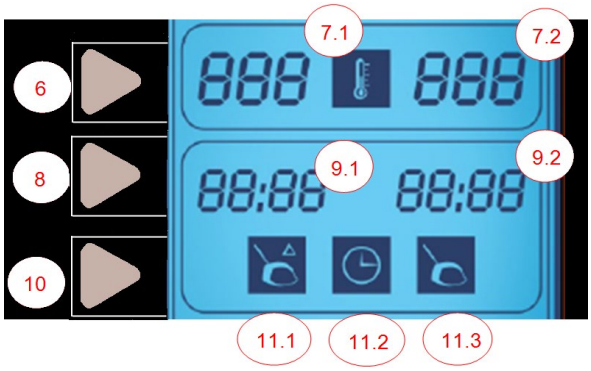
By pressing the Cooking Mode selector, the mode selector option is activated. Now turn the Main Selector button to select the required cooking mode. To maintain the selected option, press the General Option button or the Cooking Mode selector.



- 4 COOKING MODE SELECTOR SWITCH
- 5.1 CONVECTION: The oven is only heated with hot air (dry heat). (Operating range 20 - 300 ºC. The default setting is 160 ºC).
- 5.2 MIXED: Heating uses hot air and steam simultaneously, but with more power in the hot air. (50% humidity. (Operating range 20 - 250 ºC. The default setting is 140 ºC).
- 5.3 REGENERATION: Heating uses hot air and steam simultaneously, but with more power in the steam (80% humidity). (Operating temperature 20 - 180 ºC The default setting is 120 ºC).
- 5.4 CONTROLLED STEAM: Heating uses steam and it is possible to select a range of temperatures from 35 to 125 ºC. At temperatures of above 100 ºC, the heating alternates between steam and convection. (Operating temperature 35 - 125 ºC. The default setting is 80 ºC).
- 5.5 STEAM: Heating is from steam produced from water at 99 ºC and at atmospheric pressure, produced in a steam generator. Operating temperature 0 ÷ 99 ºC The default setting is 99 ºC).

The fluepipe opens automatically in convection mode. In all other modes it remains closed.

16.6. TEMPERATURE AND TIME / SPIKE / DELTA SELECTION



6 – Temperature Setting Selector
7.1 – Real Temperature
7.2 – Temperature Setting
8 – Time Selector
9.1 – Remaining Time
9.2 – Time Setting
10 – Time Setting, Spike and Delta Probe Selector
11.1 – Delta Mode
11.2 – Time Mode
11.3 – Spike probe Mode

16.7. TEMPERATURE SELECTION

The oven temperature is selected by pressing the Temperature setting selector and turning the General Option Knob to the required temperature. Confirm this value by pressing the Time Selector again or by pressing the General Option Knob.
The true temperature of the oven is shown on the control panel.
The clock (countdown) is displayed in the Time Remaining window.
After selecting the Cooking Mode and closing the door, press the START/STOP button and the oven will start to operate with the parameters shown.
The temperature range and defect values for each operating mode are listed below:

Convection	Mixed	Regeneration	Controlled steam	Steam
Range [20÷300] ºC	Range [20÷250] ºC	Range [20÷180] ºC	Range [35÷125] ºC	Range [99 ºC]
160 ºC (default setting)	140 ºC (default setting)	120 ºC (default setting)	80 ºC (default setting)	99 ºC (default setting)

- True temperature of the chamber (Left-hand number). Shows True Temperature of the oven (given by the chamber probe). The true temperature range is from -5÷330 ºC. An error is displayed if the probe indicates a value outside the established range.
- Temperature Setting in chamber (Right-hand number) Shows chamber Temperature selected by the user.

16.8. TIME SELECTION

To select the time function, press Function Selector. All the options are lit and the selected option flashes. Turn the General Option Knob to change the selection and select the Time option. To confirm the selected option, press either the Function Selector button or the Main Selector.
Select the cooking time by pressing the Time Selector and turning the Main Selector until the required time is obtained. Confirm this value by pressing the Time Selector again or the General Option Knob.
When the time reaches 0, the number starts to flash, the horn is heard and the light flashes in time with the horn until the door is opened or for a maximum of 30 seconds. If the door is not opened, the acoustic/visual warning is repeated for 30 seconds every 3 minutes.

- **Time remaining** (Left-hand number) This shows the time remaining in hours and minutes until the selected cooking mode is completed. The time deceases every minute. The time is displayed as follows: HH:MM.
- When the time reaches 0 the buzzer is heard until the button on the wheel or the START/STOP button is pressed, the door is opened or after 30 seconds If the door is not opened, or if the button on the wheel or the START/STOP button is not pressed, the acoustic/visual warning is repeated for 30 seconds every 3 minutes. When the door is opened or either of the 2 buttons is pressed, the remaining time is automatically re-established, loading the stipulated times.
- **Time setting** (Right-hand number) Time setting selected by the user. The maximum selection time is 19 hours and 59 minutes.
- If the oven is on and the time setting is changed, the remaining time will vary in the same proportion as the temperature setting is increased / decreased.
- If it is decreased while the value is at 0, it switches to indefinite mode first and then to preheating mode. If the latter mode is entered (by pressing the START/STOP, the oven is preheated to the setting temperature and the buzzer is heard (30'' every 3') when the established temperature is reached.

16.9. PRICK PROBE FUNCTION

To select the function, press Function Selector. All the options are lit and the selected option flashes. Turn the General Option Knob to change the selection and select the Core Spike Probe option. To confirm the selected option, press either the Function Selector or the General Option Knob.
When the Core Spike Probe function has been selected, insert the spike into the food and close the oven.
The Time Setting display indicates the Set temperature selected for the core of the product to be cooked. To change it, press Time Setting, Spike and Delta Probe Selector and change the value using the General Selector.
To confirm the new temperature value for the core spike probe function, press the Time Setting, Spike and Delta Probe Selector or the General Selector.
The Time remaining display indicates the True temperature at the core of the food.
To select the oven temperature, press the Temperature setting selector and select the required temperature by turning the General Option Knob. Confirm the temperature by pressing the Time Setting, Spike and Delta Probe Selector or the General Selector.
The True Temperature display indicates the True Temperature of the oven.
Next select the cooking mode as described in the previous paragraph.
After selecting the parameters, press the START/STOP button and the oven starts to work.
The range of temperatures available in core spike probe mode are as follows:

Convection	Mixed	Regeneration	Controlled steam	Steam
Range [20÷300] ºC	Range [20÷250] ºC	Range [20÷180] ºC	Range [35÷125] ºC	Range [99 ºC]

16.10. DELTA FUNCTION

The Delta Function operates with a difference between the core temperature and the oven temperature (50 ºC default setting).
To select it, press Function Selector. All the options are lit and the selected option flashes. Turn the General Option Knob to change the selection and select the Delta option. To confirm the selected option, press either the Function Selector button or the General selector Knob.
The oven temperature is always 50 ºC higher than the temperature recorded by the core probe with the Delta Function.
When the Delta Function has been selected, insert the spike into the food and close the oven.
The Time Setting indicates the core temperature of the product to be cooked. To change it, press Time Setting, Spike and Delta Probe Selector and change the value using the General Selector. To confirm the new temperature value for the Delta function press the Time Setting Selector or the General Selector.
The Time remaining display indicates the True temperature at the core of the food.
The Temperature Setting displays indicates a value 50 °C higher than the true core temperature and the True temperature indicates the true temperature of the oven.
Next select the cooking mode as described in the previous paragraph.
After selecting the parameters, press the START/STOP button and the oven starts to work.
The range of temperatures available in Delta mode are as follows:

Convection	Mixed	Regeneration	Controlled steam	Steam
0 ºC-99 ºC	0 ºC-99 ºC	0 ºC-99 ºC	0 ºC-99 ºC	0 ºC-49 ºC

16.11. HEATING POWER AND FAN SPEED

The Heating Power and Fan Speed of the oven are selected by pressing the Power and Speed Selector and turning the General Selector to obtain the required option. Confirm this value by pressing the Time Selector again or by pressing the General Option Knob.

12 - Power / speed selector button.
13.1 - Maximum power / maximum speed display.
13.2 - Average power / maximum speed display.
13.3 - Average power / average speed display
13.4 - Average power / minimum speed display.

16.12. AUXILIARY FUNCTIONS (until 01/01/2016)

The Auxiliary Function of the oven is selected by pressing the Auxiliary Function Selector. All the Auxiliary Options light up and the General Selector is turned until obtaining the required option. Confirm this value by pressing the Time Selector again or by pressing the General Option Knob.

14 - Auxiliary Options Selector button
15.1 - Cool down display
15.2 - Humidifier display
15.3 - Descaling display
15.4 - Burner blocked display (GAS models)

16.13. AUXILIARY FUNCTIONS (from 01/01/2016)

The Auxiliary Function of the oven is selected by pressing the Auxiliary Function Selector. All the Auxiliary Options light up and the General Selector is turned until obtaining the required option. Confirm this value by pressing the Time Selector again or by pressing the General Option Knob.

14 - Auxiliary Options Selector button
15.1 - Cool down display
15.2 - Humidifier display
15.3 - Descaling display
15.4 - Wash display

16.14. COOL DOWN

To cool the cooking chamber, proceed as follows:
With the door closed and the oven temperature higher than 45 ºC, press the Auxiliary Function Selector. Use the General Options Selector to select the option COOL DOWN. Confirm the option by pressing the Auxiliary Options Selector or the General Options Selector.
Next open the door.
The fan starts. When the chamber temperature reaches 45ºC, the fan stops automatically.
The cooling cycle can be stopped by pressing the START STOP button again OR by closing the door, and the Cool Down indicator will go out.

Warning: Do **not** cool the oven by directly applying cold water in the tub.
SAFETY MEASURES: The fan cover and the tray guides must be correctly fastened in place during this cycle.

16.15. HUMIDIFIER

To activate the humidifier, press the Auxiliary Options Selector. All the Auxiliary Options light up. Use the General Selector to select the option Humidify Button. Confirm the option by pressing the Auxiliary Options Selector or the General Options Selector.
The moisture inlet only operates when the door is closed and the oven is in START mode (in STOP mode the signal is ignored).
Bakery products rise very well using this function thanks to the rapid entrance of moisture. It also gives baked products a gentle shine.
It should be used for short periods of time.

16.16. DESCALING

When the oven automatically detects excess lime scale in the pipes, a message is sent via the display General Information Text informing of the need to descale.
The text DESCALING flashes on the display. The speed of the flash increases with the need for decaling, and when descaling is obligatory the message is permanently lit (at this point the oven only operates in convection mode).

The descaling function is performed by the SAT. Therefore if the oven requires descaling please contact the maintenance technician.

To descale, enter the function by pressing the Auxiliary Function Selector and select the option DESCALE. Confirm the option by pressing the Auxiliary Function Selector or the General Selector.

16.16.1. LIME SCALE SATURATION DETECTOR

In any operating mode, if the TG probe reaches:

- 125 ºC ➔ The message DESCALE is displayed in the upper text of the screen, and flashes every two seconds.
- 140 ºC ➔ The message DESCALE is displayed in the upper text of the screen, and flashes every one second.
- 155 ºC ➔ The message DESCALE is displayed in the upper text of the screen, and flashes every ½ second.
- 180 ºC ➔ The message DESCALE is displayed continuously in the upper text of the screen, and the oven only operates in Convection mode.

Once the message DESCALE has been displayed, it will not disappear until descaling takes place, even though the TG temperature falls or if the oven is switched off. The message reappears when the oven is switched on.

16.16.2. PROCEDURE FOR DESCALING

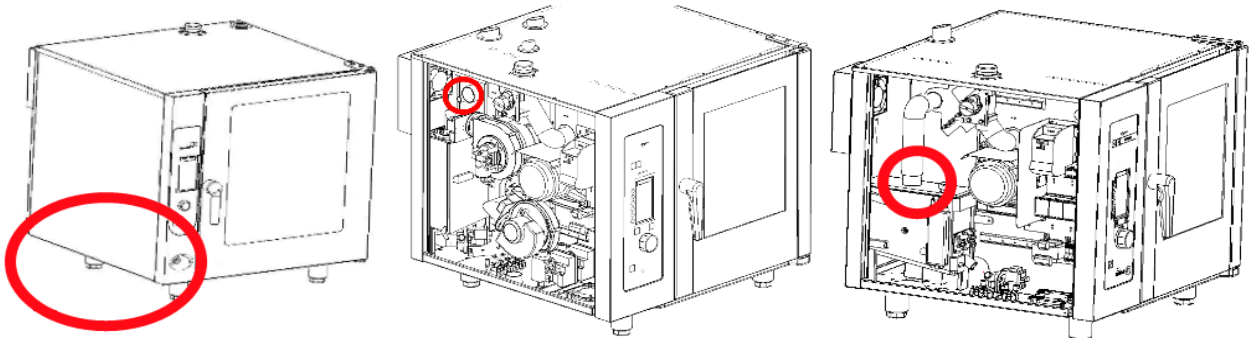
To descale, enter the function by pressing the Auxiliary Function Selector and select the option DESCALE. Confirm the option by pressing the Auxiliary Function Selector or the General Selector.
The message displayed is SELECT. TIME, descaling time between 30 and 480 minutes (120 default setting).
Wait until the user confirms the selection with the button on the wheel.
Phase 1: VAC operates for 3 minutes
The message "SPRAY DESCALER" is displayed and the process waits until it is confirmed with the General Selector. Undo the side panel of the oven and access the steam generator. Undo the descaling nut and pour the descaler in the steam generator.
Phase 2: VDV operates until reaching the maximum level, the boiler fills with descaler.
Phase 3: CV operates until TG reaches 61ºC. When TG falls below 58 ºC, CV starts again (steam heating) until reaching 61 ºC, this continues for the period selected by the user. The display shows a countdown for the time remaining.
Phase 4: VAC operates for 3 minutes.
Phase 5: VDV operates until reaching N.max.
Phase 6: VAC operates for 3 minutes.
Phase 7: VDV operates until reaching N.max.
Phase 8: Steam mode operates until TC reaches 95 ºC.
Lastly, this function is closed and the message END DESCALING, s displayed, all the outputs are set to zero (except RG) until the oven is switched off.
The current phase number FX DESCALE and the time remaining are displayed continuously.
If during the descaling cycle the operation is aborted by pressing the descaling button again or because the oven has been switched off, proceed as follows:
If it has not reached phase 2 ➔ The cycle is ended.
If it has reached or exceeded phase 2 ➔The cycle goes to phase 4.
If it has reached phase 4➔ The cycle goes to the phase in which it stopped.

There is a secret option to abort the process by pressing the O/I button for 5 seconds. The machine moves to Phase 6. Confirm by pressing START/STOP.

The chemical product used must have a **phosphoric acid base** at a concentration of 35 ÷ 40 %. It may contain an anti-foaming agent. A chemical concentration of approximately 10÷ 5% of the capacity should be used in the boiler. This concentration depends on the degree of lime scale saturation and the effectiveness of the chemical product. Please refer to the supplier for advice on the method of application.

Boiler capacities

	AE	AG
061	3.25 litres	7.3 litres
101	5.5 litres	7.3 litres
201	7 litres	12.3 litres
102	7 litres	12.3 litres
202	11.7 litres	15.3 litres



To descale, apply the chemical product in the quantities indicated by the manufacturer.

For the descaling process, we recommend using a phosphoric acid based product with a concentration of 30 - 40%.
In this concentration, we recommend using 25% of the generator volume. **In all cases, please observe chemical manufacturer's recommendations.**

16.17. RESET GAS (until 01/01/2016)

Gas burners may be blocked for a variety of reasons. If this is the case, the Burner Blocked display lights up and advises of the need to unblock the burner. This occurs after 4 failed ignition attempts.
The general information text advises that the burner is blocked. (Convection burner or Steam burner).
To unblock, enter the Burner Blocked display by pressing the General Options Knob. Now all the icons light up. Select the burner blocked window, by turning the general options knob (18). Confirm the option by pressing the special options button or the general options knob.

16.18. RESET GAS (after 01/01/2016)

Gas burners may be blocked for a variety of reasons. If this is the case, the Burner Blocked display lights up and advises of the need to unblock the burner. This occurs after 3 failed ignition attempts.
When the ignition control has tried unsuccessfully to complete the ignition operation 3 times, the appliance is blocked and the burner blocked signal is emitted. The appliance will display E-14 LOCK Q1 until the user switches the appliance off and on by pressing ON/OFF, and a new sequence of three ignition attempts will be run.

16.19. TEMPERATURE PROBE DISPLAY

When the Configure system button is pressed for 5 seconds, the value of all the thermocouples is displayed (Chamber Probe, Steam Probe, Core Probe and Steam Generator Probe).
The oven exits this function when the user releases the button, returning to the values with which it was operating.

16.20. AUTOMATIC DRAINAGE

In any operating mode, VAC will operate for 3 minutes every X hours of oven adjustment (all operating modes except convection, where TG > 60ºC), and only when the oven is switched on, if TC <= 60ºC and TG <= 60ºC. If the oven is switched off before the 3', when the power is reconnected the drainage cycle starts again for a further 3 minutes. The accumulated operating time is reset in the event of a wash.
Drainage takes place at pulses of 10 seconds ON, 10 seconds OFF for the 3 minutes of the drainage cycle.
During the process, the message DRAINING BOILER is displayed in the upper text, with the time remaining until the drainage is completed.
There is a secret option to abort the process by pressing START/STOP for 5 seconds.

16.21. DELAYED PROGRAMMING

Use this function to access the delayed programming option which allows the oven to be switched on at a set time with the established parameters.
First the oven should be programmed with the required parameters, then press the Delayed Programming button and select the start time and date. After confirmation, the upper text displays that the oven has been programmed, showing the start time and date.
To abort the programming, press the same button again. If the oven is on, any programming

will also be aborted.
To access this option the oven should be switched on but in STOP mode.

16.22. CONFIGURE SYSTEM

To access this option, the oven should be switched off.
Function to access system configuration, where the following sections can be configured:

- **Language:** Select required language.
  - German
  - Bulgarian
  - Czech
  - Croatian
  - Danish
  - Slovak
  - Spanish
  - Estonian
  - Basque
  - Finnish
  - French
  - Greek
  - Dutch
  - Hungarian
  - English
  - Italian
  - Lithuanian
  - Neutral
  - Norwegian
  - Polish
  - Portuguese
  - Romanian
  - Russian
  - Swedish
  - Turkish
  - Ukrainian

The language Neutral is the language in which the coded messages appear. These should be checked in the Manual.

- **Programme date and time**: Programme actual date and time.
- **Programme temperature scale**: This allows selection of the temperature scale to be displayed, ºC (Celsius) or ºF (Fahrenheit). The default setting is in ºC (Celsius).
- **Programme Delta**: This allows the value to be allocated to the DELTA function to be selected. This value is used whenever working in DELTA mode. The Delta range is from 20 ÷ 80 ºC, with a default value of 50.
- **Thermal Stop**: This option allows the timer operation to be programmed, that is, when the countdown of a timed operation begins. If Thermal Stop s activated, the oven does not start the countdown until the appliance reaches the programmed temperature. On the other hand, if the Thermal Stop is NOT (default option), the countdown starts as soon as the START/STOP button is pressed.
- **HACCP** Function where the oven operating values are stored **The spike probe should always be used**
  - Start date and time
  - Operating mode
  - Function
  - Humidity
  - TC value
  - TN value

To exit the menu, select the option EXIT, and return to normal operation of the oven.

16.23. SETTINGS (OVEN CONFIGURATION)

This function is protected by a password, which can be accessed by pressing the buttons Configure System and Delayed Programming for 5 seconds while the oven is switched off. I.e, in OFF mode. **Password 7455**.
Use the wheel to move through this menu.
The sections and respective options are as follows:

- **M34 Reset Oven**
  - M74 Counters All the stored log counters are reset.
  - M75 Errors Resets any errors to date.
  - M76 Parameters: Restore the factory default values established for the oven.
    - Temperature scale (ºC)
    - Delta value (50)
    - Thermal stop (No)
    - Model (201)
    - Oven type (Elec)
    - Gas type (BP)
    - Blower Speed Blowers (see table of speeds)
    - Condensation (2)
    - Automatic drainage (24)

- **M35 Configure** (Configuration)
  - M43 Oven Model Configure oven size
    - 061
    - 101
    - 201 (default setting)
    - 102
    - 202

  - M44 Oven type Allows you to configure oven as electric or gas.
    - M55 Electric (default setting)
    - M56 Gas

  - M45 Gas Type Selection of gas type (only if the oven has been configured as Gas)
    - M57 Butane-Propane (Default setting)
    - M58 Natural Gas
    - M59 City Gas

- **M47 Blower Sp.** Allows you to change the different blower speeds. The increase in speed is in fractions of 100 (only if the oven has been configured as Gas)
  The default setting for each operating mode is determined by the oven model and the type of gas selected
  - VCC (convection blower)
    - M80 On Start-up speed (0 ÷ 8000)
    - M81 Maximum Minimum speed (0 ÷ 8000)
    - M82 Medium Maximum speed (0 ÷ 8000)

  - VCV (steam blower)
    - M80 On Start-up speed (0 ÷ 8000)
    - M81 Maximum Minimum speed (0 ÷ 8000)
    - M82 Medium Maximum speed (0 ÷ 8000)

- **M48 Condensat** Option for configuring the condensation cycle.. It is possible to select how long the condensation is required to be active for every 10 seconds of the cycle.

- 0 ÷ 10 (Default setting: 2 seconds)

TABLE OF DEFAULT CONVECTION BLOWER SPEEDS

	NATURAL GAS	TOWN GAS	LGP (B/P)
AG-061	Start-up: 4000 Medium: 4200 Maximum: 6500	Start-up: 4000 Medium: 4200 Maximum: 6500	Start-up: 4000 Medium: 3600 Maximum: 5400
AG-101	Start-up Speed: 5000 Medium: 4000 Maximum: 7500	Start-up: 5000 Medium: 4000 Maximum: 7500	Start-up: 5000 Medium: 3600 Maximum: 6000
AG-201	Start-up: 4000 Medium: 4200 Maximum: 8000	Start-up: 4000 Medium: 4000 Maximum: 7200	Start-up: 4000 Medium: 3800 Maximum: 6200
AG-102	Start-up: 4000 Medium: 4000 Maximum: 8000	Start-up: 4000 Medium: 4000 Maximum: 8000	Start-up: 4000 Medium: 3500 Maximum: 6100
AG-202	Start-up: 4000 Medium: 3800 Maximum: 8000	Start-up: 4000 Medium: 4200 Maximum: 8000	Start-up: 4000 Medium: 3500 Maximum: 6000

TABLE OF DEFAULT STEAM BLOWER SPEEDS

	NATURAL GAS	TOWN GAS	LGP (B/P)
AG-061	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 5000	Start-up: 4000 Medium: 5000 Maximum: 5000	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 4300
AG-101	Start-up Speed: 5000 Medium: Tg>90ºC, -15%Max Maximum: 6400	Start-up: 5000 Medium: 6600 Maximum: 6600	Start-up: 5000 Medium: Tg>90ºC, -15%Max Maximum: 5700
AG-201	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 6700	Start-up: 4000 Medium: 6200 Maximum: 6200	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 5500
AG-102	Start-up: 5500 Medium: Tg>90ºC, -15%Max Maximum: 6200	Start-up: 4000 Medium: 6200 Maximum: 6200	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 5300
AG-202	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 7300	Start-up: 4000 Medium: 8000 Maximum: 8000	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 6000

- **M49 Auto. Auto** Permits the configuration of the frequency with which the oven should drain the boiler, that is, every so many hours of the oven's operation (all modes except convection, where TG > 60 ºC) the drainage cycle must be run.
  - 1 ÷ 63 hours (Default setting: 24 hours)
  - M68 Draining This message is displayed when the appliance is draining.
  - M69 Max Level This message is displayed when, during the drainage cycle, the level detecting rods detect maximum level.
  - M70 Min Level This message is displayed when, during the drainage cycle, the level detecting rods detect minimum level.
  - M71 Below Min This message is displayed when, during the drainage cycle, the level detecting rods detect the level is below the minimum.
  - M72 End Drainage This message is displayed when the drainage cycle is completed.

- **M50 Drain. Manu** Option permitting the drainage of the boiler. To start, press the button on the wheel. Press again to abort the operation. If the user does not abort, the drainage will automatically stop when the level falls below minimum
- **M51 Back** Returns to previous menu

➢ **M36 Identificat** (Oven identification)

- **M52 Soft vers.** This displays the software version included with the oven.
  - Software version of the control holder card.
  - Software version of the chamber card.
  - Software version of the steam or boiler card.
  - Software version of the gas card (only AG gas ovens)
- **M53 Serial No** Option allowing the serial number of the oven to be entered or displayed. An alphanumeric sequence of up to 10 characters may be used. To change the programmed value, just press the button on the wheel. The character to be changed flashes, and is modified using the wheel, confirm and move to the next character by pressing the button again. When the last character has been confirmed, the screen returns to the main menu.
- **M54 Tester No** Option allowing the number of the person who has tested the oven to be entered or displayed. A 3-digit sequence can be entered.

➢ **M37 Calibration** Option for starting the thermocouple calibration process. To start, press the button on the wheel.

- M63 Preheat This message is displayed when the oven is preheating during the calibration procedure.
- M64 Stabilise This message is displayed when the oven temperature is stabilising during the calibration procedure.
- M65 Wait Cool This message is displayed when the oven temperature needs to be lowered during the calibration procedure.
- M66 Calib. Oven This message is displayed when the oven has correctly completed the process during the calibration procedure.
- M67 Calib. error This message is displayed when the oven has not correctly completed the process and is incorrect during the calibration procedure.

When this function is activated, the value of the 4 thermocouples (TC, TV, TG, TN) is displayed.
When all the values measured by the temperature probes have stabilised, 40 seconds without any changes, the probes take 100 ºC as the reference value. The probes measure 4 thermocouples which should measure between 80 and 110 ºC.
First, the oven is set to Steam mode until TC reaches 99 ºC. This step is considered preliminary to calibration and should not be counted in the calibration time.
Next, operate the CV output continuously so that the TC, TV (only in electric ovens), TG and TN probes measure values between 80 and 110ºC. When all the values measuring the temperature probes have stabilised, 40 seconds without any changes, the probes take 100 ºC as reference and all the thermocouples are calibrated. Therefore, the difference of all the values with respect to 100 is noted. This value is used to adjust subsequent displays of the thermocouples.
Calibration may be aborted by pressing the button on the wheel or the OFF button.
If calibration is not completed within 15 minutes, the corresponding error is displayed.

➢ **M38 Check** This allows you to set the oven to Check SAT mode. To start, press the button on the wheel.
A **Special mode**, only accessible by the SAT technician, for testing the inputs/outputs available on the oven, making it possible to check these independently. When in this mode, select the required input/output using the wheel.
For outputs, use the button on the wheel to activate the output in question, similarly to deactivate it.
For inputs, the status of the selected input is displayed (YES/NO if it is an input which may be active/not active, the value of the input, etc.). If it is a thermocouple, the value it is measuring is shown and OUT is displayed in the event of error.

Inputs to display

- Camera probe TC
- Steam output probe TV
- Core probe TN
- Steam generator probe TG

- Resistance NTC
- Door contactor IP
- Maximum level probe MAX
- Minimum level probe MIN
- Gas control signal HALL. To read the burner blower input, first activate the PWM output with the blower speed selected. (only in gas ovens).

Outputs for testing

- Chamber heating (CC1)
- Chamber heating (CC2)
- Fan on M/P
- Fan direction L/R
- Condensation electrovalve (VCN)
- Humidification electrovalve (VHM)
- Chimney motor (Ms/Mb)
- Main supply relay (RG)
- Fan (VE)
- Oven lighting (LZ)
- Drainage pump (VAC)
- Water inlet solenoid valve (VDV)
- Steam heating (CV1)
- Steam heating (CV2)
- Warning bell (TA)

➢ **M39 Reliability** Option permitting the oven to be changed to Reliability mode in order to check the reliability of the different components of the oven. To do so, one of the four pre-established programmes should be selected. To start the selected programme, press the button on the wheel. The existing reliability programmes are listed below. These should all be run repeatedly until the user decides to exit the current operating mode. The reliability programme being run should be displayed at all times (programme + time elapsed), together with the data given in each of the programmes, alternating the 2 messages (5 seconds for the first, 5 seconds for the second).

- Reliability programme 1
  - This is the sequence which should be repeated:
  - 8 minutes Convection Mode at 300 ºC
  - 8 minutes Mixed Mode at 250 ºC
  - 8 minutes Steam Mode

- Reliability programme 2
  - The oven will operate in *Convection* Mode at 99 ºC. The fluepipe is activated every 30 seconds, going up or down depending upon the initial position.

- Reliability programme 3
  - The oven will operate in *Convection* Mode at 300 ºC. The VE output should be kept lit if 70<NTC>75ºC.

- Reliability programme 4
  - The oven operates in Mixed Mode at 250ºC. Every 30 seconds the direction of the fan with R/L is changed.

- Reliability programme 5
  - Not enabled.

➢ **M40 Log** option for viewing the oven log. To start, press the button on the wheel.
To go from one section to the next, use the wheel.
Press the button on the wheel for 5 seconds to reset the value displayed.

M1 H Prg Conve - Total hours of operation in Convection mode.
M2 H Prg Mixed - Total hours of operation in Mixed mode.

M3 H Prg Regen - Total hours of operation in Regeneration mode.
M4 H Prg CtrlSt - Total hours of operation in Controlled Steam mode.
M5 H Prg Steam - Total hours of operation in Steam mode.
M6 CC1 Cycles - Number of CC1 cycles.
M7 CC2 Cycles - Number of CC2 cycles.
M8 CV1 Cycles - Number of CV1 cycles.
M9 CV2 Cycles - Number of CV2 cycles.
M10 VDV Cycles - Number of VDV cycles.
M11 VDCN Cycles - Number of VCN cycles.
M12 Ms/Mb Cycles- Number of Ms/Mb cycles.
M13 VHM Cycles - Number of VHM cycles.
M14 LZ Cycles - Number of LZ cycles.
M15 VE Cycles - Number of VE cycles.
M16 RG Cycles - Number of RG cycles.
M17 R/L Cycles - Number of R/L cycles.
M18 M/P Cycles- Number of M/P cycles.
M19 IP Cycles - Number of IP cycles.
M20 CD Cycles - Number of Cool down cycles.
M21 Calibrat. No - No of calibrations.
M22 Descale Cycles - Number of descale cycles.
M23 H Prg Rel-1 - Hours of programme Reliability 1.
M24 H Prg Rel-2 - Hours of programme Reliability 2.
M25 H Prg Rel-3 - Hours of programme Reliability 3.
M26Prg Rel-4 - Hours of programme Reliability 4.
M27 H Prg Rel-5 - Hours of programme Reliability 5 (not used).
M28 TC Max - Maximum temperature of TC.
M29 TV Max - Maximum temperature of TV.
M30 TN Max - Maximum temperature of TN.
M31 TG Max- Maximum temperature of TG after last descaling.
M32 No of Errors - Total number of errors.
M33 End Log - End Log.
The total number of errors in the oven can never be deleted.

➢ **M41 Exhibition** Option allowing the oven to be set in Exhibition mode. To start, press the button on the wheel. When the oven is operating in exhibition mode, **only the Interface and the RG and LZ**, outputs should operate, all other inputs/outputs are disabled and all errors are ignored.

➢ **M42 Exit** Option for exiting the menu and returning to oven normal operating mode. To do so, press the button on the wheel.

When an error occurs:

- The bell rings intermittently.
- A flashing message is shown on the upper text of the display.
- If the **START/STOP button is pressed or the door is opened**, the error message continues to be displayed but the bell stops ringing.
- To reset the error, switch off the oven.
- When the fault causing the error is removed, the outputs return to normal operation.

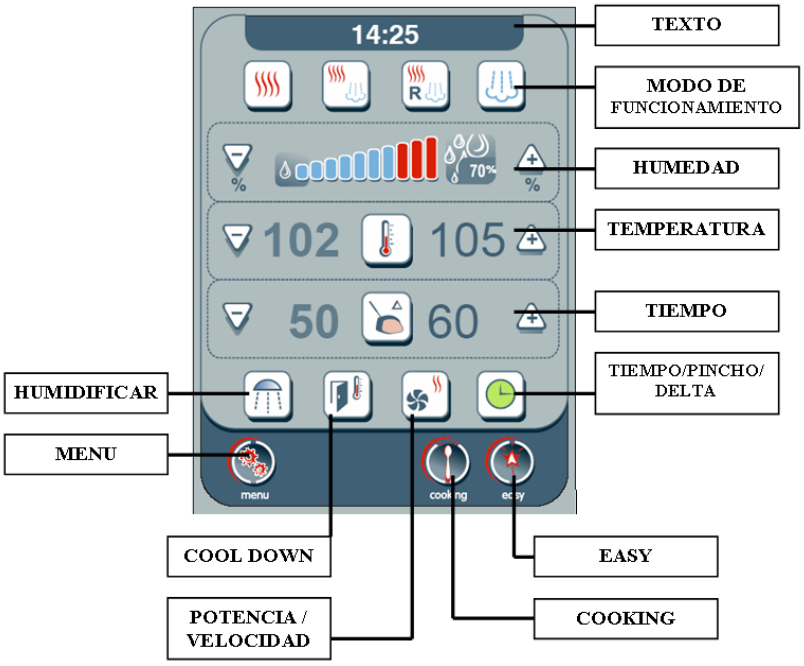
16.24. TYPES OF FAULT

ERROR	DESCRIPTION	CONSEQUENCE
E1 SENSOR TC	Camera probe broken. TC out of range [-5 ÷ 330 ºC].	The oven is completely disabled.
E2 SENSOR TN	Core probe TN damaged. TN out of range [-10 ÷ 330 ºC].	The spike and delta function is disabled.
E3 SENSOR TV	Steam outlet temperature probe (TV) faulty. TV out of range [-5 ÷ 330 ºC].	It is only possible to operate in Convection mode, omitting water condensation.
E4 SENSOR TG	Steam generator temperature probe TG faulty. TG out of range [-5 - 330 ºC].	It is only possible to operate in Convection mode.
E5 WATER LEVEL	Detects water level at maximum, but not at minimum for 3 seconds.	It is only possible to operate in Convection mode.
E6 CALIBRATION	It was not possible to calibrate in 15 minutes.	The machine continues to function normally.
E7 AE ERROR	- AE inlet does not work. - The connection has been cut off. - The motor does not start within 10 seconds of a start request. - Does not exceed 500 rpm within 20 seconds of a start request.	The machine is completely disabled.
E8 WATER REQUIRED	VDV has been running for 7 or more minutes and the maximum level has not been reached.	It is only possible to operate in Convection mode.
E9 DRAIN ERROR	VAC has been running for 1 or more minutes and level does not fall below minimum.	
E10 CV FAULT	With TG < 80 ºC, when CV operates, and in 10 minutes TG does not rise more than 3 ºC.	It is only possible to operate in Convection mode.
E11 CC FAULT	The CC operates for 25 minutes and TC does not rise 3 or more degrees. Tc<(Temperature Setting - 10ºC)	The oven is completely disabled.
E12 CONTROL TEMP	The NTC of controller reaches 60 ºC, but does not exceed 70 ºC.	The oven operates normally and the bell is not heard. This message should be displayed every 3 minutes for 30 seconds.
E13 BLOWER Q1 (only AG)	Chamber blower error.	The oven is completely disabled.

E14 BLOWER Q1 (only AG)	Chamber ignition control blocked. This occurs after 3 failed ignition attempts.	The oven is completely disabled.
E15 FAULT Q1 (only AG)	- Fault in the chamber ignition control. - SV gas is not activated. - Not possible to unlock ignition control.	The oven is completely disabled.
E16 BLOWER Q2 (only AG)	Steam blower error.	It is only possible to operate in Convection mode.
E17 BLOWER Q2 (only AG)	Steam ignition control blocked. This error occurs after 3 failed ignition attempts.	It is only possible to operate in Convection mode.
E18 FAULT Q2 (only AG)	- Fault in the steam. ignition control. - SV gas is not activated. - Not reached.	It is only possible to operate in Convection mode.
22 CONTROL TEMP	The NTC of controller exceeds 70 ºC.	The oven is completely disabled.
E23 FLUEPIPE	Faulty flue pipe motor.	The oven is completely disabled.
24 CHAM. CONNEX	Communication error. The chamber card does not respond.	The oven is completely disabled.
25 PMD CONNEX	Communication error. The control holder card does not respond.	The oven is completely disabled.
26 VAP CONNEX	Communication error. The steam card does not respond.	It is only possible to operate in Convection mode.
E27 BMF CONEX GAS	Communication error. The gas card does not respond.	The oven is completely disabled.

17. USE OF ADVANCE PLUS APE & APG OVEN

17.1. AE & AG ELECTRIC OVEN CONTROL PANEL



The ADVANCE PLUS oven has an 8'' TFT + touch-screen de (format 16/9), used for controlling all the functions of the oven, as well as displaying all the oven information. Under the QT platform it uses the Windows CE operating system.

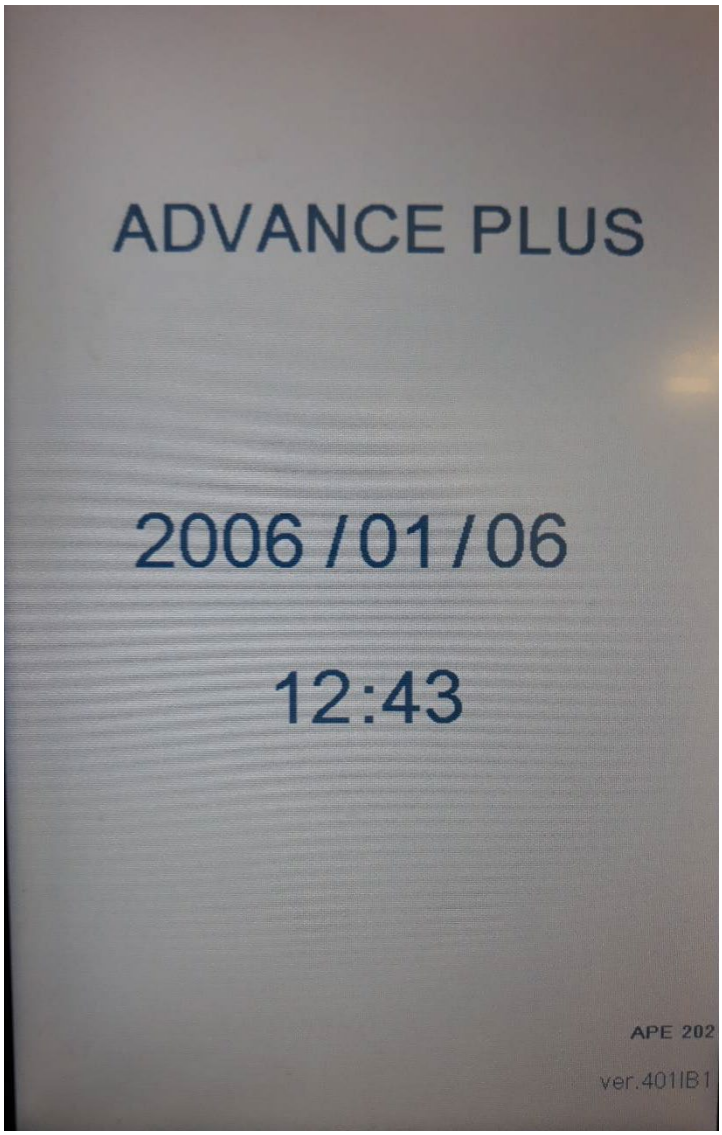
Main screens

- Screen OFF
- Initial Screen
- Fagor Cooking
- Fagor EASY
- Menu

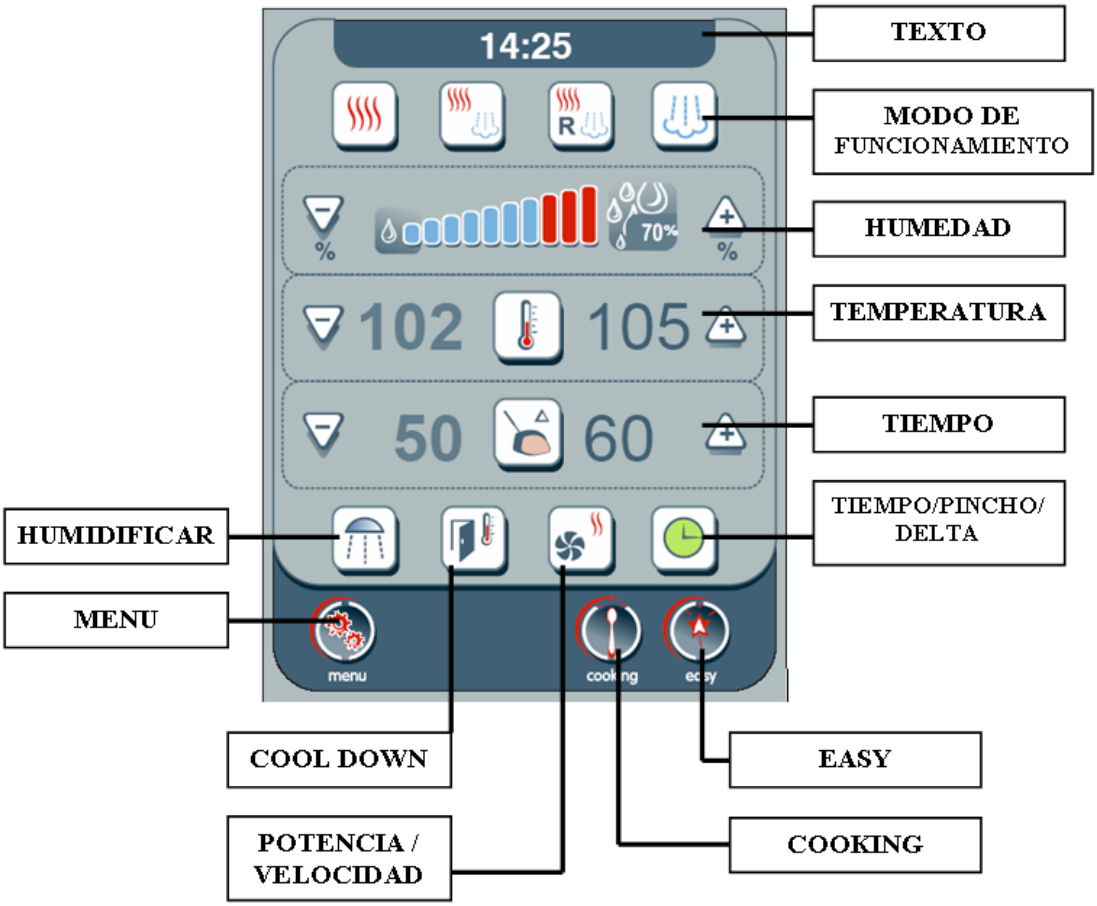
The screen is switched on/off with the main ON/OFF switch. When the screen is switched on, the Initial Screen is displayed, unless the oven was switched off in Fagor Easy or Exhibition mode, in which case the screen for the corresponding mode is displayed. The parameters displayed on screen correspond to those used for the last operation, using the default values if this is the first time the oven is switched on or in order to re-establish the factory parameters.
In addition to the mains switch, the START/STOP, button can be used for switching the oven on or off, and switching off the adjustment currently being performed.

17.1.1. SCREEN OFF

The screen is shown below in off mode, with the configuration selected by the user, who can select whether they wish to view the date and/or time in addition to the required text.
If the screen remains in OFF mode for 5 minutes, the back-light will automatically switch off. To re-activate it, just touch the screen.



17.1.2. START-UP DISPLAY

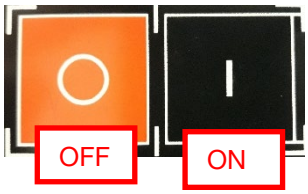


Each of the available options is defined on the main screen of the oven. If the oven is adjusting, it is not possible to access the following options **Fagor Cooking**, **Fagor Easy** and **Menu**.

- **Reset gas.** The screen only displays whether a burner is blocked in an gas oven, accompanied by a text message that indicates that the burner is blocked To unblock the burner in question, just press this button, creating the sequence stipulated for unblocking the burners.
- **Menu** (7th row 1st button): Access to oven's main menu.
- **SAT** (7th row 2nd button): Password protected function permitting access to the different options available to the SAT technician or the internal operator when configuring or checking the oven. **To enable the button in question, when in Convection or Mixed mode with the time function, enter the values 989 in temperature (300 °C displayed on screen) and 898 in time (9:38 displayed)**
- **Fagor Cooking** (7th row 3rd button): Press this button to go to the oven automatic operating mode. This includes recipes programmed at the factory, divided into families, together with personal user-defined programmes.
- **Fagor Easy** (7th row 4th button): Button to go to oven operation in simple mode.

17.2. ON/OFF

The oven is switched on/off with the main ON/OFF switch. Each time that the oven is switched on, the last-used values are displayed. If this is the first time the oven is switched on, the defect values are displayed.
When the oven is switched on, it adopts the last used parameters. If the function is changed, the values of the function being used are stored and are reloaded if you return to this function.



17.3. SELECTION OF COOKING MODES

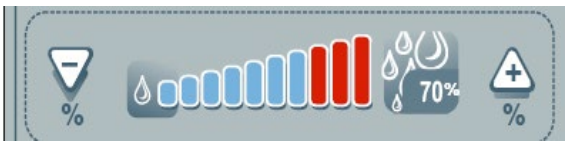
On selecting the required mode, the relevant icon is highlighted with respect to the others.

The available cooking modes are:

- Convection
- Mixed
- Regeneration
- Steam

When the appliance is switched on, it adopts the last used parameters.
If the function is changed, the values of the function being used are stored and are reloaded if you return to this function.

17.4. HUMIDITY SELECTION



This section shows the humidity level selected for the oven. Blue represents moist air, red dry air, while when the icon is off or black (only in Convection mode), the required humidity level is displayed. These are the default ranges and values of each operating mode:

- Convection: Range (0÷100 ºC) 0% default setting
- Mixed: Range (0÷100 ºC) 50% default setting
- Regeneration: Range (80 ºC) 80% default setting
- Steam: Range (100 ºC) 100 % default setting

To change the moisture level, press  and  The increase/decrease is in steps of 10%.
The buttons are only enabled in the Convection or Mixed mode, as the humidity value is fixed in the other two operating modes.

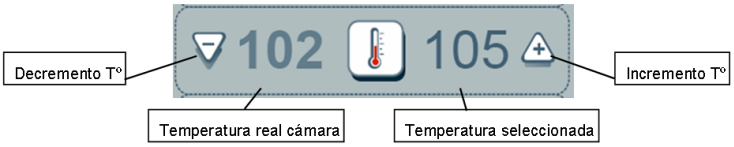
17.5. TEMPERATURE SELECTION

This section shows the true chamber temperature and that selected by the user.
The temperature shown on the left side of the screen is the true temperature in the chamber.
The temperature shown on the right side of the screen shows the temperature selected by the user.
The range of temperatures for each operating mode is shown below:

- Convection: Range (20 ÷ 300 ºC) 160 ºC default setting
- Mixed: Range (20 ÷ 250 ºC) 140 ºC default setting
- Regeneration: Range (20 ÷ 180 ºC) 120 ºC default setting
- Steam: Range (20 ÷ 99 ºC) 99 ºC default setting

Temperature selection: press the central button  which enables the selection using numbers. Select the required value and confirm or cancel with OK / cancel.

The temperature up  /down  buttons allow the temperature setting in the chamber to be modified in units within the established range. If either of the buttons is pressed for more than 2 seconds, the increase / decrease is in steps of 10.
When the oven is in delta function these buttons are not displayed.



It is possible to view the true value of the four thermocouples (TC, TV, TN and TG). Therefore, the Power/Speed button should be pressed for 5 seconds in the Initial  **Screen.**

The oven exits this function when the user releases the button, returning to the values with which it was operating.

17.6. TIME SELECTION

Cooking is according to the temperature and time selected.

1. Select the operating mode.
   
2. Select the humidity value.
   
3. Select the required oven temperature.
   
4. Select the required time
   
5. Press Start.
   

The up  /down  buttons allow the chamber temperature and time settings to be changed. If either of the buttons is pressed for more than 2 seconds, the increase / decrease is in steps of 10.
If the oven is on and either of these two buttons is pressed, the remaining time will vary in the same proportion as the temperature setting is increased / decreased.
On completion of the selected time, a visual/acoustic warning will start. To switch off the alarm, press the START/STOP button or open the door. If the door is not opened, or if the START/STOP button is not pressed, the acoustic/visual warning is repeated for 30 seconds every 3 minutes, up to a maximum of 15 minutes

17.7. PREHEATING

To preheat the oven it must be switched off and the required temperature must be higher than the temperature in the chamber.

1. Select the operating mode. 
2. Select the required oven temperature. 
3. Press time / spike / Delta display 
4. Select time 0 and press OK. 
5. Press Start 

17.8. PRICK PROBE FUNCTION

Cooking is according to the temperature of the inside of the food.
The probe should pass to the centre of the food to ensure that the food is correctly cooked in the most central point.

1. Select the spike option function with the time/spike/Delta option selector.
2. Select the required cooking temperature and the required temperature at the interior of the food.
3. Insert the probe spike in the food.
4. Close the door and press Start. 

When the true temperature of the core reaches the selected value, an acoustic warning is heard. To switch off the alarm, press the START/STOP button or open the door. If the door is not opened, or if the START/STOP, button is not pressed, the acoustic warning is repeated for 30 seconds every 3 minutes, up to a maximum of 15 minutes.

The up  /down  buttons allow the chamber temperature and time settings to be changed. If either of the buttons is pressed for more than 2 seconds, the increase / decrease is in steps of 10.
By pressing the Time/Spike/Delta or Temperature display buttons, the values are selected numerically.

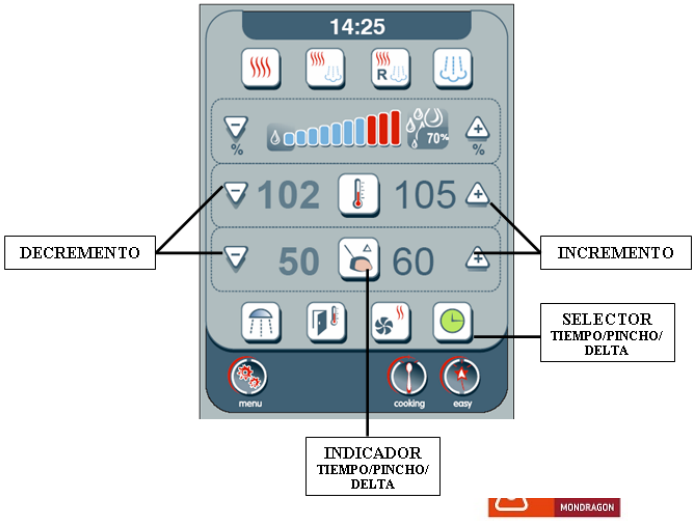
17.9. DELTA FUNCTION

Cooking takes place at a temperature of 50 ºC higher than the temperature in the centre of the food.
The probe should pass to the centre of the food to ensure that the food is correctly cooked in the most central point.

1. Select the Delta option function with the Time/Spike/Delta option selector.
2. Select the temperature required at the centre of the food.
3. Insert the probe spike in the food.
4. Close the door and press Start 

After pressing the Start/Stop button, the oven starts. When the temperature at the centre of the food reaches the value selected, the buzzer is heard.

The up  /down  buttons allow the temperature setting at the centre of the food to be changed. If either of the buttons is pressed for more than 2 seconds, the increase / decrease is in steps of 10.



By pressing the Time/Spike/Delta display buttons, the values are selected numerically.

When the true temperature of the core reaches the selected value, an acoustic warning is heard. To switch off the alarm, press the START/STOP button or open the door. If the door is not opened, or if the START/STOP, button is not pressed, the acoustic warning is repeated for 30 seconds every 3 minutes, up to a maximum of 15 minutes.

17.10. HEATING POWER AND FAN SPEED

This function is used to vary the oven power (heat) and fan speed. There are 4 options:

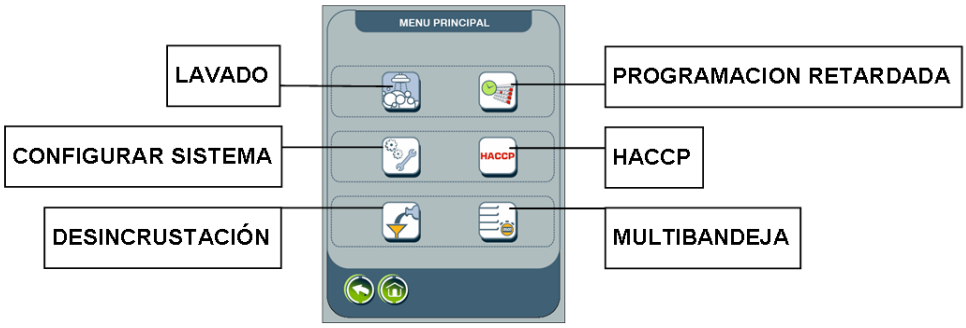
- Maximum power / maximum speed 
- Minimum power / maximum speed. 
- Minimum power / average speed. 
- Minimum power / minimum speed. 

17.11. MAIN MENU

The remaining functions of the oven are found in the main menu, except for the SAT, submenu, which is in an additional screen that can only be entered by the technician, using a special combination of keys in the Initial Screen.

17.12. MENU

The Menu option displays a screen with 6 additional options for the user.



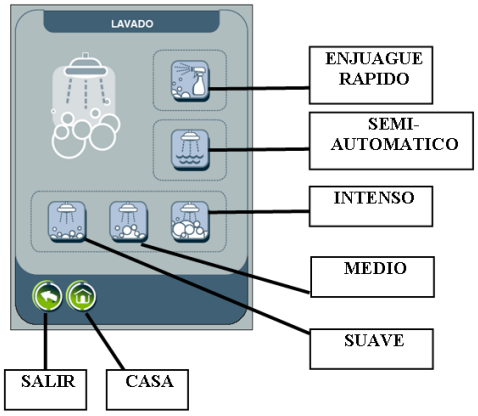
17.12.1. WASH

The wash screen allows you to select between 5 different wash programmes.

When a programme is activated, if the chamber temperature is higher than the wash temperature (60 ºC), the fan is switched on and the HIGH TEMPERATURE warning is displayed for the opening of the door. When the door is opened, the screen displays the message COOLING until the wash temperature is reached. When the door is closed and the START/STOP, pressed, the selected programme starts.

If the operation is cancelled, the oven switched off, there is a power failure or the appliance is disconnected, the next time it is switched on, the machine indicates that the wash was interrupted, and a rinse cycle is run to remove any soap that may be left in the chamber.

Press START/STOP to begin or end the cleaning process.



OVEN	RECOMMENDED SOAP
061 and 101	1/3 (075 ml.)
102	½ (112 ml.)
201 and 202	2/3 (150 ml.)

Washing programmes:
1 – Rapid rinse
2 – Gentle wash
3 – Medium wash
4 – Intense wash
5 – Semi-automatic wash

For each of the wash programmes, follow the instructions shown on the screen.
The Cool Down programme should be completed before starting a wash.

CLEANING PROCESS

1. LZ and Ms/Mb operate. The display must indicate the chamber temperature and the time left to complete the selected programme.
2. The fluepipe behaves as follows:
   - Electric oven: Fluepipe open
   - Gas oven: Fluepipe closed (otherwise water will leak out)
3. VAC operates for 3 seconds, the level of the boiler should drop below the minimum level. If the low level is not reached, after 5'' re-operate the VAC for a further 3'' and continue so. If after 1 minute the minimum level is not reached, the corresponding error is displayed. (See table of errors).
4. Operate VDV until maximum level is reached. If this is not reached within 7 minutes, the corresponding error should be displayed.
5. Now continue with the specifications for each wash programme.
6. Lastly, everything is switched off, all the outputs are set to zero and the display shows the message END OF WASH.

If the door is opened during a wash cycle, the programme stops, and restarts when the door is closed.
There is an option on the screen to cancel the current wash programme, the operation is aborted when START/STOP is pressed, and proceeds as follows if the drying phase has not been reached (if it has, the wash cycle is considered to have ended).

- The message WASH INTERRUPTED is displayed on the screen.
- When the user confirms this message, the cycle proceeds to the rinse stage, displaying the message RINSING on the screen.
- Mc activated for 30'' (drainage closes)
- The rinse cycle is run

Similarly, if the controller was switched off during the wash cycle without reaching the drying cycle, the above sequence is followed when the oven is switched back on.
If the oven is switched off during the rinse phase, the programme will restart at the point at which it was interrupted when the oven is switched back on.
There is an option to abort the rinse cycle. Press the ON button and then press the START/STOP button for 5 seconds.

QUICK RINSE

The TFT displays the name of the wash  programme

Sub-rinse
5 min

- 30 sec Mc activated (drainage closes) and CV activated until TG reaches 70 ºC.
- 50 sec Mc and VAC activated 50''.
- 90 sec Mc activated, CV if TC < 65 ºC, D/I, M/P and Mba (wash pump motor) (8''ON 10''OFF).
- 36 sec Mc and Mba (8'' ON 10'' OFF).
- 90 sec Mc activated, CV if TC < 65 ºC, M/P and Mba (8'' ON 10'' OFF).
- 30 sec Wash tub drained (Ma is activated).

Drying

- In Convection mode until reaching 160 ºC (Without rotation inverter, on M/P and Ms/Mb is activated and Ms/Mb- fluepipe motor). The message DRYING is displayed.

GENTLE WASH

Before starting to wash, the oven displays the message INSERT SOAP, and waits for user confirmation before continuing with the wash cycle.
The TFT displays the title of the wash programme together with the current cycle and the time remaining, operating as follows:
Steam mode (99 ºC): 5 minutes. Mc. operates
Stopped: 4 minutes. Mc. operates

Wash
65º
32 min.

- 30 sec Mc y CV activated until TG reaches 70 ºC.
- 50 sec Mc and VAC activated 50''.

Sub-wash
65 ºC
10 min.

- 4.5 min. Mc, D/I, M/P, Mba activated (8'' ON 10'' OFF). CV is activated if TC < X.
- 7 sec VCN is activated.
- 36 seconds Activated: Mc, Mba (8'' ON 10'' OFF). CV is not activated
- 4.5 min. Mc, M/P, Mba activated (8'' ON 10'' OFF). CV is activated if TC < X.

- 10 min. Sub-wash at 65 ºC.
- 10 min. Sub-wash at 65 ºC.
- 10 min. Sub-wash at 65 ºC.
- 30 sec Wash tub drained (Ma is activated).

Rinse
18 min.

- Stop 1 min. Ma activated
- Sub-rinse: 5 minutes (65 ºC).
- Stop 1 min. Ma activated
- Sub-rinse: 5 minutes (65 ºC).
- Stop 1 min. Ma activated
- Sub-rinse: 5 minutes (65 ºC).

Drying

- In Convection mode until reaching 160 ºC (Without rotation inverter, only M/P and Ms/Mb activated). The message ''DRYING'' is displayed.

MEDIUM WASH

Before starting to wash, the oven displays the message INSERT SOAP, and waits for user confirmation before continuing with the wash cycle.
The TFT displays the title of the wash programme together with the current cycle and the time remaining, operating as follows:

Steam mode (99 ºC): 5 minutes. Mc. operates
Stopped: 4 minutes. Mc. operates

Wash 65º 62 min.	• 30 sec Mc y CV activated until TG reaches 70 ºC. • 50 sec Mc and VAC activated 50". • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 30 sec Wash tub drained (Ma is activated).
Rinse 18 min.	• Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC). • Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC). • Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC).
Drying	• In Convection mode until reaching 160 ºC (Without rotation inverter, only M/P and Ms/Mb activated). The message "DRYING" is displayed.

INTENSE WASH

Before starting to wash, the oven displays the message INSERT SOAP, and waits for user confirmation before continuing with the wash cycle.
The TFT displays the title of the wash programme together with the current cycle and the time remaining, operating as follows:

Steam mode (99 ºC): 5 minutes. Mc. operates
Stopped: 4 minutes. Mc. operates

Intense wash 65 ºC 122 min.	• 30 sec Mc y CV activated until TG reaches 70 ºC. • 50 sec Mc and VAC activated 50". • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 10 min. Sub-wash at 65 ºC. • 30 sec Wash tub drained (Ma is activated).
Rinse 18 min.	• Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC). • Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC). • Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC).
Drying	• In Convection mode until reaching 160 ºC (Without rotation inverter, only M/P and Ms/Mb activated). The message "DRYING" is displayed.

SEMI-AUTOMATIC WASH

The TFT displays the title of the wash programme together with the current cycle and the time remaining, operating as follows:

- Steam: 10 min. Mc. operates
- The following message is displayed: SPRAY WITH DESCALER until opening and closing the door.
- The message PRESS START is displayed to continue the cycle
- Stopped: 4 minutes

.

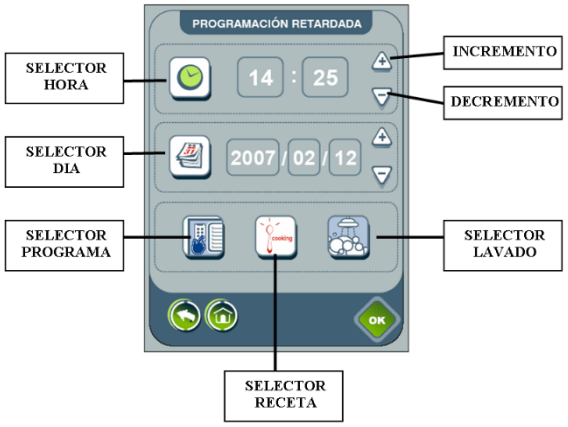
Sub-wash 65 ºC 10 min.	• 4.5 min. Mc, D/I, M/P, Mba activated (8'' ON 10'' OFF). CV is activated if TC < X. • 7 sec VCN is activated. • 36 seconds Activated: Mc, Mba (8'' ON 10'' OFF). CV is not activated • 4.5 min. Mc, M/P, Mba activated (8'' ON 10'' OFF). CV is activated if TC < X. • 7 sec VCN is activated. • 36 sec Mc, Mba (8''ON 10''OFF) activated. CV is not activated. • 20 sec Mc is activated, VCN.
Rinse 18 min.	• Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC). • Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC). • Stop 1 min. Ma activated • Sub-rinse: 5 minutes (65 ºC).
Drying	• In Convection mode until reaching 160 ºC (Without rotation inverter, only M/P and Ms/Mb activated). The message "DRYING" is displayed.

- Stop 1 min. Ma activated
- Sub-rinse: 5 minutes (65 ºC).
- Stop 1 min. Ma activated
- Sub-rinse: 5 minutes (65 ºC).
- Stop 1 min. Ma activated
- Sub-rinse: 5 minutes (65 ºC).

17.12.2. DELAYED PROGRAMME

The delayed programme allows you to programme the oven to cook and be washed at the time you require.

1. Select menu option.
2. Select delayed programming option.
3. Select time by pressing
4. Select day by pressing
5. Select programme, recipe or wash.
6. Press .

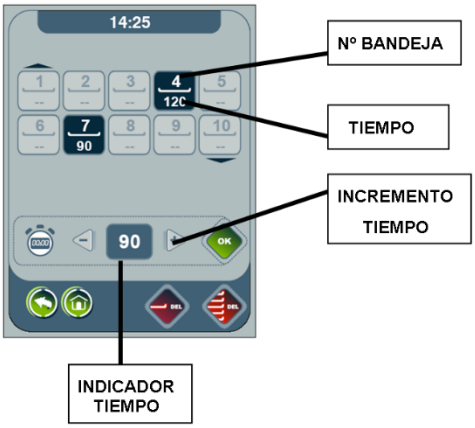


The programme selector allows you to select the oven parameters (temperature, humidity, time, fan speed).
The recipe selector allows you to select any stored recipe.
The wash selector allows you to select any wash programme.
During the delayed programming, the oven may not be used.

17.12.3. MULTI-TRAY FUNCTION

The multi-tray function allows each of the trays to be programmed independently.

1. Select the operating mode. ……
2. Select the humidity value. ……..
3. Select the required oven temperature……..
4. Press the menu button ……
5. Press the multi-tray button……
6. Select trays ……..
7. Enter required time.
8. Press OK. ……..
9. Press Start. ……



17.12.4. DESCALING

This function is used to access the descaling cycle.

1. Press the descaling button.
2. Select time (30 - 480 min.) 120 min. default setting.
3. Warning SPRAY DESCALER (3 minutes).
4. Insert descaler in steam generator (rear section of the oven).
5. Confirm.
6. On completion END DESCALING displayed.

WARNING! The descaling function is performed by the SAT. All the relevant safety measures for preventing accidents should be observed. Procedure involving chemical products.

The chemical product used must have a **phosphoric acid base** at a concentration of 35 ÷ 40 %. It may contain an anti-foaming agent. A chemical concentration of approximately 10÷ 15**%** of the capacity should be used in the boiler. This concentration depends on the degree of lime scale saturation and the effectiveness of the chemical product. Please refer to the supplier for advice on the method of application.
When the over automatically detects an excess level of lime scale in the pipes, the text DESCALING flashes on the display. The speed of the flash increases with the need for decaling, and when descaling is obligatory the message is permanently lit and the boiler heating is blocked (at this point the oven only operates in convection mode).

17.12.5. LIME SCALE DETECTION

In any operating mode, if the TG probe reaches:

- 125 ºC ➔ The message **DESCALE** is displayed in the upper text of the screen, and flashes every two seconds.
- 140 ºC ➔ The message DESCALE is displayed in the upper text of the screen, and flashes every one second.
- 155 ºC ➔ The message DESCALE is displayed in the upper text of the screen, and flashes every ½ second.
- 180 ºC ➔ The message DESCALE is displayed continuously in the upper text of the screen, and the oven only operates in Convection mode.

Once the message DESCALE has been displayed, it will not disappear until descaling takes place, even though the TG temperature falls or if the oven is switched off. The message reappears when the oven is switched on.

17.12.6. PROCEDURE FOR DESCALING

To descale, go to the DESCALE function in the MENU option.
The message displayed is SELEC. TIME, descaling time between 30 and 480 minutes (120 default setting)
Wait until the user confirms the selection with the button on the wheel.

Phase 1 VAC operates for 3 minutes.

The message displayed is SPRAY DESCALER. Undo the side panel of the oven and access the steam generator. Undo the descaling nut and pour the chemical product in the steam generator. Tighten the nut after inserting the chemical product and confirm by pressing START.

Phase 2 VDV operates until reaching the maximum level, the boiler fills with descaler.

Phase 3 CV operates until TG reaches 61 ºC. When TG falls below 58 ºC, CV enters again until reaching 61ºC, this continues for the period selected by the user. The display shows a countdown for the time remaining.
Phase 4 VAC operates for 3 minutes.
Phase 5 VDV operates until reaching N.max.
Phase 6 VAC operates for 3 minutes.
Phase 7 VDV operates until reaching N.max.
Phase 8 Steam mode operates until TC reaches 95 ºC.

Lastly, this function ends and the message END DESCALING, is displayed, leaving all outputs at zero (except RG).
The current phase number FX DESCALE and the time remaining are displayed continuously.
If during the descaling cycle the operation is aborted by pressing the descaling button again or because the oven has been switched off, proceed as follows:

If it has not reached phase 2 ➔ The cycle is ended.
If it has reached or exceeded phase 2 ➔ The cycle goes to phase 4
If it has reached phase 4➔The cycle goes to the phase in which it stopped.

There is an option to abort the descaling process. Press the ON button and then press the START/STOP button for 5 seconds.

Boiler capacities

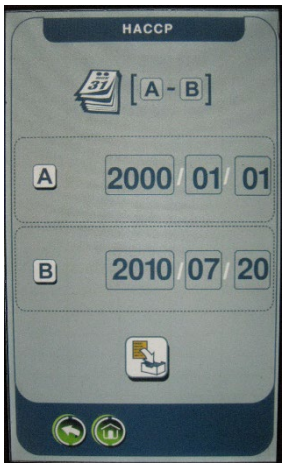
	APE	APG
061	3.25 litres	7.3 litres
101	5.5 litres	7.3 litres
201	7 litres	12.3 litres
102	7 litres	12.3 litres
202	11.7 litres	15.3 litres

The chemical product used must have a **phosphoric acid base** at a concentration of 35 ÷ 40 %. It may contain an anti-foaming agent. A chemical concentration of approximately 10÷ 5% of the capacity should be used in the boiler. This concentration depends on the degree of lime scale saturation and the effectiveness of the chemical product. Please refer to the supplier for advice on the method of application.

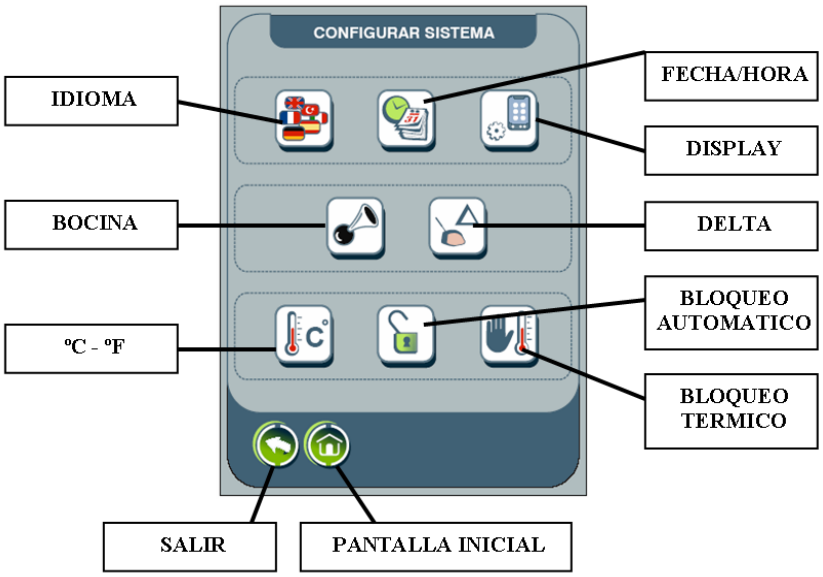
17.12.7. HACCP

When the oven is operating with the Core probe or Delta, function, the data with which it is operating must be stored in order to comply with current legislation with respect to HACCP.
The oven saves all the data for the operating mode, Humidity, TC and TN (the lowest value between TN1 and TN5) every minute while you remain in the function in question. The data are stored for one month.
These data can be displayed on the screen or downloaded to an external device using a de USB or Ethernet.

Usage:
1. Connect the USB memory stick to the oven when it is switched off.
2. Switch on the oven.
3. Confirm the option START HACCP.
4. After the message END HACCP DOWNLOAD switch off the oven.
5. Remove the USB memory stick.
6. Process the information in the Fagor HACCP application.



17.13. CONFIGURE SYSTEM



17.13.1. LANGUAGE

This allows you to select between 27 different languages. Spanish is the default language.

1. Press the language button 
2. Select the required language

- Hindi
- Spanish
- English
- Italian
- French
- Turkish
- German
- Polish
- Portuguese
- Basque
- Catalan
- Galician
- Valencian
- Swedish
- Czech
- Chinese

- Arabic
- Thai
- Korean
- Dutch
- Russian
- Hungarian
- Slovenian
- Slovak
- Finnish
- Croatian
- Estonian
- Lithuanian
- Norwegian
- Romanian
- Bulgarian
- Greek

17.13.2. DATE TIME

This allows you to update the date and time.

1. Press the button, programme time and date.
2. Press the time button and select the time using the up/down buttons. → 14 : 25
3. Press the date button and select the date using the up/down buttons. → 2007 / 02 / 12

17.13.3. DISPLAY

This allows the display to be programmed as required by the user (carried out when the oven is off).
Options which can be changed.

- Display time and/or date
- Text to be displayed

The default setting is with the time and date enabled and without any text.

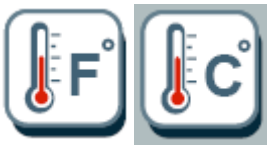
17.13.4. DELTA

This setting allows you to select the differential value for the delta cooking.
The default value is 50 ºC.

1. Press Delta setting.
2. Select required value with the up / down buttons.

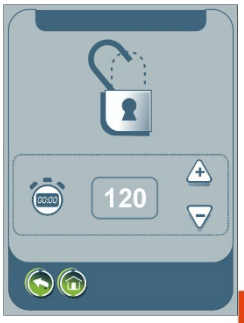
17.13.5. ºC - ºF

It is possible to change from degrees Celsius (ºC) to degrees Fahrenheit (ºF).
Press the button to change from one to the other.



17.13.6. AUTOMATIC LOCKING

An automatic locking setting can be programmed to prevent the oven from being used accidentally.
To activate this option, select the time (1 ÷ 120 minutes) after which you wish to automatically lock the oven. By default this option is deactivated.



17.13.7. THERMAL STOP

The active thermal locking begins the countdown for the programmed time only when the temperature has reached the set temperature.
To activate thermal locking press button.
The button will change colour.

17.14. FAGOR COOKING

Direct access to the oven recipes.
This represents the oven automatic operating mode. This includes recipes programmed at the factory, and divided into families, together with personal user-defined programmes. By default, there are 6 recipes in each group. However the user can enter a total number of recipes dependent on the available memory (undefined).

Each of the sections contains various recipes invented by the FAGOR INDUSTRIAL chefs.

1. Press any option.
2. Select the required recipe.

Each of the options available on this screen is defined below:

- **Recipe Families**:
    - **Meat**: This includes all the recipes belonging to the Meat group, whether pre-programmed or personally programmed. The pre-programmed recipes include:
        - Grilled steak
            - Convection 0%: 7 minutes 250 ºC.
        - Roast beef
            - Mixed 50%: 20 minutes 160 ºC.
            - Convection 0%: 20 minutes 170 ºC.
        - Breaded fillet steak
            - Convection 0%: 7 minutes 250 ºC.
        - Tenderloin steak
            - Convection 0%: Spike 52 ºC at 250 ºC
        - Chop
            - Convection 0%: Spike 52 ºC at 250 ºC
        - Bacon strips
            - Convection 0%: 3 minutes 250 ºC.
    - **Fish**: This includes all the recipes belonging to the Fish group, whether pre-programmed or personally programmed. The pre-programmed recipes include:
        - Grilled fish
            - Convection 0%: Spike 54 ºC at 250ºC
        - Breaded fillet of fish
            - Convection 0%: 7 minutes 220 ºC.
        - Boiled fillet of fish
            - Steam: Spike 54 ºC at 99 ºC
        - Baked fish
            - Mixed 20%: Spike 54 ºC at 240 ºC
        - Fish baked in salt
            - Mixed 70%: Spike 54 ºC at 220 ºC

- Cuttlefish
  - Steam: 12 minutes 99 ºC.

- **Poultry**: This includes all the recipes belonging to the Poultry group, whether pre-programmed or personally programmed. The pre-programmed recipes include:
  - Chicken
    - Steam: 10 minutes 90 ºC.
    - Mixed 20%: Spike 80 ºC at 220 ºC
    - Convection 0%: 7 minutes 300 ºC.
  - Chicken wings
    - Steam: 8’ at 90 ºC
    - Mixed 20%: 8 minutes 220 ºC.
    - Convection 0%: 7 minutes 300 ºC.
  - Chicken thighs
    - Steam: 12 minutes 90 ºC.
    - Mixed 20%: 12 minutes 220 ºC.
    - Convection 0%: 4 minutes 300 ºC.
  - Breast of turkey
    - Steam: 3 minutes 90 ºC.
    - Mixed 50%: 4 minutes 220 ºC.
    - Convection 0%: 3 minutes 300 ºC.
  - Duck
    - Steam: 15 minutes 90 ºC.
    - Mixed 20%: 12 minutes 220 ºC.
    - Convection 0%: 7 minutes 300 ºC.
  - Breast of chicken
    - Steam: 3 minutes 90 ºC.
    - Mixed 50%: 4 minutes 220 ºC.
    - Convection 0%: 3 minutes 300 ºC.

- **Shellfish**: This includes all the recipes belonging to the Shellfish group, whether pre-programmed or personally programmed. The pre-programmed recipes include:
  - Grilled prawns (No 3)
    - Convection 0%: 3 minutes 280 ºC.
  - Cooked prawns (No 3)
    - Steam: 3 minutes 85 ºC.
  - Grilled crayfish
    - Convection 0%: Spike 65 ºC at 280 ºC
  - Grilled crab
    - Convection 0%: 10 minutes 280 ºC.
  - Boiled spiny lobster
    - Steam: Spike 65 ºC at 85 ºC
  - Boiled European lobster
    - Steam: Spike 65 ºC at 85 ºC

- **Vegetables**: This includes all the recipes belonging to the Vegetable group, whether pre-programmed or personally programmed. The pre-programmed recipes include:
  - Frozen peas
    - Steam: 8 minutes 99 ºC.
  - Frozen broad beans
    - Steam: 9 minutes 99 ºC.
  - Frozen cauliflower
    - Steam: 10 minutes 99 ºC.
  - Frozen carrots
    - Steam: 9 minutes 99 ºC.

- Spinach
  - Steam: 6 minutes 99 ºC.
- Frozen broccoli
  - Steam: 8 minutes 99 ºC.

- **Cakes and pastries**: This includes all the recipes belonging to the Cakes and pastries group, whether pre-programmed or personally programmed. The pre-programmed recipes include:
  - Sponge cake
    - Convection 0%: 20 minutes 175 ºC.
  - Puff pastry
    - Convection 0%: 20 minutes 170 ºC.
  - Cup cakes
    - Convection 0%: 15 minutes 180 ºC.
  - Creme caramel
    - Steam: 15 minutes 85 ºC.
  - Muffins
    - Convection 0%: 20 minutes 200 ºC.
  - Strudel
    - Convection 0%: 35 minutes 175 ºC.

- **Accompanying dishes**: This includes all the recipes belonging to the Accompanying dishes group, whether pre-programmed or personally programmed. The pre-programmed recipes include:
  - Boiled egg
    - Steam: 12 minutes 99 ºC.
  - Scrambled egg
    - Steam: 10 minutes 99 ºC.
  - Rice
    - Steam: 35 minutes 99 ºC.
  - Chips
    - Convection 0%: 15 minutes 230 ºC.
  - Potato gratin
    - Mixed 40%: 20 minutes 220 ºC.
  - Boiled potatoes
    - Steam: 25 minutes 99 ºC.
- **Others**: This includes those recipes which do not belong to any of the above families. There are no pre-programmed recipes in this section.

- **Recipe Configuration**: Allows you to work with the available recipes. Recipes can be created, edited (copied or modified) or deleted. It is also possible to import, export, save from/to an external peripheral, making it possible to transfer the required recipe/s from one oven to another.

All the recipes (whether pre-programmed or personal) include an initial pre-heating/cooling phase, provide they are not in the +30/-30 range, to allow the oven to reach the required cooking temperature, as follows:
If the oven is at a temperature above the setting of the initial phase:

- On entering the recipe, TEMP. TOO HIGH & OPEN DOOR is displayed, in the same way as during the wash cycles.
- When the temperature setting for the initial stage is reached, the oven is switched off, the buzzer is heard, and LOAD is displayed.
- When the door is closed, PRESS START is displayed, to start running the recipe in question.

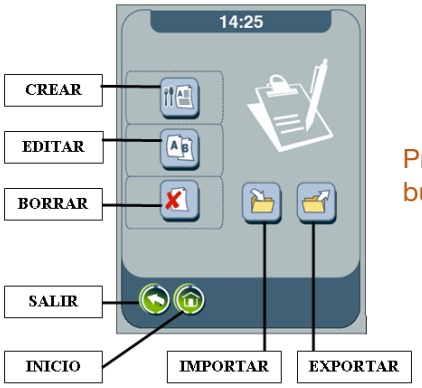
If the oven is at a temperature below the setting of the initial phase:

- On entering the recipe, PREHEAT & PRESS START is displayed.

- When Start is pressed, the oven is heated with the function established in the first phase, 30 degrees above the setting for the first phase (note that the upper limit established for this operating mode can never be exceeded), and the buzzer sounds when the temperature in question is reached.
- The message PRESS START displayed, to start running the recipe.

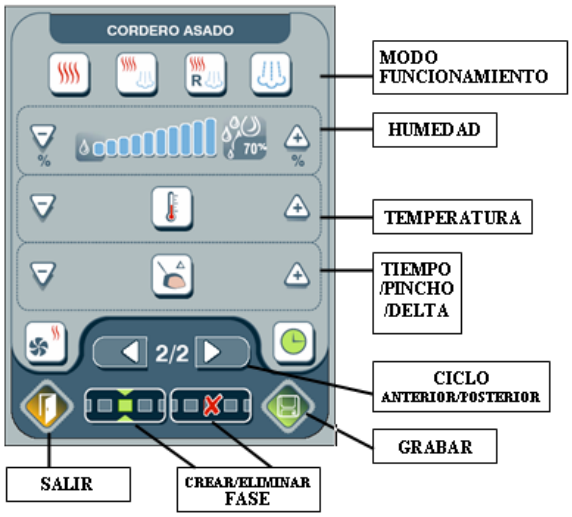
17.14.1. CREATE RECIPE

Press the edit button.



Press the create button.

Write the name of the recipe and press.



Edit conditions and steps in recipe.

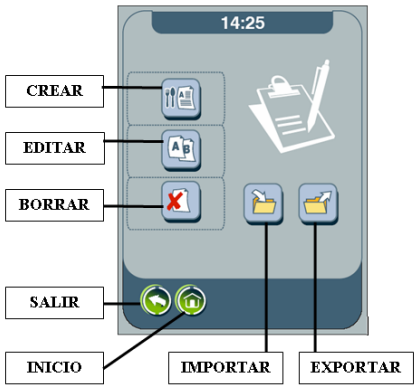
Confirm save recipe.

To create a new programme, select all the parameters (Mode, Function, Humidity, Temperature, Time and Fan Power/Speed for each phase (1 to 9) required in the programme, assign the required name using a key enabled for this purpose (See fig.5) and indicate the family to which it belongs.
If DEL is pressed without selecting any letter, the operation is aborted and you will return to the previous screen.

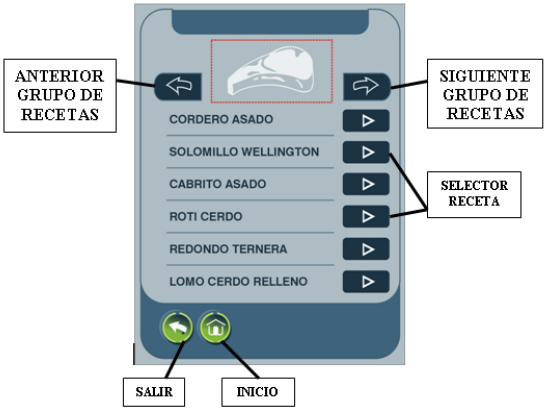
17.14.2. EDIT RECIPE

Allows an existing recipe to be copied or modified. To do so, once the recipe has been edited and the required changes made, it is possible to save the recipe. The recipe will be modified with the name it already had or it can be saved with a new name in the required recipe group.

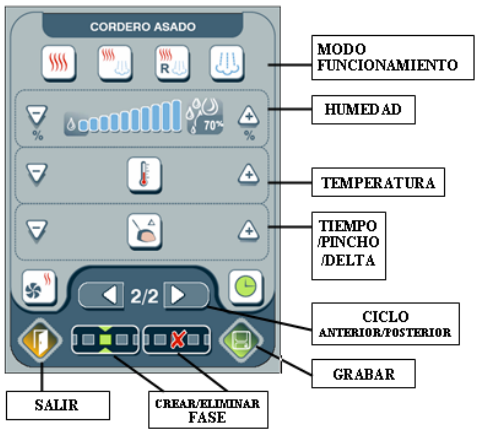
Press the edit button.



Press the edit button.



Select recipe



Edit conditions and steps in recipe
Save recipe

Confirm save recipe

17.14.3. DELETE RECIPE

The selected recipe can be deleted.

17.14.4. EXPORT

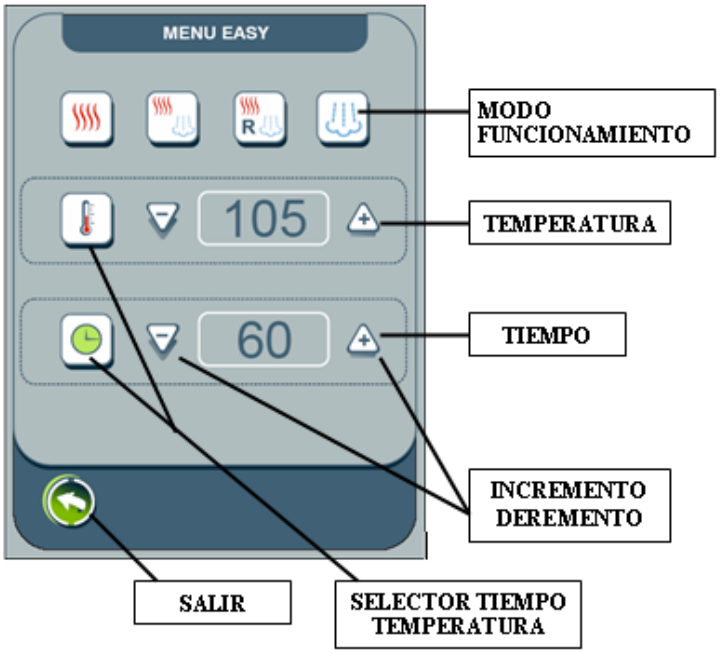
This allows existing recipes to be stored on external device (USB).

17.14.5. IMPORT

This allows recipes to be uploaded from external device (USB).
If any of the recipes are the same as the recipes already saved, confirm whether you wish to replace the existing recipe.
If recipes are imported from an external device (USB), all the recipes on the USB memory stick will be copied and the existing recipes stored on the oven will be deleted

17.15. FAGOR EASY

The FAGOR EASY option on the start screen enables you to obtain a simple setting of the screen.
For simple applications where it is only necessary to change the cooking mode, temperature and time.



1. Select the operating mode.
2. Select the temperature with the up/down buttons or by pressing the temperature selector switch and entering the value numerically.
3. Select the time with the up/down buttons or by pressing the time selector switch and entering the value numerically.
4. Press Start

17.16. SAT MENU

The options available to the SAT technician and the internal operator for the configuration or inspection of the oven are shown below. **To enter, while the oven is in Convection or Mixed mode, enter 989 in temperature value and 898 in time value.**

- Blower speed (only for gas ovens): Option to indicate the speed of each blower in gas ovens, between 0 and 8000 rpm, for each operating mode (maintenance speed, starter speed, minimum and maximum power) for each blower. The increase/decrease of all the speeds is in units of 100.
- The default setting for each operating mode is determined by the oven model and the type of gas selected
  - VCC
    - Starter speed (0 ÷ 8000)
    - Minimum speed (0 ÷ 8000)
    - Maximum speed (0 ÷ 8000)
  - VCV
    - Starter speed (0 ÷ 8000)
    - Minimum speed (0 ÷ 8000)
    - Maximum speed (0 ÷ 8000)

Table of default convection blower speeds

	Natural gas	TOWN GAS	LGP (B/P)
APG-061	Start-up: 4000 Medium: 4200 Maximum: 6500	Start-up: 4000 Medium: 4200 Maximum: 6500	Start-up: 4000 Medium: 3600 Maximum: 5400
APG-101	Start-up Speed: 5000 Medium: 4000 Maximum: 7500	Start-up: 5000 Medium: 4000 Maximum: 7500	Start-up: 5000 Medium: 3600 Maximum: 6000
APG-201	Start-up: 4000 Medium: 4200 Maximum: 8000	Start-up: 4000 Medium: 4000 Maximum: 7200	Start-up: 4000 Medium: 3800 Maximum: 6200
APG-102	Start-up: 4000 Medium: 4000 Maximum: 8000	Start-up: 4000 Medium: 4000 Maximum: 8000	Start-up: 4000 Medium: 3500 Maximum: 6100
APG-202	Start-up: 4000 Medium: 3800 Maximum: 8000	Start-up: 4000 Medium: 4200 Maximum: 8000	Start-up: 4000 Medium: 3500 Maximum: 6000

Table of default steam blower speeds

	Natural gas	TOWN GAS	LGP (B/P)

APG-061	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 5000	Start-up: 4000 Medium: 5000 Maximum: 5000	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 4300
APG-101	Start-up Speed: 5000 Medium: Tg>90ºC, -15%Max Maximum: 6400	Start-up: 5000 Medium: 6600 Maximum: 6600	Start-up: 5000 Medium: Tg>90ºC, -15%Max Maximum: 5700
APG-201	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 6200	Start-up: 4000 Medium: 6200 Maximum: 6200	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 5600
APG-102	Start-up: 5500 Medium: Tg>90ºC, -15%Max Maximum: 6200	Start-up: 4000 Medium: 6200 Maximum: 6200	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 5500
APG-202	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 8000	Start-up: 4000 Medium: 8000 Maximum: 8000	Start-up: 4000 Medium: Tg>90ºC, -15%Max Maximum: 6500

- Serial No Option allowing the serial number of the oven to be modified or displayed. An alphanumeric sequence of up to 10 characters may be used.

- Software Version This displays the software version included with the oven.
  - Software version of the control holder card.
  - Software version of the chamber card.
  - Software version of the boiler card.
  - Software version of the gas card (Only gas ovens)

- Oven model Indicate what type of oven is to be controlled.. The options are as follows:
  - APE 061
  - APE 101
  - APE 102
  - APE 201 (Default setting)
  - APE 202
  - APG 061
  - APG 101
  - APG 102
  - APG 201
  - APG 202

- Type of gas (only gas ovens): As different gases can be used (Natural Gas, Butane-propane, City Gas), the burner blower speeds should be adjusted for optimum combustion. In this section select the gas to be used.
  - Butane propane B/P (Default setting)
  - Natural Gas NG
  - City gas CG

- Exhibition Option to set the oven to Exhibition mode, enabling the control panel, and optionally the wash cycle, and disabling the internal operating of the oven.
  To exit this mode, press OFF for 5 seconds. In this way, when the oven is switched on again, it starts in normal operating mode.
  There are two exhibition configurations, depending on the selection made by the user:

- Control panel mode Only the interface and outputs RG and LZ operate, all other inputs/outputs are disabled and all errors are ignored. The values of the TC and TN probes are fixed.
- Wash Mode The oven runs the intense wash programme and continues in this cycle until the exhibition mode is exited In this mode, the wash screen is displayed, and all errors are ignored.

In exhibition mode, the START/STOP button is ignored, as are all the buttons on the screen. The oven can only be switched off, restoring the wash function when it is switched back on.
To exit the exhibition wash mode, there is a secret sequence (Press START/STOP and then press the Door Icon button 5 times followed by START/STOP again). If this sequence is entered, the wash box valve is opened to drain any water contained within, the oven is switched off on conclusion of the operation, disabling this operating mode for the next system start-up.

- Log Option for viewing the oven log.
  The following data should be saved in the log:
  - Convection hours Total hours of operation in Convection mode.
  - Mixed hours Total hours of operation in Mixed mode.
  - Regeneration hours Total hours of operation in Regeneration mode.
  - Steam hours Total hours of operation in Steam mode.
  - No CC1 Cycles Number of CC1 cycles.
  - No CC2 Cycles Number of CC2 cycles.
  - No CV1 Cycles Number of CV1 cycles.
  - No of CV2 Cycles: Number of CV2 cycles.
  - No VDV Cycles Number of VDV cycles.
  - No VAC Cycles Number of VAC cycles.
  - No VCN Cycles Number of VCN cycles.
  - No Ms/Mb Cycles Number of Ms/Mb cycles.
  - No Mc/Ma Cycles Number of Ma/Mc cycles.
  - No Mba Cycles Number of Mba cycles.
  - No VHM Cycles Number of VHM cycles.
  - No LZ Cycles Number of LZ cycles.
  - No VE Cycles Number of VE cycles.
  - No RG Cycles Number of RG cycles.
  - No R/L Cycles Number of R/L cycles.
  - No M/P Cycles Number of M/P cycles.
  - No IP Cycles Number of IP cycles.
  - No of Rapid Rinse Cycles.
  - No of Rinse Cycles.
  - No of Mild Wash Cycles.
  - No of Medium Wash Cycles.
  - No of Intense Wash Cycles.
  - No of Semi-automatic Wash Cycles.
  - No of Cool Down Cycles
  - Total No of Descaling Cycles
  - TC Max Maximum temperature of TC.
  - TV Max Maximum temperature of TV.
  - TN Max Maximum temperature of TN.
  - TG Max Maximum temperature of TG after last descaling.

It is possible to reset all the log data. To do so, press and hold the START/STOP button for 5 seconds.
The data can also be reset one by one. To do so press the Screen ON button for 5 seconds.

- Automatic drainage: Permits the configuration of the frequency with which the oven should drain the boiler, that is, every so many hours of the oven's operation (all modes except convection, where TG > 60 ºC) the drainage cycle must be run.
  - 1 ÷ 63 (**Default setting: 24**)

There is an option to abort the process by pressing START/STOP for 5 seconds.

- Condensation time: Option for configuring the condensation cycle. To do so, the technician may select how long the condensation is required to be active for every 10 seconds of the cycle. Range [0 ÷ 10], 2 default setting.

- SAT test: Access to a new screen where the technician can test each of the oven components.

- Update Software: Process for updating the control panel software. Insert a USB memory stick containing the new version

- Calibrate thermocouples: Start the thermocouple calibration process, selecting the required time (from 10 to 300 seconds, 30'' and 120'' by default in electric and gas ovens respectively). This is the time during which the probes must be stabilised without changing their value.
  When this function is activated, the value of the **4 thermocouples** (TC, TV, TG, TN) is displayed. The 4 thermocouples should measure between 80 and 110 ºC.
  First, the oven is set to Steam mode until TC reaches 99 degrees. This step is considered preliminary to calibration and should not be counted in the calibration time.

Next, operate the CV output continuously so that the TC, TN, TV (only in electric ovens) and TG probes measure values between 80 and 110 ºC. When all the values measured by the probes have been determined (CV takes the set time without a break while running, without any value changing more than one degree), the probes are taken as a reference from 100ºC, and all the thermocouples are calibrated. Therefore, the difference of all the values with respect to 100 is noted. This value is used to adjust subsequent displays of the thermocouples.

If the calibration cannot be completed within 15 minutes, the corresponding error is displayed.
The user may abort the thermocouple calibration process at any moment.

- Manual drainage: Option permitting the drainage of the boiler.

If the user does not abort the operation (leaving the screen), the drainage cycle automatically stops after 3 minutes.

- Activating Factory Configuration: Option to return to factory configuration of the oven, resetting these values.
  - Blower Speed Blowers
  - Oven model (**VPE 201**)
  - Gas type (**B/P**)
  - Automatic drainage (**24**)
  - Condensation time (**2**)
  - Delta value (**50)**
  - Config. Display (date and time active, screensaver off)
  - Temperature scale (**ºC**)
  - Locking (**0**)
  - Thermal stop (**No**)
  - Erase all new recipes created by the user

- Tester number: Option allowing the number of the person who has tested the oven to be entered or displayed. Sequence of 3 numbers.

- Error log**:** This displays all the errors which have been produced in the oven, indicating the error, date and time of the error

There is an option to reset the log by pressing START/STOP for 5 seconds.
The data can also be reset one by one. To do so press the Screen ON button for 5 seconds

- Settings**:** To enter this mode for internal use by Fagor Industrial, a sequence must be entered

While the oven is in convection mode, enter 987 in ''temperature value'' and 876 in ''time value''**.**

- Reliability

Reliability programme 1

This is the sequence which should be repeated:

- 8 hours Convection Mode at 120 ºC
- 8 hours Mixed Mode at 110 ºC
- 8 hours Steam Mode

Display: True operating parameters

Reliability programme 2

The oven will operate in Convection Mode at 100 ºC. The fluepipe is activated every 30 seconds, and goes up and down.

Display:

DSI = value TC
DSD = value TN
DII and DID = No of fluepipe cycles
The true value of the thermocouples can be displayed by pressing Cool down for 5 seconds.

Reliability programme 3

The oven will operate in Convection Mode at 300 ºC. The VE output remains open if 70 < NTC > 75 ºC.

Display:

DSI = value TC
DSD = 300
DII = value NTC
DID = This indicates whether the VE output is active or not. [ON] / [OFF]
The true value of the thermocouples can be displayed by pressing Configure System for 5 seconds.

Reliability programme 4

The oven will operate in Convection Mode at 100 ºC. Every 30 seconds the direction of the fan is changed with R/L.

Display:

DSI = value TC
DSD = value TV
DII = value TN
DID = value TG

SAT test

The available inputs/outputs in the oven can be checked and tested individually.
An output can be activated or deactivated independently.
For inputs, the status of the selected input is displayed (Yes/No if it is an input which may be active/not active, the value of the input, etc.) For a thermocouple, if it is OK, the value being measured is displayed, other wise OUT is displayed.

Inputs for testing

- Camera probe (TC)
- Steam output probe (TV).
- Core probe (TN).
- Steam generator probe (TG).
- Resistance NTC.
- Door contactor (IP).
- Maximum level probe (MAX).
- Minimum level probe (MIN).

Outputs for testing

- Chamber heating (CC1).
- Chamber heating (CC2).
- Fan on (M/P).
- Fan direction (L/R).
- Condensation electrovalve (VCN).
- Humidification electrovalve (VHM).

- Chimney motor (Ms/Mb).
- Main supply relay (RG).
- Fan (VE).
- Oven lighting (LZ).
- Drainage pump (VAC).
- Wash pump (Mba).
- Drainage motor (Mc/Ma).
- Water inlet solenoid valve (VDV).
- Steam heating (CV1).
- Steam heating (CV2).
- Warning bell (TA).

All outputs are in by default in OFF mode.

17.17. ERRORS

When an error occurs:

- The bell rings intermittently.
- A flashing message is shown on the upper text of the display.
- If the START/STOP button is pressed or the door is opened, the error message continues to be displayed but the bell stops ringing.
- To reset the error, switch off the oven.
- When the fault causing the error is removed, the outputs return to normal operation.

A list is provided below of possible errors that may arise in the oven:

"E1 SENSOR TC"
DESCRIPTION:
Camera probe broken. TC out of range [-5 ÷ 330 ºC]
CONSEQUENCE:
The oven is completely disabled.

"E2 SENSOR TN"
DESCRIPTION:
Core probe broken. TN out of range [-10 ÷ 400 ºC]
CONSEQUENCE:
The Spike and Delta functions are disabled

"E3 SENSOR TV" (Only electric ovens)
DESCRIPTION:
Steam probe broken. TV out of range [-5 ÷ 330 ºC]
CONSEQUENCE:
It is only possible to operate in Convection mode, omitting water condensation.

"E4 SENSOR TG"
DESCRIPTION:
Broken generator probe. TG out of range [-5 ÷ 330 ºC]
CONSEQUENCE:
It is only possible to operate in Convection mode.

"E5 WATER LEVEL"
DESCRIPTION
Detects water at maximum level, but does not detect it at minimum level for 3 seconds.
CONSEQUENCE

It is only possible to operate in Convection mode

"E6 CALIBRATION"
DESCRIPTION
It was not possible to calibrate in 15 minutes.
CONSEQUENCE
The oven continues to function normally.

"E7 ERROR AE" (disabled)
DESCRIPTION
- AE inlet does not work
- The connection has been cut off
- The motor does not start within 10 seconds of a start request.
- Does not exceed 500 rpm within 20 seconds of a start request.

CONSEQUENCE
The oven is completely disabled..

"E8 WATER REQUIRED"
DESCRIPTION
VDV has been running for 7 or more minutes and the maximum level has not been reached.
CONSEQUENCE
It is only possible to operate in Convection mode

"E9 DRAIN ERROR"
DESCRIPTION
VAC has been running for 1 or more minutes and level does not fall below minimum.
CONSEQUENCE
It is only possible to operate in Convection mode

"E10 CV FAULT"
DESCRIPTION
With TG < 80 ºC, when CV operates, and in 10 minutes TG does not rise more than 3 ºC.
CONSEQUENCE
It is only possible to operate in Convection mode

"E11 CC FAULT"
DESCRIPTION
The CC operates and in 25 minutes, TC does not increase 3 ºC or more provided TC < (setting–10 ºC).
CONSEQUENCE
The oven is completely disabled.

"E12 CONTROL TEMP"
DESCRIPTION
NTC of controller reaches 60 ºC, but does not exceed 70 ºC.
CONSEQUENCE
The oven continues to function normally.

"E13 BLOWER Q1" (Only gas ovens)
DESCRIPTION
Chamber blower error.
CONSEQUENCE
The oven is completely disabled.

"E14 BLOWER Q1" (Only gas ovens)
DESCRIPTION
Chamber ignition control blocked. This occurs after three failed ignition attempts.

CONSEQUENCE
The oven is completely disabled.

"**E15 FAULT Q1**" (Only gas ovens)
DESCRIPTION
Fault in the chamber ignition control
- SV gas is not activated.
- Not possible to unlock ignition control.

CONSEQUENCE
The oven is completely disabled.

"**E16 BLOWER Q2**" (Only gas ovens) (disabled)
DESCRIPTION
Steam blower error.
CONSEQUENCE
It is only possible to operate in Convection mode

"**E17 BLOWERQ2**" (Only gas ovens)
DESCRIPTION
Steam ignition control blocked. This error occurs after three failed ignition attempts.
CONSEQUENCE
It is only possible to operate in Convection mode

"**E18 FAULTQ2**" (Only gas ovens)
DESCRIPTION
Fault in the steam ignition control.
- SV gas is not activated.
- Not possible to unlock ignition control.

CONSEQUENCE
It is only possible to operate in Convection mode

"**E22 CONTROL TEMP**"
DESCRIPTION
NTC of controller exceeds 70 ºC
CONSEQUENCE
The oven is completely disabled.

"**E23 FLUE PIPE**" (disabled)
DESCRIPTION
Faulty flue pipe motor.
CONSEQUENCE
The oven is completely disabled

"**E24 CHAM. CONNEX**"
DESCRIPTION
Communication error. The chamber card does not respond.
CONSEQUENCE
The oven is completely disabled

"**E25 PMD CONNEX**"
DESCRIPTION
Communication error. The control holder card does not respond.
CONSEQUENCE
The oven is completely disabled

"**E26 VAP CONNEX**"

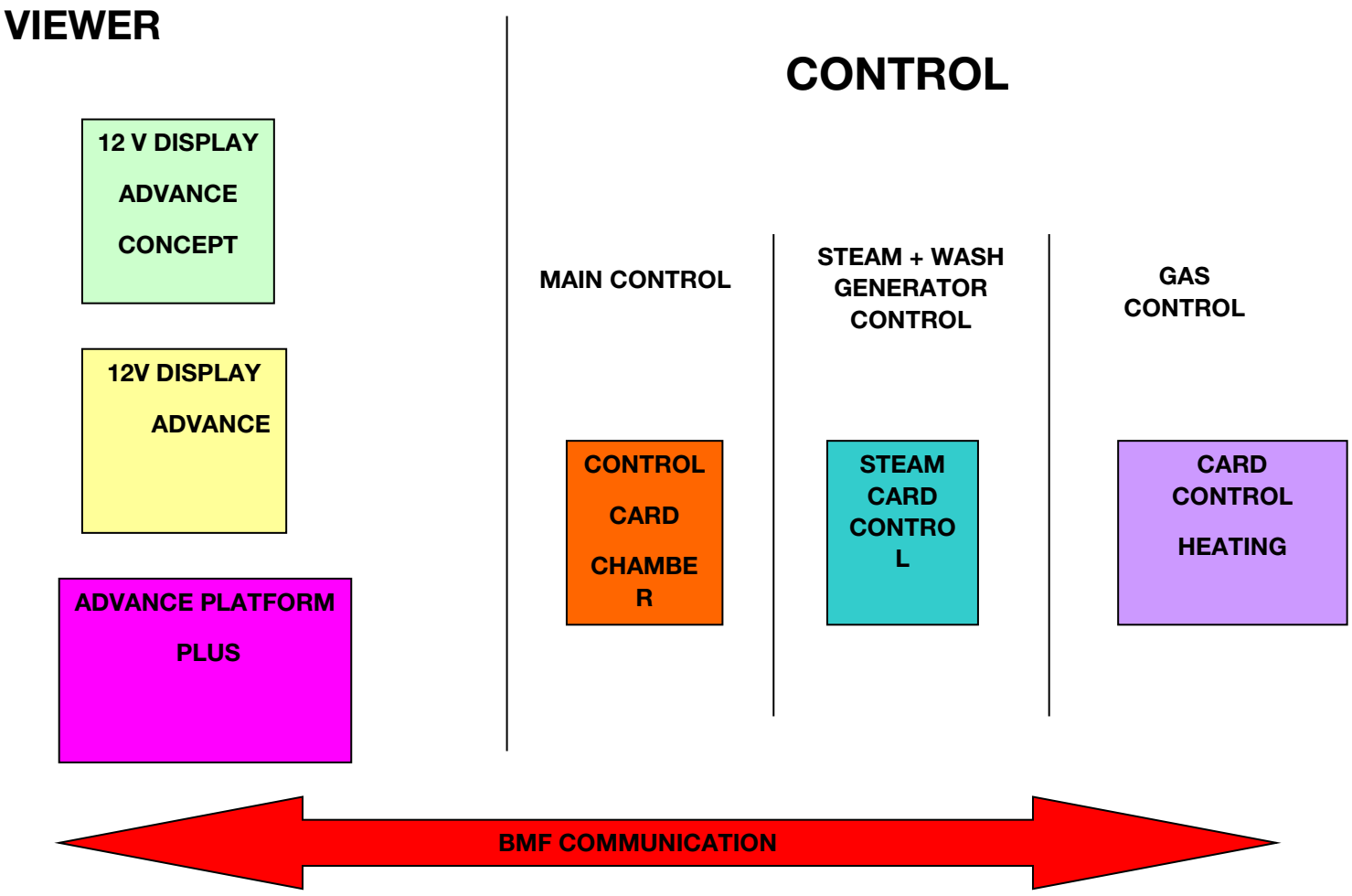
DESCRIPTION
Communication error. The boiler card does not respond.
CONSEQUENCE
It is only possible to operate in Convection mode

"**E27 BMF GAS CONNEX**" (Only gas ovens)
DESCRIPTION
Communication error. The gas card does not respond.
CONSEQUENCE
The oven is completely disabled

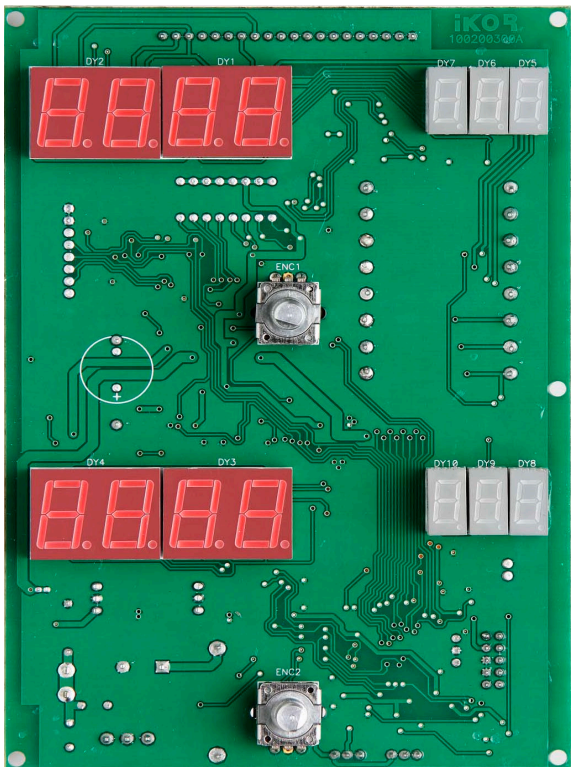
17.18. ACRONYMS

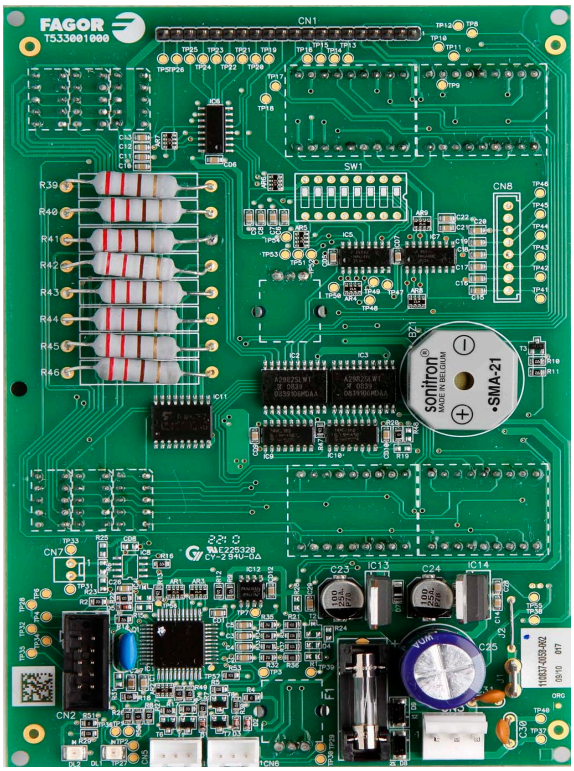
A.E. Variator frequency input
A.S. Variator frequency output
ABR Rinse
CC Chamber heating
COM Common level probe
CV Steam heating
DET Detergent
DSC Descaler
HALL Gas control signal
I/D Fan motor direction of rotation (left/right)
IP Door switch
LZ Oven lighting
M/P Fan motor ignition
Ma Drainage opening
MAX Maximum level probe
Mba Wash pump
Mc Drainage closing
MIN Minimum level probe
Ms/Mb Chimney motor
PWM Gas control signal
RG: Main supply relay
TA Warning bell
TC Camera probe
TG Steam generator probe
TN Core probe
TV Steam output probe
VAC Drainage pump
VCN Condensation electrovalve
VDV Water inlet solenoid valve
VE Fan
VHM Humidification electrovalve

18. OVEN CONTROL



18.1. ACE & ACG DISPLAY





⇒ Chamber temperature selector
⇒ Time / core temperature selector switch
⇒ Chamber temperature display (Setting + True)
⇒ Time / core temperature display (Setting + True)
⇒ Buzzer
⇒ BMF
⇒ Interface with membrane keyboard
- Buttons (ON, OFF, Mode, Fuction, Pow/spe., Humidifier, CD, Start, Stop)
- Leds (Convection, Mixed, Steam, Pow1, Pow2, Pow3, CD, Spike, Delta)

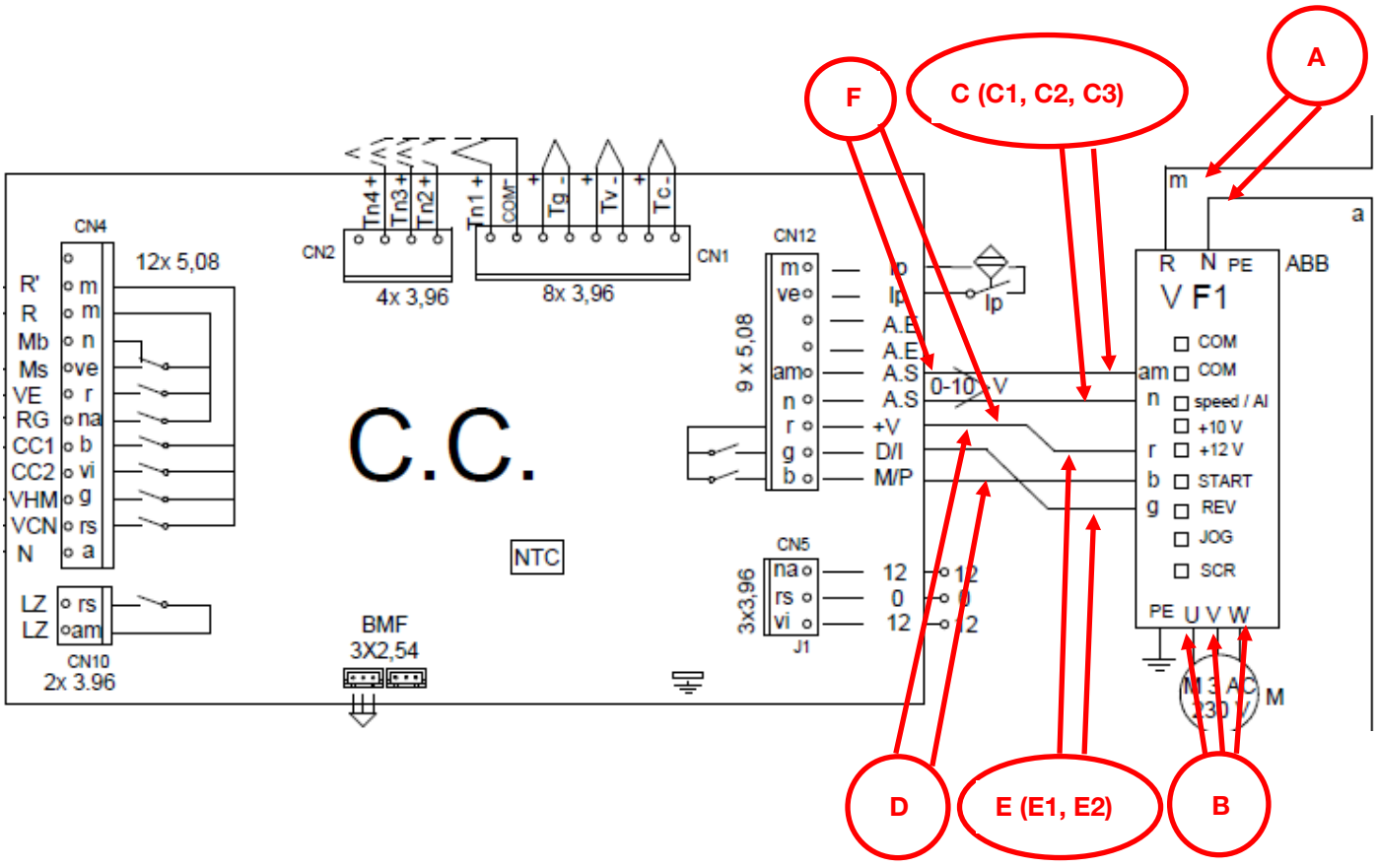
19. MAIN COMPONENTS

19.1. FREQUENCY VARIATOR OF FAN MOTOR

Programmer keypad

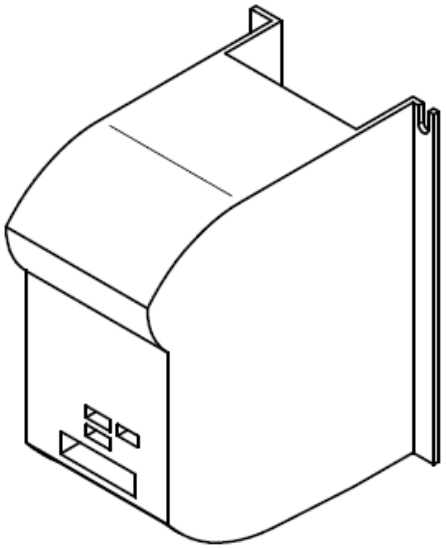
To check the frequency variator of the chamber turbine motor, measure the following voltages: Electronic Card Contact, Frequency Variator Contact:

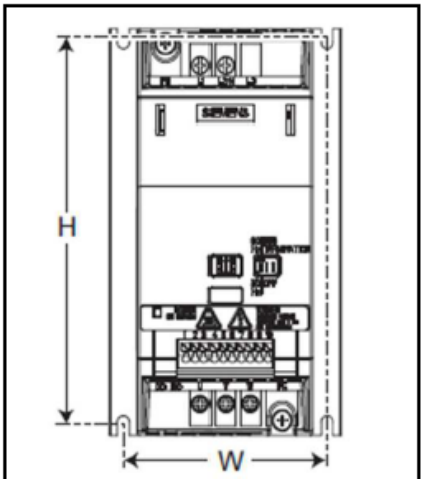
- A - Voltage Input
  - R ÷ N ≈ 230 V AC
- B - Output to motor
  - U ÷ V ≈ 215 V AC
  - U ÷ W ≈ 215 V AC
  - V ÷ W ≈ 215 V AC
- C - Speed setting
  - C1 High speed
    - am AS/am COM ÷ n AS/n speed/AI ≈ 4.7 V DC
  - C2 Average speed
    - am AS/am COM ÷ n AS/n speed/AI ≈ 4.2 V DC
  - C3 Low speed
    - am AS/am COM ÷ n AS/n speed/AI ≈ 3.7 V DC
- D - Run/Stop setting
  - r +V/r +12V ÷ b M/P/g REV ≈ 15.4 V DC
- E - Rotation setting
  - E1 Right rotation
    - r +V/r +12V ÷ g D/I/g REV ≈ 15.4 V DC
  - E2 Left rotation
    - r +V/r +12V ÷ g D/I/g REV ≈ 0 V DC
- F - Operating power supply
  - am AS/am COM ÷ r +V/r +12V ≈ 15.6 V DC



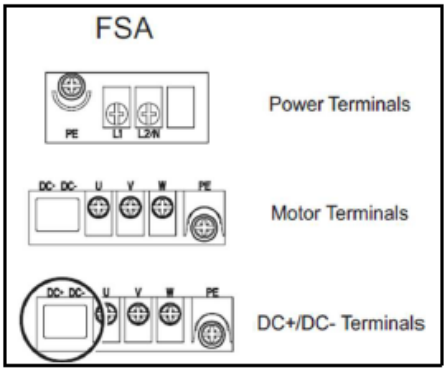
VARIADOR FRECUENCIA Siemens 230V, 0,37 Kw, 6SL3211-0AB13-7UA0

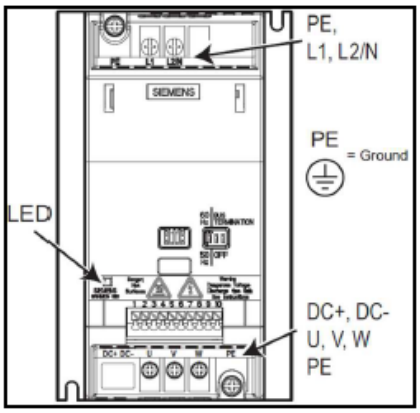
		Variador Siemens	
Parámetro			Aj. Fabr
P0100	0	Europa 50Hz	
P0304	230	Vn (Tensión nominal)	
P0305	1,8	In (Consumo nominal)	
P0307	0,37	Pn (Potencia nominal)	
P0310	50	Fn (Frecuencia nominal)	
P0311	1400	Rpm (velocidad nominal)	
P0700	2	Control Terminal	
P1000	2	Control Consigna ADC	
P1080	25	fmin (Frecuencia minima)	
P1082	50	fmax (Frecuencia maxima)	
P1120	5"	T ac (tiempo aceleración)	
P1121	5"	T dec (tiempo frenada)	
P3900	**1**	**Grabacion de datos**	
P0003	**3**	**Nivel Experto**	
P0005	27	Visualizar Corriente Salida	
P0611	16000	I2t	
P0640	150%	Imax (consume maximo)	
P1210	6	Reset	
P1300	2	Modo parabola, Ventilador	
P1800	16	F.Base Khz	
P2000	55	F ref (frecuencia ref. Consigna	





Frame Size	Drilling Dimensions H mm (inches)	W mm (inches)
A	140 (5.51)	79 (3.11)





Fixing bolts tightening torques:
Drehmomente für Befestigungsschrauben: FSA = [M4] - 2.5 Nm (22.12 lbf.in)
Couples de rotation pour vis de fixation: FSB = [M4] - 2.5 Nm (22.12 lbf.in)
Par para tornillos de sujeción: FSC = [M5] - 4.0 Nm (35.40 lbf.in)
Coppie torcenti per viti di fissaggio:

Terminal tightening torques:
Anzugsmomente für Schraubklemmenanschlüsse: FSA = 0.96 Nm (8.50 lbf.in)
Couple de serrage des bornes: FSB = 1.50 Nm (13.30 lbf.in)
Pares de apriete para los terminales de tornillo: FSC = 2.25 Nm (19.91 lbf.in)
Coppie di serraggio per connessioni con morsetti a vite:

FREQUENCY VARIATOR PARAMETERS

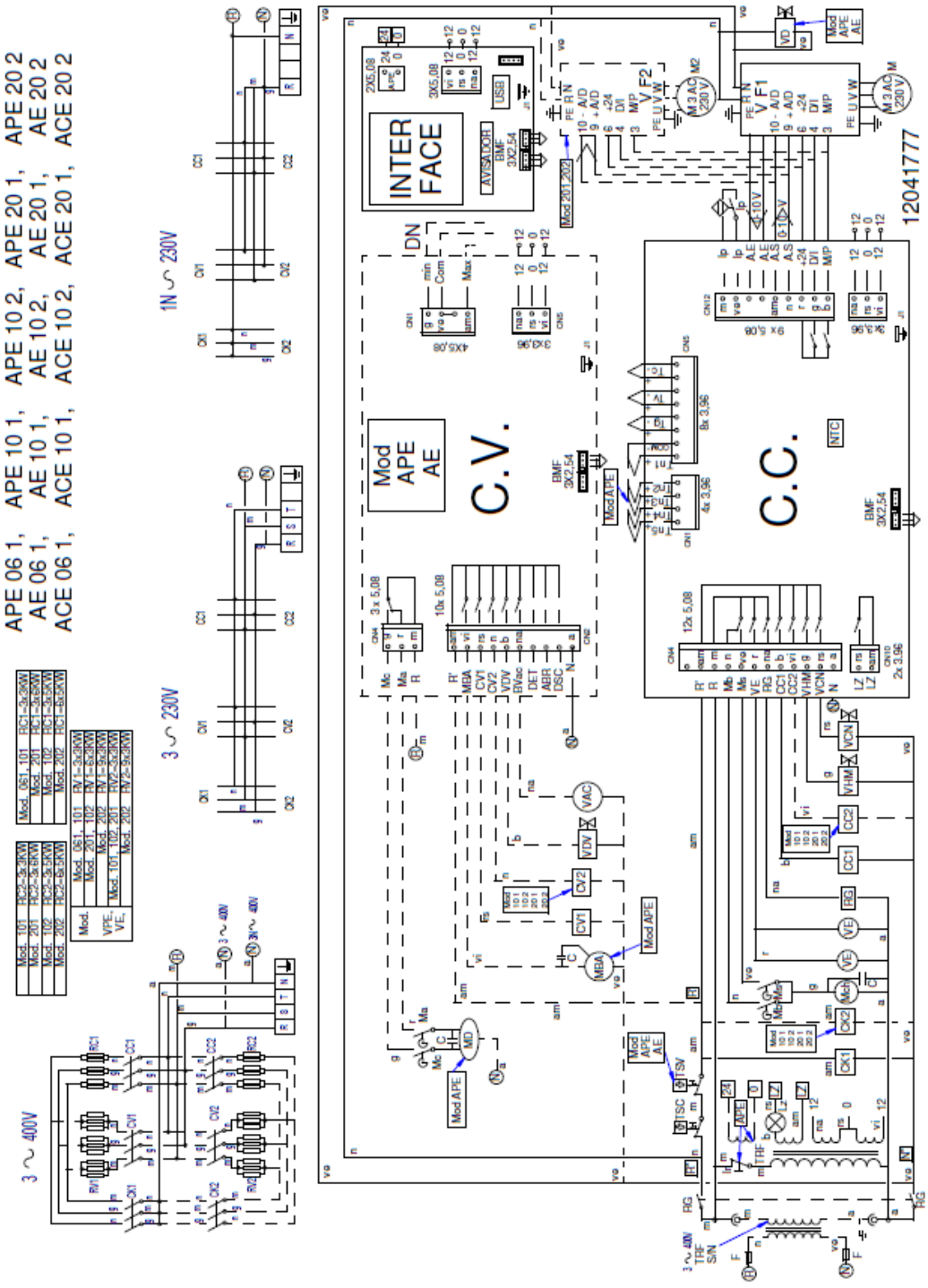
To access the frequency variator parameters, press "P". To exit this option, press "P" again. If any of the "Basic" level values are modified, level "3" must be programmed again.

19.1.1. FREQUENCY VARIATOR PARAMETERS

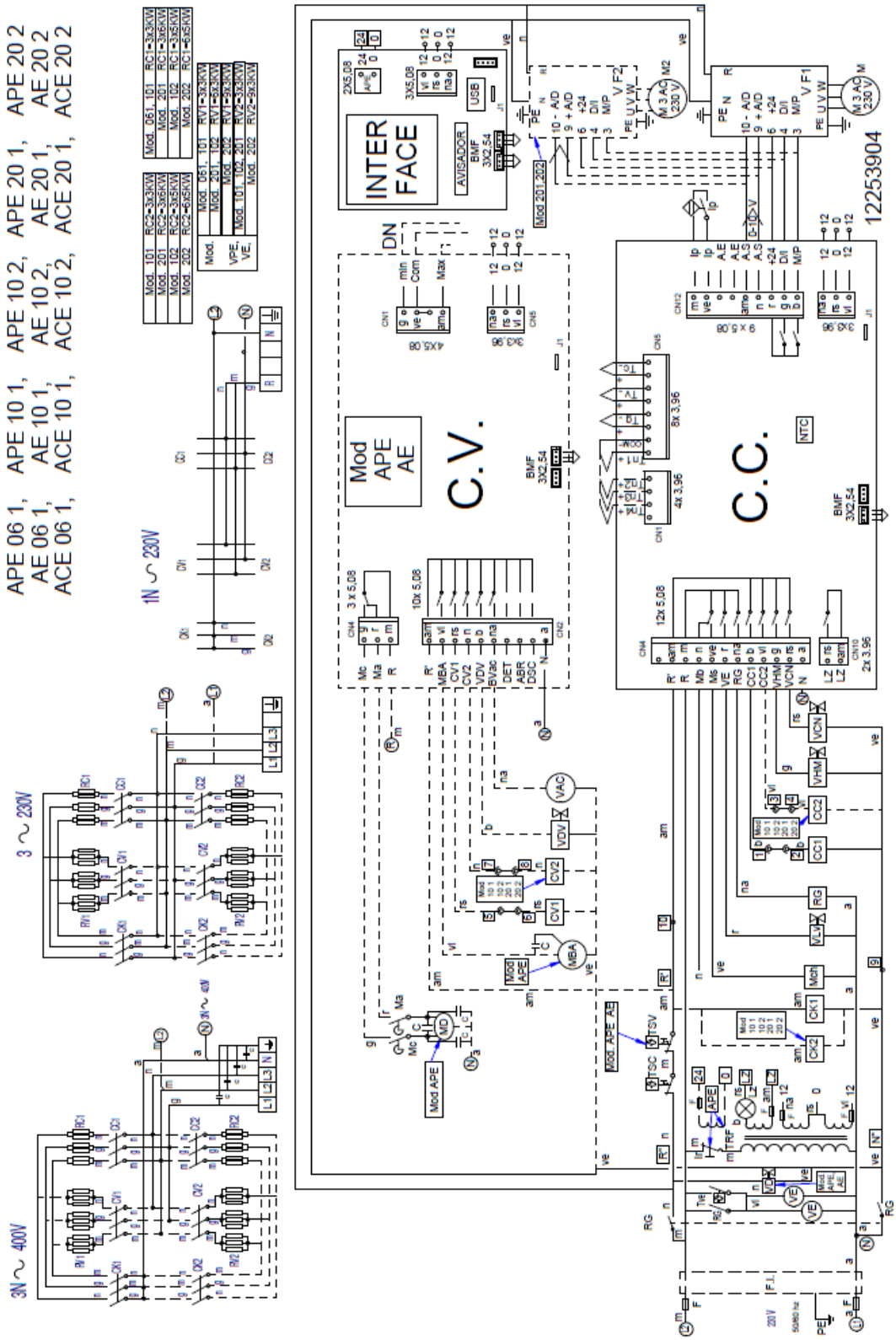
Parameter	Definition	Value					
		061 Elec	061 Gas	101 Elec+Gas	102 Elec+Gas	201 Elec+Gas	202
P0010	Start programming	1	1	1	1	1	1
P0100	Value in kW 50 Hz	0	0	0	0	0	0
P0304	Vn (V)	230	230	230	230	230	230
P0305	IN (A)	1.8	1.8	1.8	1.8	1.8	1.8
P0307	PN (kW)	0.37	0.37	0.37	0.37	0.37	0.37
P0310	Fn (Hz)	50	50	50	50	50	50
P0311	rpm (Nom)	1400	1400	1400	1400	1400	1400
P0700	Terminal	2	2	2	2	2	2
P1000	ADC setting	2	2	2	2	2	2
P1080	F. Min. (Hz)	25	25	25	25	25	25
P1082	F. Max. (Hz)	50	50	50	50	50	50
P1120	Time ON (s)	5	5	5	5	5	5
P1121	Time OFF (s)	5	5	5	5	5	5
P3900	End programming and recording data	1	1	1	1	1	1
P0003	Expert level	3	3	3	3	3	3
P0005	Output current display	27	27	27	27	27	27
P0611	Overload activation time (seconds)	16000	16000	16000	16000	16000	16000
P0640	Current overload (%)	150	150	150	150	150	150
P1210	Automatic restart	6	6	6	6	6	6
P1300	Lineal mode (V/f)	2	2	2	2	2	2
P1800	Base f. Khz	16	16	16	16	16	16
P2000	Setting reference f. Hz	47	55	55	55	55	55

20. ELECTRICAL DIAGRAM

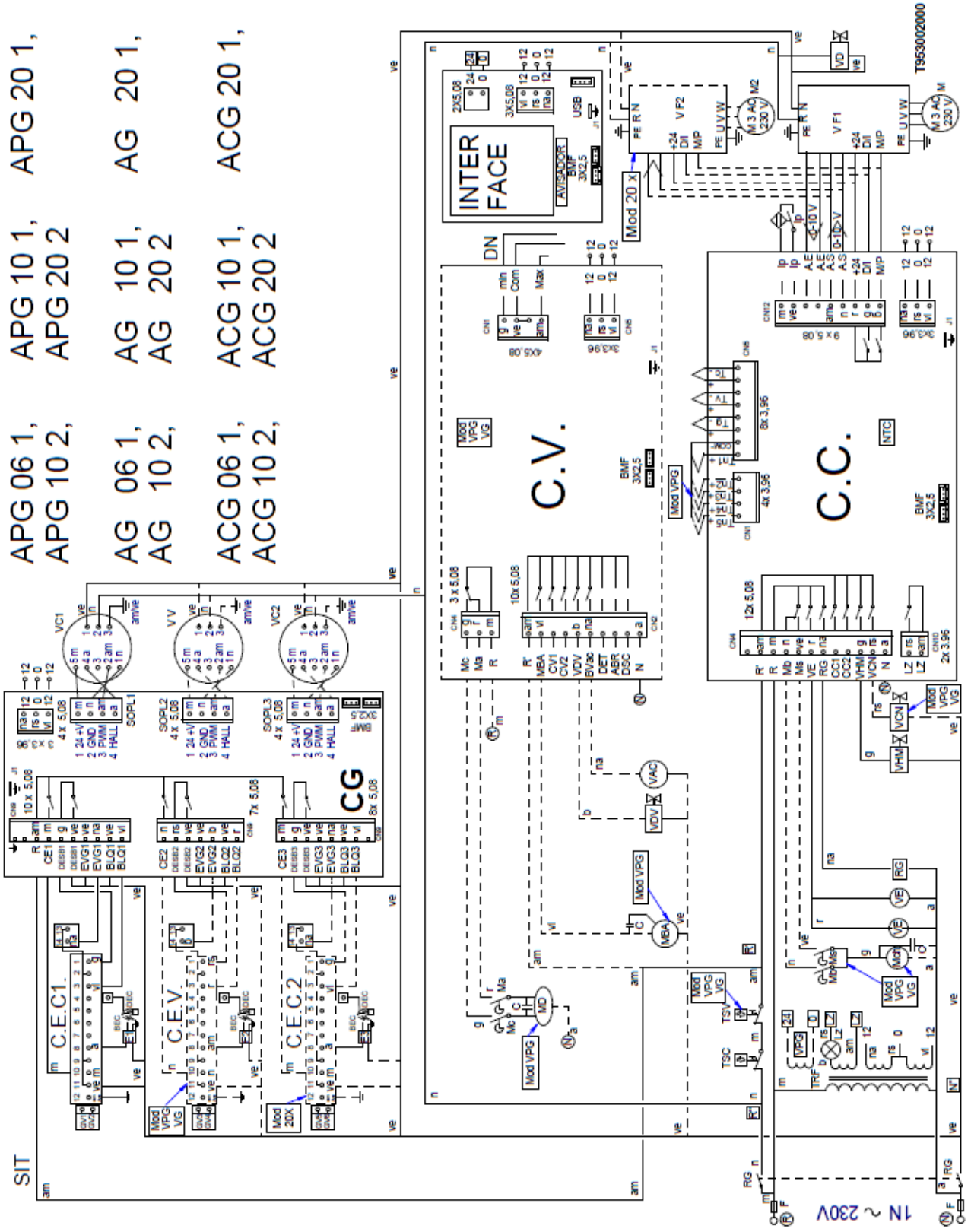
20.1. ELECTRICAL CIRCUIT DIAGRAM FOR ELECTRIC OVEN (until 01/01/2016)



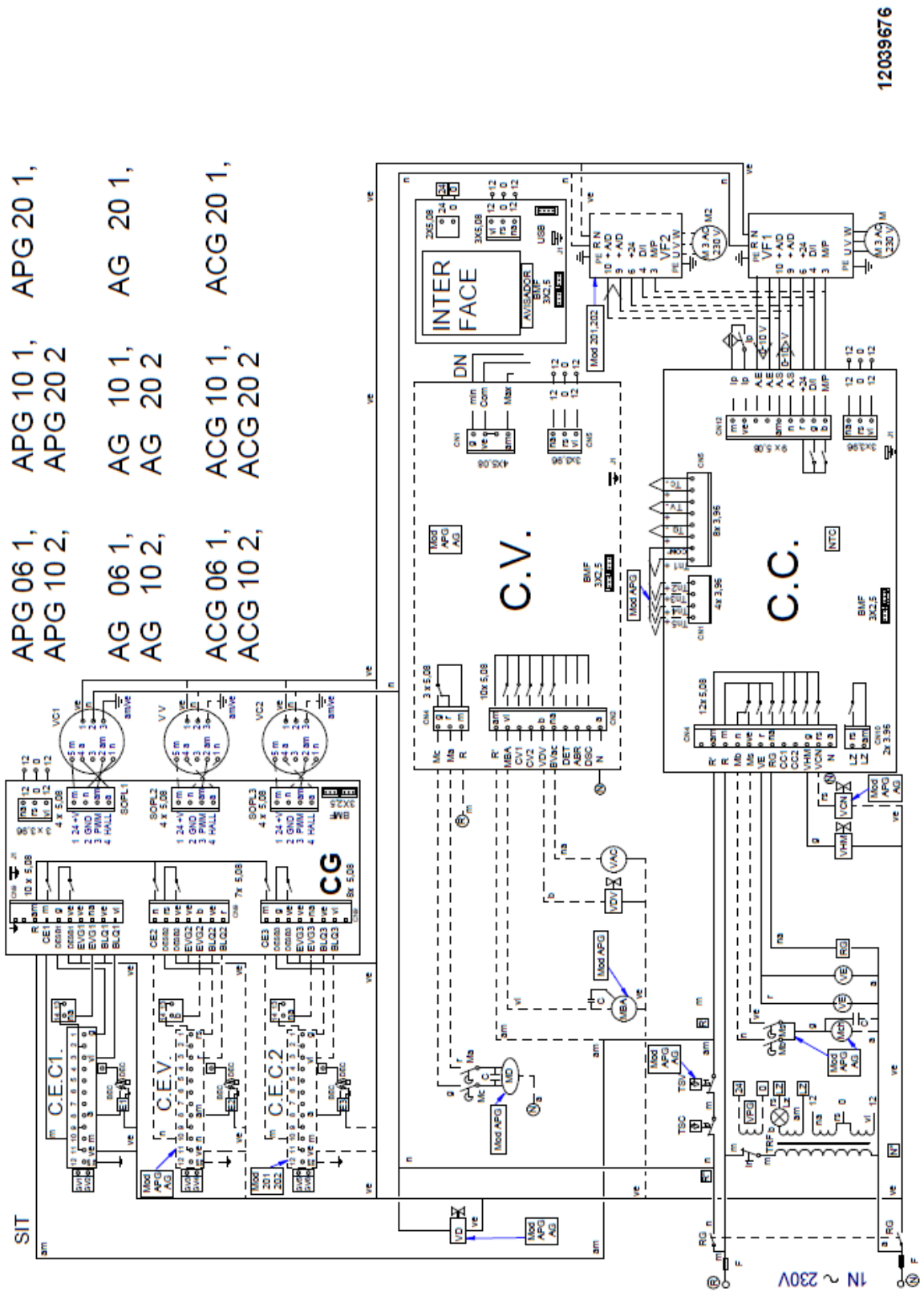
20.2. ACE ELECTRICAL CIRCUIT DIAGRAM (from 01/01/2016)



20.3. ELECTRICAL CIRCUIT DIAGRAM FOR GAS OVEN (until 01/01/2016)



20.4. ELECTRICAL CIRCUIT DIAGRAM FOR GAS OVEN (from 01/01/2016)



	ESPAÑOL	FRANÇAIS	ENGLISH	DEUTSCH	ITALIANO
BEC	Bujía Encendido Cámara	Bougie Allumage Chambre	Chamber Spark Plug	Zündkerze Einschalten Garraum	Candela di Accensione Camera
BEV	Bujía Encendido Caldera	Bougie Allumage Chaudière	Boiler Spark Plug	Zündkerze Einschalten Boile	Candela di Accensione Caldaia
C.C.	Control Camara	Contrôle Chambre	Chamber Control	Steuerung Garraum	Controllo Camera
C.E.C	Control Combustión Cámara	Contrôle Combustion Chambre	Chamber Combustion Control	Steuerung Verbrennung Garraum	Controllo Combustione Camera
C.E.V	Control Combustión Caldera	Contrôle Combustion Chaudière	Boiler Combustion Control	Steuerung Verbrennung Boiler	Controllo Combustione Caldaia
C.G.	Control Gas	Contrôle Gaz	Control Gas	Steuern Sie Gas	Controlli il gas
C.V.	Control Caldera	Contrôle Chaudière	Boiler Control	Steuerung Boiler	Controllo Caldaia
CC1, CC2	Contactor Resistencia Cámara	Contacteur Elément Chauffant Chambre	Chamber Heating Element Contactor	Schütz Heizwiderstand Garraum	Contattore Resistenza Camera
CK1, CK2	Contactor General Calentamiento	Relais Elément Chauffant	Heating Element Relay	Relais Heizwiderstand	Relè Resistenza
CV1, CV2	Contactor Resistencias Caldera	Contacteur Elément Chauffant Chaudière	Boiler Heating Element Contactor	Schütz Heizwiderstand Boiler	Contattore Resistenza Caldaia
DEC	Detector Llama Cámara	Détecteur Flamme Chambre	Chamber Flame Detector	Flammendetektor Garraum	Rilevatore di Fiamma Camera
DEV	Detector Llama Caldera	Détecteur Flamme Chaudière	Boiler Flame Detector	Flammendetektor Boiler	Rilevatore di Fiamma Caldaia
DN	Detector Nivel Caldera	Détecteur Niveau Chaudière	Boiler Level Detector	Pegeldetektor Boiler	Rilevatore Livello Caldaia
F	Fusibles	Fusibles	Fuses	Sicherungen	Fusibili
FI	Filtro Interferencias	Filtre Interférences	Interference Filter	Störungsfilter	Filtro Interferenze
FM	Térmico Motor	Thermique Moteur	Thermal Engine	Thermoschalter Motor	Termico Motore
GV1, GV2	Electro válvula Gas Cámara	Electrovanne Gaz Chambre	Chamber Gas Solenoid Valve	Elektroventil Gas Garraum	Elettrovalvola Gas Camera
GV3, GV4	Electro válvula Gas Caldera	Électrovanne Gaz Chaudière	Boiler Gas Solenoid Valve	Elektroventil Gas Boiler	Elettrovalvola Gas Caldaia
Ip	Interruptor Seguridad Puerta	Interrupteur Sécurité Porte	Door Safety Switch	Sicherheitsschalter Tür	Iterruttore Sicurezza Porta
Lz	Luz Interior	Eclairage Intérieur	Inner Light	Innenbeleuchtung	Luce Interna
M, M2	Motor Turbina	Moteur Turbine	Turbine Engine	Motor Turbine	Motore Turbina
Ma	Interruptor Micro Abierto	Microrupteur Ouvert	Open Microswitch	Mikroschalter Geöffnet	Iterruttore Micro Aperto
Mb	Interruptor Micro Bajada	Microrupteur Descente	Drop Microswitch	Mikroschalter Senken	Iterruttore Micro Discesa
Mc	Interruptor Micro Cerrado	Microrupteur Fermé	Closed Microswitch	Mikroschalter Geschlossen	Iterruttore Micro Chiuso
Mch	Motor Chimenea	Moteur Cheminée	Stack Engine	Motor Abluftkamin	Motore Canna
MD	Motor Desague	Moteur évacuation	Drain Engine	Motor Abfluss	Motore scolo
Ms	Interruptor Micro Subida	Microrupteur Montée	Rise Microswitch	Mikroschalter Heben	Iterruttore Micro Salita
PF	Potenciómetro Selector Funciones	Potentiomètre Sélecteur Fonctions	Functions Selector Potentiometer	Potentiometer Funktionswahlschalter	Potenziometro Selettore Funzioni
RC	Resistencias Cámara	Eléments Chauffants Chambre	Chamber Heating Element	Heizwiderstände Garraum	Resistenze Camere
RG	Rele General	Relais Général	Main Relay	Hauptrelais	Relè principale
RV	Resistencias Caldera	Eléments Chauffants Chaudière	Boiler Heating Element	Heizwiderstände Boiler	Resistenze Caldaia
Tc	Sonda Cámara	Sonde Chambre	Chamber Probe	Sonde Garraum	Sonda Camera
TCN	Termostato Condensación	Thermostat Condensation	Condensation Thermostat	Thermostat Kondensierung	Termostato Condensazione
Tg	Sonda Caldera	Sonde Chaudière	Boiler Probe	Sonde Boiler	Sonda Caldaia
Tn	Sonda Núcleo	Sonde Noyau	Core Probe	Kerntemperaturmessonde	Sonda Nucleo
TRF	Transformador	Transformateur	Transformer	Transformator	Trasformatore
TSC	Termostato Seguridad Cámara	Thermostat Sécurité Chambre	Chamber Safety Thermostat	Sicherheitsthermostat Garraum	Termostato Sicurezza Camera
TSV	Termostato Seguridad Caldera	Thermostat Sécurité Chaudière	Boiler Safety Thermostat	Sicherheitsthermostat Boiler	Termostato Sicurezza Caldaia
Tv	Sonda Vapor	Sonde Vapeur	Steam Probe	Sonde Dampf	Sonda Vapore
VAC	Bomba Vaciado	Pompe Vidange	Vacuum Pump	Ablasspumpe	Pompa scarico
MBA	Moto Bomba Aclarado	Pompe Rinçage	Rinsing Pump	Pumpe Ausspülen	Pompa Risciacquo
VC1, VC2	Ventilador Soplante Camara	Ventilateur Soufflant	Blowing Fan	Ventilator Gebläse	Ventilatore Soffiante
VCN	Electro válvula Condensación	Electrovanne Condensation	Condensation Solenoid Valve	Elektroventil Kondensierung	Elettrovalvola Condensazione
VDV	Electro válvula Llenado Caldera	Électrovanne Remplissage Chaudière	Chamber Filling Solenoid Valve	Elektroventil Füllung Boiler	Elettrovalvola di Riempimento Caldaia
VE	Ventilador Cuadro Eléctrico	Ventilateur Tableau Electrique	Fan Switchboard	Ventilator Elektrotafel	Ventilatore Quadro Elettrico
VF1,VF2	Variador de Frecuencia	Variateur Vitesse	Speed Variator	Geschwindigkeitsregler	Variatore di Velocità
VHM	Electro válvula Humidificador	Electrovanne Humidificateur	Humidifier Solenoid Valve	Elektroventil Befeuchtungsvorrichtung	Elettrovalvola Umidificatore
Vv	Ventilador Soplante Caldera	Ventilateur soufflement chaudière	Boiler Blowing Fan	Durchbrennenventilator zum Dampfkessel	Ventilatore Soffiante caldaia
	COLORES	COULEURS	COLOUR	FARBEN	COLORE
a	Azul	Bleu	Blue	Blau	Blu
am	Amarillo	Jaune	Yellow	Gelb	Giallo
am/ve	Amarillo/verde	Jaune / vert	Yellow / green	Gelb/grün	Giallo/verde
b	Blanco	Blanc	White	Weiß	Bianco
g	Gris	Gris	Grey	Grau	Grigio
m	Marrón	Marron	Brown	Braun	Marrone
n	Negro	Noir	Black	Schwarz	Nero
na	Naranja	Orange	Orange	Orange	Arancio
r	Rojo	Rouge	Red	Rot	Rosso
rs	Rosa	Rose	Pink	Rosa	Roseo
ve	Verde	Vert	Green	Grün	Verde
vi	Violeta	Violet	Purple	Violett	Viola
					T303042000

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Service Manual