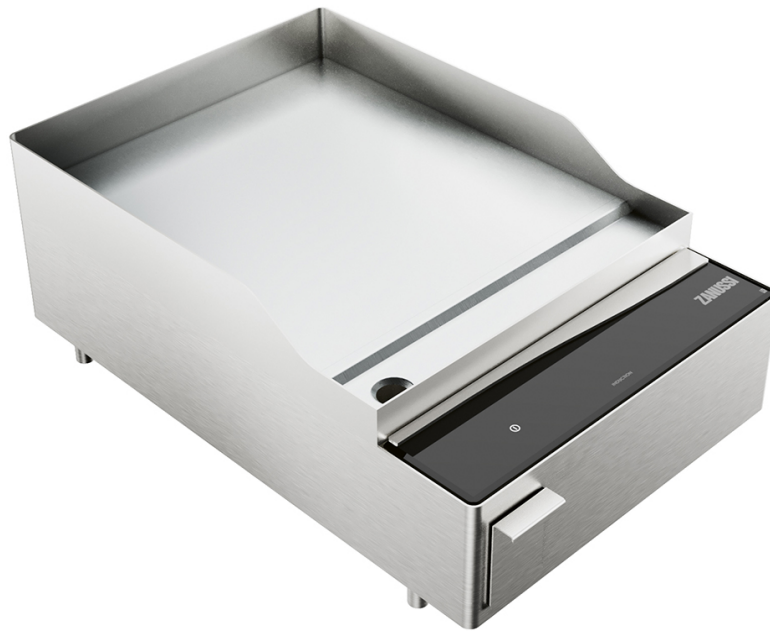


Service Manual

Fry Induction Top **IGEC-1P / 1ZT**

[Art. 406600898]



LIBERO LINE FRY TOP INDUCTION

Document made by Product Care – Technical Training & Service – Vallenoncello PN/Italy

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Foreword



The service manual (here in after Manual) provides the engineer with information necessary for correct and safe care of the machine (here in after “machine “, “appliance “or “unit”).

The following instructions are intended to maintain the machine performance and to preventing injury to persons and animals and damage to property due to improper operating procedures.

All persons involved in machine transport, installation, commissioning and maintenance, repair and disassembly must refer to the content of this manual before carrying out the various operations. This, in order to avoid wrong and improper actions that could compromise the machine's integrity or endanger people.

If, after reading this manual, there are still doubts regarding machine use, do not hesitate to contact the Manufacturer or the Customer Care to receive prompt and precise assistance for better operation and maximum efficiency of the machine. During all stages of machine assessment, always respect the current regulations on safety, work hygiene and environmental protection. It is the user's responsibility to make sure the machine is started and operated only in optimum conditions of safety for people, animals and property.

IMPORTANT

- The manufacturer declines any liability for operations carried out on the appliance without respecting the instructions given in this manual as well as for operations carried out by the user without respecting the instructions given in the user manual.
- The manufacturer reserves the right to modify the appliances presented in this publication without notice; manufacturer's relevant technical bulletins should be used as integration(s)/addendum(s).
- No part of this manual may be reproduced without the consent of the manufacturer
- This manual is available in digital format by:
 - contacting the reference customer care;
 - downloading the latest and up to date manual/technical bulletin(s) on the web site: www.electrolux.com/professional;
 -

The manual must always be part of the documentation available when servicing the machine.

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APPLIANCES COVERED BY THIS SERVICE MANUAL

Refer also to § DATA PLATE (IDENTIFICATION STICKER)

Pnc	Model	Type	Frequency Range (Hz)	Rated Voltage	Rated Input (kW)
600887	E1IREDOMES	LLFTD3S	50-60	380-415 V 3N~	7
600899	Z1IREDOMES	LLFTD3S	50-60	380-415 V 3N~	7
600886	E1IREEOMCS	LLFTS1S	50-60	220-240 V ~	3,5
600898	Z1IREEOMCS	LLFTS1S	50-60	220-240 V ~	3,5
600906	E1IREEOMCU	LLFTS1S	50-60	220-240 V ~	3

MODEL= 1PH / 3PH = Phase - SZ= Single Zone - DZ= Double Zone - SA= Stand Alone - DI= Drop In

TYPE= LL=Libero Line - FT= Fry Top - S/D = Single/Double zone 1/3= Phase - S= Stand Alone

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1 GENERAL INFORMATION

1.1 GENERAL INFORMATION

To ensure safe use of the machine and a proper understanding of the manual it is necessary to be familiar with the terms and typographical conventions used in the documentation. The following symbols are used in the manual to indicate and identify the various types of hazards:



WARNING

Danger for the health and safety of operators.



WARNING

Danger of electrocution - dangerous voltage.



CAUTION

Risk of damage to the machine or the product.



WARNING

Danger of magnetic fields.



IMPORTANT

Important instructions or information on the product



Read the instructions before using the appliance



Clarifications and explanations

- Only specialized personnel are authorized to operate on the machine.
- This appliance must not be used by minors and adults with limited physical, sensory or mental abilities or without adequate experience and knowledge regarding its use.
 - Do not let children play with the appliance.
 - Keep all packaging and detergents away from children.
 - Cleaning and user maintenance shall not be made by children without supervision.
- Do not store explosive substances, such as pressurized containers with flammable propellant, in this appliance or close to the appliance
- Do not remove, tamper with or make the machine “CE” marking illegible.
- Refer to the data given on the machine’s data plate “CE” marking for relations with the Manufacturer (e.g. when ordering spare parts, etc.).
- When scrapping the machine, the “CE” marking must be destroyed.

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1.2 SAFETY INFORMATION/PRECAUTIONS

- Risks mainly of a mechanical, thermal and electrical nature exist in the machine. Where possible the risks have been neutralized:
 - directly, by means of adequate design solutions.
 - indirectly by using guards, protection and safety devices.
- During maintenance several risks remain, as these could not be eliminated, and must be neutralized by adopting specific measures and precautions.
- Do not carry out any checking, cleaning, repair or maintenance operations on moving parts. Workers must be informed of this prohibition by means of clearly visible signs.
- To guarantee machine efficiency and correct operation, periodical maintenance must be carried out according to the instructions given in this manual.
- Make sure to periodically check correct operation of all the safety devices and the insulation of electrical cables, which must be replaced if damaged.
- Extraordinary machine maintenance operations must only be carried out by specialized Technicians provided with all the appropriate personal protection equipment (safety shoes, gloves, glasses, overalls, etc.), tools, utensils and ancillary means.
- Never operate the machine, removing, modifying or tampering with the guards, protection or safety devices.
- Before carrying out any operation on the machine, always consult the manual which gives the correct procedures and contains important information on safety.

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1.2.1 PERSONAL PROTECTION EQUIPMENT

Summary table of the Personal Protection Equipment (PPE) to be used during the various stages of the machine's service life.

Stage	Protective garments 	Safety footwear 	Gloves 	Glasses 	Safety helmet 
Transport	—	●	○	—	○
Handling	—	●	○	—	—
Unpacking	—	●	●	—	—
Installation	—	●	● ²	●	—
Normal use	●	●	● ¹	○	—
Adjustments	○	●	○	○	—
Routine cleaning	○	●	● ^{1 or 2}	○	—
Extraordinary cleaning	○	●	● ^{1 or 2}	○	—
Maintenance	○	●	○	○	—
Dismantling	○	●	○	○	—
Scrapping	●	●	●	●	—
Button:					
●	PPE REQUIRED				
○	PPE AVAILABLE OR TO BE USED IF NECESSARY				
—	PPE NOT REQUIRED				

1. During these operations, the worn gloves must be heatproof to protect hands from contact with hot food or hot parts of the appliance and/or when removing hot items from it. Failure to use the personal protection equipment by operators, specialized personnel or users can involve exposure to chemical risk and possible damage to health (depending on the model).
2. During these operations, the worn gloves must be cut-resistant. Failure to use the personal protection equipment by operators, specialized personnel or users can involve exposure to damage to health (depending on the model).

1.2.2 GENERAL INFORMATION

- The machines are provided with electric and/or mechanical safety devices for protecting workers and the machine itself. Therefore, the user must not remove or tamper with such devices. The Manufacturer declines any liability for damage due to tampering or their non-use.
- Never operate the machine, removing, modifying or tampering with the guards, protection or safety devices.
- Do not make any modifications to the parts supplied with the appliance.
- Several illustrations in the manual show the machine, or parts of it, without guards or with guards removed. This is purely for explanatory purposes. Do not use the machine without the guards or with the protection devices deactivated.

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- Do not remove, tamper with or make illegible the safety, danger and instruction signs and labels on the machine.
- Air recirculation must take into account the air necessary for combustion, 2 m³/h/kW of gas power, and the "well-being" of persons working in the kitchen.
- Inadequate ventilation causes asphyxia. Do not obstruct the ventilation system in the place where this appliance is installed. Do not obstruct the vents or ducts of this or other appliances.
- Place emergency telephone numbers in a visible position.
- The measured sound level emitted "A" does not exceed 70 dB ("A").
- Turn the appliance off in case of fault or poor operation.
- Do not use products (even if diluted) containing chlorine (sodium hypochlorite, hydrochloric or muriatic acid, etc.) to clean the appliance or the floor under it.
- Do not use metal tools to clean steel parts (wire brushes or Scotch Brite type scouring pads).
- Do not allow oil or grease to come into contact with plastic parts. Do not allow dirt, fat, food or other residuals to form deposits on the appliance.
- Do not spray water or use steam to clean the equipment.
- Do not store or use gasoline or other flammable vapors, liquids or items in the vicinity of this or any other appliance.
- Do not spray aerosols in the vicinity of this appliance while it is in operation.
- Never check for leaks with an open flame.

1.2.3 RESIDUAL RISKS

- The machine has several risks that were not eliminated from a design standpoint or with the installation of adequate protection devices. Nevertheless, through this manual the Manufacturer has taken steps to inform operators of such risks, carefully indicating the personal protection equipment to be used by them. Enough spaces are provided for during the machine installation stages in order to limit these risks.

To preserve these conditions, the areas around the machine must always be:

- kept free of obstacles (e.g. ladders, tools, containers, boxes, etc.);
- clean and dry;
- well lit.

For the Customer's complete information, the residual risks remaining on the machine are indicated below: such actions are deemed improper and therefore strictly forbidden.

Residual risk	Description of hazardous situation
Slipping or falling	The operator can slip due to water or dirt on the floor
Burns/abrasions (e.g. heating elements)	The operator deliberately or unintentionally touches some components inside the machine without using protective gloves
Electrocution	Contact with live parts during maintenance operations carried out with the electrical panel powered
Sudden closing of the lid/ door/oven door (if present, depending on the appliance type)	The operator for normal machine use could suddenly and deliberately close the lid/door/oven door (if present, depending on the appliance type)
Tipping of loads	When handling the machine or the packing containing it, using unsuitable lifting systems or accessories or with the load unbalanced

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Mechanical safety characteristics, hazards





- The appliance does not have sharp edges or protruding parts. The guards for the moving and live parts are fixed to the cabinet with screws, to prevent accidental access.

Protection devices installed on the machine

- The guards on the machine are:
-fixed guards (e.g. casings, covers, side panels, etc.), fixed to the machine and/or frame with screws or quick-release connectors that can only be removed or opened with tools

Safety signs to be placed near the machine area

Prohibition	Meaning
	do not remove the safety devices
	do not use water to extinguish fires (placed on electrical parts)
	Keep the area around the appliance clear and free from combustible materials. Do not keep flammable materials in the vicinity of the appliance
	Install the appliance in a well-ventilated place to avoid the creation of dangerous mixtures of unburnt gases in the same room

Danger	Meaning
	danger of burns
	danger of electrocution (shown on electrical parts with indication of voltage)
	risk of electromagnetic fields
	Access forbidden to wearers of electrical stimulator (pacemakers)

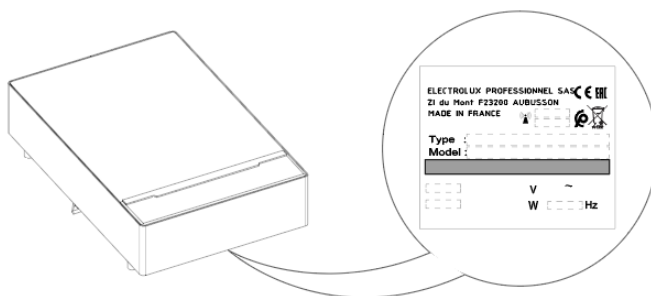
End of use

When the appliance is no longer to be used, make it unusable by removing the mains power supply wiring.

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1.3 DATA PLATE, TYPE, MODEL & PNC (IDENTIFICATION STICKER)

The identification sticker is located on the bottom of the appliance. The meaning of the various information is listed below:



EXAMPLE PICTURE !



PNC

SER

SERIAL NUMBER (PRODUCTION DATE) is necessary to find the correct spare part or to ask tech. support.

EXAMPLE : Serial Number
1 14 2 0001

4th Digit of current year
 3th Digit of current year
 Week
 Progressive number of construction

Serial nr
1 14 2 0001

EXAMPLE : TYPE
LL FT S 1 S

1 - Product / Brand
 LL Libero Line

2 - Function Type
 F Flat
 W Wok
 FT Fry Top

3 - Size / zones
 S Single zone
 D Double zone

4 - Power Supply / Phases
 1 1 Phase
 3 3 Phases

5 - Module Type
 S Stand Alone
 D Drop In

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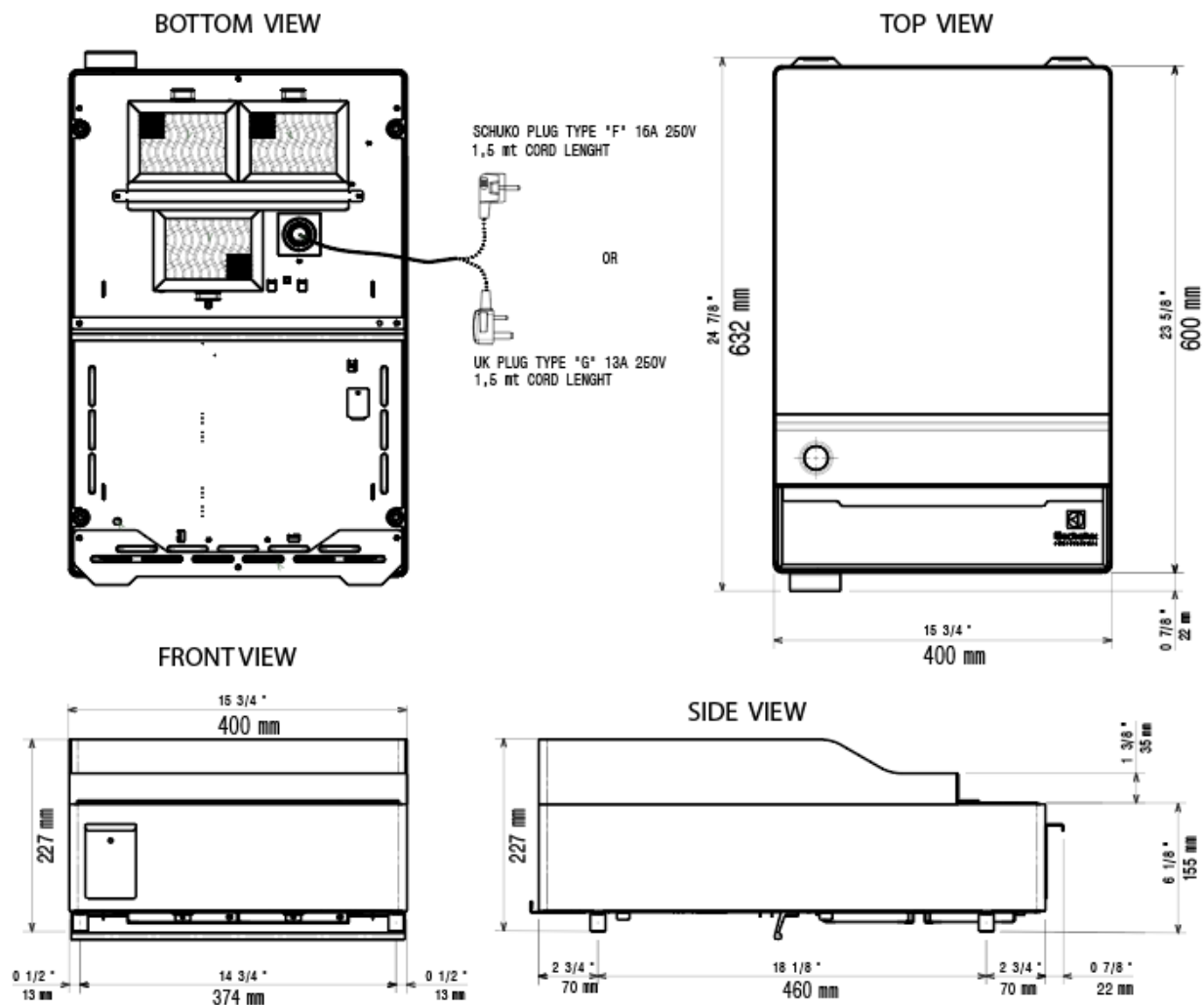
1.4 TECHNICAL DATA

Induction Fry Top				
Type		LLFTS1S		LLFTD3S
Appliance description		Single Zone	Single Zone (UK)	Double Zone
Power supply voltage	V	220 — 240		380 — 415
Frequency	Hz.	50 – 60		50 — 60
Phases	Nr.	1N~		3N~
Max current	A	16	13	16
Max total power	kW	3.5	3	7
Plug	Type	F (Schuko)	G	3N+PE 16A (IEC 60309)

TYPE= LL=Libero Line - FT= FryTop - S/D = Single/Double zone 1/3= Phase - S= Stand Alone

1.5 OVERALL DRAWINGS WITH MEASUREMENTS

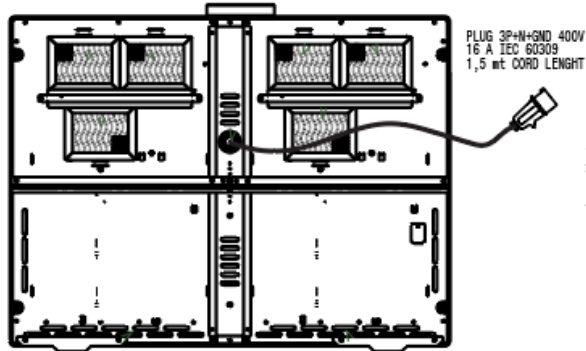
SINGLE ZONE



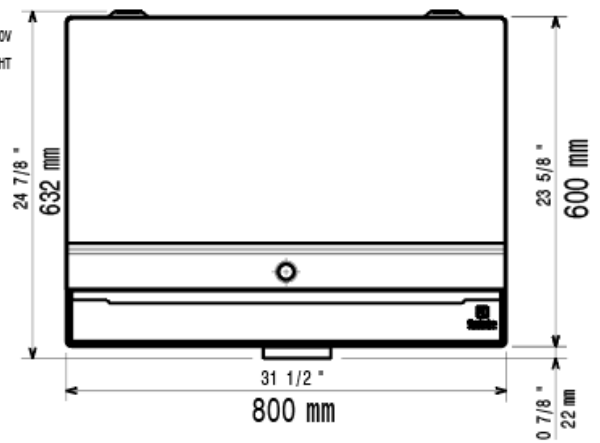
LIBERO LINE FRY TOP INDUCTION

DOUBLE ZONE

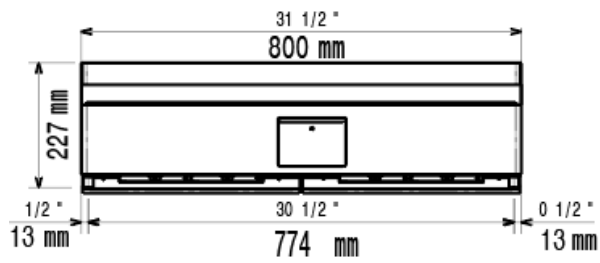
BOTTOM VIEW



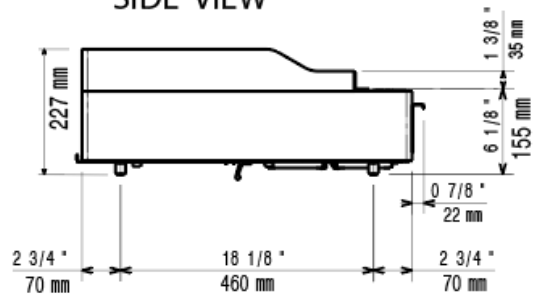
TOP VIEW



FRONT VIEW

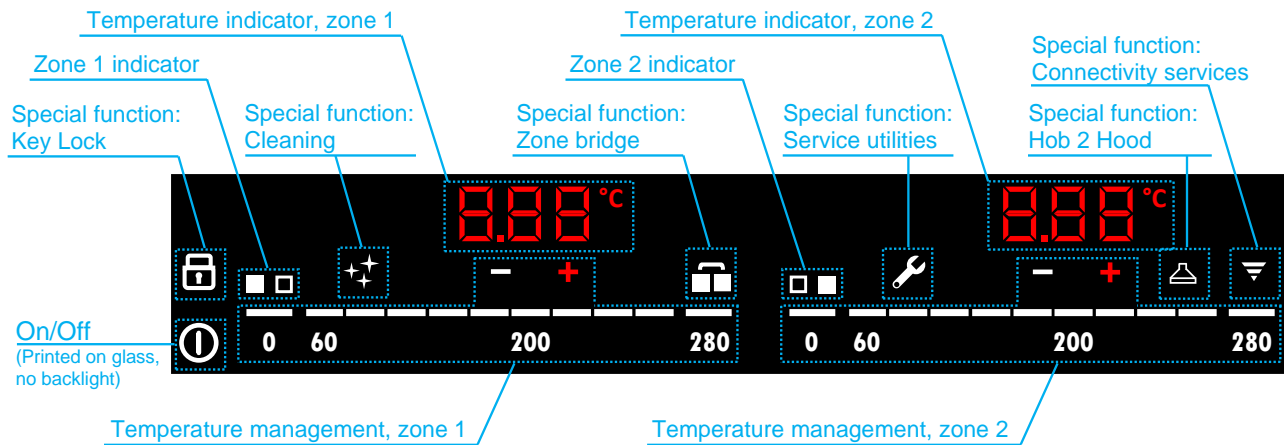


SIDE VIEW



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1.6 CONTROL PANEL INTERFACES



ON /OFF Touch the button: the griddle will turn on; a lamp test will occur, and the zone will then be ready for temp regulation/setting.



LOCK It is possible to lock the control panel while the cooking zones are in operation, in order to prevent accidental changes of the power level. To activate the function, press the button for three seconds; the corresponding indicator turn red and blinks. To deactivate the function, touch the button again; the previously set power level lights up.



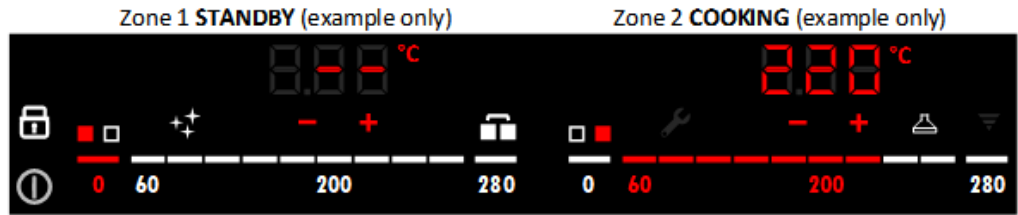
COOKING ZONES Left, Right

LIBERO LINE FRY TOP INDUCTION

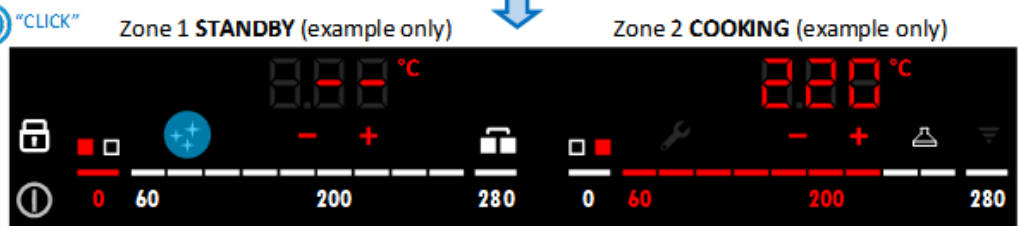


CLEANING When pressed the temperature of the cooking surface will set itself at ideal temperature at which to carry out the cleaning with specific cleaning liquid (180°C / C41 cleaning cooking surfaces).

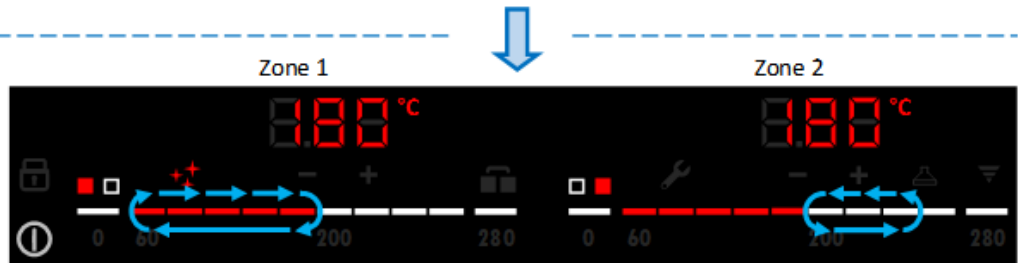
UI in **ON** state.
Cooking zones are **STANDBY** or **COOKING**
(Example only, same logic applies to Single Zone configurations)



CLEANING ACTIVATION:
User tap on **CLEANING** icon (standard short touch).



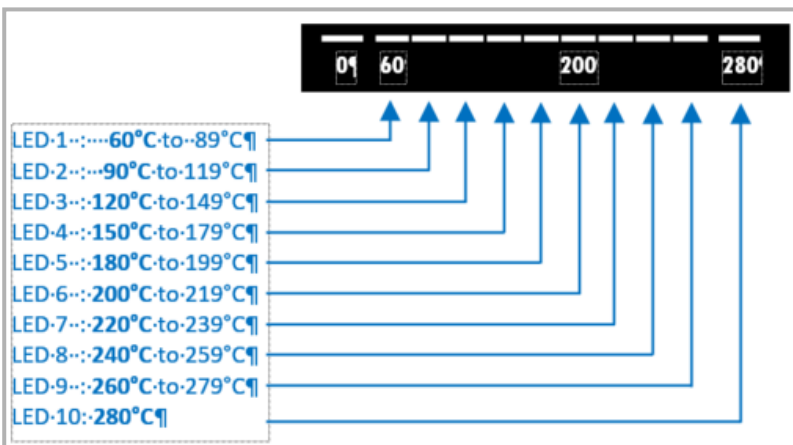
TEMPERATURE PREPARATION:
Previous settings are cleared.
A fixed Set Point is set on all zones.



Depending on current temperature every zone start, if necessary, a preheating or a pre-cooling animation.




TEMPERATURE MANAGEMENT the temperature regulation can be set by pressing the sliding bar or pressing on the "plus / minus"




Led illumination of the temperature management sliding bar explained

LIBERO LINE FRY TOP INDUCTION

TEMPERATURE DISPLAY 

MERGED ZONES MODE  Pressing the button the cooking zones will be merged and will be operable through the left side hand touch panel only.

HOOD TO HOB  (only with coupled Libero Point appliances) This is an advanced automatic function that connects the hob to the Libero Point's hood. Both the hob and the hood have an infrared signal communicator. The fan speed is automatically set based on the mode settings and the temperature of the hottest pan on the hob. It is also possible to operate the fan from the hob manually pressing one to four times the button.

WIRELESS  to be implemented.

1.7 GLOSSARY AND ABBREVIATIONS

POW Induction Power Board. Sometimes referred also as “Hob Control” (HC) or “POB”

HC Hob Control, sometimes referred also as “Power Board” (POW).

TESLA Single-phase, Double generator, 3500W Induction Power Board.

FOUCAULT 3-phase, Single generator, 5000W Induction Power Board.

UI User Interface

HUI Hob User Interface

ROADRUNNER User Interface

PD or HPD Hob Pot Detection. A circuit, normally embedded in a POW, able to detect pot presence over a coil.

HOB Induction Hob cooking appliance

WOK Induction WOK cooking appliance

FRY Induction Fry Top cooking appliance

SZ Single Zone (cooking appliance)

DZ Double Zone (cooking appliance)

1PH Single-phase power supply line

3PH 3-phase power supply line

MACS Mayor Appliance Communication System. A communication protocol used in Electrolux commercial appliances.

HCS Hob Communication System protocol. A MACS-based protocol variant, especially dedicated to Hob appliances.

DAAS Data Acquisition protocol. A MACS-based protocol variant, especially dedicated to exchange raw data between electronic devices/boards.

APD Disconnection relay. Power relay, belonging to POW circuits that supplies power to the induction circuits.

SW Software

HW Hardware

§ chapter / paragraph

MACHINE or “appliance“ or “unit”

LIBERO LINE FRY TOP INDUCTION

2 INSTALLATION AND COMMISSIONING

The following chapters are intended only for authorized technicians / engineers

2.1 GENERAL INSTALLATION

All the non-standard or out-of-standard situations should be reported on the commissioning form and duly documented for future reference.

2.1.1 UNPACKING AND POSITIONING THE EQUIPMENT



WARNING / CAUTION !

Before any operation on the machine read Chapter SAFETY INFORMATION/PRECAUTIONS. We recommend for any phase involving the removal of the packaging to use cut-resistant gloves



2.1.2 ROOM REQUIREMENTS

To guarantee continuous operation, the room temperature range must be between **5°C and 40°C**.

Outdoor functioning is strictly allowed only if the machine can be protected against any conditions being out of the above temperature range and against any atmospheric agents.

On a hot cupboard base take precaution to install a baffle for preventing hot air to reach the oven fresh air intake; this could create malfunctioning.

High room humidity may cause water to condensate on electric components hence causing short circuit.

2.1.3 LIMITATIONS

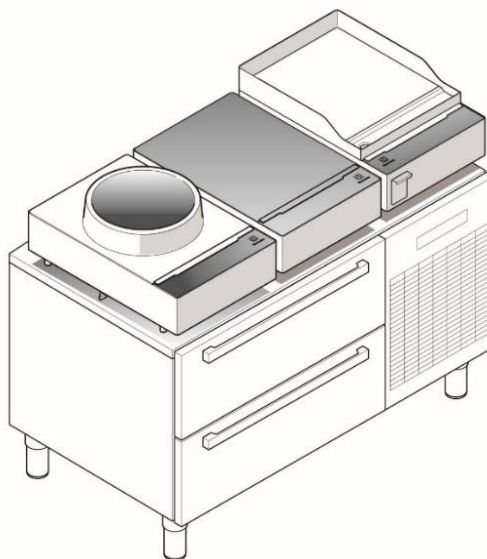
Induction appliances: to guarantee continuous operation at maximum power, the room temperature must be below 40°C.

2.1.4 LIST OF POSSIBLE INSTALLATION SOLUTIONS

Hereinafter, the instructions for the main installation possibilities. The different accessories have a dedicated Installation Manual; please refer also to these documents provided with the accessories or available on PRIDE.

2.1.4.1 ON BASE / REFRIGERATED BASE

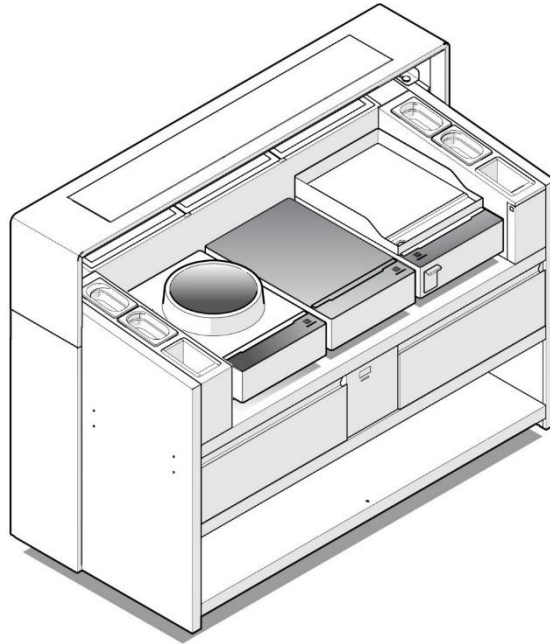
All top appliances can be fixed onto bases.



LIBERO LINE FRY TOP INDUCTION

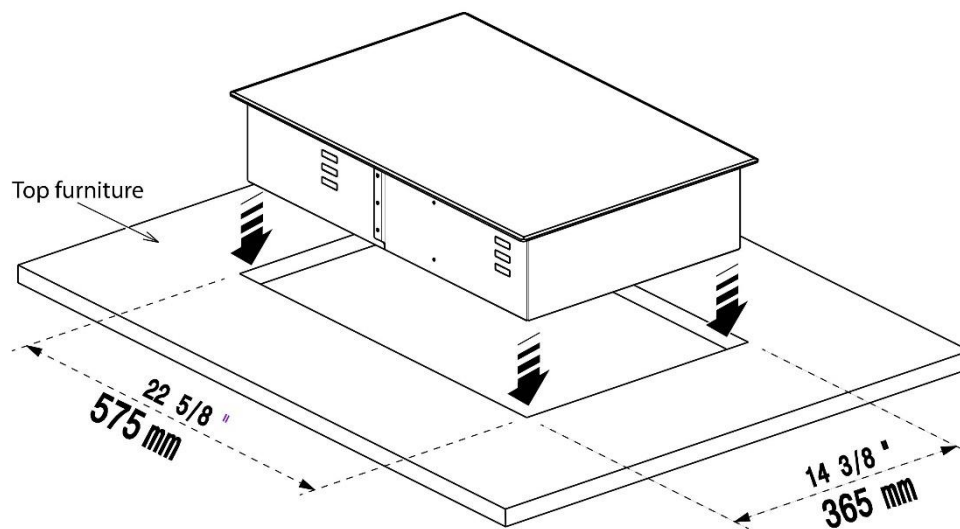
2.1.4.2 ON LIBERO POINT

The top appliances can be installed on the predisposed refrigerated base counters.
With the counter are supplied the indicated fixing pins and spring catches (to be fixated on counter)
The pins replace the original feet of the top then the top can be positioned on the counter.



2.1.4.3 DROP IN

All appliances, **except fry tops**, are available with a specific PNC code as “drop in “ D.I., model.
Example picture of a D.I HOB, the pictures of D.I appliances on this manual are just for example.



LIBERO LINE FRY TOP INDUCTION

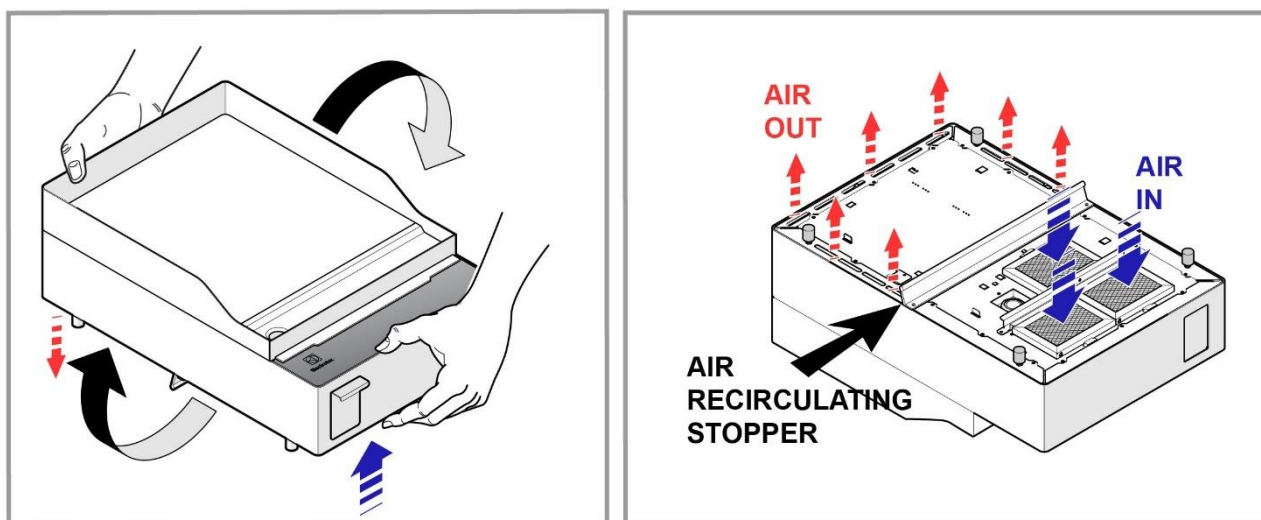
2.1.5 APPLIANCE REQUIREMENTS

2.1.5.1 POWER (VOLTS)

Refer to the volts range data indicated in the tech specs table § [TECHNICAL DATA](#)

2.1.5.2 AIR CIRCULATION

The appliance does not have aeration slots on the top surface; underneath is located the inlet / outlet passage slots. The inlet passage is also equipped with removable metal mesh filters that can be removed to be washed with warm water and soap.



2.1.5.3 APPLIANCE LOAD

It is possible to "load" the appliances with a total weight of 40kg distributed across the surface

LIBERO LINE FRY TOP INDUCTION

2.2 ELECTRIC CONNECTION



WARNING !

Take GREAT CARE when connecting / testing anything with live current, if you are unsure what you are doing and how to use your equipment safely, then **DON'T DO IT**.



IMPORTANT !

The connection to the electrical power supply must be in compliance with the current national and local regulations

The “single zone and double zone” appliances are “plug in” and are equipped with a socket ready to be inserted into mains supply.

Install ahead of the appliance an omni polar switch of suitable capacity with contact opening distance of at least 3 mm. Insert the plug into the building's electrical system, in the immediate vicinity of the appliance.

Appliance max. leakage current is 5 mA.

Install ahead of the appliance a device (interlocked plug, lockable switch or similar devices) lockable in the open position during maintenance. Connect the appliance to an efficient earthing system.

Include also the appliance into an equipotential system. The equipotential terminal block is located under the

appliance and is marked



CAUTION / IMPORTANT !

If the supply cord is damaged, it must be replaced in order to avoid a hazard. The manufacturer declines any liability if the current national and local regulations and possible safety regulations are not respected

2.2.1 HOW TO RECOGNIZE PHASE AND NEUTRAL



WARNING!

Take GREAT CARE when testing anything with live current and always use your personal protective equipment; if you are unsure what you are doing and how to use your equipment safely then **DON'T DO IT**


The appliance is equipped with a power cord and socket, however, in case of need , some basic tips on how to check the supply wires before our main terminal board.

Double zone appliances are three phase supplied : L1+L2+L3 +N


Single zone is single phase supplied : L+N

Put your meter in AC Volts setting. Connect supply to the main terminal board **MA** but do not turn on the appliance. Connect the meter test leads to the terminal board contacts; the readings should be:

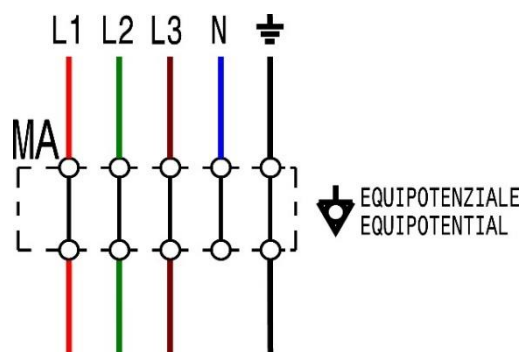
L1 / L2 / L3 + N* (Phase and Neutral) = **230 Volts**
(+/- 6% based on European standards)

L1 / L2 / L3 +  (Phase and Earth) = **230 Volts**

L1 and/or L2 + L3 (Phase and Phase) = **400 Volts**

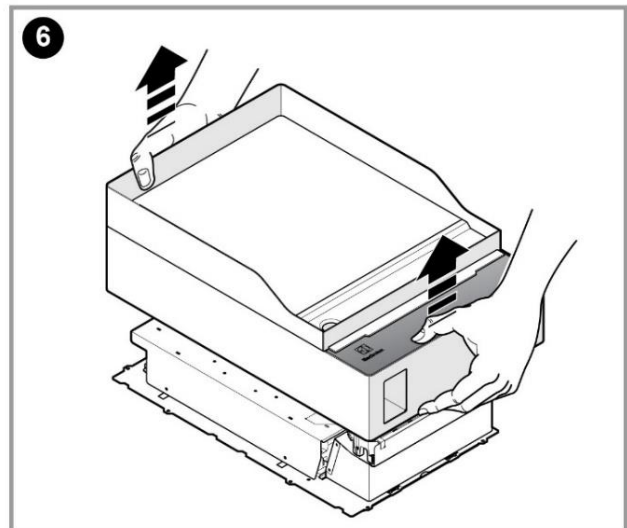
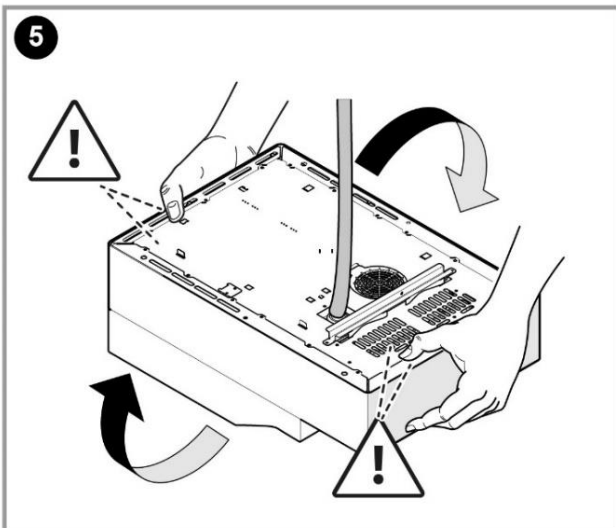
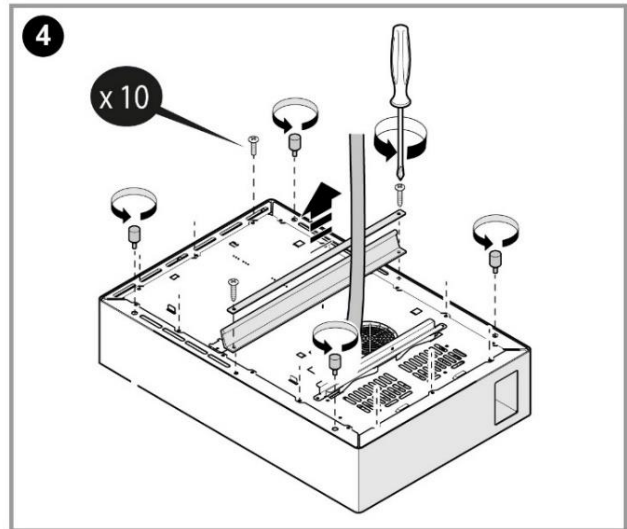
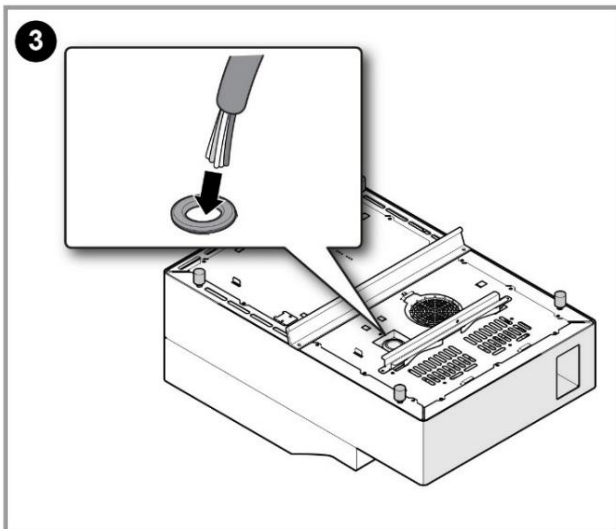
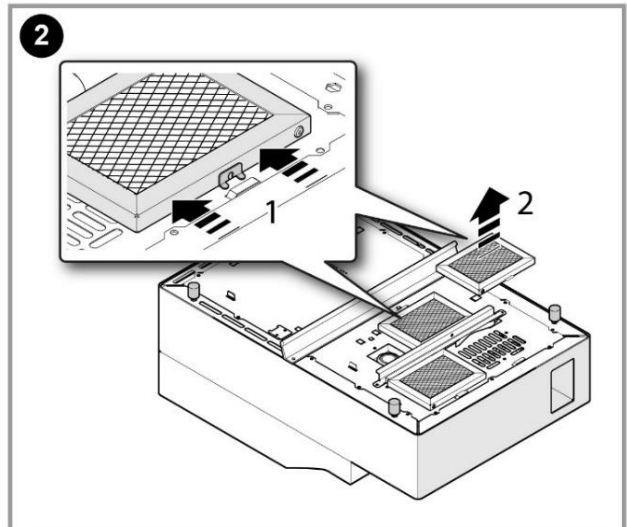
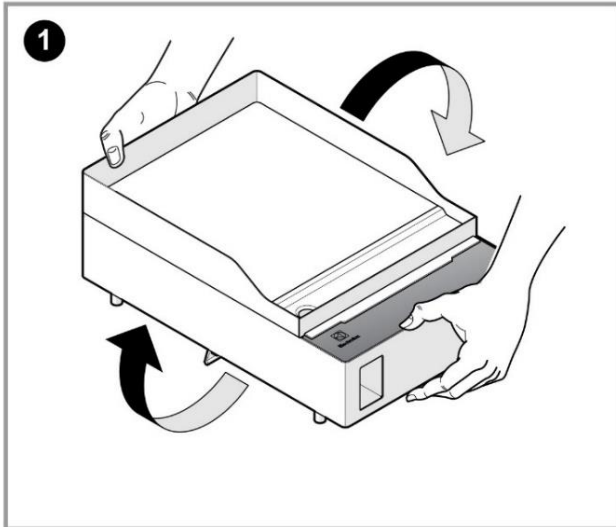
N +  (Neutral and Earth) = **0 Volts**
(or approx. zero V)

The combination and results obtained will permit you to find all wires: PHASE, NEUTRAL and EARTH.

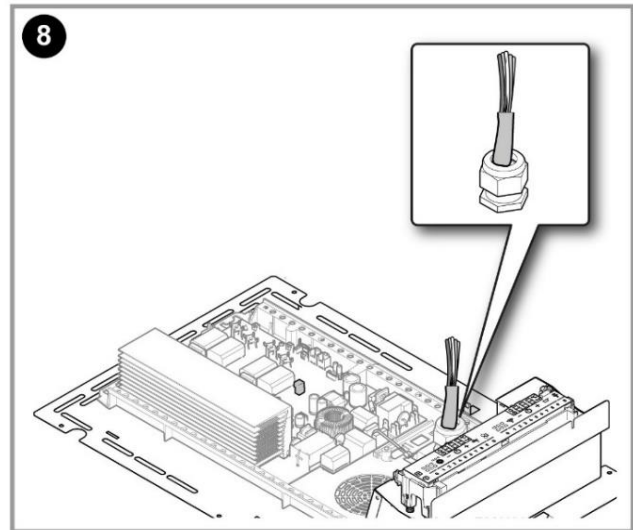
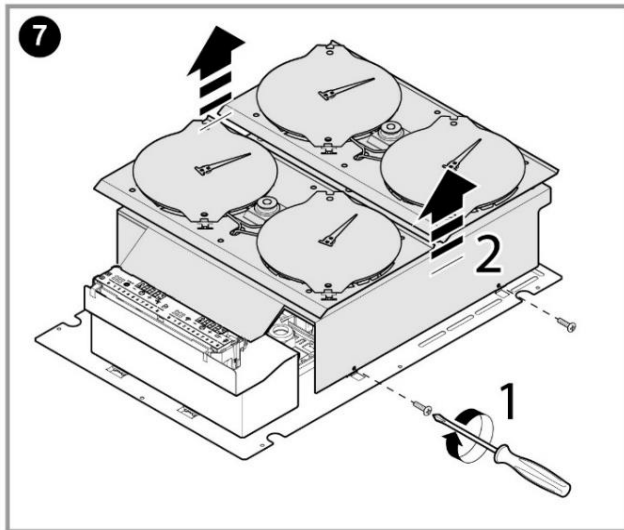


LIBERO LINE FRY TOP INDUCTION

In case of need the supply cable can be replaced/removed:



LIBERO LINE FRY TOP INDUCTION



2.2.2 RESIDUAL CURRENT

The contact opening max. distance and leakage current must comply with the local safety regulations. Many countries use a 30mA, but you must refer to the local regulations!!

2.3 FIRST START UP

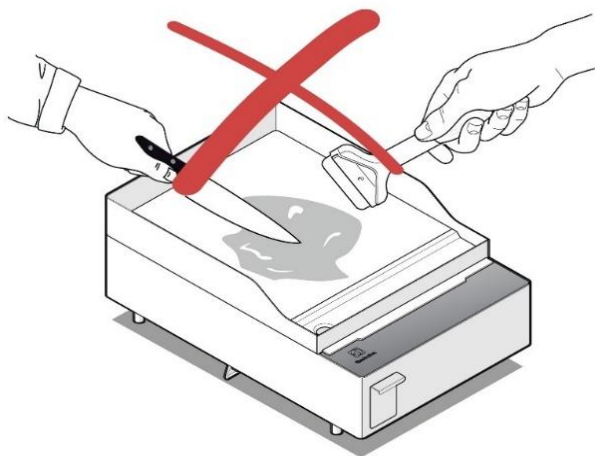
Once that all the supplies connections have been carried out it's time to start up the appliance. Remove the entire protective film from all the paneling's; the protective film can be easily removed when the appliance has not been heated up. If the appliance is run for a long period without removing the protective film the film could melt and then be difficult to remove / damage the paneling's finishing.

2.3.1 DAILY STARTUP

Before you turn on the appliance make sure that:

The mains voltage and frequency match those indicated on the appliance data plate at § DATA PLATE (IDENTIFICATION STICKER). Visual check if the supply cable is in good condition.

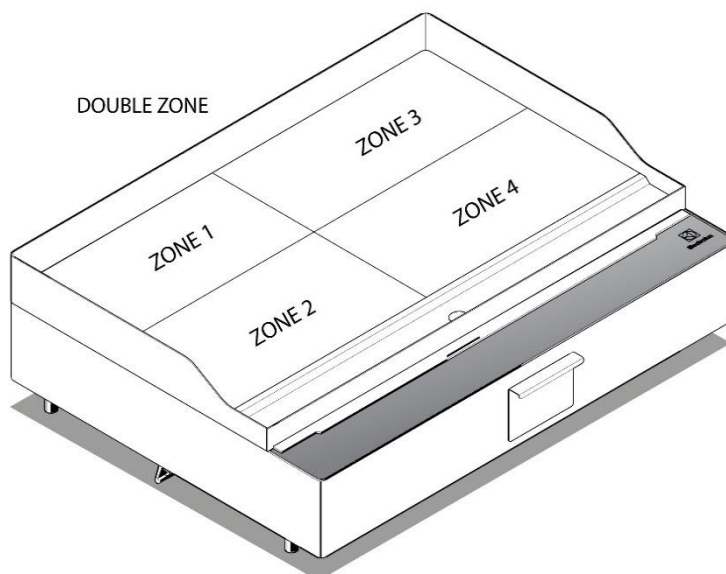
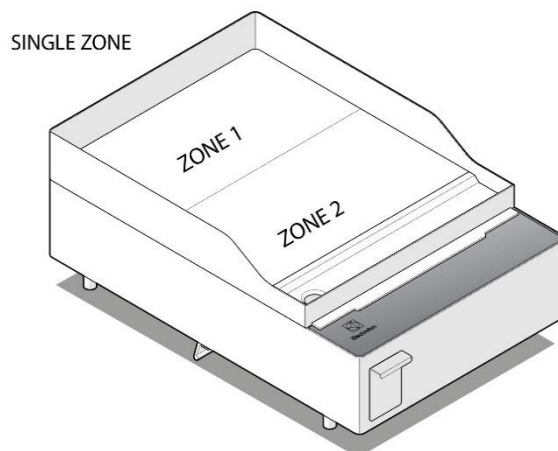
2.3.2 PRECAUTIONS DURING USE



LIBERO LINE FRY TOP INDUCTION

2.3.3 COOKING ZONES

The single zone appliance is equipped with two induction coil assembly(zones); each coil assembly has two coils. The double zone appliance is equipped with four induction coil assembly (zones). Only the DZ appliance has two different settable temperature zones (left zone 1+2 and right zone 3+4).



2.4 COMISSIONING

Please refer to the Commissioning form; the document is available for authorized technicians on the web sites (PRIDE-SERVICE PORTAL- AGELUX etc..) In case of any doubt, refer to your local country customer care.

LIBERO LINE FRY TOP INDUCTION


3 USE OF APPLIANCE

3.1 OPERATING INSTRUCTIONS

Please refer to the Installation and Operating Manual of the appliance; the document is available for authorized technicians on the web sites (PRIDE-SERVICE PORTAL- AGELUX etc..) In case of any doubt, refer to your local country customer care.

3.2 CLEANING

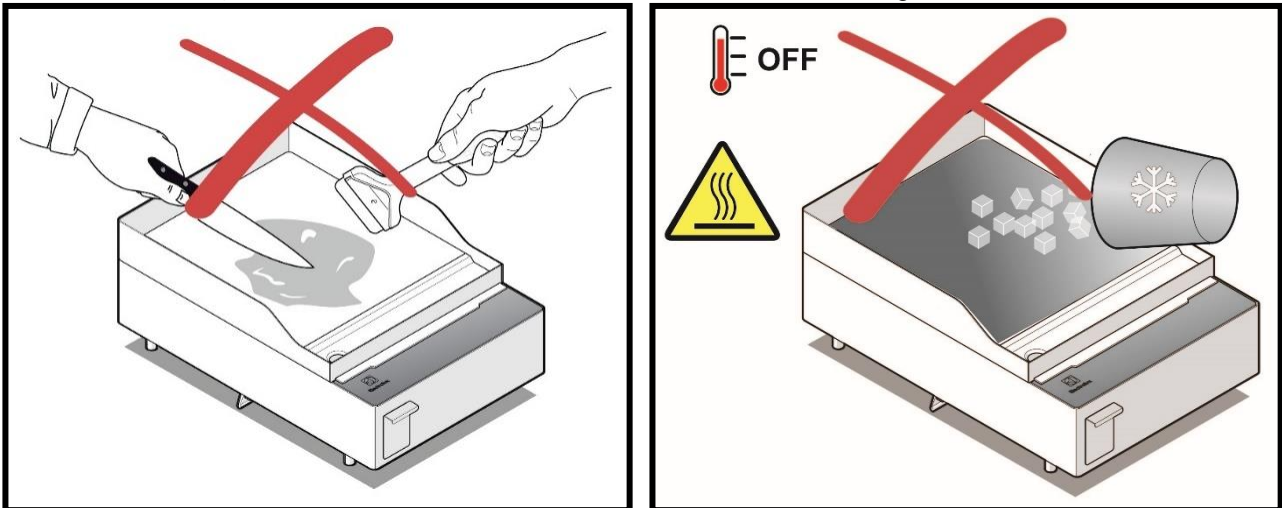
3.2.1 COOKING TOP SURFACE

Turn off the appliance after service and let the appliance cool down or use the specific  button (refer to the § CONTROL PANEL INTERFACES) to set the correct temperature to be used for cleaning the cooking surface (180C°).

Do not use sharp blades to cut foodstuff directly onto the cooking surface; pay attention to not scrape the corners of spatula blades onto the top surface.

Do not pour large amounts of cold water / ice onto the hot cooking top as thermal shock can damage the top's material.

Refer also to the § PERSONAL PROTECTION EQUIPMENT when cleaning hot surfaces.



- With a dedicated specific cleaning detergent (Rapid Grease C41) follow the procedure instructions of the detergent.
- With other detergents, follow the instructions contained in the safety data sheet relative to that product.
- Do not use abrasive or corrosive detergents as they could damage the surfaces by mechanical aggression (scratches) or chemical aggression (corrosion/stains).



CAUTION! Risk of damage to the machine

Do not pour ice / cold liquids etc. onto a heated appliance, the thermal shock could cause damage to the appliance



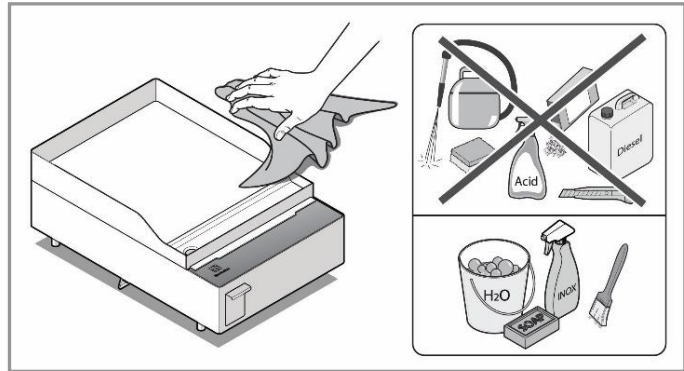
CAUTION!

All operations must be carried out following indications at § PERSONAL PROTECTION EQUIPMENT and/or referring to the safety data sheet of products involved during this phase.

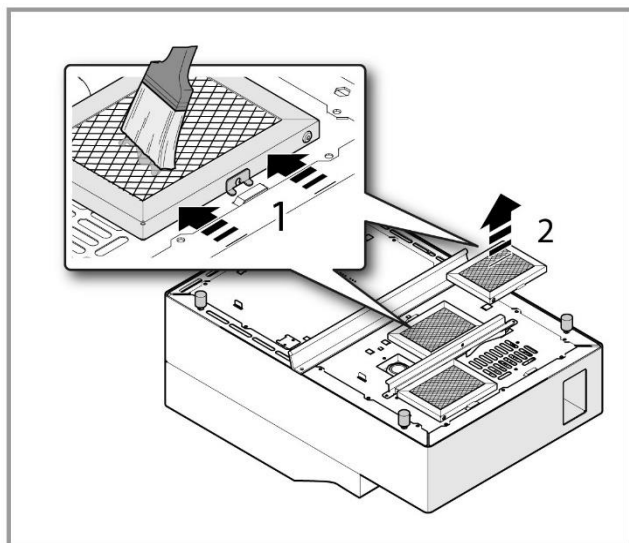
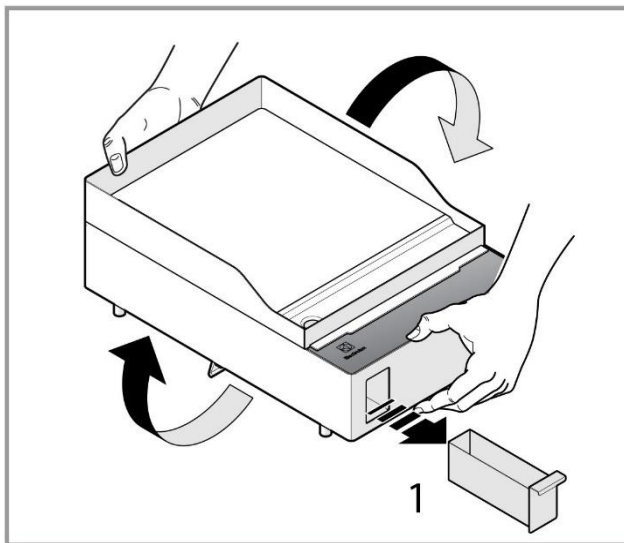
LIBERO LINE FRY TOP INDUCTION

3.2.2 APPLIANCE

Clean the appliance and splash guard, in presence of encrusted dirt or grease use a damp cloth, do not use abrasive or corrosive detergents as they could damage the surfaces by mechanical aggression (scratches) or chemical aggression (corrosion/stains). Rub the cloth/sponge following the grain of the satin finish and rinse often; rubbing in a circular motion combined with the particles of dirt on the cloth/sponge could damage the steel's satin finish. **Dry** carefully the surfaces after cleaning.



3.2.3 GREASE TRAY AND AIR FILTERS



Grease tray collector – and air filters*: can be washed separately or inserted into a dish washing machine, dry carefully or leave to dry on a dish rack or towel.

*The air filters can be cleaned when dirty, it's not necessary to clean them after every service

LIBERO LINE FRY TOP INDUCTION

4 DETAILED APPLIANCE AND COMPONENTS DESCRIPTION/FUNCTIONING

The following chapters are intended only for authorized technicians / engineers



WARNING !

Take **GREAT CARE** when connecting / testing anything with live current, if you are unsure what you are doing and how to use your equipment safely, then **DON'T DO IT.**

4.1 FUNCTIONAL / TECHNICAL DESCRIPTION

4.2 EQUIPMENT FUNCTIONING

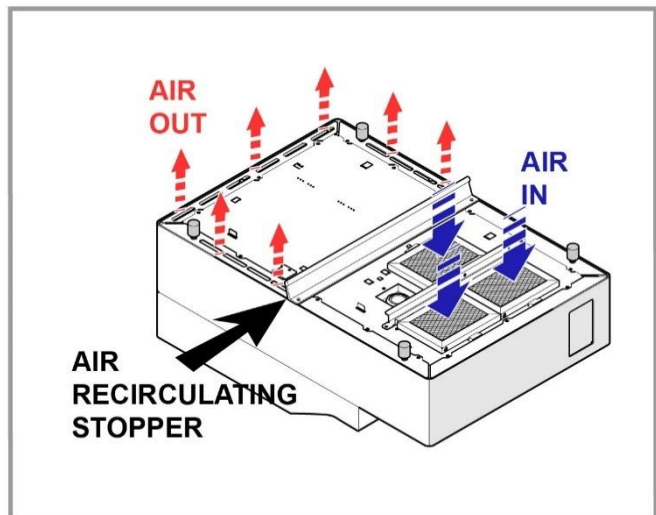
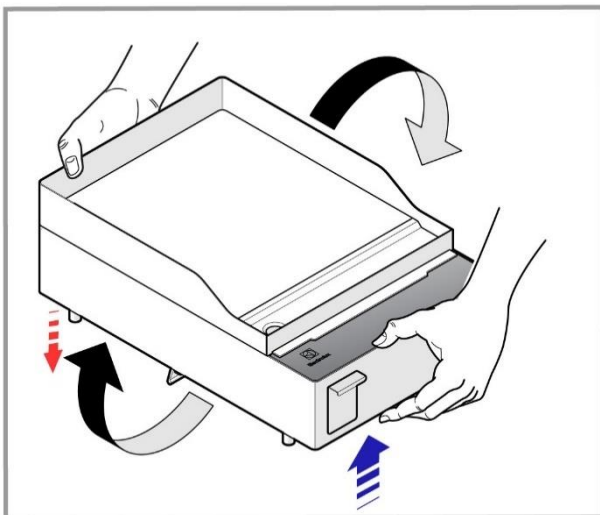
In an induction Hob normally, the coils will heat up the pots if they are detected on the cooking top; with the induction griddle the detection is not necessary because the coils heat up the griddle cooking surface.

When turned ON and temperature regulated the coils under the griddle cooking surface bond with the top and start to work immediately.

4.3 AIR CIRCULATION

The appliance is a high performer and will require a big amount of fresh air to cool its internal components.

In case that the air filters do not cleaned when dirty the appliance could overheat and an alarm will be shown on the display.

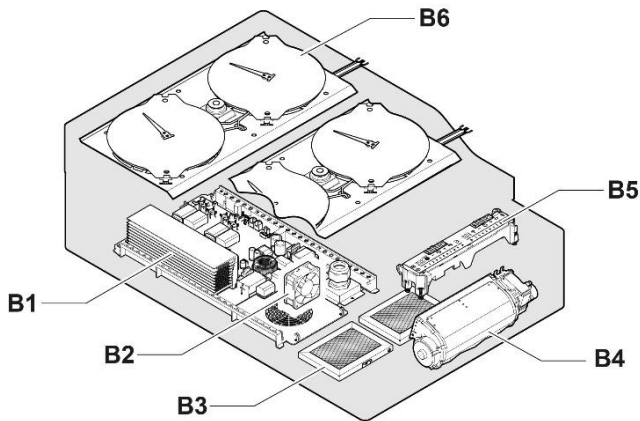


NOTE !

If the filters start to get dirty and limit the fresh air passage, before emitting an “over heating alarm” the appliance will start to limit the energy emission of the POW, a typical call from a customer could be “ the appliance is not performing any more” or “ after some time the appliance is not performing”. first phone check is make the customer have a look at the air intake filters and in case of need dismount them, wash and reinstall.

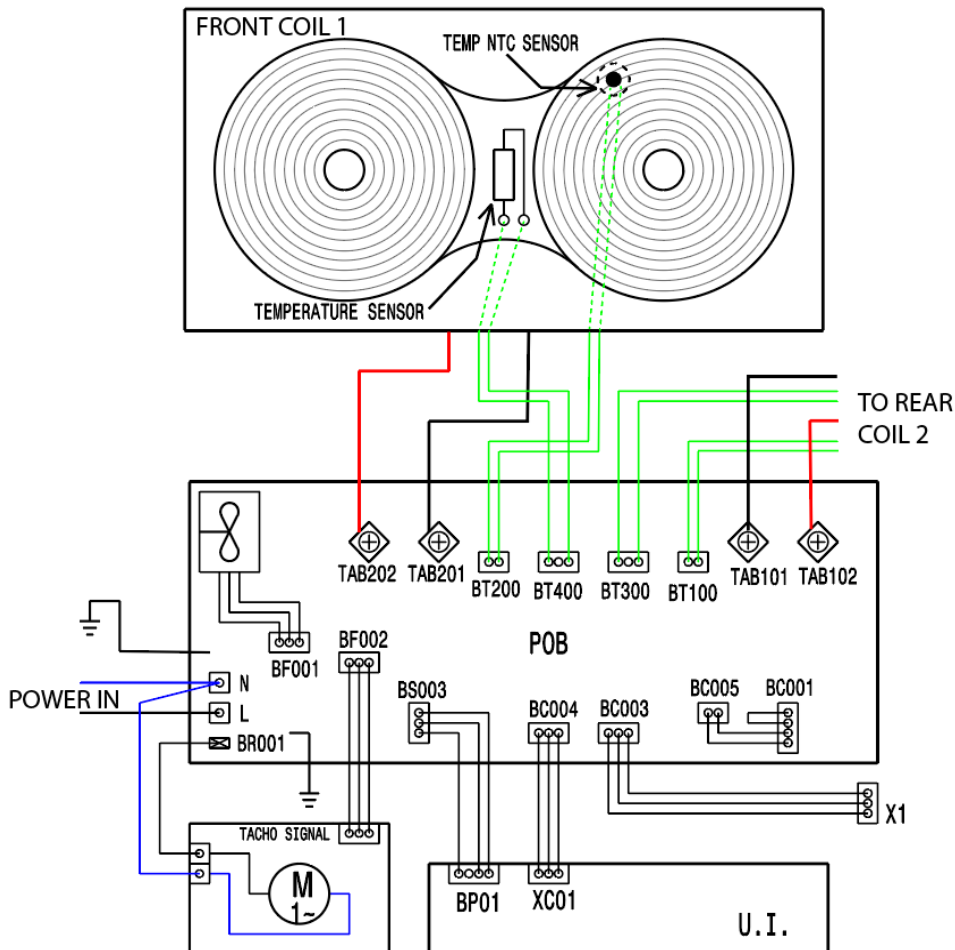
LIBERO LINE FRY TOP INDUCTION

4.4 COMPONENTS TECHNICAL DESCRIPTION/FUNCTIONING



Pos.	Component	§.
B1	Generator POB, TESLA	<u>GENERATOR</u>
B2	Ventilator	<u>VENTILATOR</u>
B3	Filter	<u>FILTER</u>
B4	Ventilator tang M1	<u>VENTILATOR (TANGENTIAL)</u>
B5	User board	<u>USER INTER- FACE, U.I</u>
B6	Coils & tem- perature sensors	<u>COILS</u>

4.4.1 GENERATOR TESLA, POW

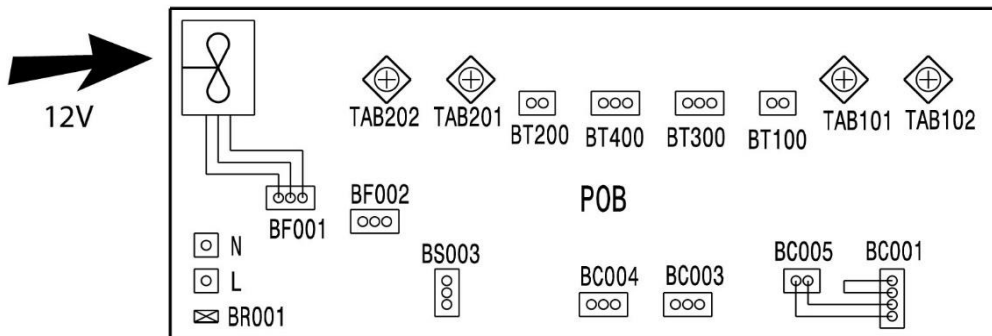
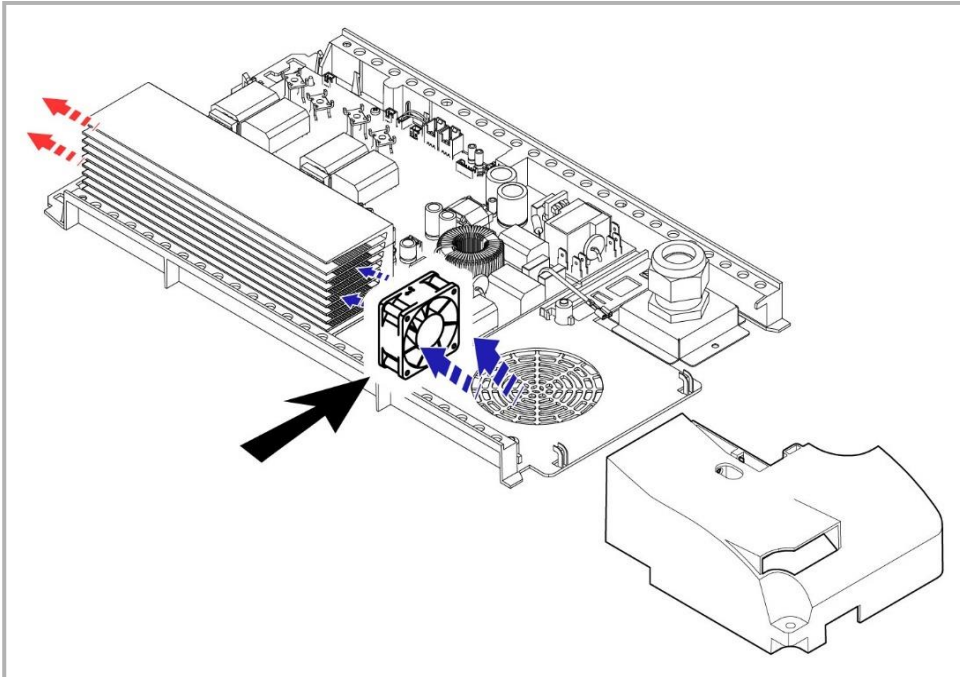


LIBERO LINE FRY TOP INDUCTION

4.4.2 VENTILATOR

The ventilator BF001 is included into the Generator assembly, it is not available as a single spare part.

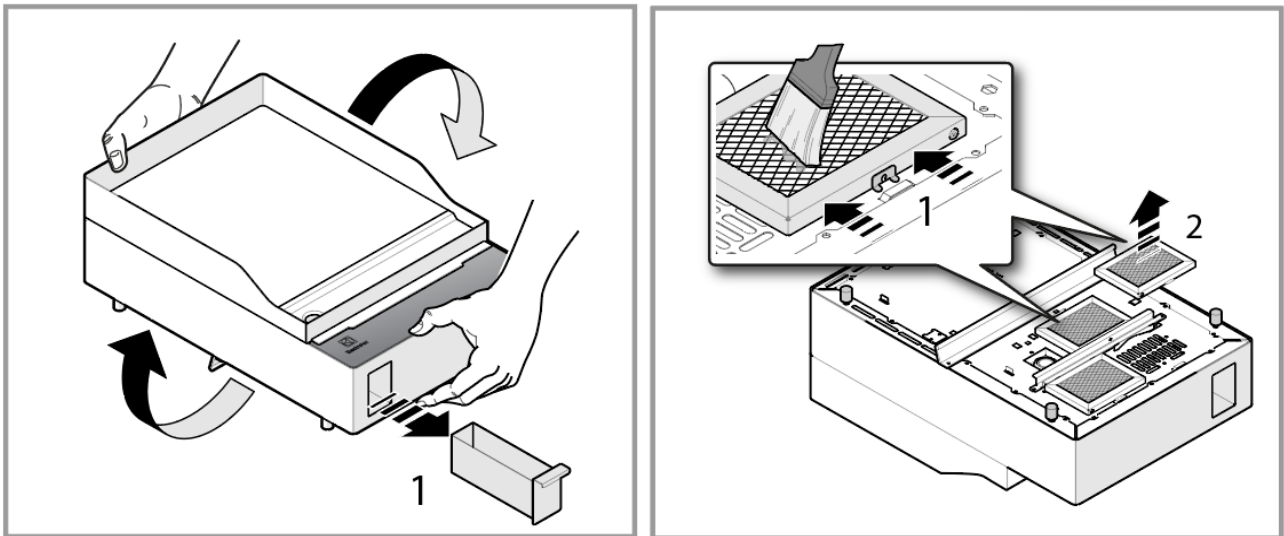
The ventilator is commanded directly by the Generator; its purpose is to cool down the heat dispel finned pack, it's a 12v supplied motor.



LIBERO LINE FRY TOP INDUCTION

4.4.3 FILTER

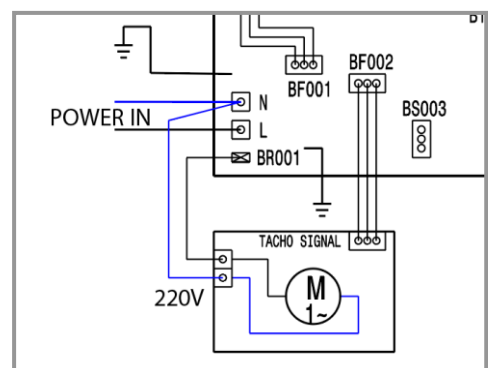
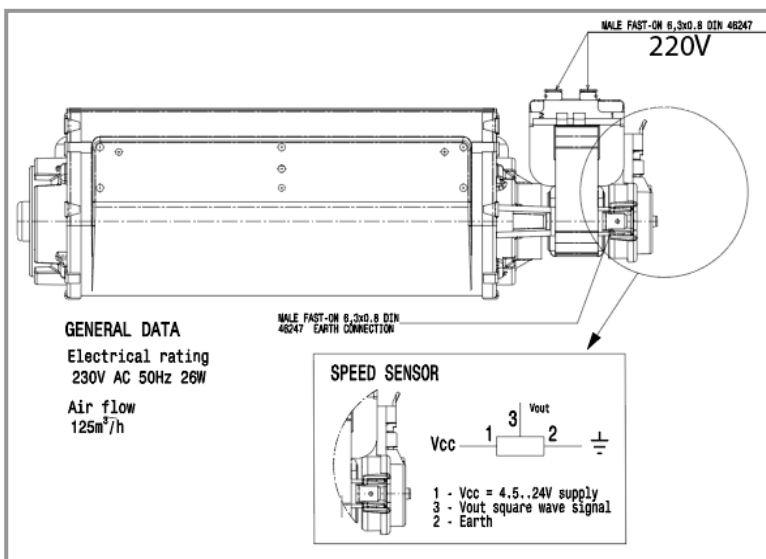
The air filters can be washed separately or inserted into a dish washing machine, dry carefully or leave to dry on a dish rack or towel. In case of clogging up the appliance can over heat and generate an alarm



NOTE !

If the filters start to get dirty and limit the fresh air passage, before emitting an “over heating alarm” the appliance will start to limit the energy emission of the POW, a typical call from a customer could be “ the appliance is not performing any more” or “ after some time the appliance is not performing”. first phone check is making the customer have a look at the air intake filters and in case of need dismount them, wash and reinstall.

4.4.4 VENTILATOR (TANGENTIAL) M1

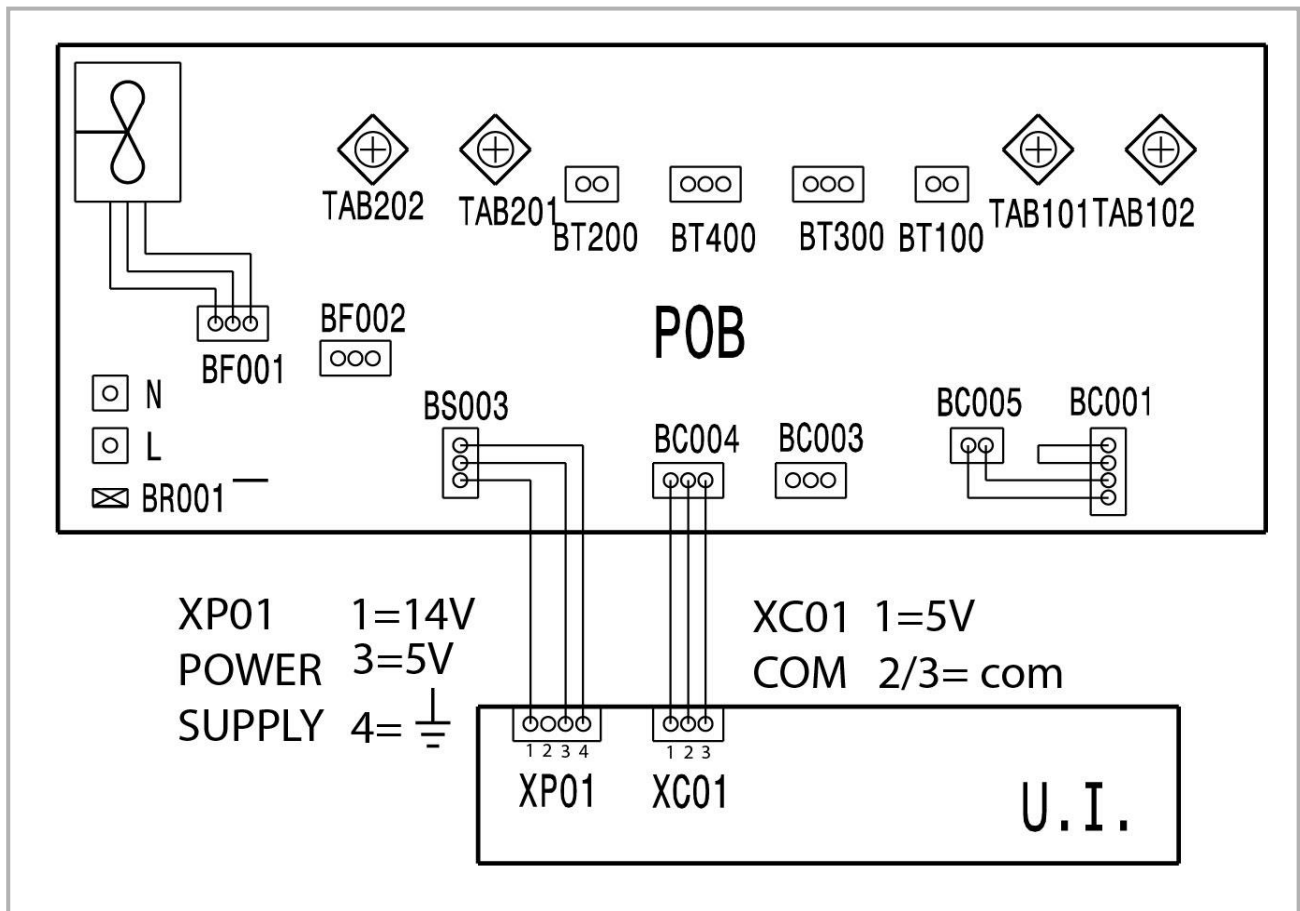


LIBERO LINE FRY TOP INDUCTION

4.4.5 USER INTERFACE, U.I

XP01 is the power supply connector / XC01 is the communication cable (U.I to Generator).

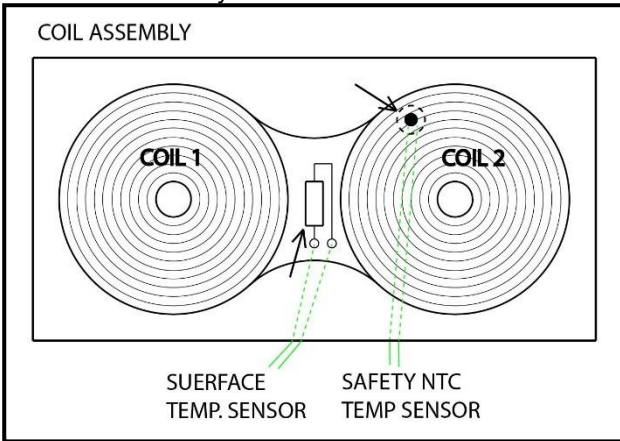
To give power supply to the U.I only one POW(pob) needs to have the bridge cable from BC001 to BC005. The POW that will not have connected a U.I does NOT need this small bridge cable, or the POW will go in short!!. Refer also to the EWD at [ELECTRIC WIRING DIAGRAM \(EXAMPLE\)](#)



LIBERO LINE FRY TOP INDUCTION

4.4.6 COILS & TEMPERATURE SENSORS

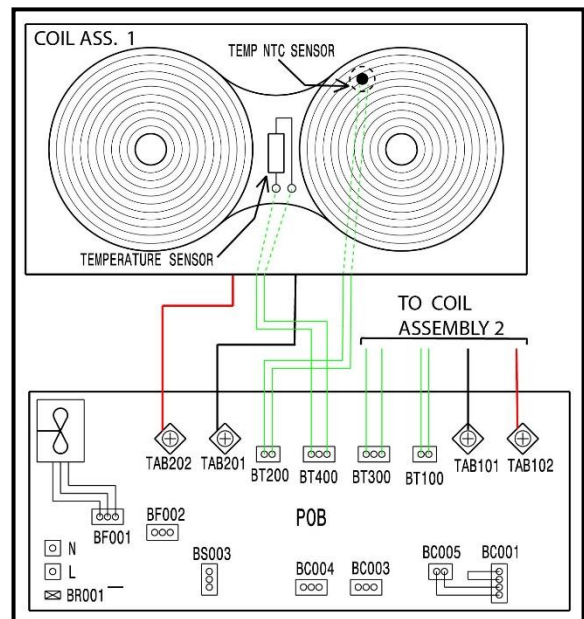
Fry top SZ appliances have two coil assembly's / **Fry top DZ** appliances has four coil assemblies. Each coil assembly is then made with two coils. There are two temperature sensors per coil assembly.



- Safety sensor (safety thermostat), it is embedded into the coil, it will measure the temperature of the coil to protect the generator. If the temperature is spiking over the max **Coil Temp (°C)**, it will first limit the output power then at 140C° it will input the shutting down of the generator. There is no manual resetting of the safety sensor, this because it is electronically controlled; once that the appliance has cooled down (the appliance will keep in function the ventilation system in case of safety temp. activation) the appliance will turn back on and restart functioning. In case of overheating an alarm will be displayed on the U.I. [§ALARM CODE LIST](#)

Coil Temp (°C)	Max Power (W)
0-133	1750
134	1575
135	1400
136	1225
137	1050
138	875
139	437
140	0

- Temperature sensor, it is located at the center of the coil assembly, it measures the temperature of the cooking surface. Max temperature set point is 280C°, if for any reason the appliance will spike above 290C° the generator will cut out. There is no manual resetting of the temperature sensor , this because it is electronically controlled; once that the appliance has cooled down (the appliance will keep in function the ventilation system in case of high temp. activation) the appliance will turn back on and restart functioning. In case of overheating an alarm will be displayed on the U.I. [§ALARM CODE LIST](#)



LIBERO LINE FRY TOP INDUCTION

4.5 ELECTRONIC BOARD

4.5.1 SWITCHING ON / OFF

Turn **ON** the appliance by pressing the On/Off button for 3 seconds.

Once in **ON** state, there are different possibilities to return to **OFF** state again:

Manual Switch OFF, operating on the On/Off button. This possibility is always available, no matter if cooking zones are cooking or not.

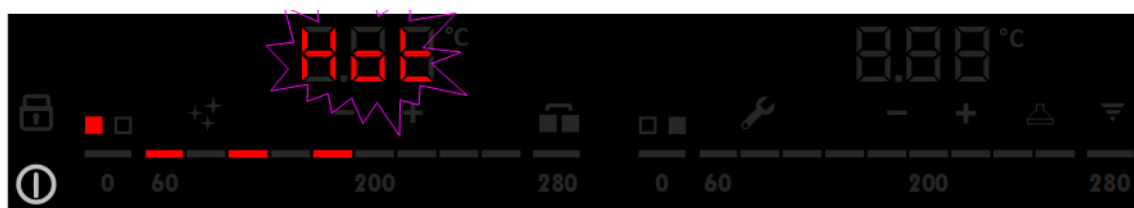
Automatic Switch OFF, when all cooking zones are not cooking, and the UI does not sense any user activity on the appliance for a proper timeout.

Safety Switch OFF, when the UI sense a permanent pressure on at least one active button or slider point.

NOTE !



When turning off in case of residual heat inside the cooking surface on the display will be visualized



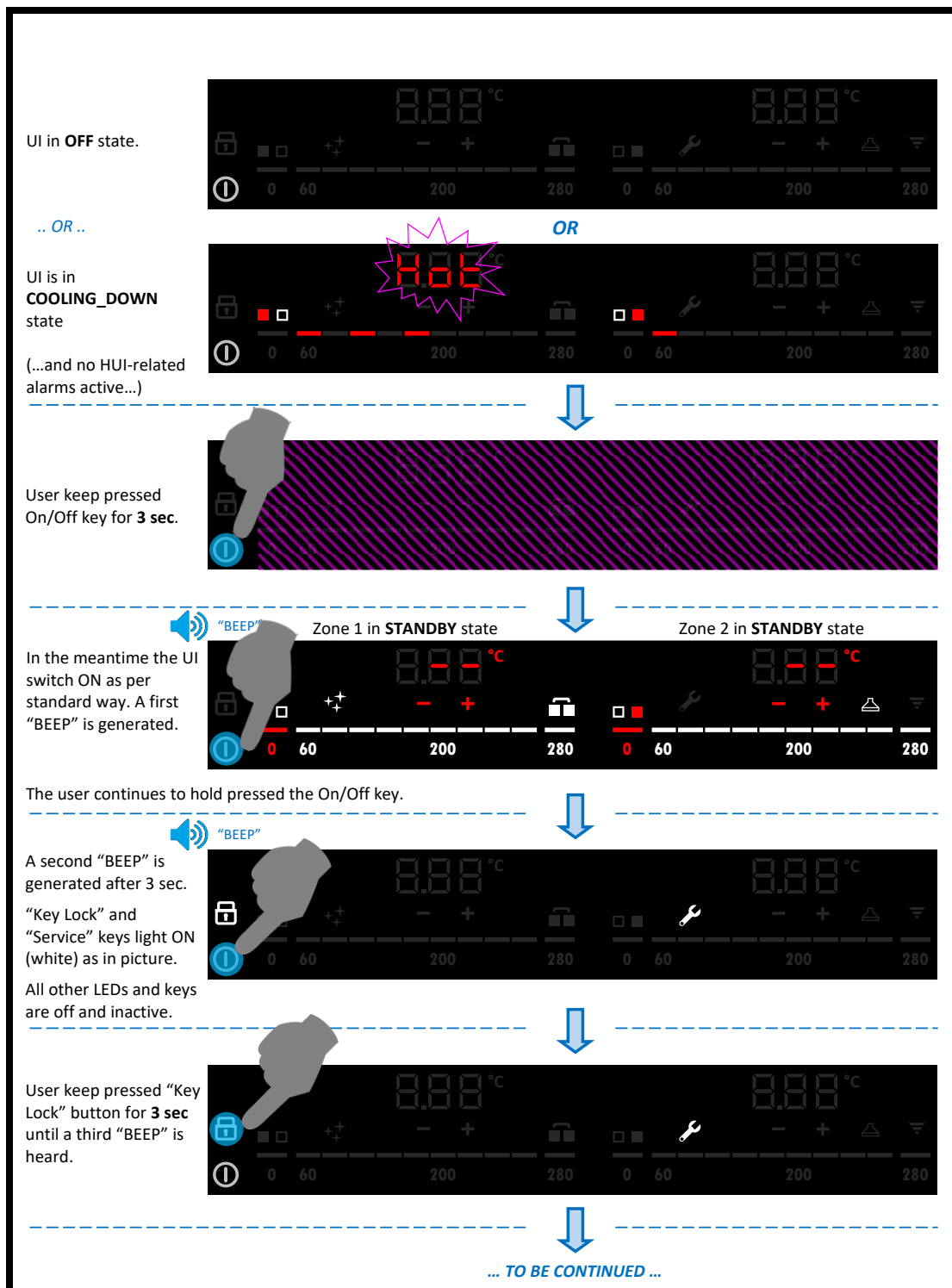
LIBERO LINE FRY TOP INDUCTION

4.5.2 CUSTOMER MENU

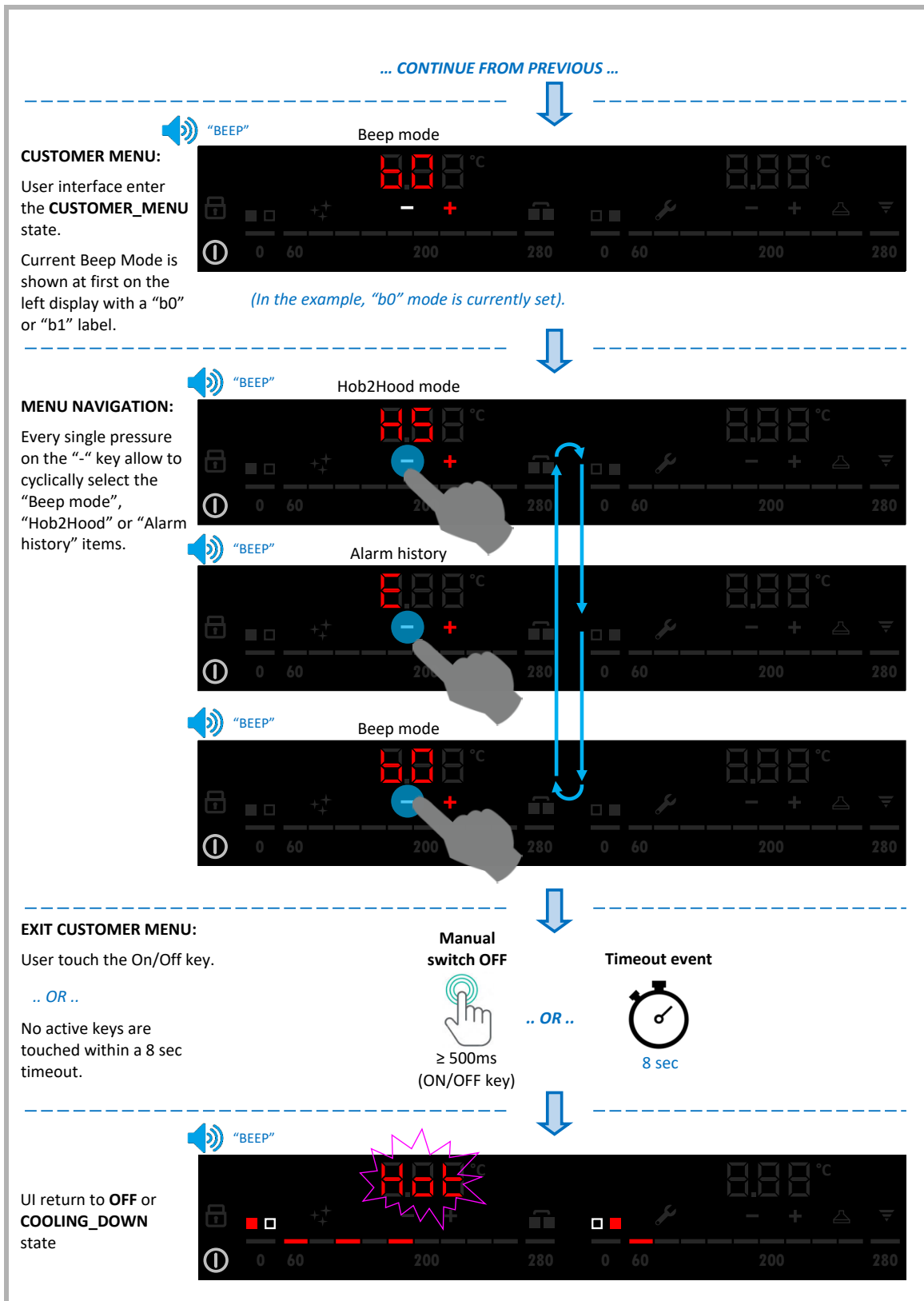
Accessing the customer Menu allows you to:

- Set the Buzzer mode.
- Set the Hob2Hood mode.
- Show the alarm history. Up to 5 alarm codes are showed, starting from the newest one to the oldest one.

The Customer Menu is only available starting from **OFF** or **COOLING_DOWN** state. When exiting the menu, the UI return to **OFF** or **COOLING_DOWN** state, to access:



LIBERO LINE FRY TOP INDUCTION



LIBERO LINE FRY TOP INDUCTION

4.5.2.1 BUZZER MODE

Set the Buzzer mode. Available modes are “b0” and “b1”.

b0 : Full buzzer use as described in this document;

b1: Reduced buzzer use. Buzzer is normally disabled except:

Switch ON

Switch OFF, no matter if manual or automatic

Safety switch OFF routine with 5 “BEEP” sequence

Temperature Set Point reached (Preheating / Pre-cooling animation stop);

Cleaning end

All operations inside CUSTOMER MENU, including menu access sequence;

All operations inside SERVICE MENU, including menu access sequence.

The user enter the CUSTOMER
(Example only, current Beep mode maybe “b0” or “b1”)

Beep mode = b0: Full buzzer use *(Example only)*

“BEEP” Beep mode = b1: Reduced buzzer use

SET BEEP MODE:
Every single pressure on the “+” key cyclically change the Beep mode.

“BEEP” Beep mode = b0: Full buzzer use

Once selected the desired Beep mode, user can press “-” key to switch to “Hob2Hood” setting page, press On/Off key to exit CUSTOMER MENU or wait 8 sec to automatically exit from CUSTOMER MENU .

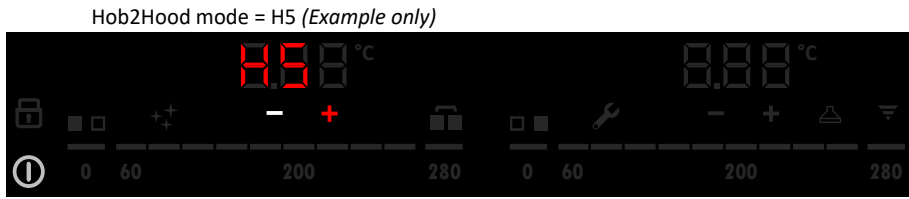
Exiting the Beep Mode page the new mode is stored. In case of power failure the setting is unchanged.

LIBERO LINE FRY TOP INDUCTION

4.5.2.2 HOB2HOOD MODE

The user enter the CUSTOMER MENU and select the Hob2Hood item.

(Example only, current Hob2Hood mode maybe from H0 to H6)



SET HOB2HOOD MODE:

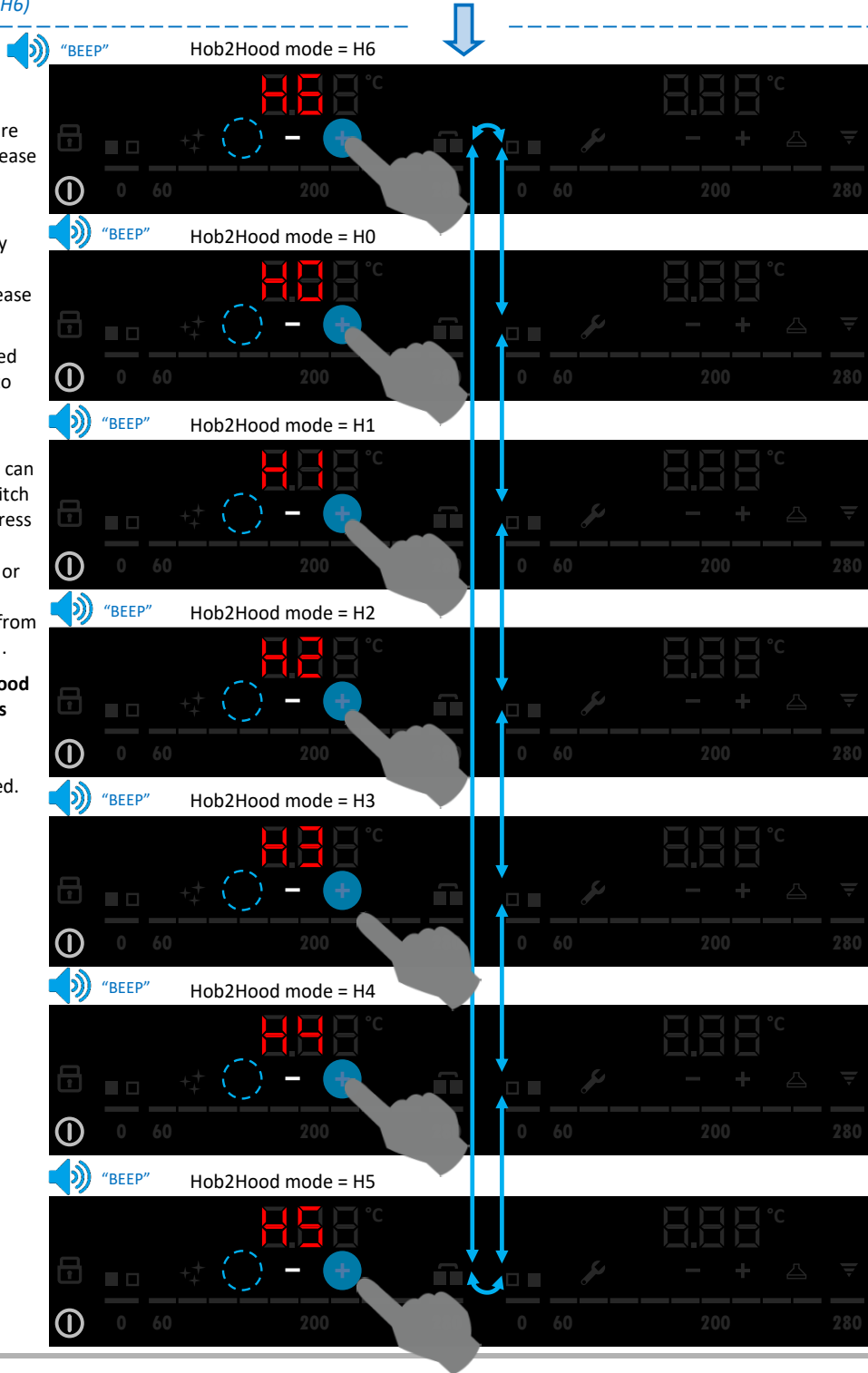
Every single pressure on the "+" key increase the set.

Note: every single pressure on the key indicated with the dashed circle decrease the set.

Selection is repeated cyclically from H0 to H6.

Once selected the desired value, user can press "-" key to switch to Alarm history, press On/Off key to exit CUSTOMER MENU or wait 8 sec to automatically exit from CUSTOMER MENU .

Exiting the Hob2Hood page the new set is stored. In case of power failure the setting is unchanged.

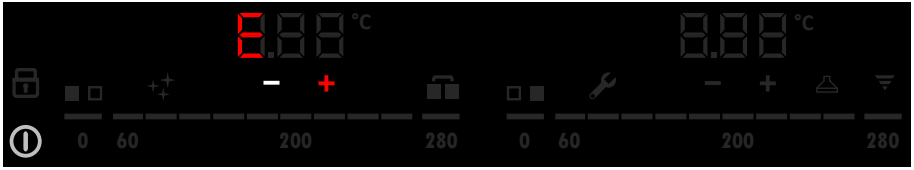


LIBERO LINE FRY TOP INDUCTION

4.5.2.3 ALARM HISTORY

The user enter the CUSTOMER MENU and select the Alarm History item .

Alarm History initial page

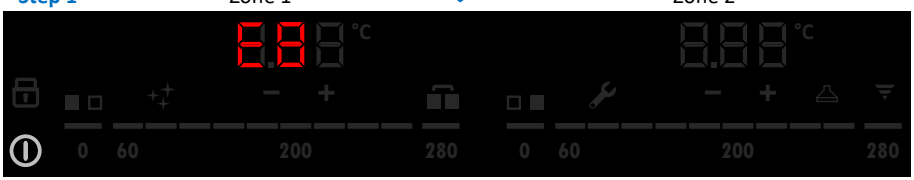


--- "BEEP" ---

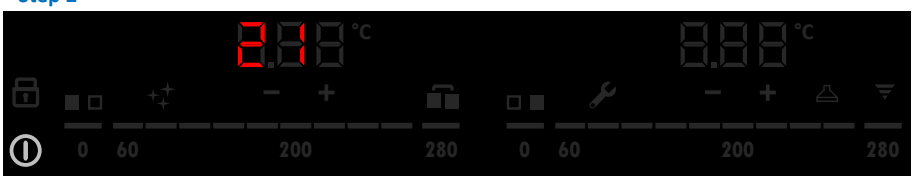
VIEW ALARM HYSTORY:
User touch the "+" key to view the alarm history.

(Example for E821)

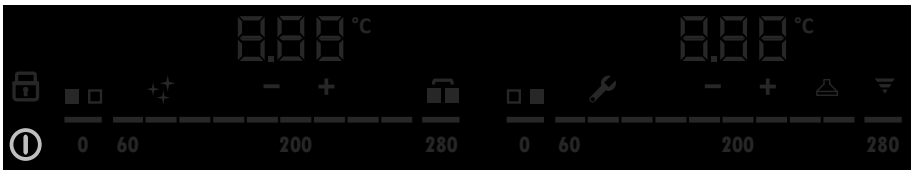
Step 1 Zone 1 Zone 2



Step 2



Step 3



5 x (5 sec)

The last 5 stored alarm codes are displayed, starting with the **newest** occurred to the **oldest** one.
Every alarm code is displayed for 5 seconds (2 times) following the standard visualization scheme .
Alarm codes appears in the same position where they originally appeared in ON state, meaning on one display only or replicated on both .

NOTE: The sequence is always executed 5 times. If less than 5 alarm codes are stored then the UI is completely off for void positions until the final timeout is reached.

--- "BEEP" ---

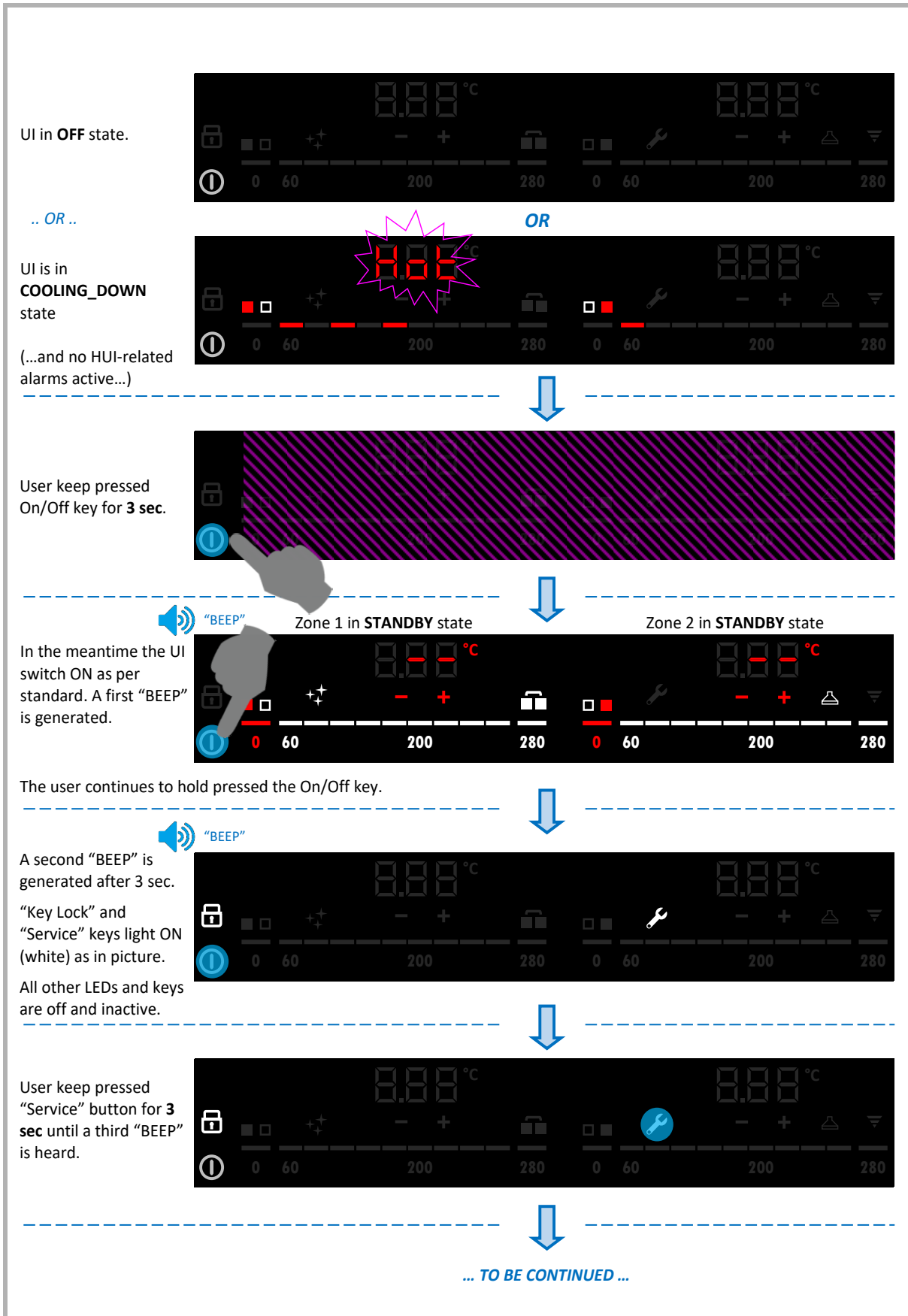
At the end of the sequence the UI automatically return to the Alarm History initial page.

User can press "-" key to switch to "Beep mode" setting page, press "+" key to restart alarm history visualization, press On/Off key to exit CUSTOMER MENU or wait 8 sec to automatically exit from CUSTOMER MENU .

Up to 5 alarm codes are showed, starting from the newest one to the oldest one.

LIBERO LINE FRY TOP INDUCTION

4.5.3 SERVICE MENU



LIBERO LINE FRY TOP INDUCTION

... CONTINUE FROM PREVIOUS ...

SERVICE MENU:
User interface enter the **SERVICE_MENU** state.
Current Demo mode is shown at first on the left display with a "d" or "do" label.

Demo mode

(In the example, Demo is disabled).

MENU NAVIGATION:
Every single pressure on the left "-" key allow to cyclically select the available items in the order "Demo mode", "S1", "S2", "S3" and "S4".

Service utility S1

Service utility S2

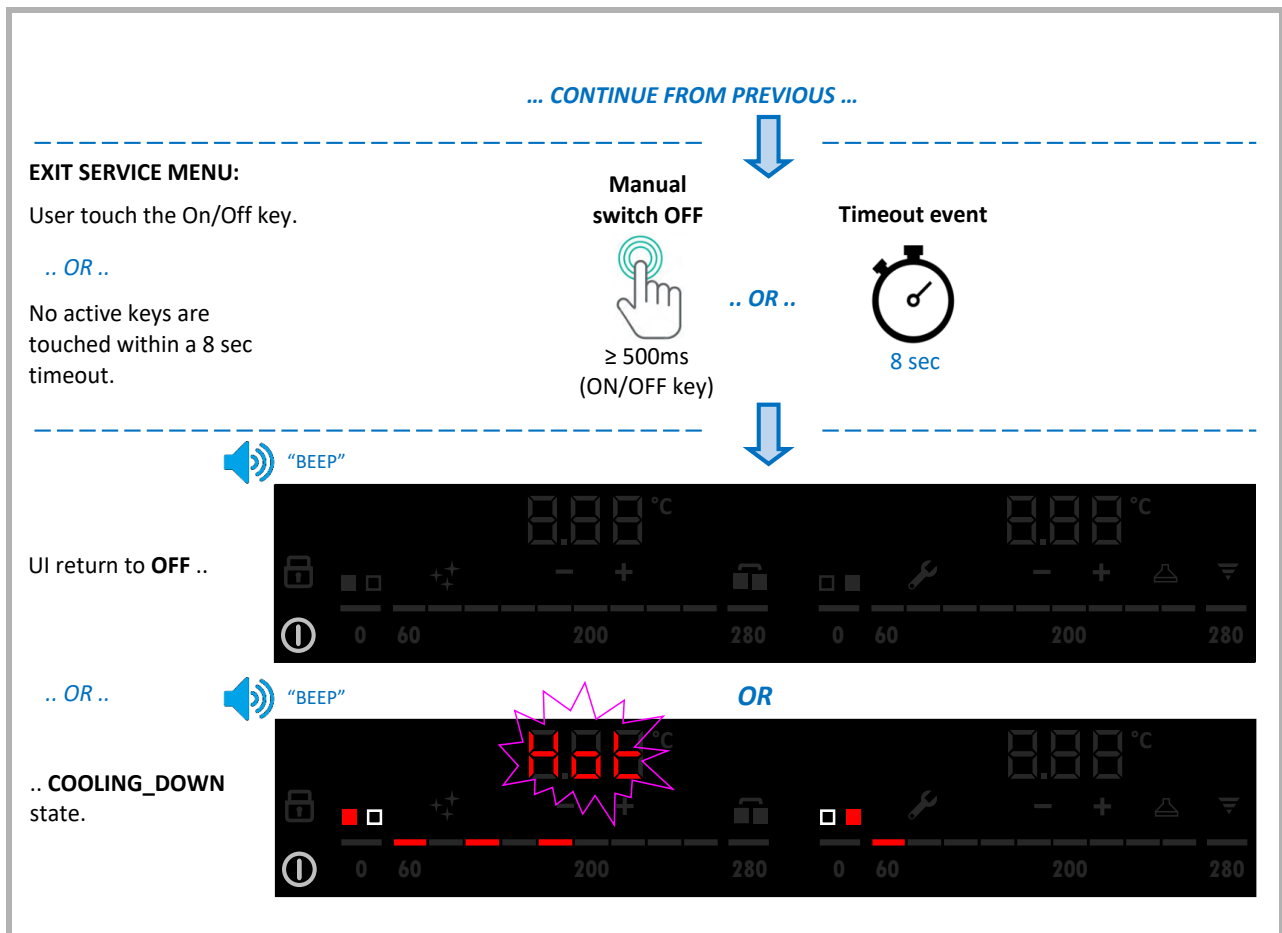
Service utility S3

Service utility S4

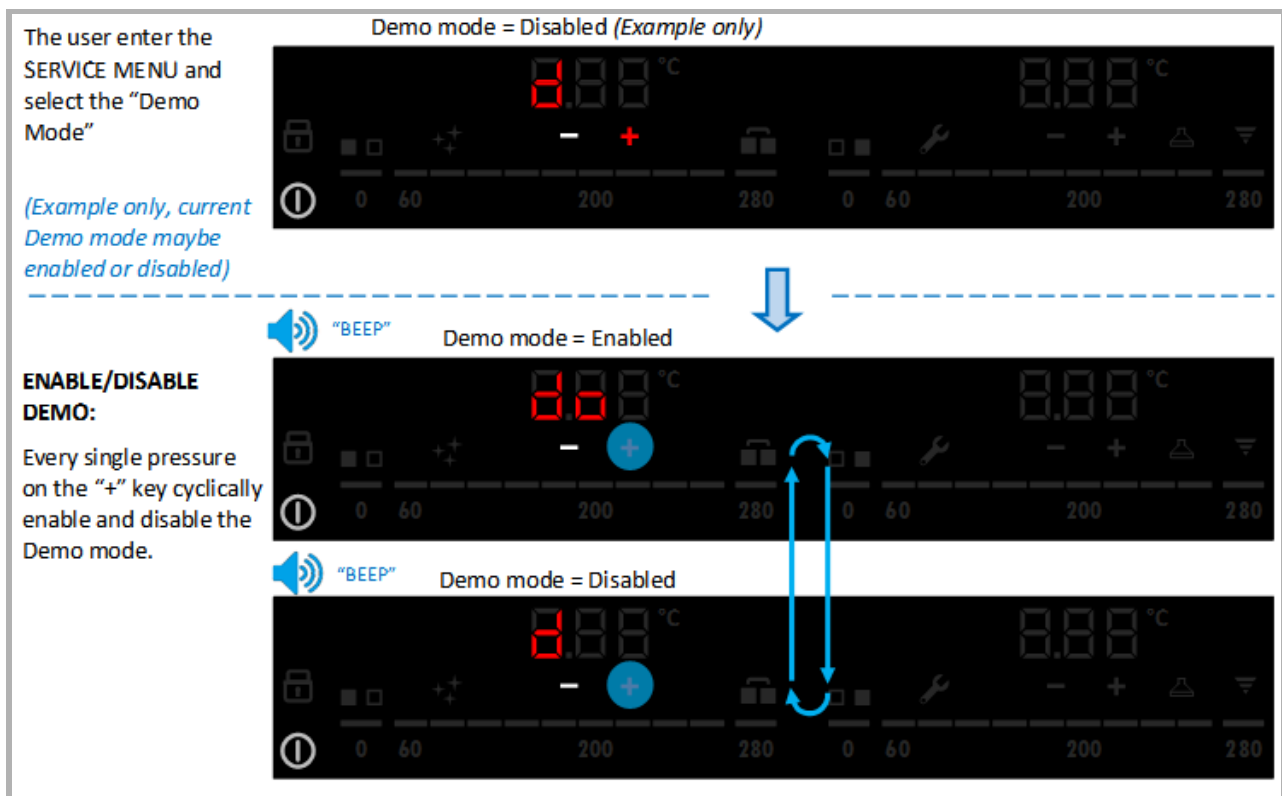
Demo mode ("d" or "do")

... TO BE CONTINUED ...

LIBERO LINE FRY TOP INDUCTION



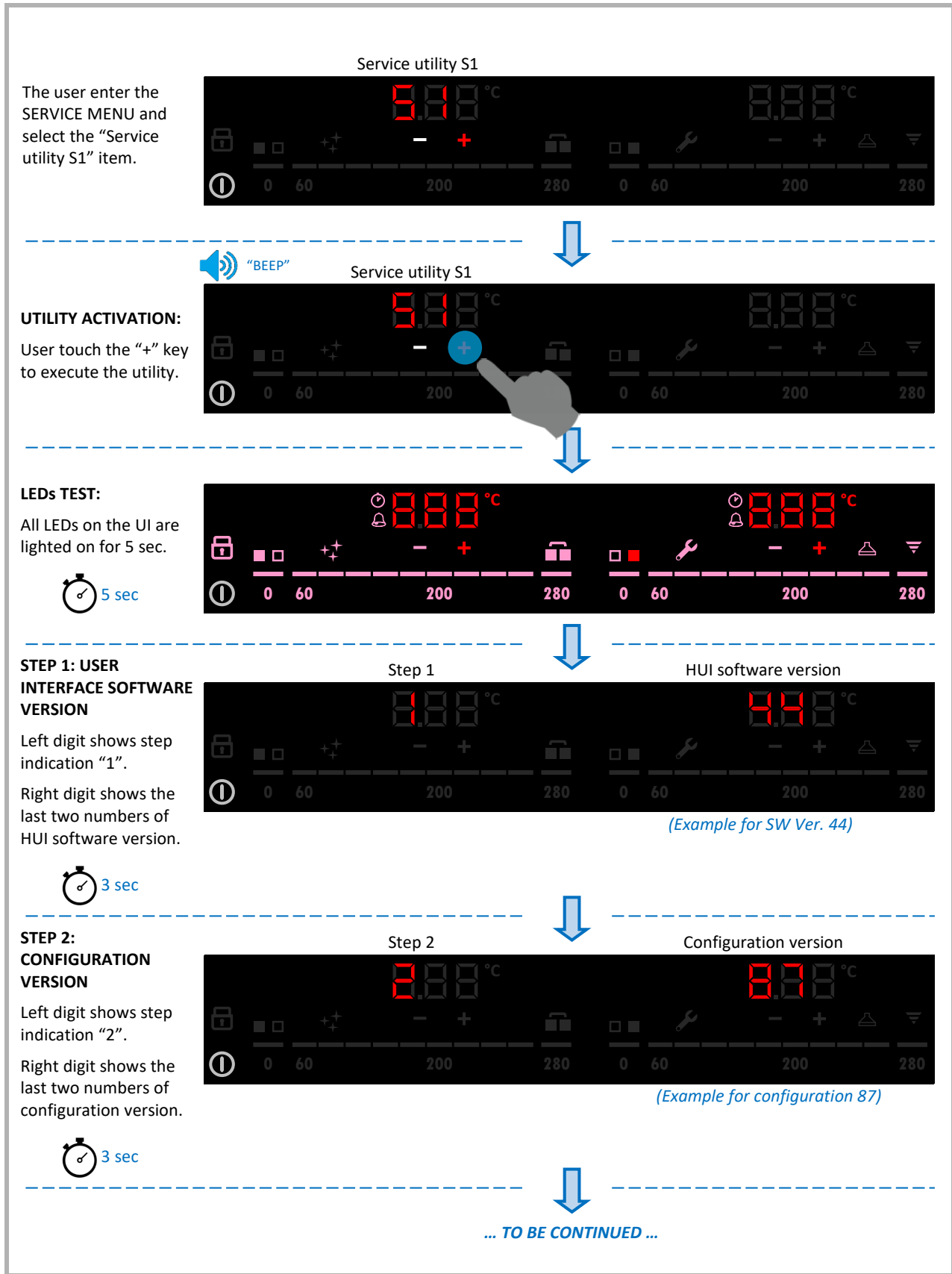
4.5.3.1 DEMO MODE



LIBERO LINE FRY TOP INDUCTION

4.5.3.2 S1, SOFTWARE EDITION

This function permits you to resume a "lamp test", like a first power on so you can check the software installed on the appliance.

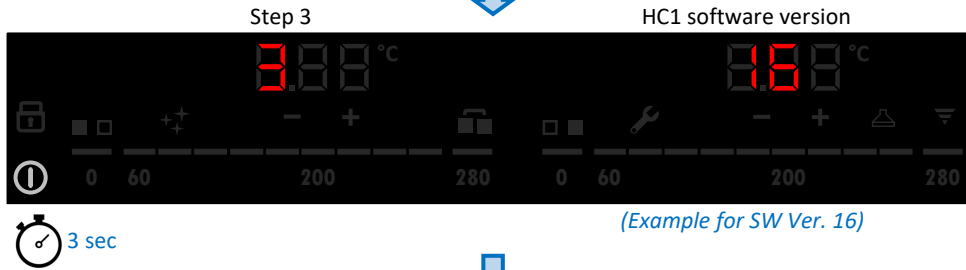


LIBERO LINE FRY TOP INDUCTION

... CONTINUE FROM PREVIOUS ...

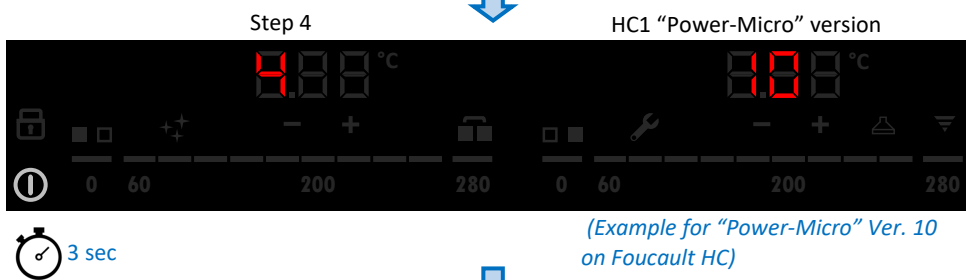
STEP 3: HC1 POWER BOARD SOFTWARE VERSION

Left digit shows step indication "3".
Right digit shows the last two numbers of HC1 software version.



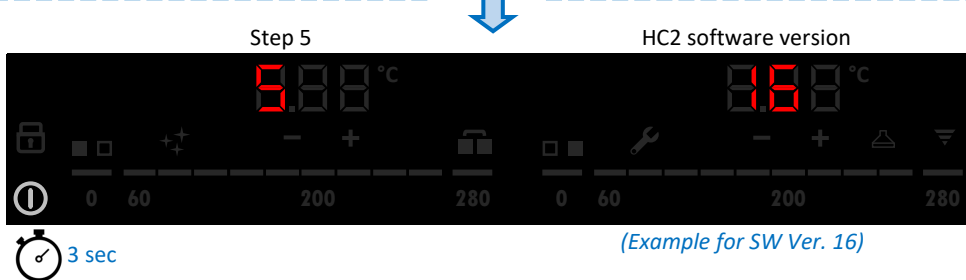
STEP 4: HC1 POWER BOARD "Power-Micro" VERSION

Tesla HC: Not used (right digit shows "--").
Foucault HC: Right digit shows the last two numbers of HC1 "Power-Micro" version.



STEP 5: HC2 POWER BOARD SOFTWARE VERSION

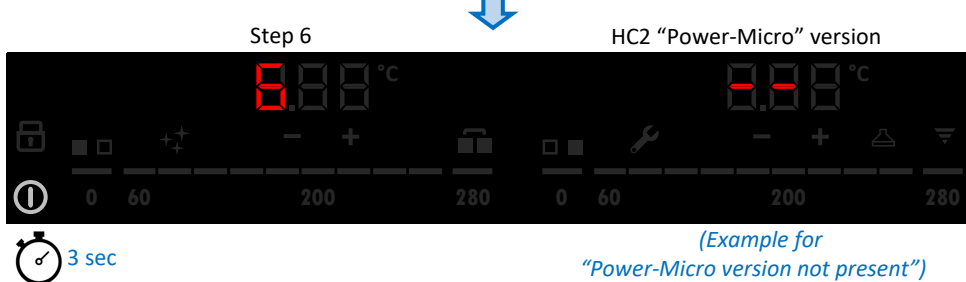
Left digit shows step indication "5".
Right digit shows the last two numbers of HC2 software version.



This step is present only for configurations with two power boards, meaning for Double Zone Frytop.

STEP 6: HC2 POWER BOARD "Power-Micro" VERSION

Tesla HC: Not used (right digit shows "--").
Foucault HC: Right digit shows the last two numbers of HC2 "Power-Micro" version.



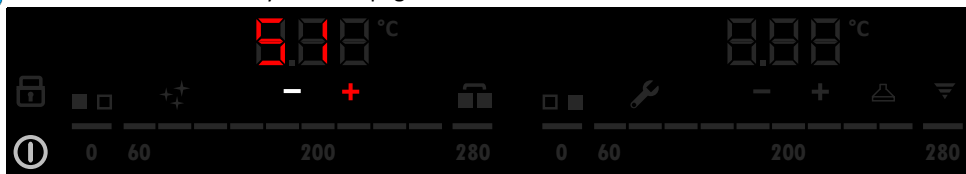
This step is present only for configurations with two power boards, meaning for Double Zone Frytop.



"BEEP"

Service utility S1 initial page

At the end of the sequence the UI automatically return to the Service utility S1 initial page.



From here user can press "-" key to switch to "S2" service utility page, press On/Off key to exit SERVICE MENU or wait 8 sec to automatically exit from SERVICE MENU .

NOTE: Described sequence can be interrupted anytime pressing the On/Off key. The HUI will automatically return to **OFF** or **COOLING_DOWN** state. All other keys are disabled.

LIBERO LINE FRY TOP INDUCTION

4.5.3.3 S2, SELF-DIAGNOSTIC TEST OF GENERATORS OFF

Service Utility S2: Power boards (POW) self-diagnostic test with induction generators OFF.

During this test there is no need to place pots on cooking zones (For FRYTOP: there is no need to have the cooking plate mounted over the coils). Induction generators are OFF (APD relay open), so meaning pot detection and power generation is not done.

The user enter the SERVICE MENU and select the "Service utility S2" item.


UTILITY ACTIVATION:
User touch the "+" key to execute the utility.

POWER BOARD SELF-TEST, GENERATOR OFF:
All connected power boards perform a self-diagnostic routine with the generators OFF (APD relay open). This takes about 30 seconds.

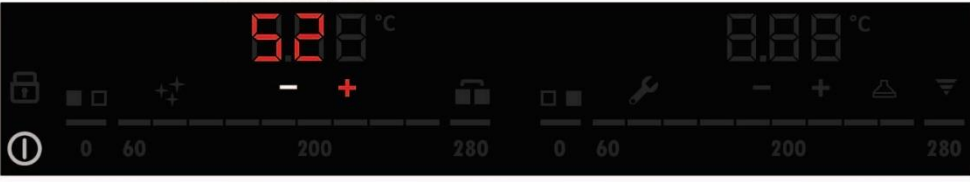
About 30 sec


TEST RESULT:
At the end of the test a "BEEP" is generated to warn the user.
Test result is showed for 5 seconds for every single cooking zone as in picture.

- "0" = Test OK
- "E" = Test failed

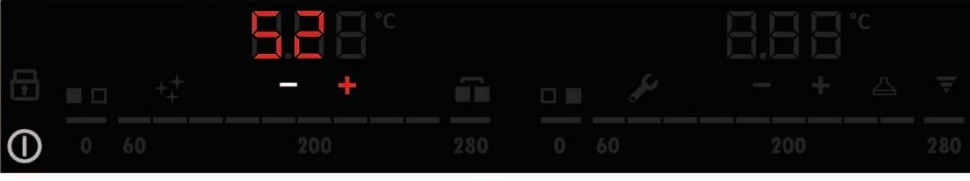



Service utility S2



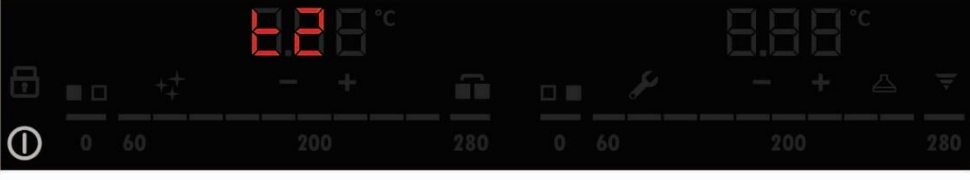


"BEEP" Service utility S2







Power board self-test, generators OFF



NOTE: There is only one power board connected (HC1) on FRY models, Single zone.
There are two power board connected (HC1+HC2) on FRY models, Double zone.



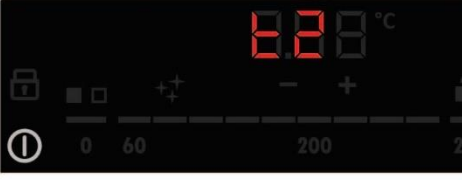
"BEEP" Power board self-test, generators OFF



Test result on Single Zone configurations:
OK on controlled cooking zone

.. OR ..

"BEEP" Power board self-test, generators OFF



Test result on Single Zone configurations:
Not OK on controlled cooking zone

.. OR ..

LIBERO LINE FRY TOP INDUCTION

... CONTINUE FROM PREVIOUS ...

TEST RESULT:
(Continue from previous).



"BEEP" Power board self-test, generators OFF

Test result on Double Zone configurations: **OK** on both cooking zones

.. OR ..

"BEEP" Power board self-test, generators OFF

Test result on Double Zone configurations: **Not OK** on both cooking zones

.. OR ..

"BEEP" Power board self-test, generators OFF

Test result on Double Zone configuration: **Not OK** for the generators assigned to the left part of the UI (Zone 1)

Test result on Double Zone configuration: **OK** for the generators assigned to the right part of the UI (Zone 2)

.. OR ..

"BEEP" Power board self-test, generators OFF

Test result on Double Zone configuration: **OK** for the generators assigned to the left part of the UI (Zone 1)

Test result on Double Zone configuration: **Not OK** for the generators assigned to the right part of the UI (Zone 2)



At the end of the sequence the UI automatically return to the Service utility S2 initial page.

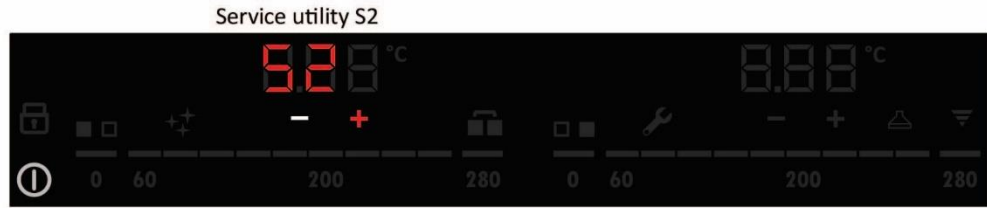
"BEEP" Service utility S2 initial page

From here user can press "-" key to switch to "S3" service utility page, press On/Off key to exit SERVICE MENU or wait 8 sec to automatically exit from SERVICE MENU

NOTE: Described sequence can be interrupted anytime pressing the On/Off key. The HUI will automatically return to **OFF** or **COOLING_DOWN** state. All other keys are disabled.

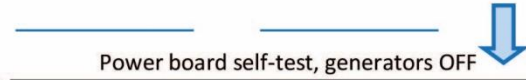
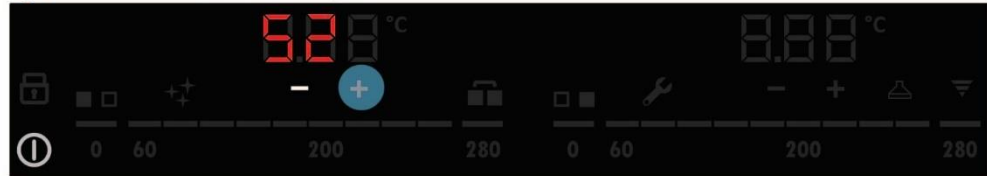
LIBERO LINE FRY TOP INDUCTION

The user enter the SERVICE MENU and select the "Service utility S2" item.



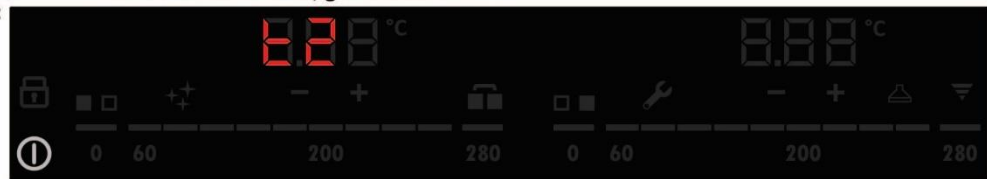
UTILITY ACTIVATION:

User touch the "+" key to execute the utility.

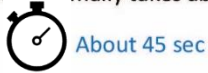


POWER BOARD SELF-TEST, GENERATOR OFF:

All connected power boards perform a self-diagnostic routine with the generators OFF (APD relay open).

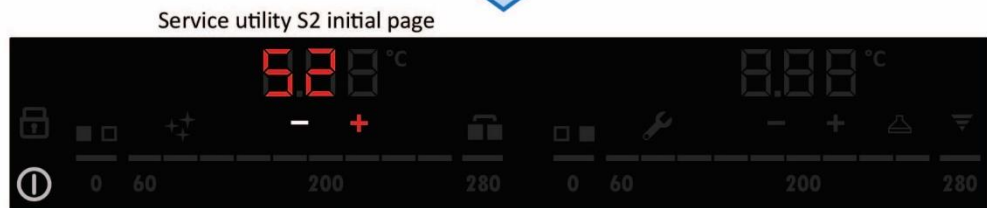


This normally takes about 30 seconds but several attempts are done if the test is not performed.



TEST NOT EXECUTED:

The HUI is unable to perform the test, i.e. because MACS communication is broken.



In this case the UI automatically return to the Service utility S2 initial page without showing the test result.

No "BEEP" is generated.

From here user can press "-" key to switch to "S3" service utility page, press On/Off key to exit SERVICE MENU or wait 8 sec to automatically exit from SERVICE MENU.

NOTE: Described sequence can be interrupted anytime pressing the On/Off key. The HUI will automatically return to **OFF** or **COOLING_DOWN** state. All other keys are disabled.

LIBERO LINE FRY TOP INDUCTION

4.5.3.4 S3, SELF-DIAGNOSTIC TEST WITH GENERATORS ON

Service Utility S3: Power boards (POW) self-diagnostic test with induction generators ON.

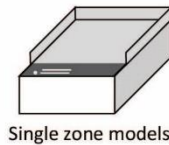
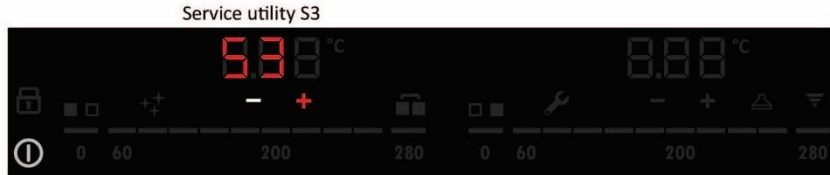
During this test pots must be present on all cooking zones (For FRYTOP: cooking plate must be mounted over the coils). Induction generators are ON (APD relay closed). Pot detection is executed. All generators (meaning all coils) on all cooking zones are ON at maximum power defined in the configuration (Level 9).

NOTE: This test is not always accurate. By repeating the test several times, it happens with a certain frequency that the equipment is unable to provide the result without a physical change having occurred on the equipment. On double zone appliances, most of the time only the result of POW1 (Zone 1, left digit) is showed whereas right digit stays off. Other times the result for POW2 appears after about 2 seconds.

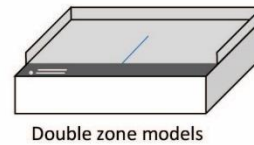
The user enter the SERVICE MENU and select the "Service utility S3" item.

Cooking plate must be present on all cooking zones to pass the test.

Demo mode must be disabled to execute this test.

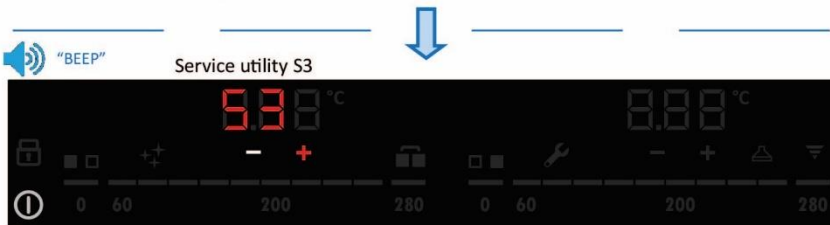


.. OR ..



UTILITY ACTIVATION:

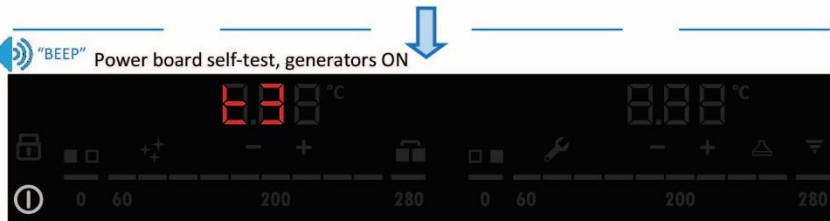
User touch the "+" key to execute the utility.



POWER BOARD SELF-TEST, GENERATOR ON:

All connected power boards perform a self-diagnostic routine with the generators ON (APD relay closed). This takes about 15 seconds.

Another "BEEP" is generated at the beginning of the test.



NOTE: There is only one power board connected (HC1) on FRY models, Single zone.
There are two power board connected (HC1+HC2) on FRY models, Double zone.

⌚ About 15 sec

TEST RESULT:

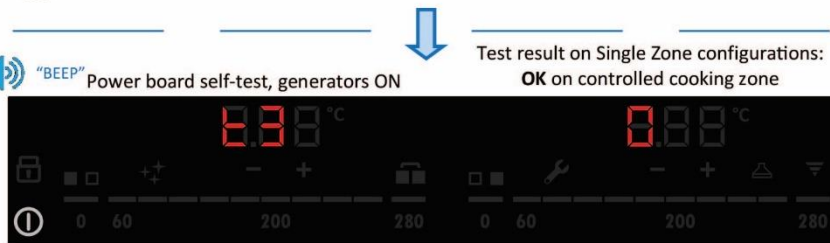
At the end of the test a "BEEP" is generated to warn the user.

Test result is showed for every single cooking zone as in picture.

- "0" = Test OK
- "E" = Test failed

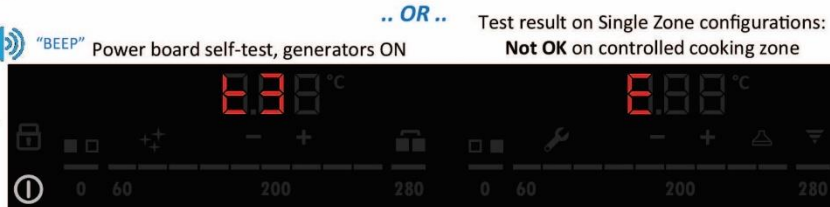
Visualization persist for 5 sec to 230 sec. This time is different according to the detected error.

⌚ 5 to 230 sec



Test result on Single Zone configurations: **OK** on controlled cooking zone

.. OR ..



Test result on Single Zone configurations: **Not OK** on controlled cooking zone

.. OR ..

... TO BE CONTINUED ...

LIBERO LINE FRY TOP INDUCTION

... CONTINUE FROM PREVIOUS ...

TEST RESULT:

(Continue from previous).



5 to 230 sec



"BEEP" Power board self-test, generators ON

Test result on Double Zone configurations:
OK on both cooking zones

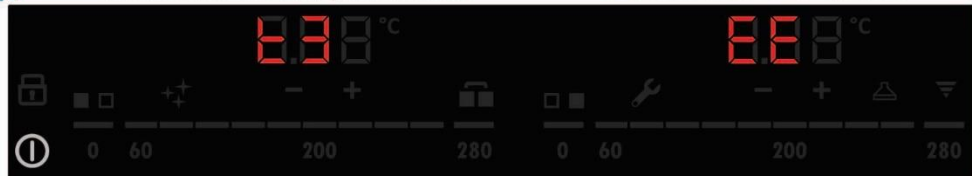


.. OR ..



"BEEP" Power board self-test, generators ON

Test result on Double Zone configurations:
Not OK on both cooking zones



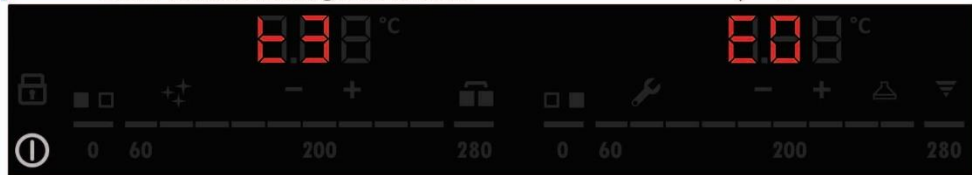
.. OR ..



"BEEP" Power board self-test, generators ON

Test result on Double Zone configuration: **Not OK** for the generators assigned to the left part of the UI (Zone 1)

Test result on Double Zone configuration: **OK** for the generators assigned to the right part of the UI (Zone 2)



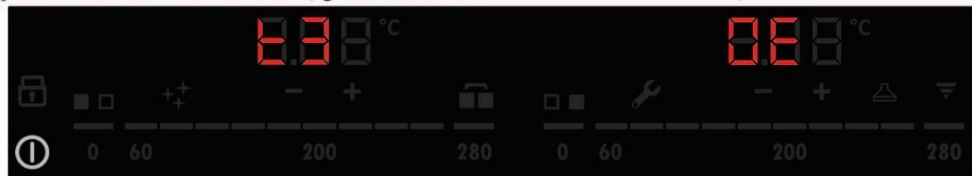
.. OR ..



"BEEP" Power board self-test, generators ON

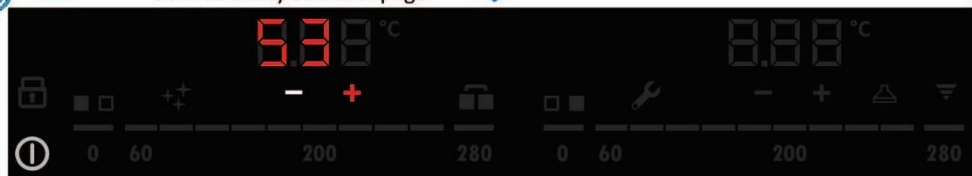
Test result on Double Zone configuration: **OK** for the generators assigned to the left part of the UI (Zone 1)

Test result on Double Zone configuration: **Not OK** for the generators assigned to the right part of the UI (Zone 2)



"BEEP" Service utility S3 initial page

At the end of the sequence the UI automatically return to the Service utility S3 initial page.



From here user can press "-" key to switch to "S4" service utility page, press On/Off key to exit SERVICE MENU or wait 8 sec to automatically exit from SERVICE MENU.

NOTE: Described sequence can be interrupted anytime pressing the On/Off key. The HUI will automatically return to OFF or COOLING_DOWN state. All other keys are disabled.

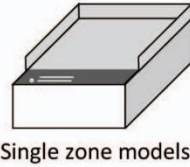
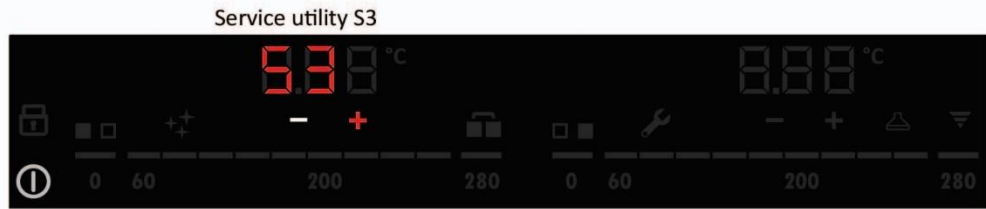
NOTE: This test is not always accurate. By repeating the test several times, it happens with a certain frequency that the equipment is unable to provide the result without a physical change having occurred on the equipment.

LIBERO LINE FRY TOP INDUCTION

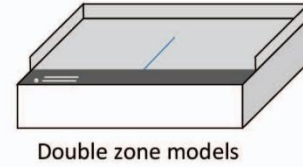
The user enter the SERVICE MENU and select the "Service utility S3" item.

Cooking plate must be present on all cooking zones to pass the test.

Demo mode must be disabled to execute this test.

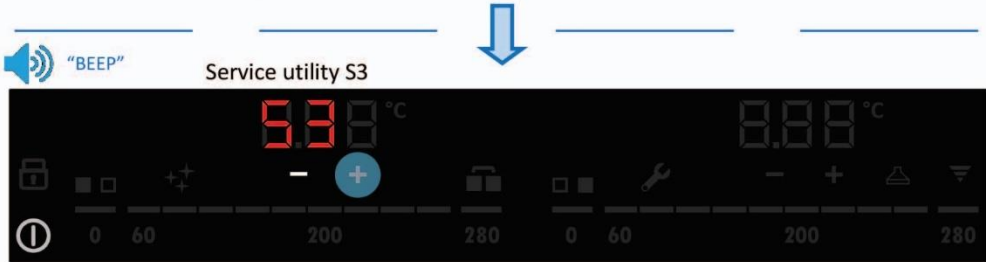


.. OR ..



UTILITY ACTIVATION:

User touch the "+" key to execute the utility.

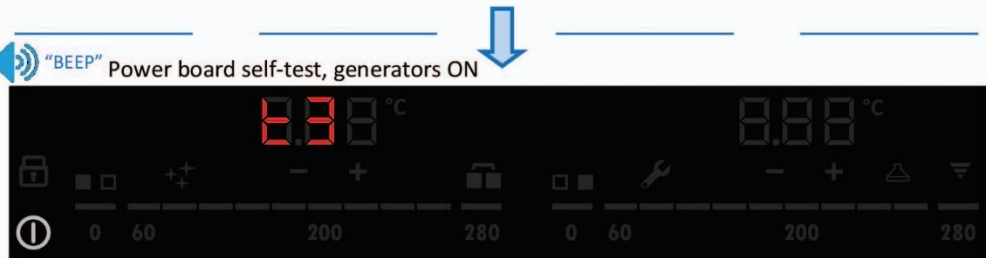


POWER BOARD SELF-TEST, GENERATOR ON:

All connected power boards perform a self-diagnostic routine with the generators ON (APD relay closed).

Another "BEEP" is generated at the beginning of the test.

This normally takes about 30 seconds but several attempts are done if the test is not performed.



TEST NOT EXECUTED:

The HUI is unable to perform the test, i.e.:

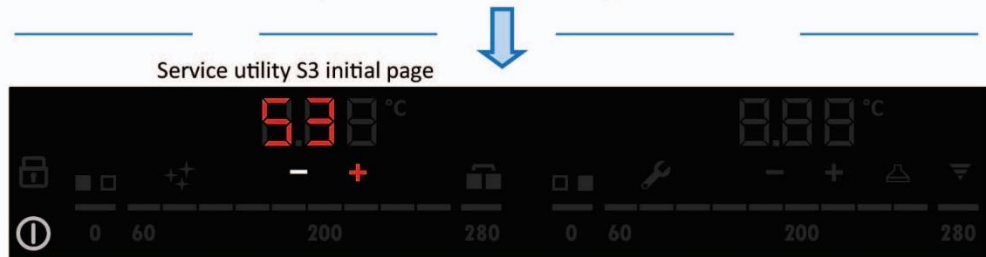
- MACS communication is broken;
- Demo mode is active.
- Cooking plate is not present on all cooking zones.
- Coils not connected.
- In general, the HC is in alarm.

In this case the UI automatically return to the Service utility S3 initial page without showing the test result.

No "BEEP" is generated.

From here user can press "-" key to switch to "S4" service utility page, press On/Off key to exit SERVICE MENU or wait 8 sec to automatically exit from SERVICE MENU.

NOTE: Described sequence can be interrupted anytime pressing the On/Off key. The HUI will automatically return to OFF or COOLING_DOWN state. All other keys are disabled.



LIBERO LINE FRY TOP INDUCTION

4.5.3.5 S4, COOKING TOP COUPLING

This test is made to check the quality of the coupling between pots and generator, the function is more useful on HOB appliances.

Fry tops do not need to do this test this because the cooking surface is already coupled with the generators and the quality of the bonding is guaranteed by the materials of the cooking top that is built on the appliance.

However, a quick explanation of how this test works.

Service Utility S4: Power supply voltage + cooking plate coupling rate (pot coupling rate).

POW Hob Control. Also referred as "Power Board" (POW).

TESLA Single-phase, generator, 3500W

The test is done in three steps:

- **Step 1:** The POW measure the main power supply voltage without load (power request zero).
- **Step 2:** On FRYTOP appliances the max power is applied to all coils (power level 9) to every coils (generators) belonging to the cooking area. Real generated power is estimated measuring the current on the coil and a coupling factor is showed as:

Coupling factor % = (Estimated power / Requested power) %

Where estimated and requested power is the sum of the values measured on every single coil (generator) belonging to the area under test.

Visualization is done as Px where:

P0 → 0% to 9%	P5 → 50% to 59%
P1 → 10% to 19%	P6 → 60% to 69%
P2 → 20% to 29%	P7 → 70% to 79%
P3 → 30% to 39%	P8 → 80% to 89%
P4 → 40% to 49%	P9 → 90% to 100%

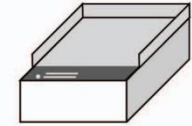
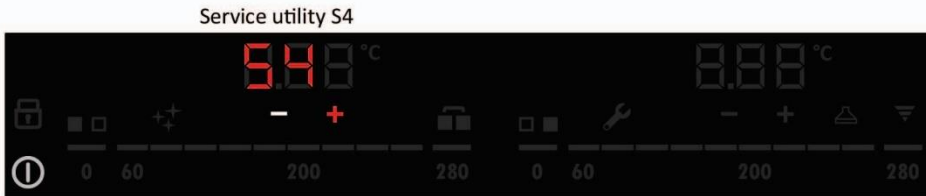
- **Step 3:** Main power supply voltage is measured with the cooking zone under test at max power.

LIBERO LINE FRY TOP INDUCTION

The user enter the SERVICE MENU and select the "Service utility S4" item.

Cooking plate must be present on at least one cooking zone to execute the test.

Demo mode must be disabled, otherwise the coupling factor will be 0%.



Single zone models

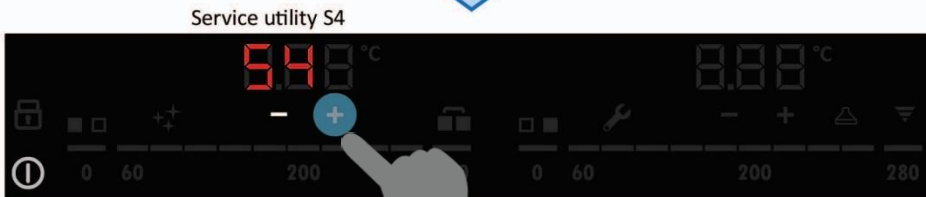
.. OR ..



Double zone models

UTILITY ACTIVATION:

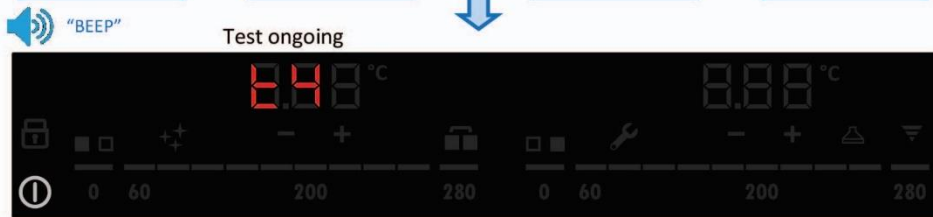
User touch the "+" key to execute the utility.



STEP 1: MAIN VOLTAGE WITHOUT LOAD

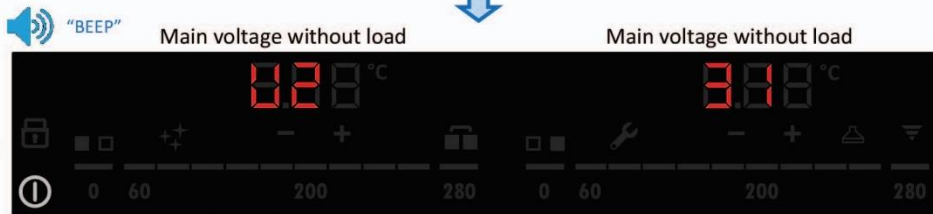
No power is requested to the cooking zone under test.

Main power supply voltage is measured.



STEP 1: MAIN VOLTAGE WITHOUT LOAD

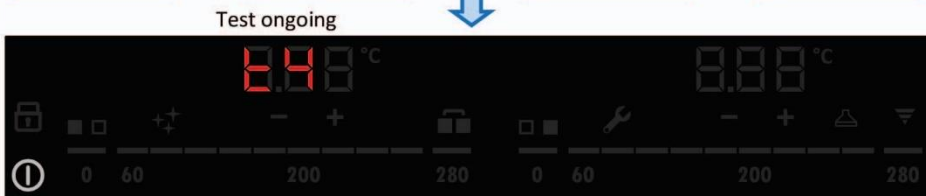
Measured voltage is shown with the format "Ux" - "xx" as in picture.



(Example for 231V)

STEP 2: POT COUPLING

Max power is requested to the cooking zone under test.



- Current absorption is measured and generated power is estimated.
- Main power supply voltage is measured.

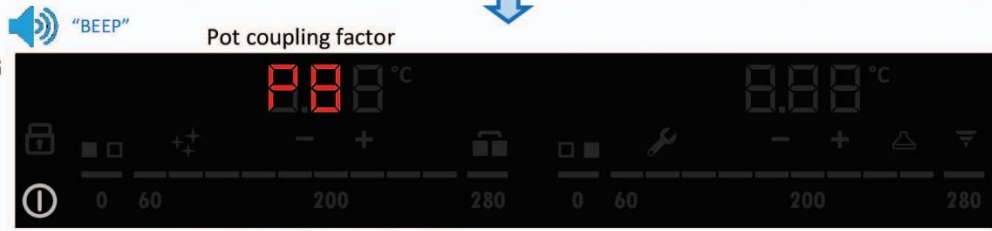
... TO BE CONTINUED ...

LIBERO LINE FRY TOP INDUCTION

... CONTINUE FROM PREVIOUS ...

STEP 2: POT COUPLING

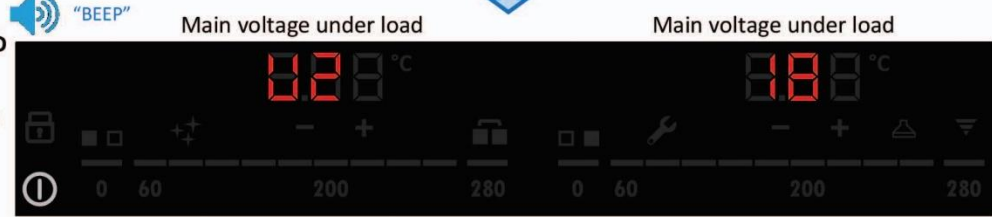
Coupling factor is shown with the format "Px" as in picture.



(Example for P8 → 80% to 89%)

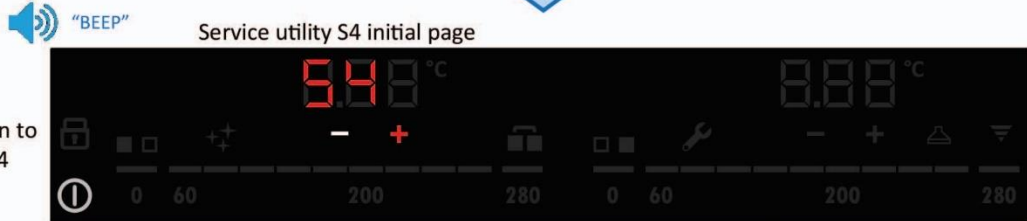
STEP 3: MAIN VOLTAGE UNDER LOAD

Measured voltage is shown with the format "Ux" – "xx" as in picture.



(Example for 218V)

At the end of the sequence the UI automatically return to the Service utility S4 initial page.



From here user can press "-" key to switch to "Demo mode" page, press On/Off key to exit SERVICE MENU or wait 8 sec to automatically exit from SERVICE MENU.

NOTE 1: Described sequence can be interrupted anytime pressing the On/Off key. The HUI will automatically return to OFF or COOLING_DOWN state. All other keys are disabled.

NOTE 2: If an HC alarm is detected during the test the sequence is interrupted. Visualization on the UI is frozen. The UI automatically return to S4 initial page after a timeout (from 25 sec to 230 sec). The point where the sequence is interrupted and the timeout depends on the type of malfunction occurred.

NOTE 3: Ideally this test should be performed with the cooking plate mounted only on one of the cooking zones. For Double Zone equipment this is not possible. In this case the test will be executed anyway choosing randomly one of available cooking zones. There is no indication on the UI of the cooking zone used for the test.

NOTE 4: On Libero Line FRYTOP appliances every cooking zone is driven by a dedicated HC "Tesla" board; within the HC "Tesla" board, both generators Front and Rear are used. The test is only executed if pot detection is positive on Front Zone. On the opposite, if pot detection is negative for the Rear zone the test is performed anyway but coupling factor will be the half of the expected because Rear zone does not generate any power.

LIBERO LINE FRY TOP INDUCTION

4.5.4 HOB TO HOOD (H2H, SPECIAL FUNCTION)



NOTE !

This special function is only available when the libero appliances are installed on board to a LIBERO POINT appliance.

This function is accessible directly on the U.I of the libero line appliances and does NOT need to be accessed (like service menu or customer menu). How does this function work: The Libero Line appliances are equipped with an I.F (infra-red) communication sensor located under the U.I glass; this sensor will communicate and send data to the I.R port located on the left side of the libero point appliance.



The “hob to hood” H2H icon and button are used in association with two internal functions: Automatic and Manual “hood” Fan Speed regulation.

Be aware, in below description, that rules for the button and for the icon color are different, depending to the function currently active.

4.5.5 MANUAL FAN SPEED

With this function, by pressing the H2H icon, the customer interrupts the automatic fan speed regulation and can decide manually what speed to set on the “hood” of the libero point.

With the Manual Fan Speed the user has the possibility to select desired hood fan speed from speed zero (meaning fan OFF) to speed 4 (max) by repeatedly pressing the H2H button on the U.I of the appliance.

This function is always available when the UI is **ON**, no matter if cooking zones are **IDLE**, **STANDBY** or **COOKING** sub-state.

When U.I. enters an **ON** state the manual Fan Speed is not active. Fan speed is initially set to zero and will eventually change depending on Automatic Fan Speed algorithm.

Pressing the H2H button the Manual Fan Speed mode is automatically activated. Once manually selected, fan speed is maintained up to when the U.I. turns in **OFF** or **COOLING_DOWN** states.

Manual Fan Speed regulation is not available when the U.I. is **OFF** or **COOLING_DOWN**. H2H button will be inactive.

Manual Fan Speed regulation is not available during cleaning special function. H2H button is inactive and the icon is off. Despite of this, automatic fan speed regulation continues during cleaning.

If the appliance is turned off the Manual Fan Speed setting is lost.

Manual fan operation overrides the Automatic Fan Speed regulation.

LIBERO LINE FRY TOP INDUCTION

UI in **ON** state.
Cooking zones are **STANDBY** or **COOKING**
(Example only, same logic applies to Single Zone configurations)

Manual Fan Speed function still not active, meaning that the user never touched the H2H key since the UI is in ON state.
H2H key maybe white or red, depending on Automatic Fan Speed.
In this example is supposed that H2H icon is white, meaning hood fan speed zero.

MANUAL FAN SPEED ACTIVATION:
User touch the H2H key.
Manual Fan Speed is now active @ Speed 1.
H2H key became red.

MANUAL FAN SPEED REGULATION:
User touch the H2H key.
Manual Fan Speed still active.
Fan speed increased to Speed 2.
H2H key still red.

4.5.6 AUTOMATIC FAN SPEED:

This function automatically regulates the “hood” fan speed according to operating conditions on the cooking zones. The appliance cannot see how much vapor/smoke we are producing when cooking but it can “see” the temperature of the cooking surfaces... the algorithm works like this “hotter the surfaces= more steam = more hood suction level”; colder the surfaces= less vapor = less need of hood suction”.

The Automatic Fan Speed algorithm is operative both in **ON** and **OFF** state when Manual Fan Speed mode is not active.

H2H button is not used for Automatic Fan Speed but just for Manual Fan Speed regulation.

Automatic fan speed signals are sent also during Cleaning or even if there is an POW error. Required speed maybe wrong when the error involves a temperature sensor because temperature reading is unreal.

H2H ICON:

Regardless of whether Manual or Automatic Fan Speed mode is active, H2H icon indicated the required hood fan speed as follow:

ON state: White when is required speed zero (hood fan off), red when is required hood fan speed different from zero.

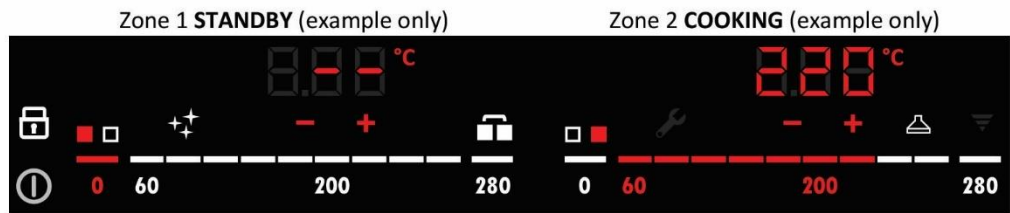
OFF state: Off when is required speed zero (hood fan off), red when is required hood fan speed different from zero.

NOTE: During Cleaning the H2H icon is forced OFF. Despite of this, automatic fan speed regulation continues according to cooking surface temperature.

LIBERO LINE FRY TOP INDUCTION

UI in **ON** state.
Cooking zones are **STANDBY** or **COOKING**

(Example only, same logic applies to Single Zone configurations)

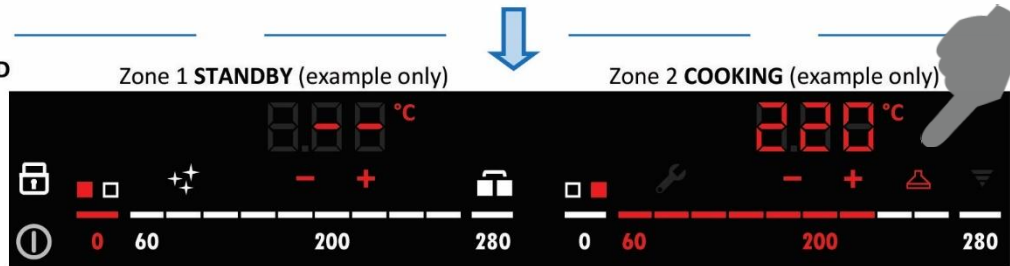


Manual Fan Speed function still not active, meaning that the user never touched the H2H key since the UI is in ON state.
H2H key initially white, meaning that Automatic Fan Speed function has not yet begun to adjust the speed since the UI is in ON state.

AUTOMATIC FAN SPEED REGULATION:

Manual Fan Speed function not active.

According to zone conditions, Automatic Fan Speed function adjust the speed.



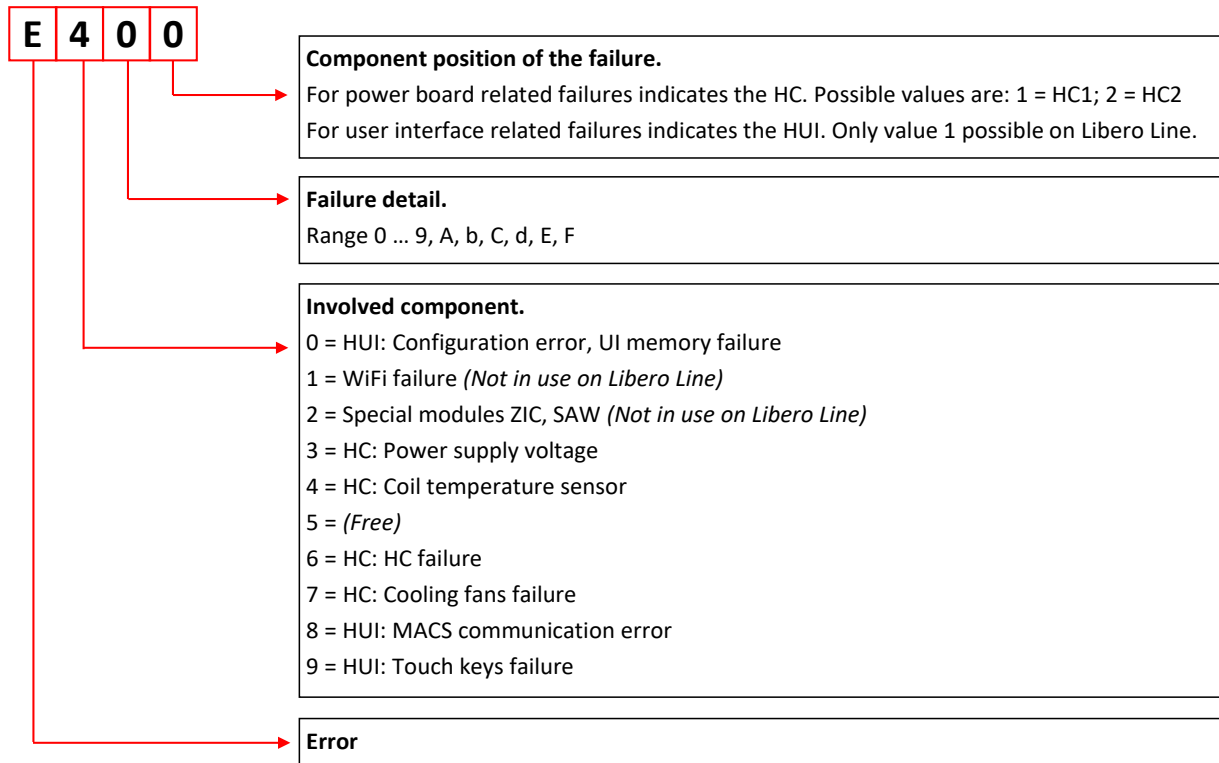
When speed is different from zero the H2H icon became red.
No sound is generated during Automatic Fan Speed regulation.

LIBERO LINE FRY TOP INDUCTION

4.5.7 ALARMS

Alarms on Libero Line appliances are codified using four characters as follow:

HUI Hob User Interface / **HC** Hob Control. Also referred as “Power Board” (POW).



The alarm code appears:

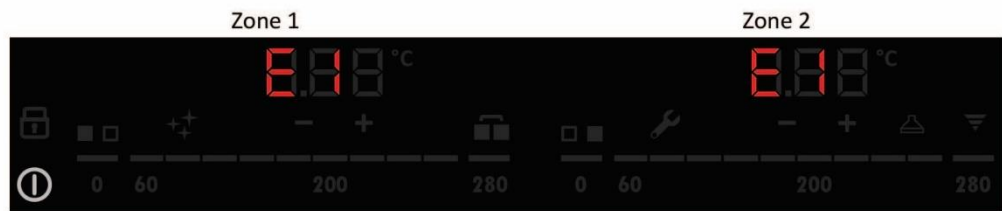
- **For User Interface (U.I.) errors:** Some codes appear on left display only, some other are replicated on both display. No matter if the appliance is single or double zone.
- **For power board (POW) errors:** The error appears on the U.I. zone associated to the generator in error or unable to work as a consequence of the malfunction. So, meaning:
 - In one display only when the alarm impact only one generator inside a specific POW (e.g. E411: Coil temperature sensor open/not connected). Visualization is done on the U.I. zone associated to the defective generator. This is done to allow technician to correctly identify the failed component.
- Be aware that in some cases more than one generators are controlled by one Zone in the U.I. (e.g. for the Single zone Fry Top). In this case the error of both generators are showed in the same U.I. zone. There is not a specific way to indicate which generator is actually in error.
 - Replicated on both display if the problem impact on more than one generators and these generators are controlled by different zones on the U.I. (e.g. E321: Power supply undervoltage).
 - Replicated on both display if there is more than one error associated to different zones in the U.I.. Theoretically speaking, different specific codes should be showed on every U.I. zones. By design choice instead just one code (the latest discovered in chronological order) is replicated on all U.I. zones in error.

LIBERO LINE FRY TOP INDUCTION

NOTE: Depending on the alarm code and configuration in use, visualization can be replicated on both display or showed on one zone only.

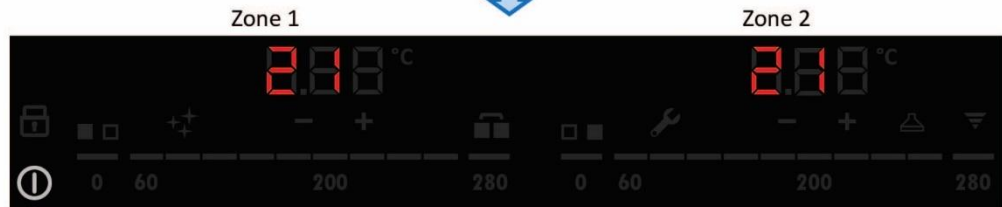
STEP 1:

First two characters of the alarm code are showed for 1 sec.



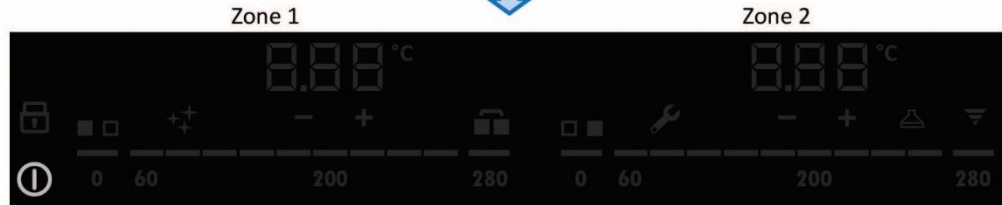
STEP 2:

Last two characters of the alarm code are showed for 1 sec.



STEP 3:

Display off for 0.5 sec



LIBERO LINE FRY TOP INDUCTION

4.5.7.1 ALARM CODE LIST

This alarm list is generic for all libero line appliances that have Tesla or Foucault generator.

Refer also to the § GLOSSARY AND ABBREVIATIONS

Alarm code	Involved component	Power disable	Self-resetting	Alarm name	Alarm description	Alarm troubleshooting
E031	U.I	Yes	No	UI_CFG_ALM	Missing configuration or defect CRC of complete configuration block. The alarm is showed on left display only. NOTE 1: With Tesla POW only, HOB and WOK application this alarm is overridden by E821 after about 30 seconds. NOTE 2: With Tesla POW only, FRYTOP application this alarm at first overridden by E441 in about ten seconds, then overridden by E821 after about 30 seconds. NOTE 3: This alarm prevents entering on CUSTOMER and SERVICE menu.	Wrong spare part, communication cable disconnected
E311 E312	POW	Yes	Yes	400V_DETECTION	Tesla POW only: Power supply overvoltage. Its purpose is to detect wrong phase-to-phase connection (400V instead of 230V).	Check voltage
E321 E322	POW	No	Yes	LOW_MAINS_VOLTAGE	Too low power supply voltage. Tesla POW: About 150V for detection, 160V for reset (internal induction circuits measure, after APD relay). Foucault POW: About 310V for detection and reset, no hysteresis (internal induction circuits measure, after APD relay). About 10 seconds under the threshold are required to generate the error.	Check voltage
E401 E402	POW	Yes	Yes	TEMP FMEA_Z0 (Front zone on Tesla POW) TEMP FMEA_Z1 (Rear zone on Tesla POW)	SENS (Front zone on Tesla POW) SENS (Rear zone on Tesla POW) Coil safety temperature sensor bad circuit or short circuit. Bad circuit means temperature $\geq 290^{\circ}\text{C}$ on Tesla POW. Bad circuit means temperature $\geq 300^{\circ}\text{C}$ on Foucault POW. For Tesla POW, HOB & WOK , diagnostic is executed on both generators (Front and Rear) even if not really used in a specific configuration, i.e. in a single zone configuration. For this reason, a dummy sensor (100kOhm resistance) must be connected on the unused input.	Check temp sensors
E411 E412	POW	Yes	Yes	TEMP OPEN_Z0 (Front zone on Tesla POW) TEMP OPEN_Z1 (Rear zone on Tesla POW)	SENS (Front zone on Tesla POW) SENS (Rear zone on Tesla POW) Coil safety temperature sensor open or not connected. For Tesla POW, HOB & WOK , diagnostic is executed on both generators (Front and Rear) even if not really used in a specific configuration, i.e. in a single zone configuration. For this reason, a dummy sensor (100kOhm resistance) must be connected on the unused input.	Check temp. sensors
E421 E422	POW	Yes/No	Yes	ZONES HI-TEMP	Tesla POW, HOB & WOK: Overtemperature on front or rear coil (measured on coil safety sensor). The error is unique for all temperature sensor inside an POW. 260 °C for activation, 215°C for deactivation. No slope control. Tesla POW, FRYTOP: Overtemperature on front or rear coil (measured on coil safety sensor and plate temperature sensor). The error is unique for all temperature sensor (coil safety + plate) inside an POW. Coil safety sensor: 140 °C for activation, 95°C for deactivation. No slope control. Plate temperature sensor: 290 °C for activation, no self-resetting. No slope control. Foucault POW, HOB & WOK: Overtemperature on coil safety sensor. 280 °C for activation, 255°C for deactivation. In addition, starting 150°C the alarm is also arisen by a too fast temperature increment. In this case the alarm is not self-resetting.	Check cleaning filters, cleaning of ventilators fans (dirt accumulation on fan blades)

LIBERO LINE FRY TOP INDUCTION

Alarm code	Involved component	Power disable	Self-resetting	Alarm name	Alarm description	Alarm troubleshooting
E431 E432	POW	Yes	Yes	TEMP SENS SLOPE_Z0 (Front zone on Tesla POW) TEMP SENS SLOPE_Z1 (Rear zone on Tesla POW)	Implemented on Tesla POW only: Slope detection alarm (temperature not increasing, stuck,) on front or rear coil. This diagnostic is only active when zone temperature is below 55°C. Intervention time depends on requested power: <ul style="list-style-type: none"> Level 8, 9, 10 : 2 min 30 sec Level 7 : 4 min 30 sec Level 5, 6 : 7 min Level 4 : 9 min 30 sec Level 3 : 14 min Level 1,2 : More than 3h The error is self-resetting after two minutes that the U.I. is OFF or COOLING_DOWN state. NOTE: For Tesla POW with single zone configurations this diagnostic help to diagnose the reversal of the sensor with the dummy resistor (100kOhm resistance).	Check temp sensors, DUMMY sensor has been swapped position after Part replacement.
E441 E442	POW	Yes/No	Yes	PLATE_TEMP_SENSOR_Z0 (Front zone on Tesla POW) PLATE_TEMP_SENSOR_Z1 (Rear zone on Tesla POW)	Tesla HC, HOB & WOK: Wrong electrical connection: A cooking plate temperature sensor is present on BT300 or BT400 connector. In this case the error is not self-resetting. Tesla POW, FRYTOP: Two possibilities: Cooking plate temperature sensor open, not connected, bad circuit or short circuit. Bad circuit means temperature $\geq 290^{\circ}\text{C}$ on Tesla POW. HOB or WOK configuration loaded in a FRYTOP appliance. The error is self-resetting in case of sensor open or not connected, not self-resetting in case of bad circuit or short circuit. NOTE: Diagnostic is executed on both generators (Front and Rear) within the single Tesla POW § 4.4.7.3.4.	Check temp sensors, DUMMY sensor has been swapped position after Spare Part replacement
E501	U.I	No	No		The alarm is showed on both display (left and right). On Libero Line this may happen when a wrong firmware is used for the hardware.	Check correct U.I. spare part
E601	POW	No	Yes	15V BAD	15 Volt supply out of window	Check voltage
E611 E612	POW	Tesla : Yes Foucault: No	Yes	Tesla: IGBT_TEMP_SENS Fouc: SENS_ERR_IGBT	Tesla POW: IGBT/heat-sink sensor open or short or $>130^{\circ}\text{C}$ (115°C for deactivation). One single error for both IGBT temperature sensors within an POW. Foucault HC: IGBT/heat-sink sensor open or short. The error is self-resetting	Overheating, Check cleaning filters, cleaning of ventilators fans (dirt accumulation on fan blades)
E641	POW	Yes	Yes	RELAY GLUED	APD relay glued, can't switch off power induction circuits.	Check POW
E651	POW	Yes	Yes	ADJACENT_ADC_PIN_FMEA_ERROR	Solder/assembly fault inside power board: short circuit on adjacent pin of safety ADC. NOTE: On Tesla POW, this error appears (on both generators) if a coil temperature sensor is disconnected / reconnected when the POW board is already powered on.	Check temp sensors connectors
E661	POW	Yes	No	DATA_CRC_ERROR	Foucault POW only: Internal power table missing. Foucault POW software is equipped with an internal power table to be used when the POW is connected without an UI and power level set is established by a potentiometer (modular cooking range). Even if not used on Libero Line, the POW software check the presence of the internal power table at power-on	Wrong spare part.
E6A1	POW	Yes	Yes	MAINS_FREQUENCY_ERROR	Power supply frequency detection error. Acceptable range: 40% to 60% of the duty cycle @50Hz.	Check Power supply frequency

LIBERO LINE FRY TOP INDUCTION

Alarm code	Involved component	Power disable	Self-resetting	Alarm name	Alarm description	Alarm troubleshooting
E701 E702	POW	Tesla : Yes	Yes	Tesla: BOARD_FAN_ERROR	<p>Tesla POW: IGBT cooling fan blocked or not connected. Remarks:</p> <ul style="list-style-type: none"> The alarm is reset when the U.I. stay at least 120sec of OFF or COOLING_DOWN state, no matter if problem is solved or not. About 20 sec before the alarm occurs POW sent pot fail state to the U.I. <p>Foucault HC: One or more internal cooling fan blocked/not connected/not following. Power disable depend on number of fans blocked</p>	Check cooling fan of POW
E711 E712	POW	Yes	Yes	EXTERNAL_FAN_ALARM	<p>Tesla POW only: External tangential fan blocked or not connected.</p> <p>Remarks: The alarm is reset when the U.I. stay at least 120sec of OFF or COOLING_DOWN state, no matter if problem is solved or not.</p>	Check cooling fan
E821 E822	U.I	Yes	Yes	POW_COMM_WDOG_ALM	<p>U.I1 detects POW1/POW2 communication timeout. The alarm is showed on left display only (Both 821 and 822).</p> <p>NOTE: This alarm maybe generated by:</p> <ul style="list-style-type: none"> A wrong MACS connection between U.I and POW A missing or wrong ID jumper on POW board. <p>With appliance with more than one POW (e.g. Double Zone Fry top) it's still possible to work with one zone only when the other one is in error.</p>	Check communication cables POW to U.I.
E831 E832	U.I	Yes	Yes	MACS_ACK_TOUT	<p>U.I1 detects MACS acknowledgements missing to POW1. This alarm appears if communication is lost during standard operation. The alarm is overridden by E821 after some seconds. The alarm is showed on both display.</p>	Check communication cables POW to U.I.
E911	U.I			BUTTON_LOW_REF	Touch button failure	Check U.I.
E921	U.I			BUTTON_LOW_SIGNAL	Touch button failure	Check U.I.
E931	U.I			BUTTON_HIGH_REF	Touch button failure	Check U.I.
E941	U.I			BUTTON_HIGH_SIGNAL	Touch button failure	Check U.I.
E981	U.I			BUTTON_ERROR - Init	Touch button failure	Check U.I.
E991	U.I			BUTTON_ERROR - Run time	Touch button failure	Check U.I.
E9A1	U.I			BUTTON_ERROR - FMEA Library	Touch button failure	Check U.I.
E9b1	U.I			BUTTON_ERROR - FMEA short	Touch button failure, the alarm is showed on both display.	Check U.I.
E9C1	U.I			BUTTON_ERROR - FMEA open	Touch button failure, the alarm is showed on both display.	Check U.I.

NOTE !



If the filters start to get dirty and limit the fresh air passage, before emitting an “over heating alarm E421” the appliance will start to limit the energy emission of the POW, a typical call from a customer could be “ the appliance is not performing any more” or “ after some time the appliance is not performing”.

4.6 SOFTWARE UPDATE

The software update is not possible on the electronic boards. WIFI is not implemented at this moment.

LIBERO LINE FRY TOP INDUCTION

5 TROUBLESHOOTING

The following chapters are intended only for authorized technicians / engineers

5.1 INTRODUCTION

Refer to the alarms described at § [ALARM CODE LIST](#)

6 SERVICING THE APPLIANCE

The following chapters are intended only for authorized technicians / engineers



WARNING !

Take GREAT CARE when connecting / testing anything with live current, if you are unsure what you are doing and how to use your equipment safely, then **DON'T DO IT.**

6.1 LIST OF NEEDED TOOLS

Complete Socket & Wrench set (from 6 to 24)

Complete allen button set

Bent long nose pliers

Screwdrivers Philips "small / medium / large"

Screwdrivers flat "small / medium / large"

Clamp amp meter

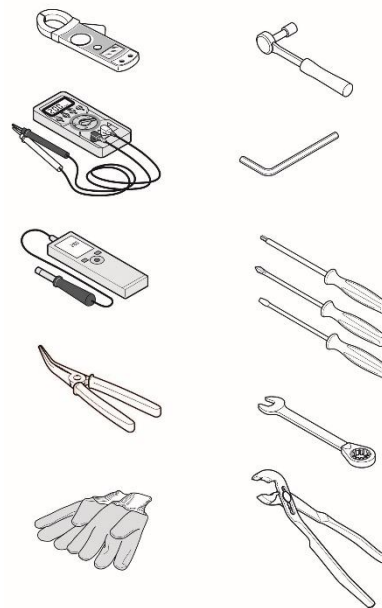
Multimeter (voltage reader)

Tongue groove pliers (water & gas pipes)

Grip lock plier

Protective gloves (heatproof / cut proof)

Refer also to the § [PERSONAL PROTECTION EQUIPMENT](#)



LIBERO LINE FRY TOP INDUCTION

6.2 DISASSEMBLY/REASSEMBLE OF COMPONENTS

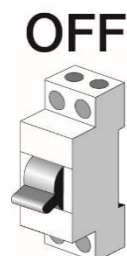
This chapter explains how to remove various parts of the equipment to access its functional components: please always refer to this guide to access various parts.

To locate the component of interest, please refer to the following § and illustrations. Each component is marked with a name/number and a page which explains in detail how to take it apart.



WARNING / CAUTION !

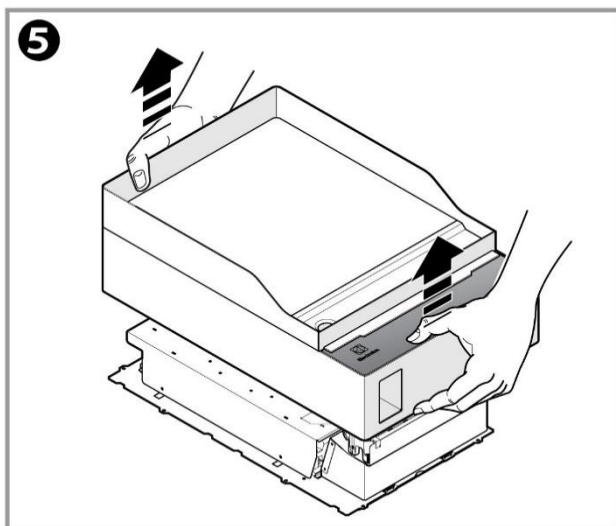
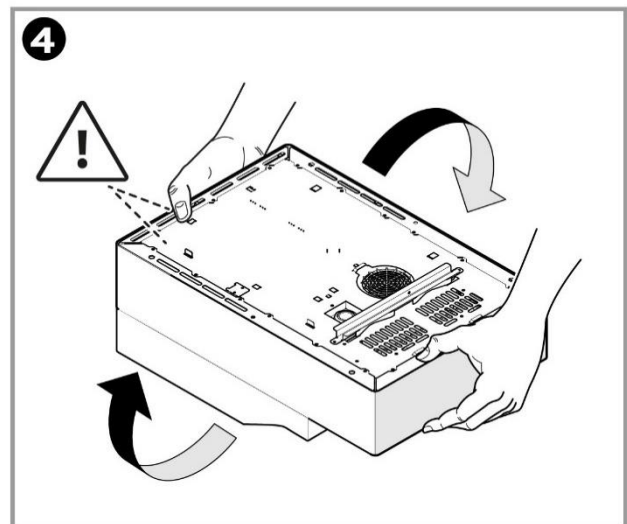
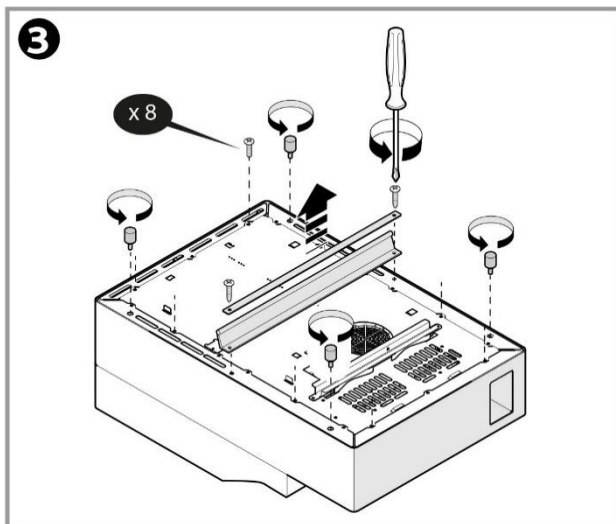
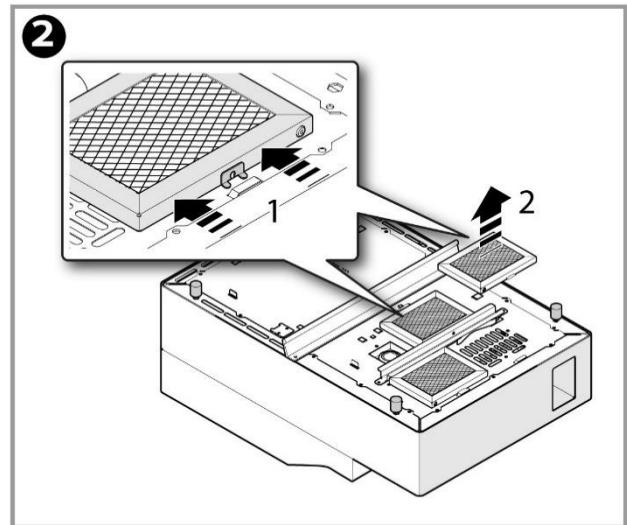
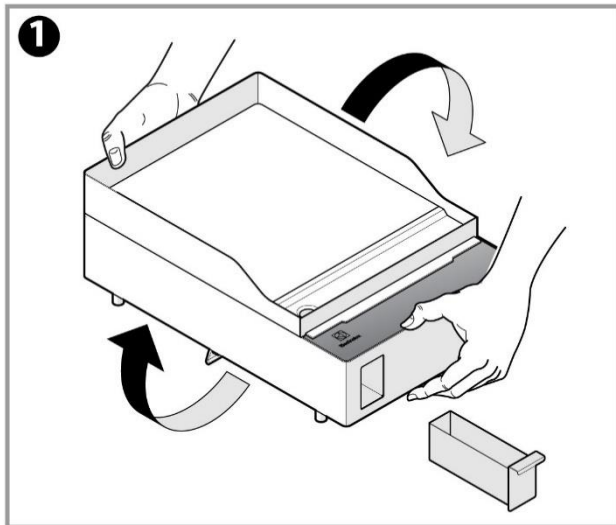
Before any operation on the machine read Chapter SAFETY INFORMATION/PRECAUTIONS. We recommend for any phase involving the removal of the components to use cut-resistant gloves



LIBERO LINE FRY TOP INDUCTION

6.2.1 APPLIANCE CASING

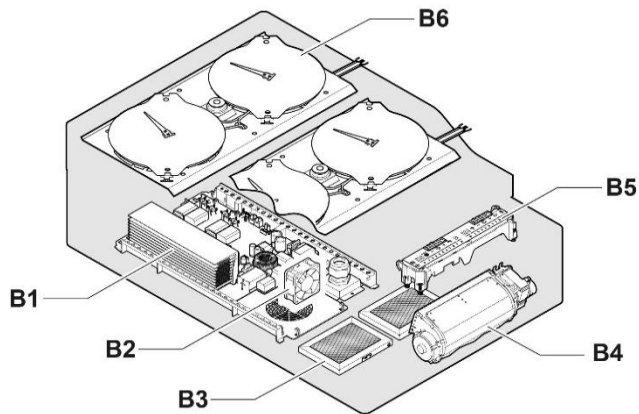
This operation is valid for all libero line appliances stand alone.



LIBERO LINE FRY TOP INDUCTION

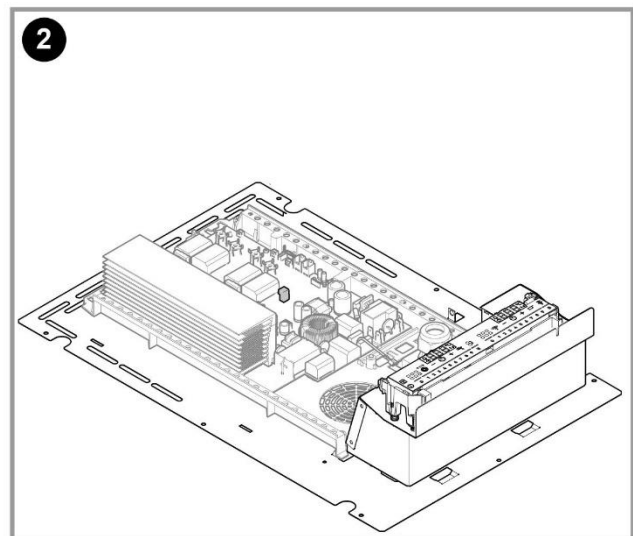
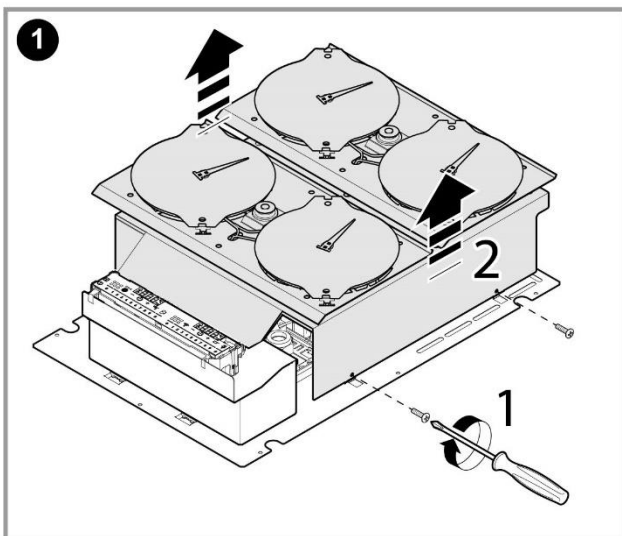
6.2.2 COMPONENTS

Once removed the appliance casing:



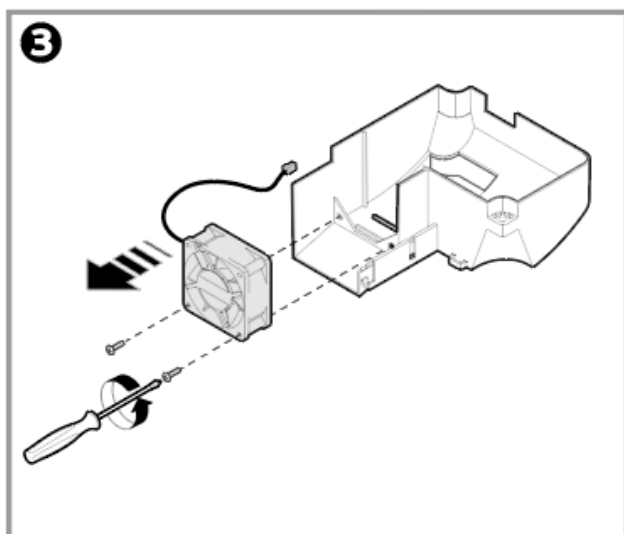
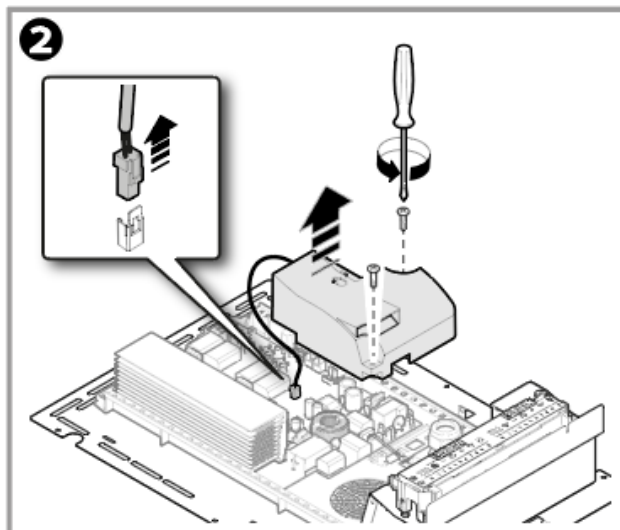
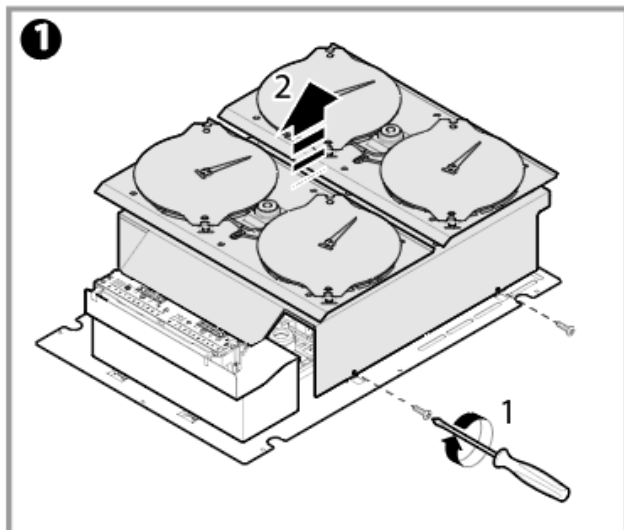
Pos.	Component	§.
B1	Generator	<u>GENERATOR</u>
B2	Ventilator	<u>VENTILATOR</u>
B3	Filter	<u>FILTER</u>
B4	Ventilator tang.	<u>USER INTER-FACE, U.I. &.VENTILATOR (TANGENTIAL)</u>
B5	User board	<u>USER INTER-FACE, U.I. &.VENTILATOR (TANGENTIAL)</u>
B6	Coils	<u>COILS</u>

6.2.2.1 GENERATOR



LIBERO LINE FRY TOP INDUCTION

6.2.2.2 VENTILATOR



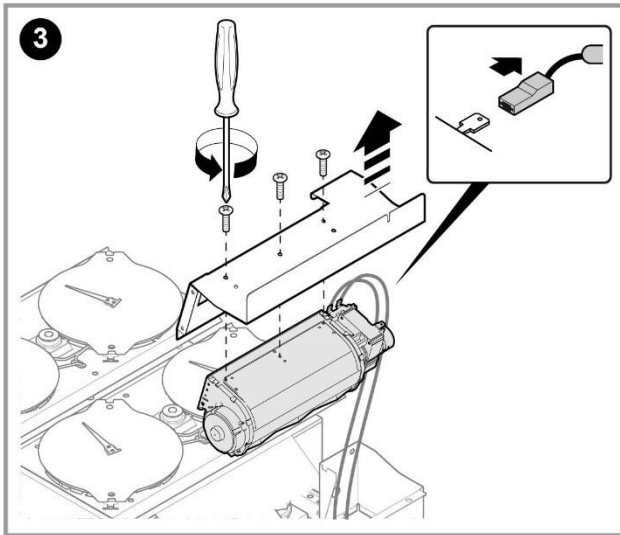
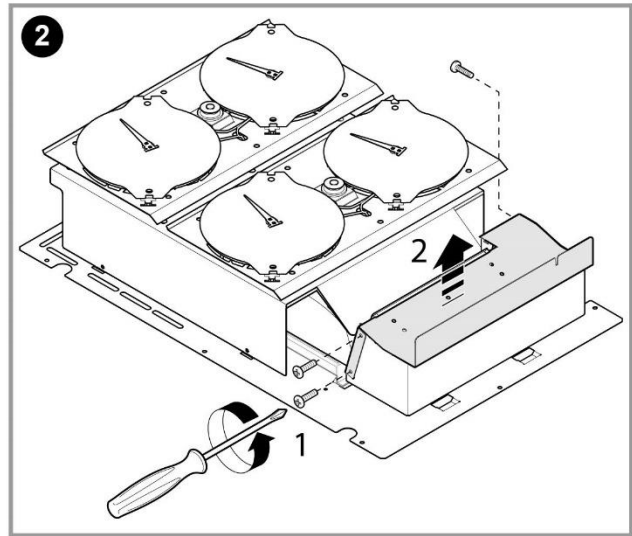
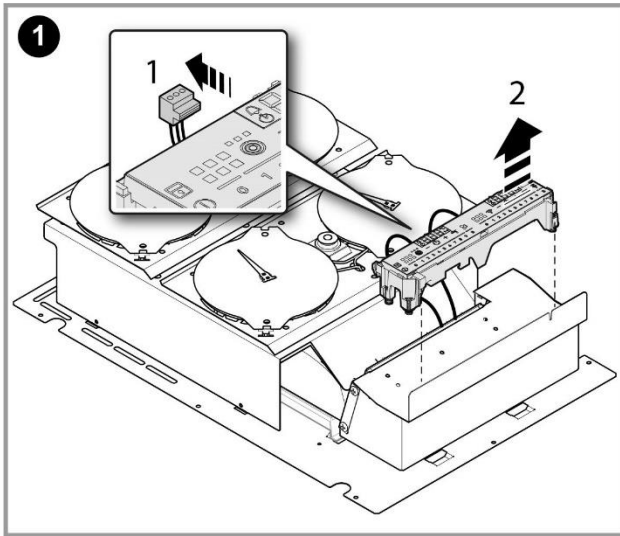
6.2.2.3 FILTER

Refer to pictures at [FILTER](#)

LIBERO LINE FRY TOP INDUCTION

6.2.2.4 USER INTERFACE, U.I. &.VENTILATOR (TANGENTIAL)

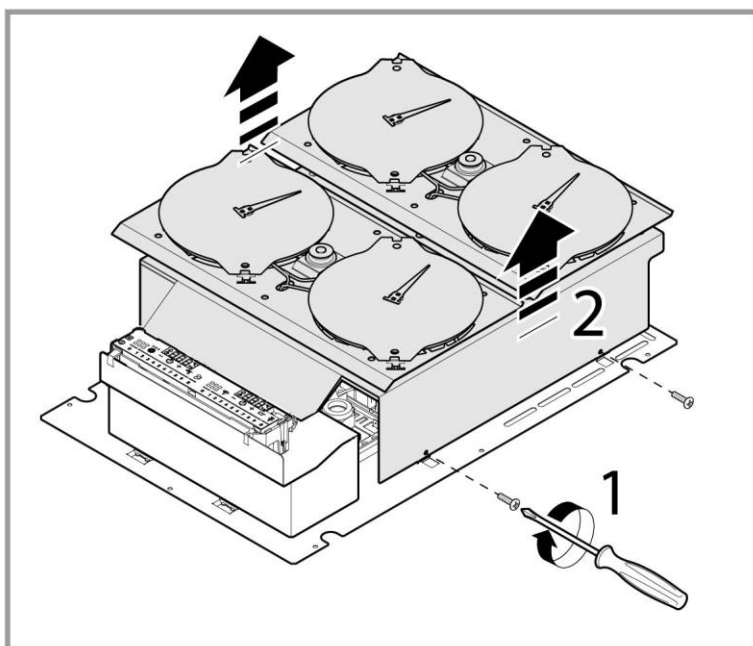
The U.I is fixed onto springs into slots in the paneling.



LIBERO LINE FRY TOP INDUCTION

6.2.2.5 COILS

After removal of the appliance casing, the coils can be removed with their supporting paneling. The coil assembly is fixed to the paneling with springs and slots on the supporting panel.



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