

Use and maintenance manual

EVERLASTING

BLAST CHILLERS / SHOCK FREEZERS

KING TROLLEY




VIEW ON YouTube



Thank you for choosing this product.

Please read the warnings contained in this manual carefully, as they provide important information regarding safe operation and maintenance.

Make sure to keep this manual for any future reference by the various operators.

In some parts of the manual, the  symbol appears, indicating an important warning that must be observed for safety purposes.

CHAPTER 1 BOUNDARY CHARACTERISTICS OF OPERATION

The blast chiller has been designed and built to operate in optimal conditions at temperatures of up to +43°C, with adequate air circulation. In places with characteristics that are different from the requirements, the stated performance cannot be guaranteed.

Standard power voltage is 400V/3N-Ph/50Hz or the one indicated on CE label.

The following table shows the cooling and/or freezing capacity in kg.

Model	Blast chilling Kg. +90°C / +3°C	Rapid freezing Kg. +90°C / -18°C
KING TROLLEY 20.1.75 COMPACT	80	55
KING TROLLEY 20.1.75 L	90	65
KING TROLLEY 20.1.75 P	120	90
KING TROLLEY 40.1.90	150	120
KING TROLLEY 40.2.90 L		
KING TROLLEY 40.1.110 L	150	120
KING TROLLEY 40.2.110 L		
KING TROLLEY 40.1.90 P	220	170
KING TROLLEY 40.2.90 P		
KING TROLLEY 40.1.110 P	220	170
KING TROLLEY 40.2.110 P		
KING TROLLEY 80.1.90 L	340	280
KING TROLLEY 80.2.90 L		
KING TROLLEY 80.1.110 L	340	280
KING TROLLEY 80.2.110 L		
KING TROLLEY 80.1.90 P	420	330
KING TROLLEY 80.2.90 P		
KING TROLLEY 80.1.110 P	420	330
KING TROLLEY 80.2.110 P		
KING TROLLEY 120.1.90 L	420	330
KING TROLLEY 120.2.90 L		



ENGLISH

KING TROLLEY 120.1.110 L	420	330
KING TROLLEY 120.2.110 L		
KING TROLLEY 120.1.90 P	630	480
KING TROLLEY 120.2.90 P		
KING TROLLEY 120.1.110 P	630	480
KING TROLLEY 120.2.110 P		
KING TROLLEY 160A.1.90 L	630	480
KING TROLLEY 160A.2.90 L		
KING TROLLEY 160A.1.110 L	630	480
KING TROLLEY 160A.2.110 L		
KING TROLLEY 160A.1.90 P	840	660
KING TROLLEY 160A.2.90 P		
KING TROLLEY 160A.1.110 P	840	660
KING TROLLEY 160A.2.110 P		
KING TROLLEY 160B.1.90 L	630	480
KING TROLLEY 160B.2.90 L		
KING TROLLEY 160B.1.110 L	630	480
KING TROLLEY 160B.2.110 L		
KING TROLLEY 160B.1.90 P	840	660
KING TROLLEY 160B.2.90 P		
KING TROLLEY 160B.1.110 P	840	660
KING TROLLEY 160B.2.110 P		
KING TROLLEY 240.1.90 L	1000	800
KING TROLLEY 240.2.90 L		
KING TROLLEY 240.1.110 L	1000	800
KING TROLLEY 240.2.110 L		
KING TROLLEY 240.1.90 P	1260	960
KING TROLLEY 240.2.90 P		
KING TROLLEY 240.1.110 P	1260	960
KING TROLLEY 240.2.110 P		

N.B.: the times and quantities in kg above are valid for products with a maximum thickness of 4 cm.

Maximum time: Positive chilling: 90 min, Freezing: 240 min

The technical features of KING TROLLEY blast chillers are listed on the CE label placed on the external side of the control panel.

Manufacturing Company	<div></div>		 
	Modello Model	<div></div>	
Code article	Cod.Art Code	Matricola Ser. Number	
Operating voltage	Tensione Tension	CL.	
Power consumption	Assorbimento Absorption	A	Kw
Type of coolant	Gas Gaz		Kg
Degree of protection	IP20, CLASS 1		

⚠ ATTENTION: any request for intervention, technical support and spare part must refer to the **SERIAL NUMBER** on the CE label, or on the external side of the control panel. The producer declines any responsibility for any improper or not reasonably foreseen usage of the blast chiller and for any operation carried out by neglecting the indications listed on the manual. The manufacturer declines any liability for improper use of the blast chiller, as well as use that could not have been reasonably foreseen, and for all operations performed on it that disregard the instructions in the manual.

The main general safety standards are listed below:

- Do not use or place electrical devices inside the refrigerated compartments if they are not of the type recommended by the manufacturer
- Do not touch the blast chiller with damp or wet hands or feet
- Do not use the blast chiller barefoot
- Do not insert screwdrivers or other objects between the guards or moving parts
- Do not pull the power cord to unplug the blast chiller from the electricity network
- The blast chiller is not intended to be used by persons (including children) with physical or mental problems, or lack of experience and knowledge, unless they are controlled or instructed in using the unit by a person responsible for their safety. Children must be supervised to ensure that they do not play with the appliance.
- Before carrying out any cleaning or maintenance, disconnect the blast chiller from the mains power supply by turning off the main switch and pulling the plug
- In the event of failure and/or malfunction of the blast chiller, turn it off and to refrain from any attempt to repair or intervene directly. It is necessary to exclusively contact a qualified technician.

Blast chiller model KING TROLLEY is composed of modular panels covered in different materials and insulated with expanded polyurethane with 42kg/m³ density. In the design and construction, all measures have been adopted to ensure a blast chiller that complies with safety and hygiene requirements, such as: rounded interior corners, deep drawing with drain on the outside for the condensate liquids, no rough surfaces, fixed guards on moving or dangerous parts.

The products must be stored in observance of the load limits given in the table, in order to ensure an efficient circulation of air inside the blast chiller.

Load capacity BLAST CHILLERS KING TROLLEY

KING TROLLEY	Trolley Capacity (Not included)			
Mod.	GN 1/1	GN 2/1	EN 60 x 40	EN 60 x 80
	Nr°	Nr°	Nr°	Nr°
KING TROLLEY 20.1.75 COMPACT	2 x 20	1 x 20	1 x 20	1 x 20
KING TROLLEY 20.1.75 L	2 x 20	1 x 20	1 x 20	1 x 20
KING TROLLEY 20.1.75 P	2 x 20	1 x 20	1 x 20	1 x 20
KING TROLLEY 40.1.90	3 x 20	1 x 20	2 x 20	1 x 20
KING TROLLEY 40.2.90 L				
KING TROLLEY 40.1.110 L	4 x 20	1 x 20	3 x 20	1 x 20
KING TROLLEY 40.2.110 L				
KING TROLLEY 40.1.90 P	3 x 20	1 x 20	2 x 20	1 x 20
KING TROLLEY 40.2.90 P				
KING TROLLEY 40.1.110 P	4 x 20	1 x 20	3 x 20	1 x 20
KING TROLLEY 40.2.110 P				
KING TROLLEY 80.1.90 L	8 x 20	3 x 20	4 x 20	3 x 20
KING TROLLEY 80.2.90 L				
KING TROLLEY 80.1.110 L	9 x 20	3 x 20	6 x 20	3 x 20
KING TROLLEY 80.2.110 L				
KING TROLLEY 80.1.90 P	8 x 20	3 x 20	4 x 20	3 x 20
KING TROLLEY 80.2.90 P				
KING TROLLEY 80.1.110 P	9 x 20	3 x 20	6 x 20	3 x 20
KING TROLLEY 80.2.110 P				
KING TROLLEY 120.1.90 L	12 x 20	5 x 20	10 x 20	5 x 20
KING TROLLEY 120.2.90 L				
KING TROLLEY 120.1.110 L	14 x 20	5 x 20	12 x 20	5 x 20
KING TROLLEY 120.2.110 L				
KING TROLLEY 120.1.90 P	12 x 20	5 x 20	10 x 20	5 x 20
KING TROLLEY 120.2.90 P				
KING TROLLEY 120.1.110 P	14 x 20	5 x 20	12 x 20	5 x 20
KING TROLLEY 120.2.110 P				
KING TROLLEY 160A.1.90 L	16 x 20	7 x 20	14 x 20	7 x 20
KING TROLLEY 160A.2.90 L				
KING TROLLEY 160A.1.110 L	19 x 20	7 x 20	16 x 20	7 x 20
KING TROLLEY 160A.2.110 L				
KING TROLLEY 160A.1.90 P	16 x 20	7 x 20	14 x 20	7 x 20
KING TROLLEY 160A.2.90 P				
KING TROLLEY 160A.1.110 P	19 x 20	7 x 20	16 x 20	7 x 20
KING TROLLEY 160A.2.110 P				
KING TROLLEY 160B.1.90 L	12 x 20	6 x 20	10 x 20	6 x 20
KING TROLLEY 160B.2.90 L				
KING TROLLEY 160B.1.110 L	15 x 20	9 x 20	12 x 20	6 x 20
KING TROLLEY 160B.2.110 L				

KING TROLLEY 160B.1.90 P	12 x 20	6 x 20	10 x 20	6 x 20
KING TROLLEY 160B.2.90 P				
KING TROLLEY 160B.1.110 P	15 x 20	9 x 20	12 x 20	6 x 20
KING TROLLEY 160B.2.110 P				
KING TROLLEY 240.1.90 L	20 x 20	10 x 20	15 x 20	8 x 20
KING TROLLEY 240.2.90 L				
KING TROLLEY 240.1.110 L	24 x 20	15 x 20	18 x 20	9 x 20
KING TROLLEY 240.2.110 L				
KING TROLLEY 240.1.90 P	20 x 20	10 x 20	15 x 20	8 x 20
KING TROLLEY 240.2.90 P				
KING TROLLEY 240.1.110 P	24 x 20	15 x 20	18 x 20	9 x 20
KING TROLLEY 240.2.110 P				



The installation must be performed exclusively by a qualified technician

1.1 It is prohibited to remove the guards and safety devices

It is absolutely forbidden to remove safety guards.

The manufacturer disclaims any liability for accidents due to failure to comply with this obligation.

1.2 Information on emergency operations in the event of fire

- disconnect the Blast chiller from the power source or cut off the power supply
- do not use water jets
- use dry chemical or CO2 extinguishers

CHAPTER 2 CLEANING THE REFRIGERATOR

Since the blast chiller will be used to store food, cleaning is necessary for hygiene and health protection purposes. The cleaning of the blast chiller has already been carried out at the factory. It is suggested, however, to carry out an additional cleaning of the internal parts before use, making sure that the power cord is unplugged.

2.1 Cleaning the interior and exterior cabinet

For this purpose the following are indicated

- the cleaning products: water and mild, non-abrasive detergents. **DO NOT USE SOLVENTS AND THINNERS**
- methods for cleaning: wash the interior and exterior parts with warm water and mild soap or with a cloth or sponge with suitable products
- disinfection: avoid substances that can alter the organoleptic characteristics of the food
- rinsing: cloth or sponge soaked in warm water. **DO NOT USE WATER JETS**
- frequency: weekly is recommended, the user can set different frequencies depending on the type of food being stored.



REMARK: Clean frequently the door seals.

Some preserved products could release some enzymes that could damage the seals causing its quick deterioration. For the cleaning, use only specific products for this purposes, available also on request on our sales network.

2.2 Cleaning the condenser

The efficiency of Blast chillers is compromised by condenser / remote condensing unit obstruction; therefore, it is necessary to clean it monthly. Before carrying out this operation, turn off the Blast chiller / remote condensing unit, disconnect the power cable and proceed as follows:

Remote condensing unit – according to the model, remove the condenser protection as per instructions on the supplied unit manual.

Remove dust and lint from the wings by vertical movements with the help of an air jet or a dry brush. In case of oily deposits, use a brush imbibed with specific detergents. For models with flippable fronts, unscrew the block screw and turn the front by the top hinges; proceed then with cleaning as for models with fixed front. After completing the operation, restart the Blast chiller. Evaporators installed above the appliances are cartaphoresis-treated to reduce corrosion problems.



During this operation, use the following personal protective equipment: goggles, respiratory protection mask, chemically resistant gloves (gasoline-alcohol).

CHAPTER 3 PERIODIC CHECKS TO BE CARRIED OUT

The following are the points or units of the blast chiller that require periodic checks:

- integrity and efficiency of door seals
- integrity of the grilles in contact with food
- integrity of the fixing hinges of the doors
- integrity of the power cord of the blast chiller

3.1 PRECAUTIONS IN CASE OF LONG PERIODS OF INACTIVITY

A long period of inactivity is defined as a stoppage of more than 15 days.

It is necessary to proceed as follows:

- switch off the blast chiller and disconnect it from the power supply
- carry out a thorough cleaning of the interior cabinet, shelves, trays, guides and supports, paying special attention to critical points such as the joints and magnetic gaskets, as indicated in Chapter 2.
- leave the door partly open to prevent air stagnation and residual humidity

CHAPTER 4 PREVENTIVE MAINTENANCE

4.1 Restarting after a long period of inactivity

Restarting after long inactivity is an event that requires preventive maintenance.

It is necessary to perform a thorough cleaning as described in chapter 2.

4.2 Control of the warning and control devices

We recommend that you contact your dealer for a service or maintenance contract that includes:

- cleaning of the condenser
- verification of the coolant load
- remote condensing unit condenser cleaning
- verification of the full cycle operation
- electrical safety



CHAPTER 5 EXTRAORDINARY MAINTENANCE AND REPAIR

All maintenance activities that have not been described in previous chapters are considered “Extraordinary Maintenance.” Extraordinary maintenance and repair are tasks reserved exclusively to the specialist personnel authorized by the manufacturer.

No liability is accepted for actions carried out by the user, by unauthorized personnel, or with the use of non-original replacement parts.

CHAPTER 6 TROUBLESHOOTING

Problems may occur, in the blast chiller, identified as shown in the table:

TROUBLE DESCRIPTION	POSSIBLE CAUSES	HOW TO REPAIR IT
the blast chiller does not turn on	no power supply	check the plug, socket, fuses, line
	other	contact technical support
the refrigeration unit does not start	the set temperature has been reached	set new temperature
	defrosting in progress	wait until the end of cycle / turn power off and on again
	control panel failed	contact technical support
	other	contact technical support
the refrigeration unit runs continuously but does not reach the set temperature	location is too hot	aerate more
	condenser is dirty	clean the condenser
	insufficient coolant	contact technical support
	stop the condenser fan	contact technical support
	insufficient sealing of doors	check the seals / provision of goods
	evaporator completely frosted	manual defrosting
	other	contact technical support
the refrigeration unit does not stop at the set temperature	command panel failed	contact technical support
	temperature sensor ceiling failed	contact technical support
block of ice on the evaporator	misuse	see chapter 1.
	defrost heater fault	contact technical support
	defrost probe damaged	contact technical support
accumulation of water or ice in the drip tray	drain clogged	clean the pipette and the drain
	blast chiller is not level	check levelling

CHAPTER 7 INSTRUCTIONS FOR REQUESTING ASSISTANCE

For any technical problem and for intervention, assistance and spare-part requests it is necessary to exclusively revert to one's dealer, providing the code and the serial number indicated on the specification label attached to the appliance.

CHAPTER 8 SAFETY AND ACCIDENT PREVENTION

The blast chiller has been built with suitable measures to ensure the safety and health of the user. The following are the measures taken to protect against mechanical risks:

- **stability:** The blast chiller, even with the grilles removed, has been designed and built in such a way that under the intended operating conditions, its stability is suitable for use without risk of overturning, falling or unexpected movement

- **surfaces, edges, corners:** the accessible parts of the blast chiller are, within the limits allowed by their functions, free of sharp angles and sharp edges, as well as rough surfaces likely to cause injury
- **moving parts:** were designed, constructed and arranged to avoid risks. Certain parts are equipped with fixed guards so as to prevent risks of contact which may result in injury

The following are the measures taken to protect against other risks:

- **electricity:** The blast chiller has been designed, built and equipped so as to prevent risks from electricity, in accordance with the specific legislation in force
- **noise:** The blast chiller has been designed and built in such a way that risks resulting from the emission of airborne noise are reduced to the minimum level

8.1 It is absolutely forbidden (Fig. 2) :

- to tamper with or remove the closing panels of the monocondensing unit
- remove the labels applied describing the technical characteristics (1) and the warnings for grounding of the blast chiller
- remove the labels applied describing the technical characteristics and the warnings for grounding of the motocondensing unit
- remove the label of the blast chiller which warns the user to turn off the power supply before working on the unit
- remove the label of the remote motocondensing unit which warns the user to turn off the power supply before working on the unit
- to remove the labels applied on the blast chiller indicating grounding
- to remove the labels applied on the remote motocondensing unit indicating grounding
- to remove the label applied on the power cord, indicating the type of power supply (2)

The manufacturer declines any responsibility for the safety of the blast chiller if this were to happen.

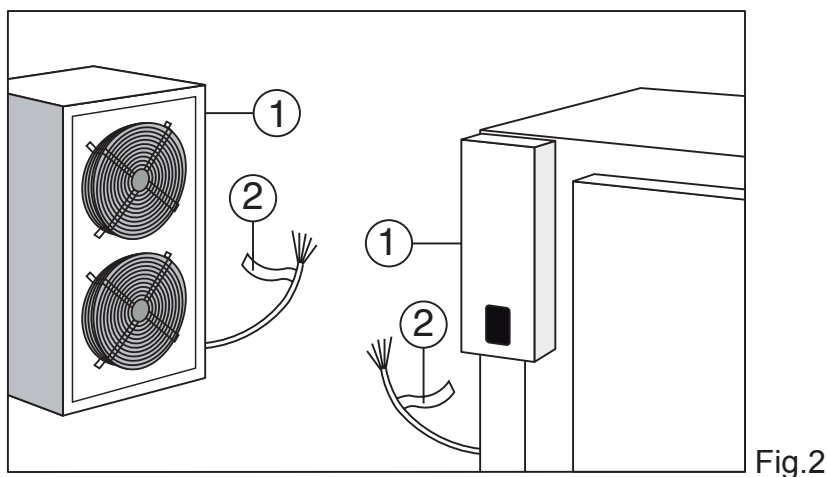


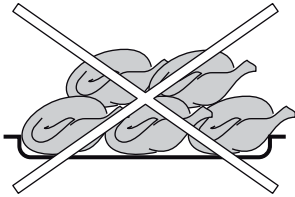

Fig.2

8.2 Indications for optimal operation

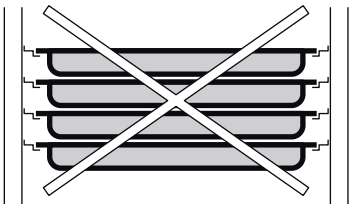
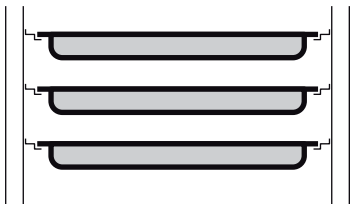
- do not obstruct the motor-compartment air intakes (place at minimum 50 cm from ceiling)
- do not block the air vents of the engine compartment
- place the foodstuffs on the appropriate shelves or containers. Do not place them directly on the bottom, or leaning against the walls, doors or fixed guards
- close the doors carefully
- always keep uncluttered the defrosting water drain hole placed on the bottom
- always keep the defrost water drain hole clear of obstructions
- limit, to the extent possible, the frequency and duration of door opening. Each opening causes a change in the internal temperature
- perform periodically current maintenance (see chapter 3)

CORRECT LOAD THE BLAST CHILLER

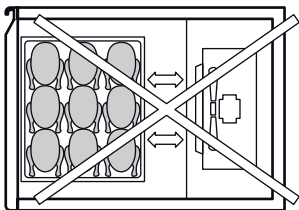
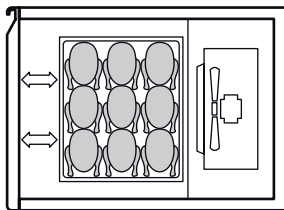
AVOID overloading the blast chiller beyond the set limits shown in the table

NO	OK
	

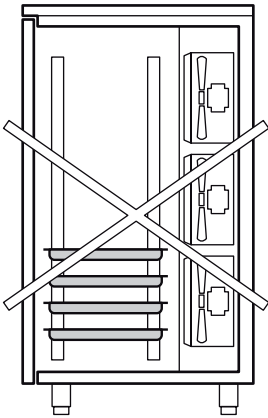
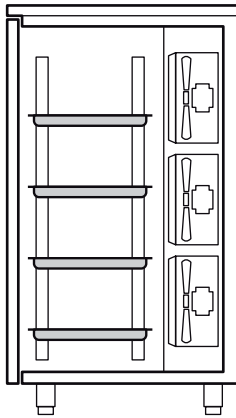
Do not place the trays too close to each other so as to avoid uneven air circulation inside the blast chiller

NO	OK
	

Do not place the trays too far away from the evaporator

NO	OK
	

Do not concentrate the trays in one area of the blast chiller in case the load is not complete; distribute its height evenly

NO	OK
	

In case of interruption or failure of the power supply circuit, prevent the opening of the doors in order to maintain a uniform temperature inside the blast chiller.

If the problem persists longer than a few hours it is recommended to move the product to a suitable place.

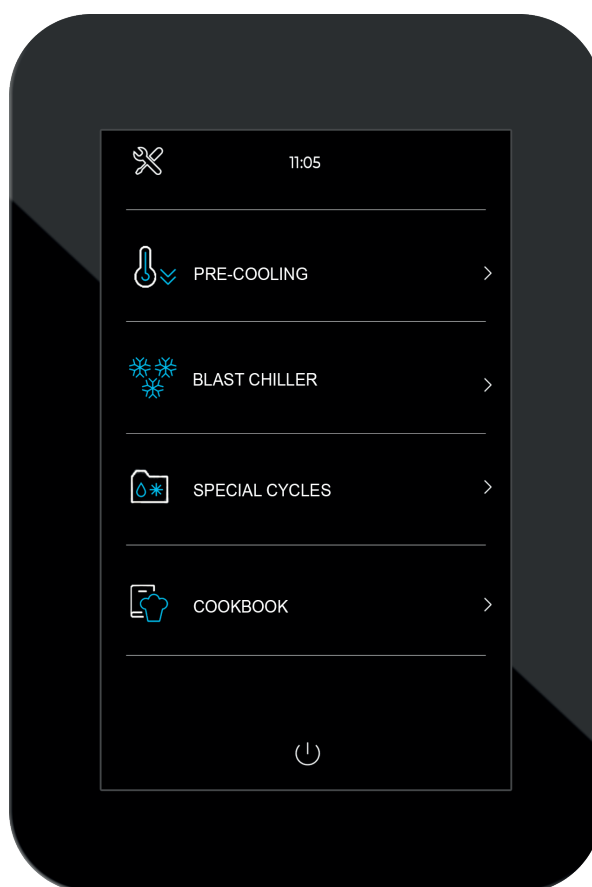
9.1 Control panel description:

the Blast chiller control panel is a digital thermoregulator with 5-inch capacitive touch-screen graphic display.

HOME screen

The available operation statuses are:

- **OFF** control panel is off
- **STAND-BY** control panel is powered and turned off
- **ON** control panel is powered, turned on and waits for an operation cycle to start
- **RUN** control panel is powered, turned on and an operation cycle is running.



In case of power interruption during “STAND-BY” or “ON” status, when power will be restored the control panel will resume the current status before the interruption.

In case of power interruption during “RUN” status, when power will be restore the Blast chiller will operate as follows:

- if blast-chilling or shock-freezing was running, the cycle will be restored by taking into consideration the duration of the power shortage;
- if **STORAGE** was running, the cycle will continue with the same settings;

9.2 INSTRUCTIONS FOR USE

9.2.1 Start-up

Before starting up the Blast chiller, make sure that electrical connections have been carried out as indicated on chapter 14.

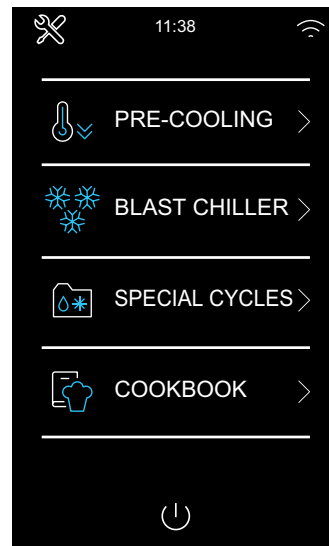
Plug in the Blast chiller; the display will turn on and will show the status it was in before unplugging it, i.e.:

On/stand-by screen: push on the central area to go to **HOME** screen;
- directly on **HOME** screen, displaying the operation menus.

ON/STAND-BY



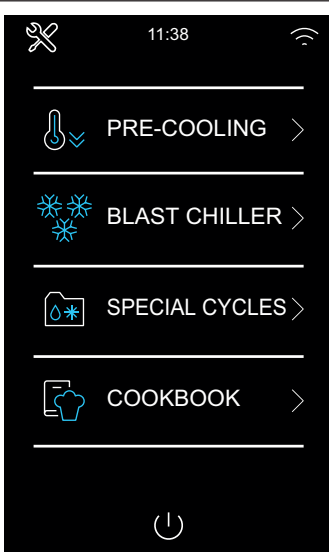
HOME



If the duration of the power shortage has caused a clock error, it will be necessary to reset real date and time (Chapter 10)

- Push the central key on the On/stand-by screen to turn on the control panel: **HOME** screen will be displayed.

- Push the key at the bottom of the **HOME** screen to turn off the control panel.

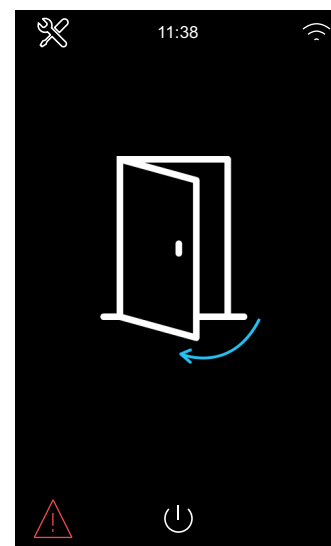


9.2.2 Silencing the buzzer

Push any key while the buzzer rings.

9.2.3 Open door warning

- The following warning is displayed when the door is opened
- Push any area on the display to remove the visualization.



9.3 OPERATION

The appliance can manage the following operation cycles:

- **Temperature-based blast chilling and storage**
- **Temperature-based hard blast chilling and storage**
- **Time-based blast chilling and storage**
- **Time-based hard blast chilling and storage**
- **Temperature-based shock freezing and storage**
- **Temperature-based soft shock freezing and storage**
- **Time-based shock freezing and storage**
- **Time-based soft shock freezing and storage**
- **Multitimer continuous cycle**
- **Precooling**
- **Sanification**
- **Defrosting**
- **Ice-cream hardening**
- **Chocolate**
- **Drying**
- **Sterilisation (optional)**

9.3.1 OPERATION MODE selection

Choose the operation mode by selecting the corresponding key on the **HOME** screen.

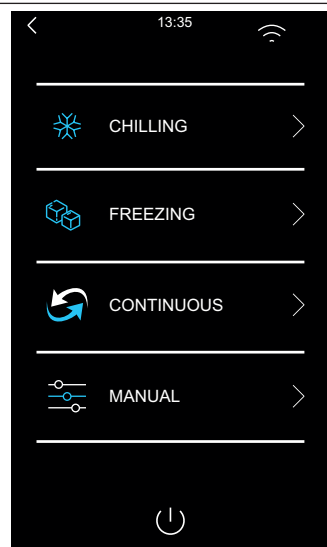
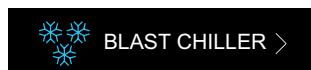


PRE-COOLING >	Allows selecting a chamber precooling cycle
BLAST CHILLER >	Allows activating Blast chiller mode
SPECIAL CYCLES >	Allows activating special cycle mode
COOKBOOK >	Allows selecting recipe model, where prestored recipes are available

	The icon appears in case of running alarms.
	Push to visualize the archive of alarms detected during operation;

9.3.2 BLAST-CHILLING / SHOCK-FREEZING cycle selection

- Push the key on the **HOME** screen to select a **BLAST-CHILLING** or **SHOCK-FREEZING** cycle

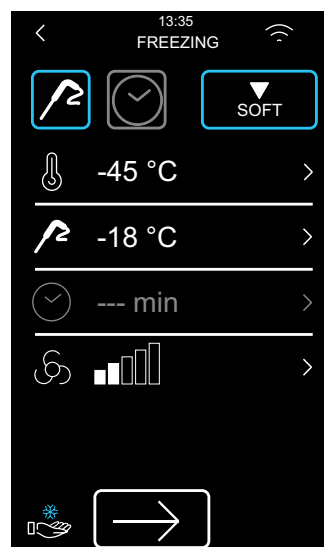
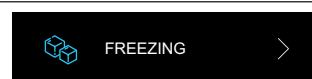
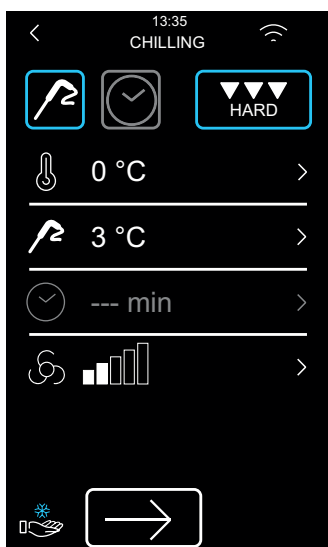


It will be possible to select one of the following functions:

	<p>BLAST CHILLING: allows selecting a standard blast chilling cycle with its specific presets. It is possible to select the HARD mode on the same screen: in this case, blast chilling is composed of two phases with different setpoints. At the end of blast chilling, the corresponding storage phase is carried out with specific septoints according to the selected blast-chilling type.</p>
	<p>SHOCK FREEZING: allows selecting a standard shock freezing cycle with its specific presets. It is possible to select the SOFT mode on the same screen: in this case, shock freezing is composed of two phases with different setpoints. At the end of shock freezing, the corresponding storage phase is carried out with specific septoints according to the selected shock-freezing type.</p>
	<p>CONTINUOUS CYCLE: allows selecting and endless blasti-chilling/ shock-freezing cycle with the possibility of inserting various operation timers.</p>
	<p>MANUAL CYCLE (CUSTOMIZED): Push the key to start the procedure to set a customized cycle. It is possible to create up to 4 phases in this cycle. Once all phases are set, the cycle can be started or the set program can be saved inside the recipe list.</p>

- BLAST CHILLING/SHOCK FREEZING AND STORAGE


Push on these areas to respectively go to a **BLAST-CHILLING** or **SHOCK-FREEZING** cycle.




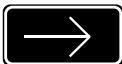
NOTE: if the core probe is present and not in error, the default cycle is always **TEMPERATURE-BASED**.



The following screen with active “core probe” key  is displayed.

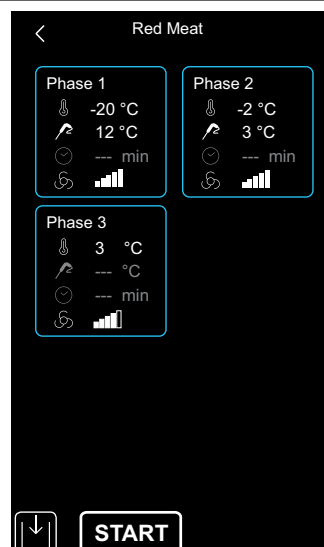
- Push the  key to go to a **TIME-BASED CYCLE**: the core probe key will deactivate and the **TIME** key will activate.

The selected cycle will propose the preset settings for that cycle, push the  key to adjust the preset settings within the allowed ranges.

- Push the  key to change the storage temperature and fan speed


- Once all settings are completed, push  to end the phase: a summary screen with data regarding the set cycle will be displayed, as shown here below.


- Push the  key to save the set program, or  to start the cycle.

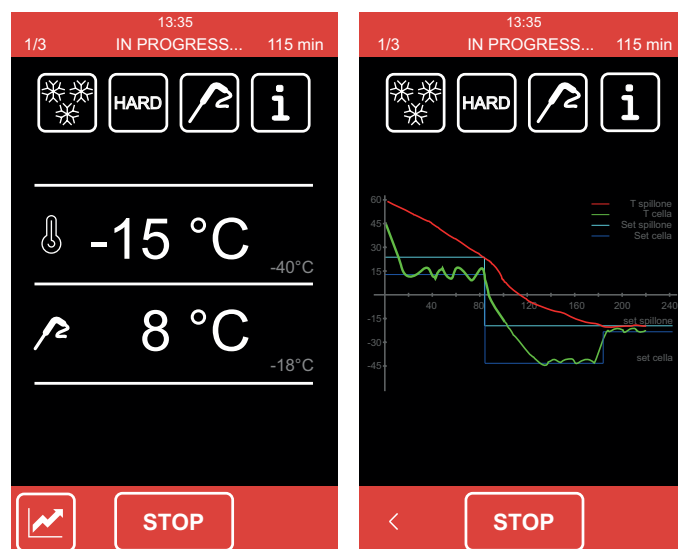


If the cycle is **TEMPERATURE-BASED**, a test to check the correct insertion of core probe inside the product will be carried out. If the test is not passed, the cycle automatically becomes **TIMED-BASED**: the buzzer rings and the running alarm symbol will be displayed.


- During the execution of the cycle, the main setpoints will be displayed.

Push the  key to visualize the temperature trend chart with 5-minute sampling, except when cycle is resumed after a power shortage and after the start of a storage phase.

it is possible to stop the cycle at any one time by pushing the  key.





- Once the **BLAST CHILLING/SHOCK FREEZING** cycle has ended (either the core probe temperature has been reached or the time has ended), the buzzer rings and the **STORAGE** phase begins, after carrying out the DEFROSTING phase

- The **STORAGE** phase is endless and only ends if the  key is pushed



- HARD BLAST CHILLING/SHOCK FREEZING - SOFT BLAST CHILLING and STORAGE CYCLE

It is possible to select a hard blast chilling/ soft shock freezing by pushing  or  on the blast chilling /shock freezing setting screen. Before selecting this mode, make sure to set the type of desired cycle (**TIME-BASED** or **TEMPERATURE-BASED**).

This cycle is composed of two chilling phases with different setpoints and of a subsequent **STORAGE** phase.

- a first “hard” phase for blast chilling and “soft” for shock freezing, with unmodifiable setpoints defined by relative parameters;
- a second chilling phase **BLAST-CHILLING/SHOCK-FREEZING**
- a third **STORAGE** phase with adjustable setpoints.

At the end of a phase, the controller automatically starts next phase.
The end of the first two phases is signalled by the buzzer ringing.

Also for this cycle it is possible to select the **TIME-BASED** mode: in this case, the passage to the next phases is determined by the elapsing of the set time.

- CONTINUOUS cycle




Push the key to select a **CONTINUOUS CYCLE**, to be started only by mode:




- TIME-BASED

After selecting the cycle, a screen on which to set chamber temperature, fan speed, end-cycle storage duration and temperature values appears.



Cycle is started by pushing the  key; it ends only when all timers are elapsed; after this, the STORAGE phase begins

TIME-BASED cycle allows setting up to four **MULTITIMER** timers.

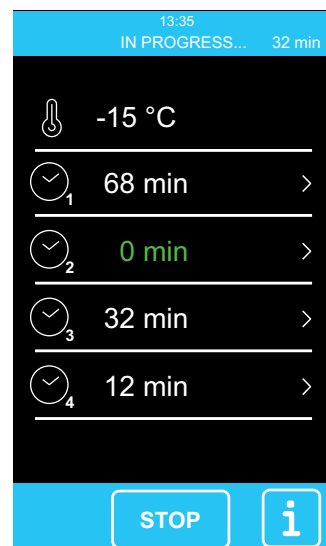
Cycle starts by activating only the first timer with its presets, while the other timers are activated by pushing the key    and setting a time while the cycle is already running.

When the timer is confirmed with time setting, the countdown starts directly.

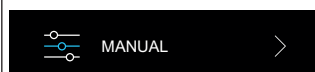
Each timer is independent and, when elapsed, it can be reset and restarted.

Cycle ends only when all set timers are elapsed.

At the end of a timer countdown, the buzzer rings; a notification appears and the value "0 min" for the respective timer is visualized in green colour.

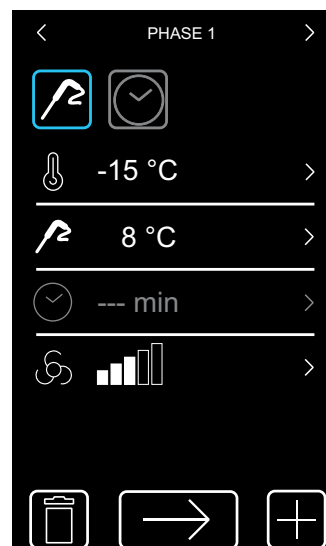


- CUSTOMIZED cycle





- "**MANUAL CUSTOMIZED**" cycle allows setting a cycle composed of maximum 4 phases (3 **CHILLING** phases and 1 **STORAGE** phase), and can be composed of **TEMPERATURE-BASED**, **TIMED-BASED** or **MIXED** phases

On **MULTIFUNCTIONAL** models it is possible to set a **SLOW COOKING** or **SLOW COOKING + CONSERVATION** phase at the end of the cycle

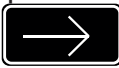


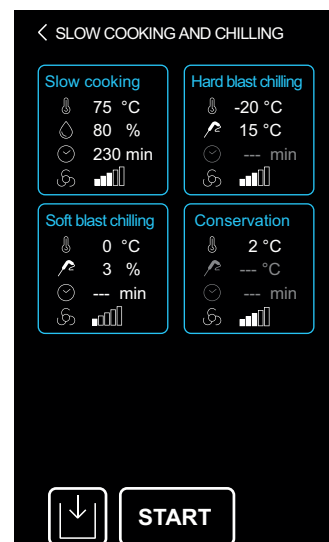
- The “**CUSTOMIZED**” cycle is started by activating the first phase, which is a core-probe phase by default.

It is possible to change the phase to **TIME-BASED** and set the relative setpoints.

Push  to add any extra phase; push  to remove a phase from the program.

Use the arrows on top to move among the various phases.

Once the desired phases are entered and the various settings are carried out, push  to confirm: a summary screen will be then visualized.




Push  to start the cycle or  to save it into the recipe list.

9.4 SETPOINT setting


9.4.1 CHAMBER TEMPERATURE SETPOINT setting

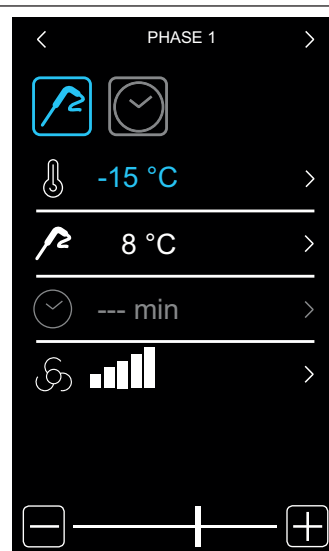
When a blast-chilling, shock-freezing, continuous or customized cycle is selected, the chamber temperature, product temperature, time and fan speed presets are loaded as per parameter settings. These values can be adjusted by users withing the defined ranges.

Push the  key next to the value to adjust to enable the adjustment; the screen here below will appear and the value to be adjusted will turn different color.

- Set the desired value using the lower bar



Once the setting is completed, push the  key next to the adjusted value and return to the previous screen.



9.4.2 PRODUCT TEMPERATURE SETPOINT setting

Proceed as described for chamber setpoint, after pushing the  key regading product temperature (i.e. the temperature detected by core probe) .


9.4.3 CYCLE DURATION setting

Proceed as described for chamber setpoint, after pushing the  key regarding cycle duration.

9.4.4 FAN SPEED setting


Proceed as described for chamber setpoint, after pushing the  key regarding fan speed. Minimum fan speed can be set for any cycle except **SLOW COOKING**.

9.5 CYCLE execution

- Push the  key to start a cycle as per settings.

If the cycle is **TEMPERATURE-BASED**, blast-chilling/shock-freezing phases end when the core probe (or core probes) reach the set temperature. If the cycle is **TIME-BASED**, blast-chilling/shock freezing phases end when the set time(s) elapse.

The following screen is displayed during the execution of the cycle.

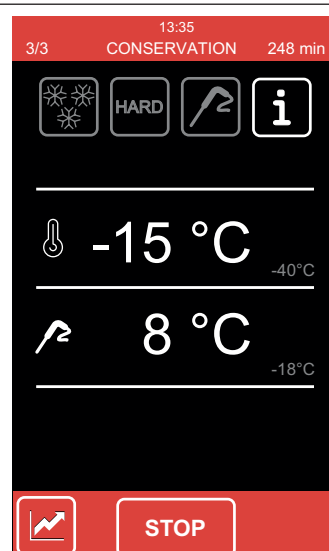
Push the  key to visualize probe values, input/output status and possible running alarms.



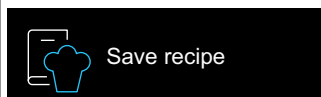
9.6 CYCLE end

- If the **TEMPERATURE-BASED** blast-chilling/shock-freezing cycle ends correctly, i.e. temperature at product core is reached within the allowed time, STORAGE phase automatically starts and the following screen is displayed.

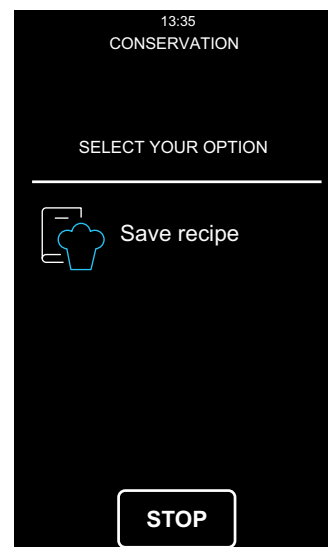
if the **TEMPERATURE-BASED** cycle does not end within the allowed times, the alarm icon will warn about the anomaly, but the chilling cycle will continue anyway.



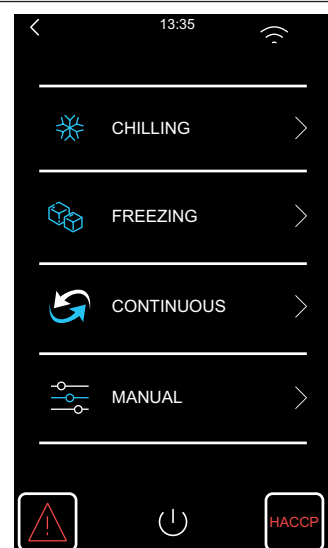
- For **TEMPERATURE-BASED** cycles, push the **STOP** key to display the screen allowing the functions of:



- memorization of the previously carried-out cycle.
- or push the STOP key again to return to main menu



- At the end of a **TIME-BASED** cycle, the blast-chilling/shock-freezing mode starting screen will be displayed.

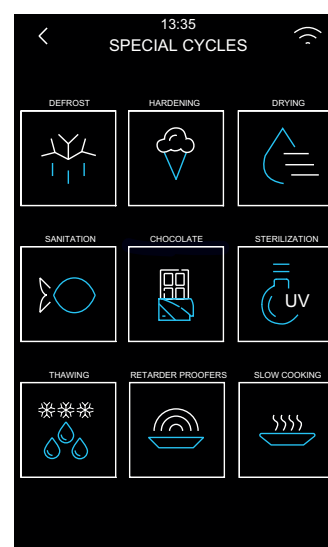


9.7 SPECIAL and MULTIFUNCTIONAL cycles

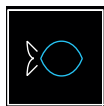


Push the **SPECIAL CYCLES** key on the **HOME** screen to open the following screen with the following **SPECIAL CYCLES**:

- manual defrosting
- ice-cream hardening
- drying
- sanitification
- chocolate
- sterilisation (optional)



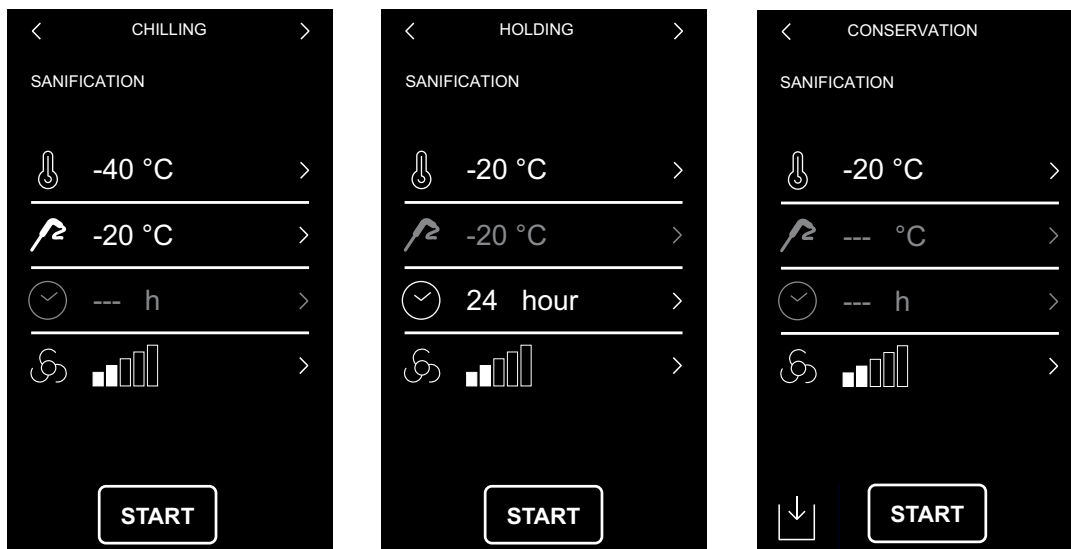
9.7.1 SANIFICATION cycle



Push the key to select a **SANIFICATION** cycle.

It is a special cycle composed of the following phases with this preset:

CHILLING | CONSERVATION | STORAGE



The arrows on top allow moving among the various phases for the sanitification to visualize/adjust setpoints. After selecting the function, a screen containing the presets is displayed, which can be adjusted.

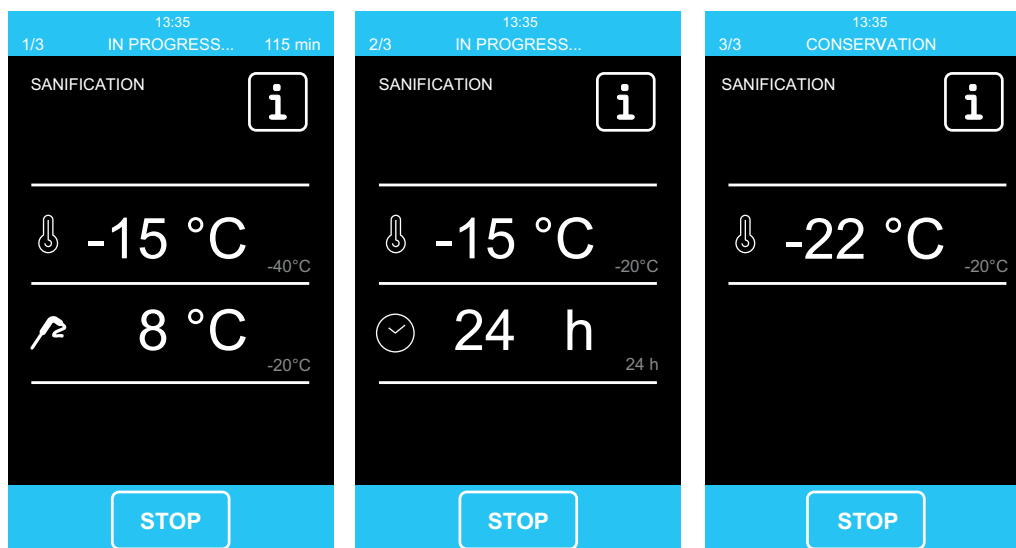
Push the **START** key to start the sanitification. Chilling end temperature, operation setpoint during chilling and conservation duration are displayed during the execution of a sanitification.

The **SANIFICATION** cycle starts with a **CHILLING** phase. When the temperature detected by the core probe reaches the chilling end temperature, the appliance will start **CONSERVATION**.


Chilling end temperature is also the operation temperature during conservation.

After the time set for conservation has elapsed, **STORAGE** automatically starts.

Core probe insertion test is always carried out at the beginning of the cycle: if the test is not passed, the buzzer rings and the cycle is interrupted.



During chilling, the appliance displays the temperature detected by the core probe, the chamber temperature and the time elapsed since chilling has started.

The cycle can be interrupted ahead of time by pushing the  key

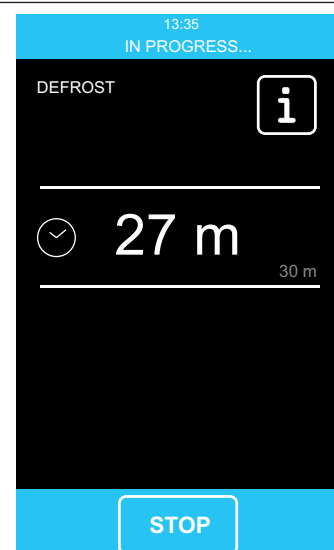
9.7.2 MANUAL DEFROSTING cycle



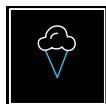
Push the key to select a **MANUAL DEFROSTING** cycle, to be started by pushing the  key.

After starting the cycle, the following screen is displayed.

NOTE: Defrosting is also carried out automatically with defined time intervals and it is activated only if necessary



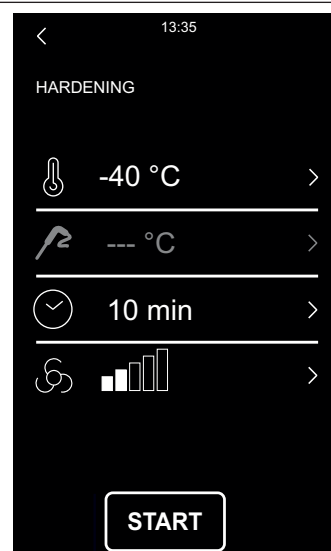
9.7.3 ICE-CREAM HARDENING cycle



Push the key to select an ice-cream hardening cycle.

It is a **TIMED-BASED SHOCK FREEZING**. When the time is over, no storage is started: the hardening cycle continues until the **STOP** key is pushed.

Opening the door stops the countdown, which will resume after closing the door.



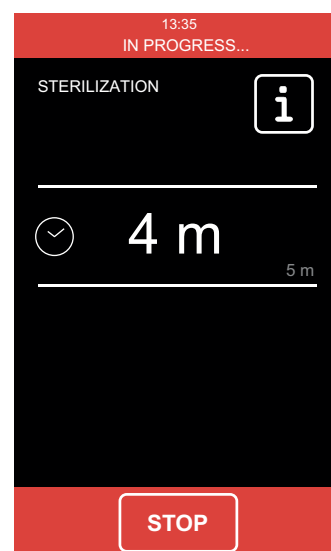
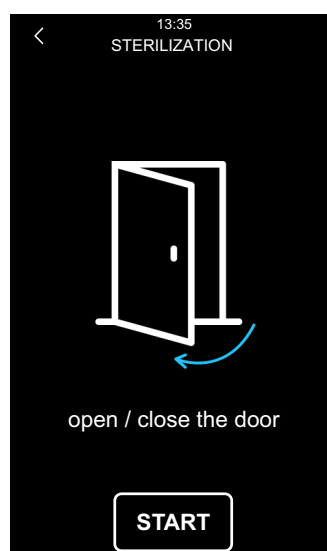
9.7.4 CHAMBER STERILISATION cycle (Optional)



Push the key to select a **STERILISATION** cycle.

Push the **START** key to start the sterilisation cycle. The time countdown will be displayed. Sterilisation ends when time is over, when the **STOP** key is pushed or when the door is opened.

At the end of the cycle, the buzzer rings and the display returns to the **HOME** screen.

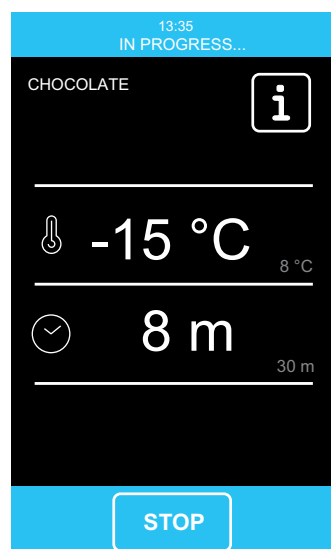
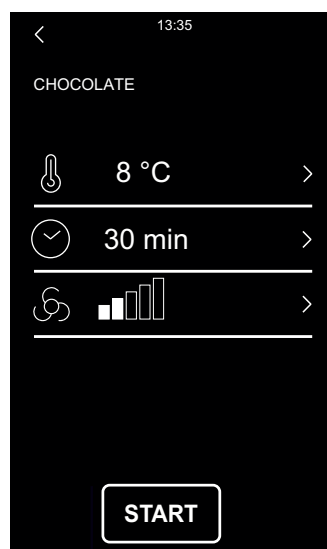


9.7.5 CHOCOLATE cycle

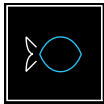


Push the key to select a **CHOCOLATE** cycle. Push the **START** key to start **TIME-BASED** (30 min.) **CHOCOLATE CHILLING** cycle, with chamber temperature 8°C and low fan speed. At the end of the Time, **STORAGE** with chamber temperature 14°C is started.

The cycle stops when time elapses or by pushing the **STOP** key.




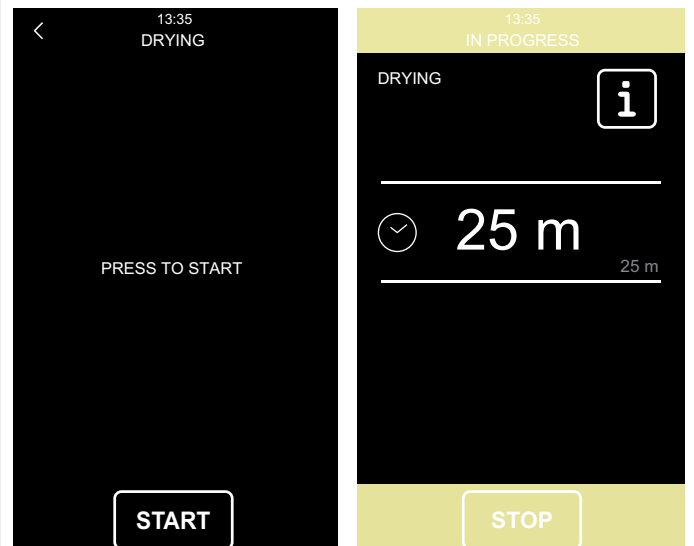
9.7.6 DRYING cycle



Push the key to select a **DRYING** cycle.

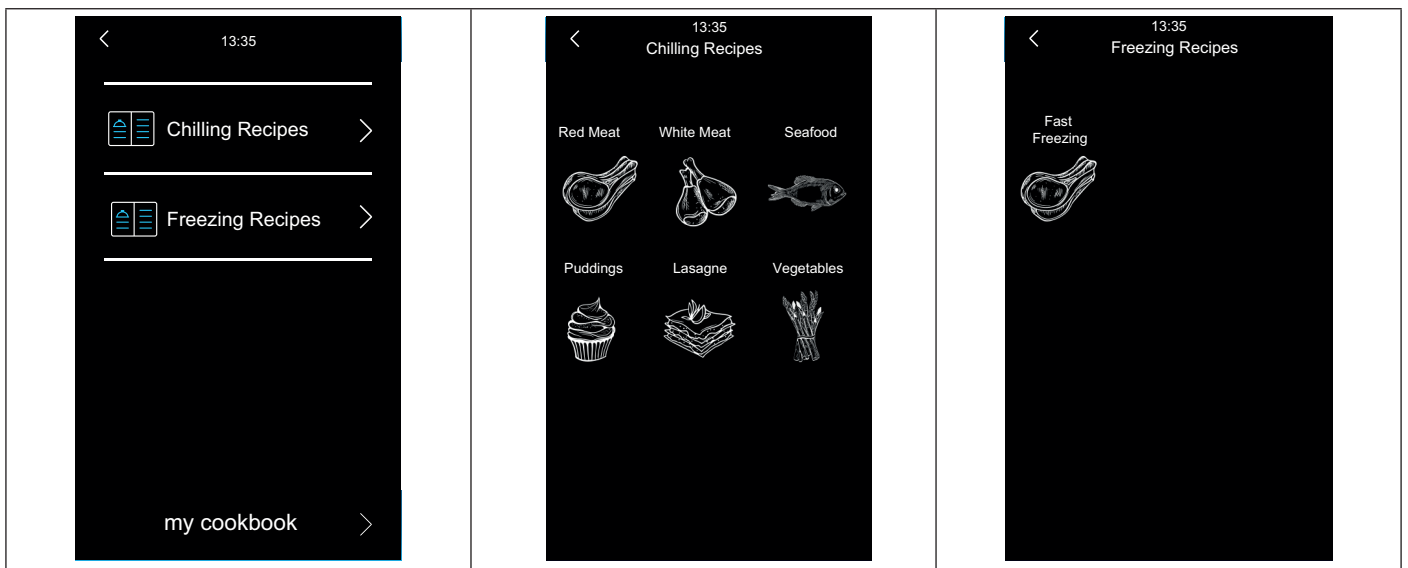
It is a forced ventilation cycle without chilling to dry the internal chamber. After starting it is advisable to keep the door open during the execution of the cycle.

The cycle stops when the time is over or by pushing the  key.



9.8 RECIPES

The following preset recipe types are available: **BLAST-CHILLING RECIPES** | **SHOCK-FREEZING RECIPES**. Preset values can be temporarily adjusted, but the recipe can only be saved in “**MY RECIPES**” recipe list.



- “MY RECIPES”

<div style="background-color: black; color: white; padding: 5px; display: flex; justify-content: space-between; align-items: center;"> my cookbook > </div> <p>Push the key to allow saving your own recipes (up to 40) in a specific customized menu.</p> <p>See paragraph 9.8.1 for details about “MY RECIPES” storage procedure</p>	
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9.8.1 “MY RECIPES” storage



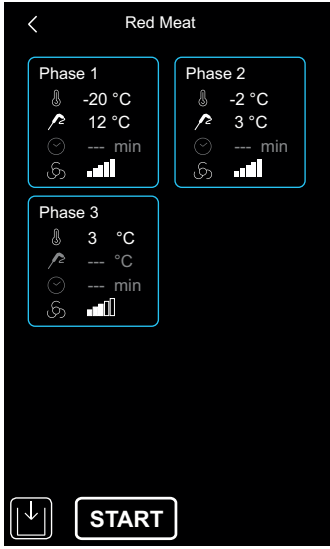
It is possible to store both **TIME-BASED** and **TEMPERATURE-BASED** cycles.

The following storage modes are available:

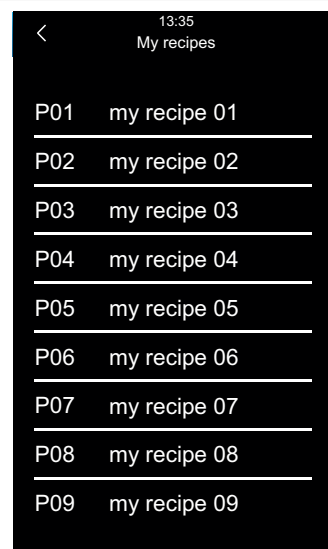
- **Before carrying out the cycle:** by selecting an existing recipe, adjusting it, then save it.
- **During storage:** after a CUSTOMIZED BLAST-CHILLING/SHOCK-FREEZING cycle,

when the  key is pushed, the appliance will suggest storing the carried-out recipe.



In case a **TEMPERATURE-BASED CYCLE** is stored, what will be stored is the time needed to reach the desired temperature at product core.

<p>Here below an example of how to “SAVE A RECIPE” before carrying out the cycle.</p> <p>After setting the desired cycle, set the appliance in “Cycle Summary” status.</p> <p>Before pushing the , key, store the recipe as follows:</p> <p>- Push the  key</p>	
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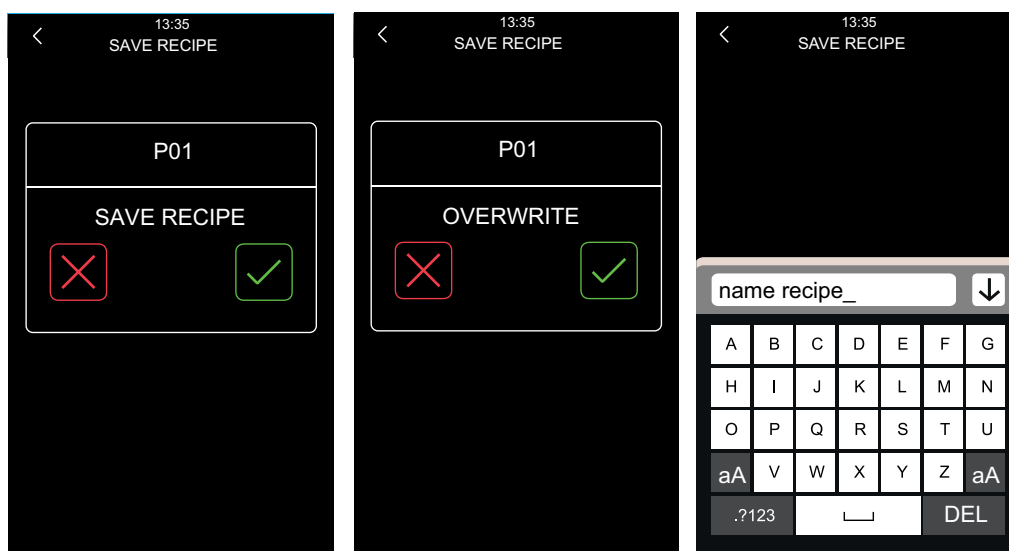
Access “**MY RECIPES**” page, showing a list with available positions (indicated with “---”) and the possibly previously saved recipes.



- Scroll and select the position in which to save the new recipe or overwrite an existing one



- Push the  key to confirm and access the alphabetical keyboard (push the  key to exit without saving)

- Type in the desired recipe name and push to confirm



Proceed as follows if you wish to change the recipe name:

- Push on the name of the desired recipe






- Push the  key to confirm overwriting and access the alphabetical keyboard (push the  key to exit without saving)

- Cancel the displayed recipe name with the  key and type in the new recipe name

- Push the  key to confirm.

9.8.2 “MY RECIPES” recipe start

Operate as follows to start a recipe:


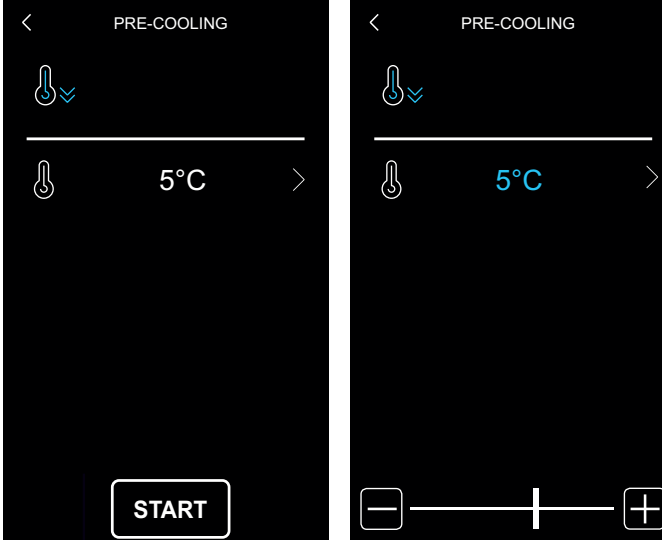


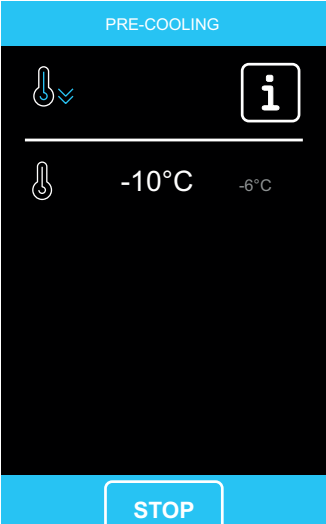
- Make sure the appliance is on and no procedure is running;
- Push the  **COOKBOOK** > key
- Enter the  **my cookbook** > menu and select the desired recipe
- Push the  key on the “cycle summary” page to start the recipe
- In case you wish to adjust recipe data, push   to adjust presets.


9.8.3 “MY RECIPES” recipe removal

Operate as follows to remove a recipe:

Select the recipe you wish to remove from “MY RECIPES” list and push the  key of PHASE 1 within 5 seconds.


9.9 PRECOOLING cycle

<p> PRE-COOLING ></p> <p>Push the key on the HOME screen to start a PRECOOLING cycle.</p> <p>It is similar to standard blast chilling and it can be activated before any cycle.</p> <p>The following screen is displayed when the sensitive area is pushed.</p>	
<p>Set the desired temperature value and push the  key to start chamber PRECOOLING.</p> <p>The following screen will be displayed, where the execution of precooling is highlighted.</p> <p>Push the  key to stop PRECOOLING.</p>	

Once the desired temperature is reached, the buzzer rings and the cycle continues by keeping the reached chamber temperature until the  key.

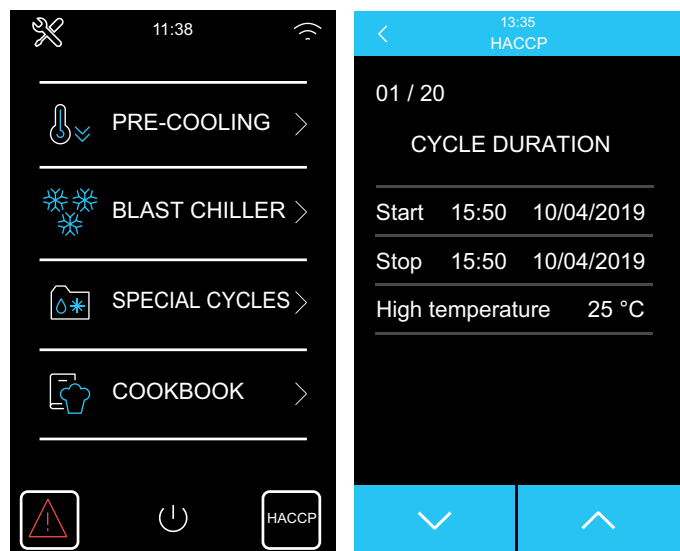
At the end of the cycle, the **HOME** page will automatically be displayed.

9.10 HACCP Alarms



If there have been any alarms to access the alarm area push the  key on the **HOME** screen to access the HACCP alarm area.

The alarms of the HACCP list are:


- Blast chilling/shock freezing cycle duration
- Power failure
- Open door
- High temperature alarm
- Low temperature alarm



9.11 HACCP alarm archive visualization

With the “HACCP” function it is possible to store up to 20 events, after which the more recent event overwrites the oldest. Access HACCP alarm area and push the   keys to visualize all alarms.

9.12 Other alarms

By pressing the “danger”  key, any active alarms “ON” are displayed


ALARM	DESCRIPTION	CAUSE	SOLUTION
RTC	Internal clock alarm	Lack of calibration	Set the clock
CHAMBER PROBE	Chamber probe failure alarm	Faulty chamber probe	Replace probe
EVAPORATOR PROBE	Evaporator probe failure alarm	Faulty evaporator probe	Replace probe
CORE PROBE	Core probe failure alarm	Faulty core probe	Replace probe
OPEN DOOR	Open door alarm	The door has remained open beyond the maximum set time	<ul style="list-style-type: none"> - Close the door - Check door microswitch
HIGH CHAMBER TEMPERATURE	High chamber temperature	Chamber temperature has exceeded the maximum set value	<ul style="list-style-type: none"> - Check refrigerating unit - Service
LOW CHAMBER TEMPERATURE	Low chamber temperature	Evaporator temperature is lower than the minimum set value	<ul style="list-style-type: none"> - Check refrigerating unit - Service
HIGH EVAPORATOR TEMP.	High evaporator temperature	Evaporator temperature has exceeded the maximum set value	<ul style="list-style-type: none"> - Check internal fans - Service

CYCLE DURATION	Blast chilling or shock freezing were not ended within their maximum duration	Product has not reached the minimum set temperature within the set times for automatic blast-chilling or shock-freezing cycle	- Check internal fans - Check product size - Service
BASE COMMUNICATION	Communication error between user interface and control module	Communication problems between interface and control module	- Check interface - control module connection - Service
POWER FAILURE	Power failure alarm	Power interruption alarm	Check electrical connection
SANIFICATION CORE PROBE INSERTION	Sanification alarm	Sanification cycle has been stopped for core probe insertion alarm	- Check the correct insertion of probe into product
SANIFICATION DURATION	Sanification cycle alarm	Sanification has not ended because set temperature was not reached	- Check core probe insertion - Check product quantity
CORE PROBE INSERTION	Alarm for not inserted probe	Probe has not been inserted into product and the selected program requires it	- Check the correct insertion of probe
EXPANSION COMMUNICATION	Communication error between user interface and expansion module	Communication problems between interface and expansion module	Service

CHAPTER 10 SETTINGS


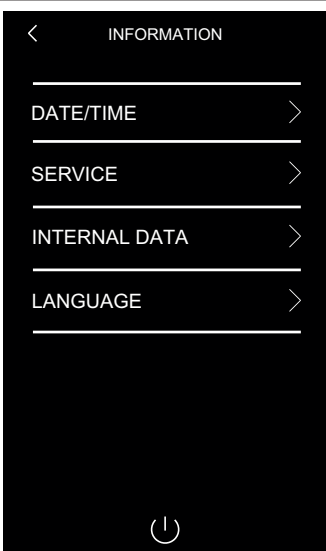
It is possible to set the following on the INFORMATION page:

- **TIME AND DATE:** allows setting time and date for the day
- **SERVICE / INTERNAL DATA:** these areas are intended for authorized technical personnel
- **LANGUAGE SELECTION:** it is possible to set/change the control panel language

Push the  key top left on the **HOME** screen to access **INFORMATION** area.

The page displays the following menus:

- **DATE/TIME**
- **SERVICE (PARAMETERS)**
- **INTERNAL DATA**
- **LANGUAGE**

10.1 DATE/TIME setting

Allows adjusting time and date of the appliance; it is also possible to set the hour format 12h / 24h - a.m / p.m. and the date format dd/mm/yyyy - mm/dd/yyyy

10.2 - SERVICE (PARAMETERS)

Intended for authorised technical personnel (Chapter 17)

10.3 INTERNAL DATA

The list of the available functions is displayed:

- alarms;
- input and output status;
- compressor operation hours;
- HACCP data selection;
- internal data reset.

“Internal data reset” menu, accessible by password (password: 99) allows resetting the following data:

- compressor operation hours;
- HACCP alarms
- user's recipe

10.4 LANGUAGE

From this area it is possible to set the language among the available ones.

CHAPTER 11 NOISE LEVEL

The blast chiller has been designed and manufactured in a such way that the risks resulting from the emission of airborne noise are reduced to the lowest level (refer to the technical sheets)

CHAPTER 12 MATERIALS AND FLUIDS USED

The materials in contact or which may come into contact with foodstuffs comply with the relevant directives.

The blast chiller has been designed and built in such a way that these materials can be cleaned before each use.

The refrigerant fluids used R452A conform with the new EU regulation 517/2014 F-Gas
R452A is a fluorinated gas, it has a GWP potential of 2141



The symbol indicates that this product must not be treated as household waste.

To prevent potential negative consequences for the environment and human health, make sure that this product is properly disposed of and recycled.

For more information regarding the disposal and recycling of this product, please contact your Distributor, after sale Service, or waste treatment Service.





The transport and handling of the blast chiller must only be done while maintaining the vertical position, observing the markings on the packaging.

The manufacturer disclaims any liability for problems resulting from transport performed under conditions other than those specified above.

The accessories of the blast chiller (guides, grilles, trays, remote condensing unit with pipes) are packaged separately and placed inside the unit.

The blast chiller is mounted on a wooden base with screws and packaged with polyethylene, carton, crate or boxes.

Regarding the disposal of the packaging it is necessary to refer to current regulations in your country.



The movement of the blast chiller shall be performed using a fork lift or pallet trucks equipped with suitable forks (length of at least 2/3 of the unit).

The dimensions and masses of the refrigerated cabinets packed are shown in Table 1.

The limits of stackability and the centre of gravity are indicated on the label of the package.

13.1 Positioning operations

Since the incorrect positioning of the blast chiller can cause damage to the same, jeopardizing its proper functioning and result in risk to the personnel, the installer must adhere to the following general rules:

- position the remote unit as described in the installation manual
- position the blast chiller keeping a minimum distance of 3 cm from any wall
- the environment must be sufficiently ventilated
- position the blast chiller away from heat sources
- avoid exposure to direct sunlight
- remove the polyethylene, cardboard or wood packaging



Polyethylene is dangerous for children

- remove any accessories with external connections



use protective gloves when handling the wooden packaging and the wooden base.

The presence of splinters may cause damage to your hands

- remove the PVC film applied as a protection to the outer surfaces of the blast chiller
- position the blast chiller using a level (Fig. 5)

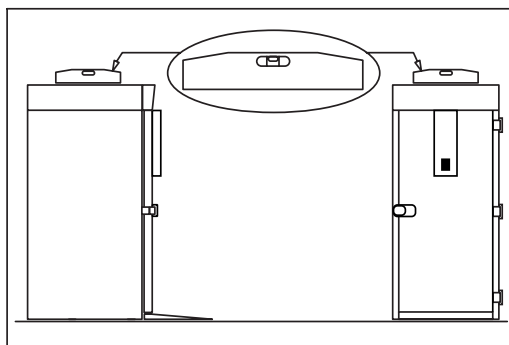


Fig.5

- position the access ramp (Fig. 6)

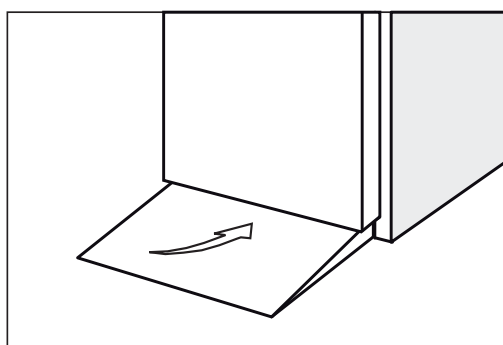


Fig.6

- position the condensing unit (Fig. 7)

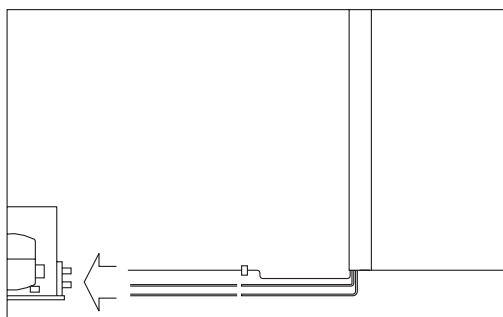


Fig.7

- N.B.: the condensing unit is pre-loaded with nitrogen pressure by the manufacturer
- prepare the two pipes that protrude from the temperature blast chiller for the connection to the respective pipes of the condensing unit
- connect the pipes of the condensing unit to the pipes of the blast chiller
- create a vacuum and then charge of the refrigerant fluid as indicated on the plate or technical data sheet
- make the electrical connection of the blast chiller to the condensing unit (refer to the assembling and installation manual and installation manual of the condensing unit).

CHAPTER 14 ELECTRICAL WIRING AND CONNECTIONS

The electrical system and connection must be carried out by qualified personnel. Before installation, measure the impedance of the network, the impedance value for the connection to the network must not exceed 0.075 ohm.

For safety reasons you must follow these guidelines:

- verify that the sizing of the electrical system is suitable for the power consumption of the blast chiller and that it provides for a differential switch (circuit breaker)



The power cord has the connection type “Y” and it can be replaced exclusively by the manufacturer or authorized technical service



It is essential to correctly connect the blast chiller to an efficient earthing system carried out as specified by the applicable provisions of law.

CHAPTER 15 INSTALLATION OPERATIONS

It is important, in order to prevent errors and accidents, to perform a series of checks before starting up the blast chiller in order to identify any damage incurred during transport, handling and connection.



ATTENTION: Checks to be performed:

- check the integrity of the power cord (it must not have suffered abrasions or cuts)
- check the solidity of the door hinges and inside protections
- check the integrity of the internal and external parts (pipes, heating elements, fans, electrical components, etc.) and their fixing
- check that the seals of the doors and drawers have not been damaged (cuts or abrasions) and close with an airtight seal
- check the integrity of the pipes and fittings

CHAPTER 16 REINSTALLATION

It is necessary to comply with the following procedure:

- disconnect the power cord from the power outlet from the condensing unit and from the blast chiller
- the handling should be carried out as described in chapter 113
- for a new placement and connection, please refer to par. 13
- proceed to the possible recovery of the refrigerant gas in accordance with the regulations in force in your country.




WARNING!

**INSTRUCTIONS STRICTLY RESERVED TO AUTHORIZED
TECHNICAL PERSONNEL**

Every intervention executed by a non authorized technical personnel
implies a warranty decay.


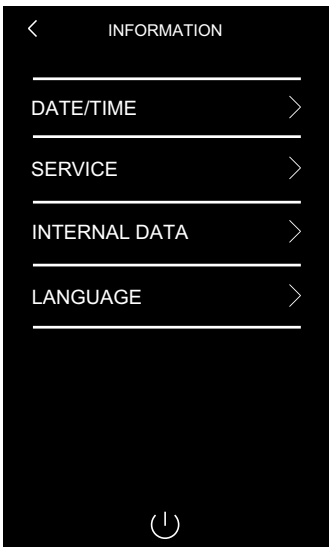
It is possible to access **INTERNAL DATA** modification screen from the **INFORMATION** page

Push the  ket top left on the **HOME** screen to access the **INFORMATION** area.

The page displays the following menus:

- **DATE/TIME**
- **SERVICE (PARAMETERS)**
- **INTERNAL DATA**
- **LANGUAGE**

Push **SERVICE (PARAMETERS)**

the following functions are available:

- PARAMETER configuration, by means of password (-19)
- Default value refresh (restricted and not selectable)
- OEM Recipe refresh by means of password (99)

PARAMETER

NB only the highlighted parameters can be modified by maintenance service. The other parameters can be modified only after reference/authorization by our technical department.

PAR.	ABF	MIN.	MAX.	U.M.	ANALOG INPUTS
CA1	0	-25	25	°C/°F(1)	chamber probe calibration
CA2	0	-25	25	°C/°F(1)	evaporator probe calibration (if P4=1)
CA3	0	-25	25	°C/°F(1)	condenser probe calibration (if P5=1)
CA4	0	-25	25	°C/°F(1)	core probe 1 calibration
CA5	0	-25	25	°C/°F(1)	core probe 2 calibration (if P9>1)
CA6	0	-25	25	°C/°F(1)	core probe 3 calibration (if P9>1)
P0	1	0	1	----	probe type 0 = PTC 1 = NTC
P2	0	0	1	----	temperature unit of measure 0 = °C 1 = °F
P3	1	0	3	----	core probe type 0= deactivated 1= single probe 2= multi core probe 3= multi-sensor probe See also P9
P4	1	0	1	----	evaporator probe activation 0 =no 1 = yes
P5	0	0	1	----	condenser probe activation 0 =no 1 = yes
P9	1	1	3	----	if P3=1, P9 must be set at 1; if P3=2, the number set for P9 corresponds to the number of available core probes (from 1 to 3); if P3=2 the number set for P9 corresponds to the available number of sensor on the core probe
PAR.	ABF	MIN.	MAX.	U.M.	MAIN REGULATOR
r0	3	1	15	°C/°F(1)	chamber setpoint differential in blast-chilling, shock-freezing, sanification, ice-cream hardening and customized cycles
r1	90	1	500	min	tim-based blast chilling duration
r2	240	1	500	min	time-based shock freezing duration
r3	3	-50	99	°C/°F(1)	product temperature for temperature-based blast-chilling end and for soft phase end in temperature-based soft shock freezing; see also parameter r5
r4	-18	-50	99	°C/°F(1)	product temperature for temperature-based shock freezing end; see also parameter r6
r5	90	1	500	min	maximum allowed duration for temperature-based blast chilling; see also parameter r3
r6	240	1	500	min	maximum allowed duration for temperature-based shock freezing; see also parameter r4
r7	-2	-50	99	°C/°F(1)	chamber temperature setpoint during blast chilling and during soft phase of soft shock freezing; see also parameter r0

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r8	-40	-50	99	°C/°F(1)	chamber temperature setpoint during shock freezing and during ice-cream hardening; see also parameter r0
r9	-20	-50	99	°C/°F(1)	chamber temperature setpoint during hard phase of hard blast chilling; see also parameter r0
r10	2	-50	99	°C/°F(1)	chamber temperature setpoint during storage following blast chilling, hard blast chilling and continuous cycle; see also parameter r0
r11	-20	-50	99	°C/°F(1)	chamber temperature setpoint during storage following shock freezing and soft shock freezing, see also parameter r0
r12	0	-50	99	°C/°F(1)	chamber temperature setpoint during precooling; see also parameter r0
r13	15	-50	99	°C/°F(1)	product temperature for hard phase end of temperature-based hard blast chilling
r14	60	10	100	%	hard phase duration in time-based hard blast chilling, i.e. value percentage set with parameter r1; soft phase duration in time-based soft shock freezing, i.e. value percentage set with parameter r2
r15	65	-50	199	°C/°F(1)	product temperature below which the maximum duration count for temperature-based blast chilling or shock freezing starts.
r17	5	0	99	°C/°F(1)	minimum variance between product temperature and chamber temperature leading to consider the first phase of the test for correct core probe insertion as successfully completed 0= test is deactivated and core probe is considered as always inserted
r18	60	10	999	s	duration of the second phase of the test to check core probe correct insertion
r19	-40	-50	99	°C/°F(1)	chamber temperature setpoint for sanitation first phase
r20	-20	-50	99	°C/°F(1)	product temperature setpoint for sanitation first phase and chamber temperature set point for sanitation second phase
r21	24	0	24	h	sanitation second phase duration
r22	-20	-50	99	°C/°F(1)	chamber temperature setpoint for sanitation third phase
r23	5	1	99	h	maximum duration sanitation first phase
r24	10	1	400	min	ice-cream hardening cycle duration
r25	25	-50	99	°C/°F(1)	chamber temperature initial setpoint for low load thawing
r26	30	-50	99	°C/°F(1)	chamber temperature initial setpoint for medium load thawing
r27	35	-50	99	°C/°F(1)	chamber temperature initial setpoint for high load thawing
r28	10	-50	99	°C/°F(1)	chamber temperature final setpoint for low load thawing
r29	12	-50	99	°C/°F(1)	chamber temperature final setpoint for medium load thawing
r30	15	-50	99	°C/°F(1)	chamber temperature final setpoint for high load thawing
r31	3	-50	99	°C/°F(1)	chamber temperature setpoint for storage after thawing
r32	240	1	999	min	thawing duration for low load
r33	480	1	999	min	thawing duration for medium load
r34	720	1	999	min	thawing duration for high load
r35	-15	-50	99	°C/°F(1)	chamber temperature setpoint for customized blast chilling
r36	10	-50	99	°C/°F(1)	product temperature setpoint for customized blast chilling
r37	240	1	999	min	time-based customized blast chilling duration
r38	5	-50	99	°C/°F(1)	chamber temperature setpoint for storage after customized blast chilling
r39	75	-50	99	°C/°F(1)	maximum settable chamber temperature setpoint
r40	-40	-50	99	°C/°F(1)	minimum settable chamber/probe temperature setpoint
PAR.	ABF	MIN.	MAX.	U.M.	COLD REGULATOR (valid parameters only if F12=2 or 3)
rC0	2	1	15	°C/°F(1)	parameter rC3 differential
rC3	5	-50	99	°C/°F(1)	chamber temperature setpoint for blast-chilling phase (for leavening cycle)
rC4	2	0	10	°C/°F(1)	relative cold threshold in neutral zone for all leavening phases
rC5	5	-50	++	°C/°F(1)	chamber temperature setpoint for storage phase in retarding-proofing cycle
PAR.	ABF	MIN.	MAX.	U.M.	HEAT REGULATOR (valid parameters only if E12=2 or 3)
rH0	2	1	15	°C/°F(1)	parameter rH3 rH4 rH5 rH10 rH 13 differential
rH3	20	-50	99	°C/°F(1)	chamber temperature setpoint for proofing phase
rH4	30	-50	99	°C/°F(1)	chamber temperature setpoint for leavening phase
rH5	25	-50	99	°C/°F(1)	chamber temperature setpoint for conservation phase
rH6	2	0	10	°C/°F(1)	relative heat threshold in neutral zone for all leavening phases
rH7	120	0	999	Min	blast-chilling phase duration (for leavening cycle)
rH8	180	0	999	Min	proofing phase duration
rH9	180	0	999	Min	leavening phase duration
rH10	75	-50	99	°C/°F(1)	chamber temperature setpoint for slow cooking
rH11	60	-50	99	°C/°F(1)	product temperature setpoint for slow cooking
rH12	60	0	999	Min	slow cooking duration
rH13	60	-50	99	°C/°F(1)	chamber temperature setpoint for conservation
rH14	60	1	600	s	heater cycle time in leavening
rH15	30	1	10	s	heater ON time in leavening
rH16	1	0	10	°C/°F(1)	relative neutral zone threshold for thawing
rH17	2	1	15	°C/°F(1)	chamber setpoint differential in thawing for heater activation
rH18	2	1	15	°C/°F(1)	chamber setpoint differential in thawing for compressor activation
rH19	60	1	600	s	heater cycle time in thawing

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rH20	60	1	10	s	heater ON time in thawing
rH21	1	0	10	°C/°F(1)	neutral zone threshold in storage phase
PAR.	ABF	MIN.	MAX.	U.M.	HUMIDITY REGULATOR (valid parameters only if E12=1)
rU1	7	-50	99	°C/°F(1)	chamber temperature below which humidification is inhibited
rU2	300	1	600	s	cycle time for humidifier start in leavening and slow cooking
rU3	120	1	600	s	humidifier ON time within rU2 cycle time to generate 100% humidity in chamber
rU4	0	0	1	- - - -	humidification control activation in blast-chilling and storage phase (for leavening cycle) 0 = no 10 = yes
rU5	60	0	100%	preset %	humidification in blast chilling (for leavening cycle) if parameter rU4=1
rU6	60	0	100%	preset %	humidification in storage (retarding-proofing cycle)
rU7	60	0	100%	preset %	humidification in proofing
rU8	80	0	100%	preset %	humidification in leavening
rU9	0	0	100%	preset %	humidification in conservation
rU10	80	0	100%	preset %	humidification in slow cooking
rU11	0	0	100%	preset %	humidification in conservation after slow cooking
PAR.	ABF	MIN.	MAX.	U.M.	COMPRESSOR PROTECTIONS
C0	0	0	240	min	minimum time between power recovery after power shortage happening during a running cycle and compressor starting
C2	5	0	240	min	minimum time between compressor turning off and following turning on
C3	0	0	240	min	minimum time compressor ON (compressor 1 and compressor 2)
C4	10	0	240	min	OFF compressor time during chamber probe error (code "CHAMBER PROBE"). Happens during storage after blast chilling and shock freezing. See also parameters C5 and C9
C5	10	0	240	min	OFF compressor time during chamber probe error (code "CHAMBER PROBE"). Happens during storage after blast chilling; see also parameter C4
C6	65	0	199	°C/°F(1)	condenser temperature above which overheated condenser alarm is activated (code "OVERHEATED COND").
C7	75	0	199	°C/°F(1)	condenser temperature above which compressor block alarm (code "BLOCKED COMP") is activated, after C8 time is elapsed.
C8	1	0	15	min	compressor block alarm (code "BLOCKED COMP") activation delay from passing of C7 threshold
C9	30	0	240	min	compressor ON time during chamber probe error (code "CHAMBER PROBE"), happening during storage after shock freezing; see also parameter C4.
C10	5	0	240	min	compressor OFF time during chamber probe error (code "CHAMBER PROBE"), happening during storage after shock freezing; see also parameter C4
PAR.	ABF	MIN.	MAX.	U.M.	DEFROSTING
d0	8	0	99	h	defrosting interval 0= defrosting at intervals will never be activated
d1	1	0	4	- - - -	defrosting type 0= electrical (during defrosting, compressor will be turned off; defrosting output will be activated and evaporator fan will be turned off) 1= hot gas (during defrosting, compressor will be turned on, defrosting output will be activated and evaporator fan will be turned off) 2= air (during defrosting, compressor will be turned off and evaporator output will be activated; evaporator fan will be turned on regardless of door conditions i.e. regardless of door microswitch status) 3= air with open door (during defrosting, compressor will be turned off and defrosting output will be activated; evaporator fan will be turned on on condition that the door is open, i.e. on condition that door microswitch is active and that parameter i0 is set to a different value than 0)
d2	8	-50	99	°C/°F(1)	evaporator temperature for defrosting end; see also parameter d3
d3	15	0	99	min	if evaporator probe is not present (P4=0), it defines defrosting duration; if evaporator probe is present (P4=1), it defines maximum defrosting duration; see also parameter d2 0= defrosting will never be activated; evaporator fan will be turned on if the door is open, i.e. if door microswitch input is active and parameter i0 is set to a different value than 0)
d4	0	0	1	- - - -	defrosting activation at blast chilling start and at shock freezing start 0 = no 1 = yes
d5	0	0	99	min	defrosting delay from storage start 0 = defrosting will be activated after the time set with parameter d0 has elapsed
d7	2	0	15	min	dripping delay after a defrosting in which compressor and evaporator fan will remain turned off and defrosting output will be deactivated
d15	0	0	99	min	minimum consecutive duration of compressor ON for hot gas defrosting start if d1 is set to 1
d16	0	0	99	min	pre-dripping time if d1 is set to 1 (hot gas defrosting), in which compressor and evaporator fan will be turned off and defrosting output will remain activated
PAR.	ABF	MIN.	MAX.	U.M.	TEMPERATURE ALARMS
A1	10	0	99	°C/°F(1)	chamber temperature below which inimum alarm temperature is activated (regarding working setpoint, i.e. "r10-A1" during storage after blast chilling and "r11-A1" during storage after shock freezing; (code "LOW TEMPERATURE"); see also parameter A11.
A2	1	0	1	- - - -	minimum temperature alarm activation (code "LOW TEMPERATURE"): 0 = no 1 = yes
A4	10	0	99	°C/°F(1)	chamber temperature above which maximum temperature alarm is activated (regarding working setpoint, i.e. "r10+A4" during storage after blast chilling and "r11+A4" during storage after shock freezing (code "HIGH TEMPERATURE"; see also parameter A11 (4)
A5	1	0	1	- - - -	maximum temperature alarm activation (code "HIGH TEMPERATURE"): 0 = no 1 = yes
A7	30	0	240	min	temperature alarm delay (code "HIGH TEMPERATURE" and code "LOW TEMPERATURE")
A8	30	0	240	min	maximum temperature alarm delay (code "HIGH TEMPERATURE") from evaporator fan stop end and from storage start

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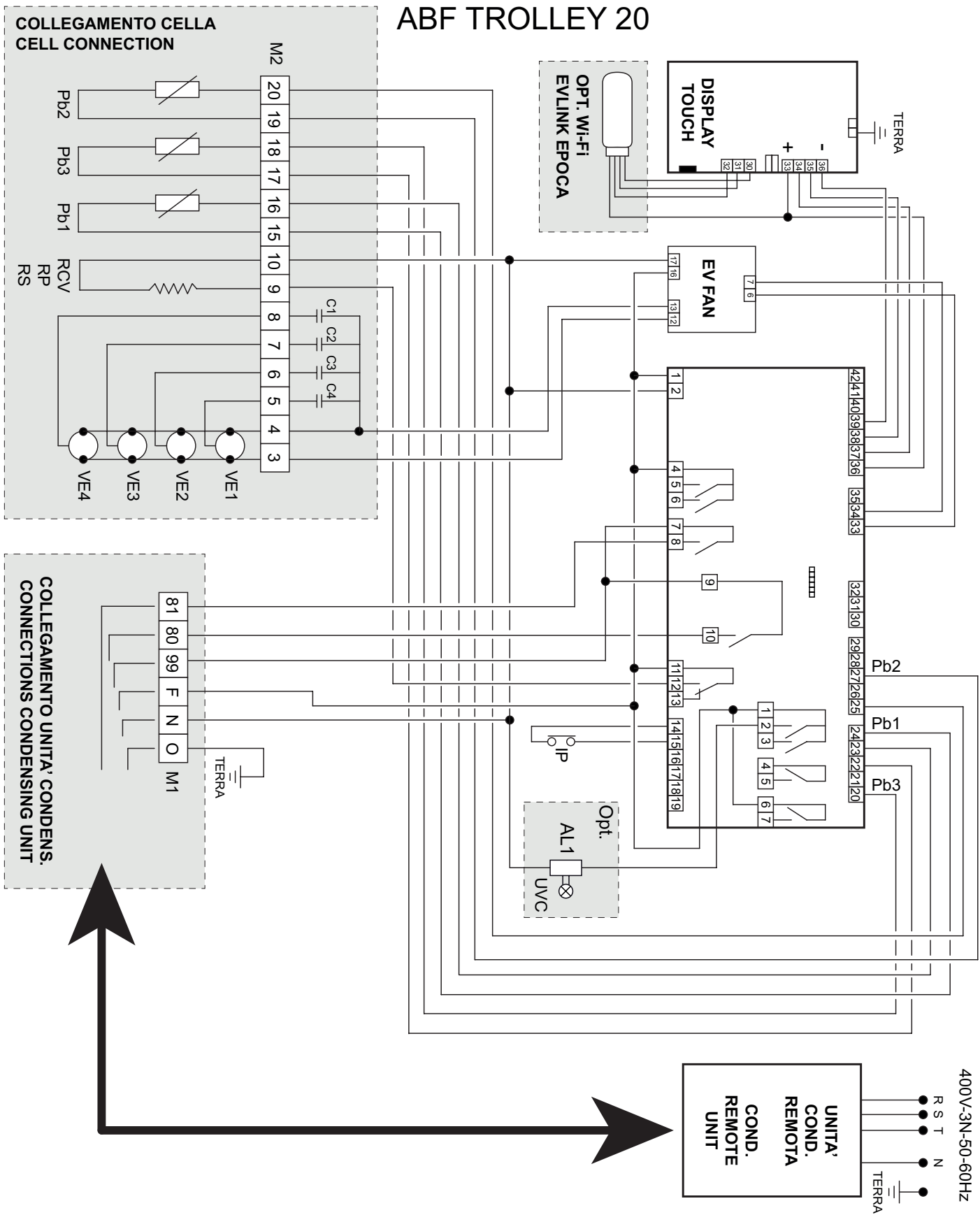
A10	5	0	240	min	power shortage duration causing power failure alarm memorization (code "POWER FAILURE") when power will be resumed. 0 = alarm will not be signalled
A11	2	1	15	°C/°F(1)	parameter A1 and A4 differential
A12	35	0	240	s	buzzer activation duration during blast chilling end and shock freezing end
A13	60	0	240	s	buzzer activation duration for alarm
PAR.	ABF	MIN.	MAX.	U.M.	EVAPORATOR AND CONDENSER FANS
F1	70	-50	99	°C/°F(1)	evaporator temperature above which evaporator fan is turned off during precooling/blast chilling/shock freezing/sanification/ice-cream hardening/blast chilling (for leavening cycle); see also parameter F8
F3	0	0	15	min	evaporator fan stop duration (during evaporator fan stop, compressor can be turned on; defrosting output will remain deactivated and evaporator fan will remain turned off)
F8	2	1	15	°C/°F(1)	F1 and F17 differential
F15	15	0	240	s	evaporator fan delay from door closing , i.e. from door microswitch input deactivation
F17	90	-50	199	°C/°F(1)	chamber temperature above which evaporator fan is turned off during precooling/blast chilling/shock freezing/sanification/ice-cream hardening/blast chilling (for leavening cycle); see also parameter F8
F19	30	0	100	%	evaporator fan minimum speed calibration
F20	100	0	100	%	evaporator fan maximum speed calibration
F21	100	0	100	%	peak speed
F22	10	0	10	s	peak time
F23	5	1	5	----	fan speed in blast chilling and in shock-freezing soft phase
F24	5	1	5	----	fan speed in blast-chilling hard phase
F25	5	1	5	----	fan speed in shock freezing and ice-cream hardening
F26	5	1	5	----	fan speed in positive storage
F27	5	1	5	----	fan speed in negative storage
F28	5	1	5	----	fan speed in precooling
F29	1	1	5	----	fan speed in first phase of thawing
F30	1	1	5	----	fan speed in first phase of thawing
F31	1	1	5	----	fan speed in third phase of thawing
F32	1	1	5	----	fan speed in fourth phase of thawing
F33	1	1	5	----	fan speed in fifth phase of thawing
F34	1	1	5	----	fan speed in storage after thawing
F35	5	1	5	----	fan speed in sanification first phase (blast chilling)
F36	5	1	5	----	fan speed in sanification second phase (conservation)
F37	5	1	5	----	fan speed in sanification third phase (storage)
F38	5	1	5	----	fan speed in customized blast chilling
F39	5	1	5	----	fan speed in customized storage
F40	5	1	5	----	fan speed in slow cooking
F41	1	1	5	----	fan speed in conservation after slow cooking
F42	5	1	5	----	fan speed in blast chilling (for leavening cycle)
F43	5	1	5	----	fan speed in proofing
F44	5	1	5		fan speed in leavening
F45	5	1	5		fan speed in storage (for leavening cycle)
F46	40	0	99	°C/°F(1)	condenser temperature above which condenser fan is turned on
F47	5	0	240	s	condenser fan turning off delay from compressor turning off (only if condenser probe is not present)
F48	0	0	1	0	condenser fan status during defrosting 0 = off 1 = on
F49	0	0	1	---	fan operation mode in storage 0 = parallel to compressor 1 = always on
F50	1	0	1	---	fan operation mode in slow cooking 0= always on 1= on if heaters are on with ON-OFF cycles if heaters are off
F51	120	0	999	s	fan OFF time in heating for operation with F50 = 1
F52	60	0	999	s	fan ON time in heating for operation with F50 = 1
F53	1	1	5	---	minimum settable fan speed for all cycles except slow cooking. Attention: check setting coherence with parameters from F23 to F45
F54	2	1	5	---	minimum settable fan speed for slow cooking. Attention: check setting coherence with parameters from F23 to F45
PAR.	ABF	MIN.	MAX.	U.M.	DIGITAL INPUTS
i0	1	0	2	----	effect caused by door opening, i.e. by door microswitch activation 0 = no effect and no warning 1 = compressor, evaporator fan, defrosting heaters, heating heaters and humidification will be turned off and chamber light will be turned on. After the time set by parameter i2 is elapsed, the appliance will display the alarm and the buzzer will be activated (until the door will be closed); see also parameter F15
i1	1	0	1	----	door microswitch input polarity 0 = normally open (active input with closed contact) 1 = normally closed (active input with open contact)
i2	5	-1	120	min	door opening duration for open door alarm recording -1 = alarm will not be signalled
i5	-	-	-	-	restricted

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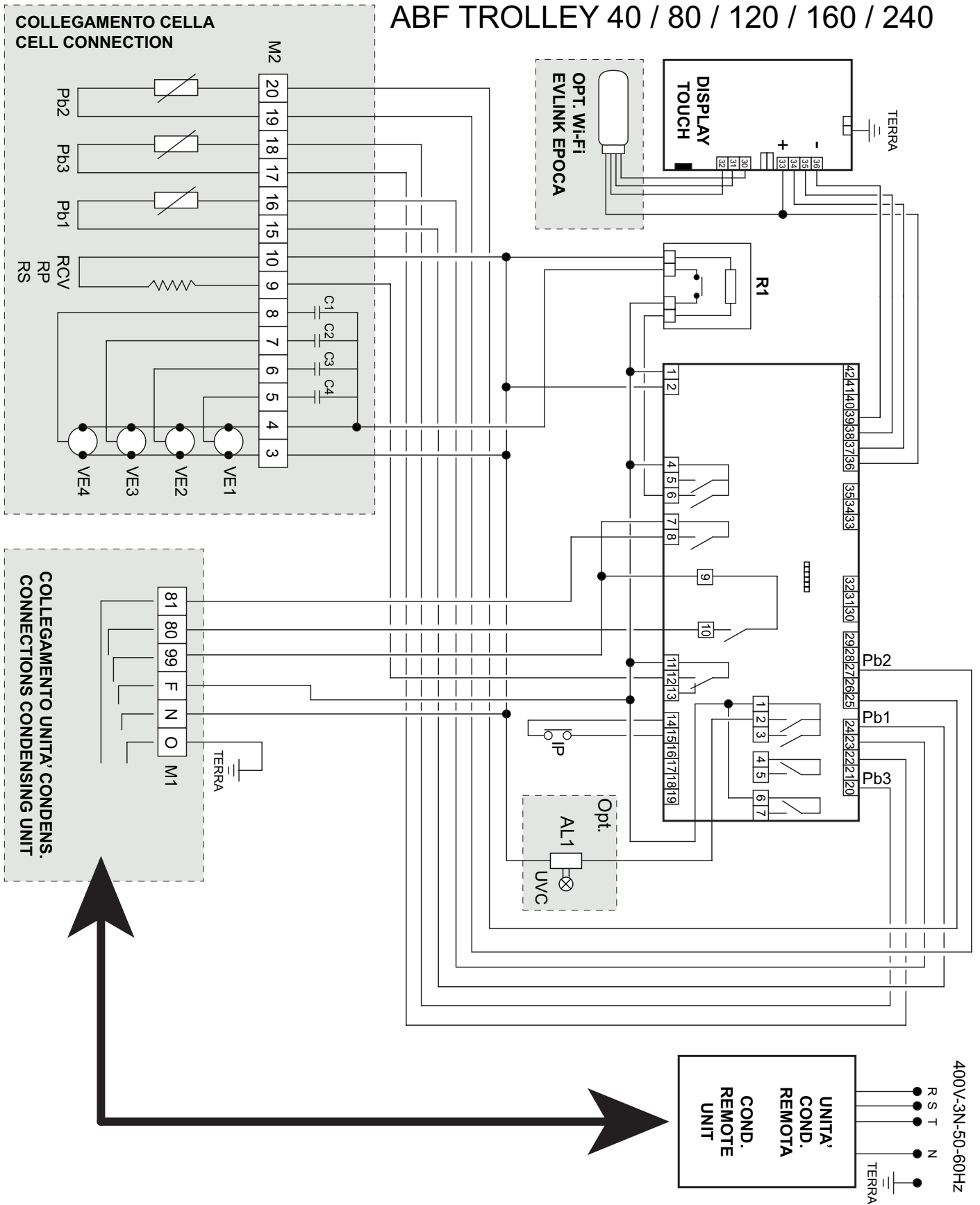
i6	0	0	1	----	high pressure input polarity 0 = normally open (active input with closed contact) 1 = normally closed (active input with open contact)
i7	5	-1	240	s	high pressure alarm warning delay -1 = alarm will not be signalled
i8	1	0	1	-	restricted
i9	0	0	1	----	low pressure input polarity 0 = normally open (active input with closed contact) 1 = normally closed (active input with open contact)
i10	5	-1	240	s	low pressure alarm warning delay -1 = alarm will not be signalled
i11	0	0	1	----	thermal protection input polarity 0 = normally open (active input with closed contact) 1 = normally closed (active input with open contact)
i12	5	-1	240	s	thermal protection alarm warning delay -1 = alarm will not be signalled
i13	0	0	1	-	restricted
PAR.	ABF	MIN.	MAX.	U.M.	DIGITAL OUTPUTS
u01c	1	0	12	----	utility managed by output K1 0. Not used 1. Compressor 1 2. Compressor 2 3. Defrosting 4. Evaporator Fans 5. Condenser Fans 6. Door Heater 7. Defrosting Heater 8. Alarm 9 Pump-down Valve 10. Core Probe Heating 11. UV Lamp 12. Chamber Light 13. Chamber Heater (only for relay from u10c to u13c) 14. Steam generator (only for relay from u10c to u13c) 15. Steam injection (only for relay from u10c to u13c)
u02c	3	0	12	----	utility managed by output K2 = Defrosting
u03c	4	0	12	----	utility managed by output K3 = evaporator fans
u04c	5	0	12	----	utility managed by output K4 = condenser fans
u05c	6	0	12	----	utility managed by output K5 = door heater
u06c	0	0	12	----	utility managed by output K6 = defrosting heater
u07c	8	0	12	----	utility managed by output K7 = alarm
u08c	9	0	12	----	utility managed by output K8 = pump-down electrovalve
u09c	0 opt 11	0	12	----	utility managed by output K9 = UVC lamp (opt.)
u10c	13	0	15	----	utility managed by output K10 (if MULTI expansion is present) = heating heater
u11c	14	0	15	----	utility managed by output K11 (if MULTI expansion is present) = steam generator
u12c	15	0	15	----	utility managed by output K12 (if MULTI expansion is present) = steam injection
u13c	0	0	15	----	utility managed by output K13 (if expansion is present) = same configurations as defined in parameter u01c
u5	-1	-50	99	°C/°F(1)	chamber temperature above which door heaters are turned off
u6	10	1	240	min	UV light turning-on duration for sterilisation cycle
u7	40	-50	199	°C/°F(1)	core-probe end-heating temperature; see also parameter u8
u8	0	0	240	min	core-probe maximum heating duration; see also parameter u7 0 = core-probe heating is deactivated
u9	1	0	1	-	restricted
u11	1	0	1	----	evaporator fan activation during sterilisation (0=no 1=yes)
u12	10	0	999	s	compressor turning-off delay from pump-down valve deactivation (pump-down is turning off)
u13	25	1	99	m	drying duration
PAR.	ABF	MIN.	MAX.	U.M.	SERIAL COMMUNICATION (type RS-485 serial port with MODBUS communication protocol) + EVLINK WIFI
PA1	426	-99	999	----	EVconnect/EPoCA 1st level password
PA2	824	-99	999	----	EVconnect/EPoCA 2nd level password
bLE	1	0	99	----	Serial port configuration for connectivity 0 = free 1 = force for EVconnect or for EPoCA 2-99 = EPoCA local network address
L1	5	1	240	min	data recording interval during main cycles; interval is the same both for internal data-logger and for EVLINK
LA	247	1	247	----	appliance address
Lb	3	0	3	----	baud rate 0 = 2.400 baud 1 = 4.800 baud 2 = 9.600 baud 3 = 19.200 baud
LP	2	0	2	----	odd-even 0 = none 1 = odd 2 = even
PAR.	ABF	MIN.	MAX.	U.M.	MISCELLANEA
E7	0	0	1	----	keyboard lock" function activation mode 0 = not activated function 1 = automatic with temporary effect (keyboard will automatically lock after 60s from last key operation during the execution of a cycle)
E8	60	30	600	s	keyboard lock timeout
E9	1	0	1	----	pre-loaded splash-screen visualization after electrical power is resumed (0 = no 1 = yes)
E10	0	0	1	----	humidifier type 0 = boiler 1 = instant boiler
E12	0	0	3	----	Function activation with expansion module 0 = no expansion module 1 = slow cooking only 2 = retarding-proofing only 3 = slow cooking + retarding proofing Attention: the modification of this parameter will automatically reboot the appliance
E13	0	0	1	----	appliance type 0 = "blast-chiller" home 1 = "multifunctional" home Attention: the modification of this parameter will automatically reboot the appliance
E14	0	0	1	----	operation mode in case of core-probe insertion test fail 0 = time-based 1 = with core probe
E15	0	1	0	----	adjusted OEM recipe saving mode 0 = on user's recipe list 1 = on user's recipe list + OEM recipe overwriting
E16	1(*)	0	1	----	ventilation mode 0 = without phase cut 1 = with phase cut

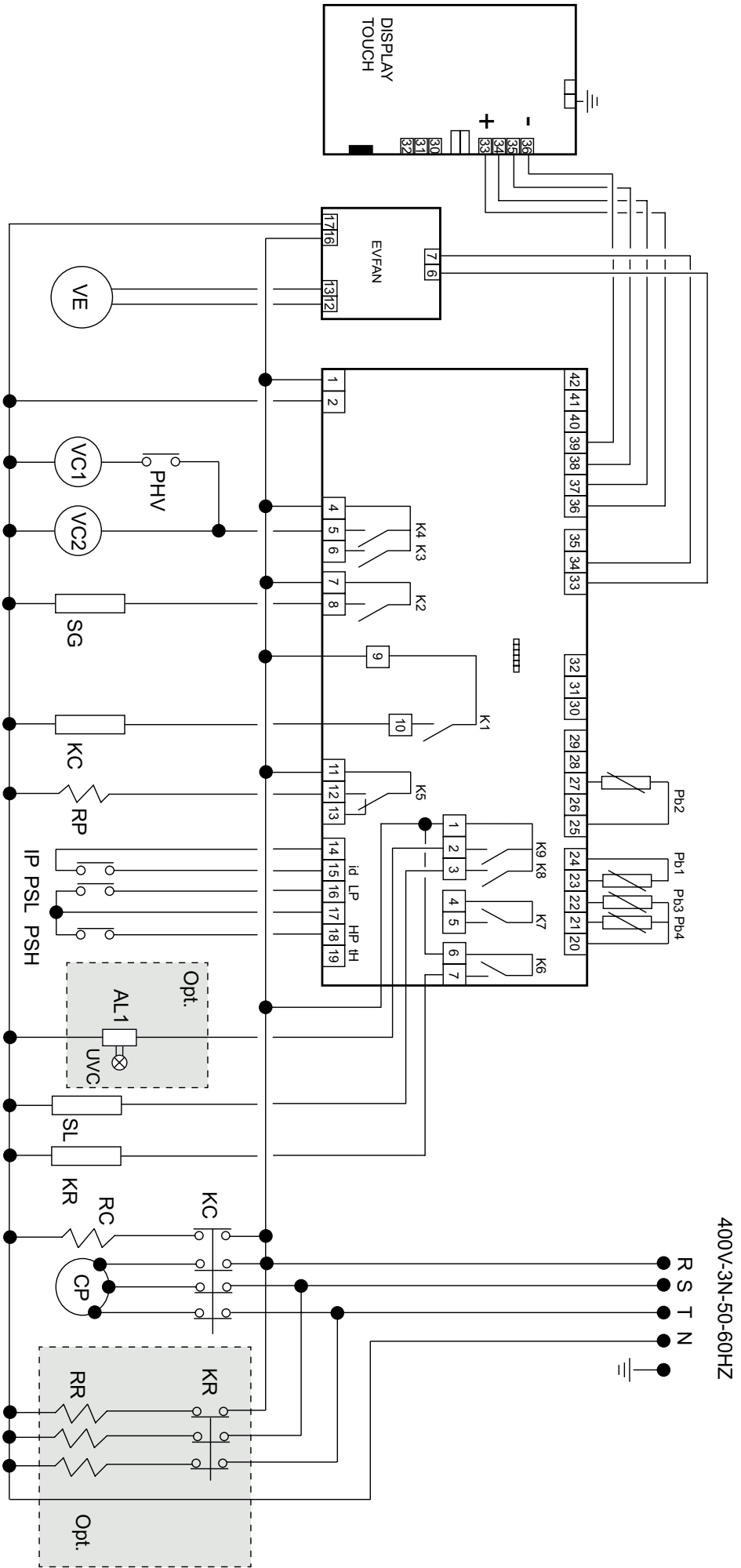
E17	0	0	1	----	sterilization type 0 = UV lamp; 1 = ionization
E18	0	0	2		state of ionization cycle from passage of conservation cycle; 0 = keep the previous state; 1 = off; 2 = on
E19	60	0	240	min	time out ionizer operation in storage

* E16=1 Only KING 20 modell



ABF TROLLEY 40 / 80 / 120 / 160 / 240





ABF TROLLEY 20 COMPACT

U | RR | VE | VE | SG | SL | VC | RP | T1 | T2 | T3 | RC | N | N | N

COMPONENT LIST

RVC - Cell compensation valve resistance
RC - Carter heater
RP – Door Resistance Anti-condensation
RS – Discharge resistance
VE1 / 4 - Evaporator Fan
C1 / 4 - Fan condenser
EVFAN - Fan Speed Control Module
AL1 - UVC Lamp Power Supply (optional)
UVC- UVC Lamp (optional)
VC2 / VC1 - Condenser Fan
PHV - Fan pressure switch
PSL - Minimum pressure switch
PSH - Maximum pressure switch
IP- Door Microswitch
Pb1 - Chamber Probe
Pb2 - Core-Probe
Pb3 - Evaporator Probe
Pb4 - Condenser probe
KC - Compressor contactor
KR - Heating resistance contactor (Opt.)
R1 - Evaporator fan relay



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