



Blast Chillers & Freezers

Service & Installation Manual



1	GENERAL INFORMATION	4
2	SAFETY PRECAUTIONS.....	4
3	SERIAL DATA PLATE.....	5
4	RECEIVING AND INSPECTING THE EQUIPMENT	5
5	INSTALLATION	5
5.1	Location.....	5
5.2	Uncrating.....	6
5.3	Ventilation.....	6
5.4	Leveling	7
5.5	Initial Cleaning Procedure	7
6	ELECTRICAL INSTRUCTIONS	7
7	STARTUP PROCEDURE.....	8
7.1	Loading Product	9
8	DIGITAL CONTROL.....	9
8.1	Functions.....	9
9	USER INTERFACE	11
9.1	Foreword.....	11
9.2	Device commissioning	12
9.3	Switching the device on/off.....	12
9.4	The display	13
9.5	Display of inputs and outputs status	14
9.6	Defrosting activation in manual mode	15
9.7	Locking/unlocking of the keyboard	15
9.8	Silencing the buzzer	16
10	INSTRUCTIONS TO BE FOLLOWED FOR THE USE OF THE CHILLER	16
11	OPERATION	17
11.1	Foreword.....	17
	Foreword regarding needle probe.....	18
11.2	Temperature-controlled blast chilling and storage	18
11.3	Temperature-controlled hard chilling and storage	20
11.4	Time-controlled blast chilling and storage	22
11.5	Time-controlled hard blast chilling and storage	24
11.6	Continuous blast chilling.....	25
11.7	Temperature-controlled deep freezing and storage	26
11.8	Temperature-controlled soft deep freezing and storage	28
11.9	Time-controlled deep freezing and storage	30
11.10	Time-controlled soft deep freezing and storage	32
11.11	Continuous deep freezing.....	33
11.12	Pre-cooling start-up	34
11.13	Management of the test regarding correct insertion of the needle probe	35
11.14	Switching for sterilisation cycle	35
11.15	Heating the needle probe	36
11.16	Fish Sanification	37
12	“PROGRAMS” FUNCTION.....	38

12.1	Foreword.....	38
12.2	Memorisation of a program.....	38
12.3	Execution of a program.....	39
13	“FAVOURITES” FUNCTION	40
13.1	Foreword.....	40
13.2	Execution of a program.....	40
14	“HACCP” FUNCTION	40
14.1	Foreword.....	40
14.2	Display of information relative to the HACCP Alarms	41
14.3	Deleting of information relative to the HACCP Alarms	42
15	COMPRESSOR OPERATING HOURS COUNT	43
15.1	Display of compressor operating hours.....	43
16	CONFIGURATION.....	44
16.1	Setting the real date and time	44
16.2	Setting the configuration parameters	45
16.3	Restoring the factory settings.....	46
	Access to the procedure	46
	Restoring the configuration parameters	46
	Deleting programs	46
	Deleting favourites.....	47
	Deleting the compressor operating hours.....	47
17	USE OF THE USB PORT	48
17.1	Foreword.....	48
17.2	Upload and Download of the configuration parameters	48
17.3	Upload and Download of the programs	50
17.4	Download of the information relative to the HACCP Alarms	51
18	SIGNALS AND INDICATIONS	53
18.1	Signals	53
18.2	Indications.....	55
19	ALARMS.....	56
20	ERRORS.....	58
21	MAINTENANCE, CARE AND CLEANING	61
21.1	Cleaning Procedure.....	61
21.2	Parts and Service.....	62
22	TROUBLE SHOOTING CHART	63
23	WARRANTY.....	66
23.1	Two Years Parts & Labor Warranty.....	66
23.2	Warranty Coverage	66
23.3	Additional Four-Year Compressor Part Warranty.....	66
23.4	Warranty conditions for the supplied products	67
23.5	Exclusions from and conditions to warranty coverage	68
23.6	Report for the client.....	68

1 GENERAL INFORMATION

Congratulations on your purchase. Infrico Blast Chillers, through the use of well-engineered air flow design and powerful refrigeration systems, are able to pull heat away from food product extremely quickly, avoiding any bacteria proliferation and food deterioration. The main reasons for using Blast Chillers are food safety, saving costs and time and better-quality food.

This unit has been manufactured under strict quality controls and meets the high standards set by Infrico. Before shipping, each individual cabinet has been tested in order to assure a quality product. Furthermore, it has been produced with recyclable materials using an environmentally friendly process, making an active contribution to the preservation of our environment.

To get to know all the benefits of your new equipment, please read this instruction manual carefully before installing.



WARNING! Use this unit only for its intended purpose, as described in this manual.

2 SAFETY PRECAUTIONS

Failure to observe the recommendations made by the present manual will be at the entire responsibility of the user. The main safety regulations are as follows:

- This unit must be properly installed and located in accordance with this manual before it is used.
- This unit has been designed for professional use only and should only be operated by qualified personnel.
- This unit must only be used for the purposes for which it was designed: chilling and freezing food products.
- This unit must not be used for products such as chemicals, medicines or blood products.
- Do not touch the unit with moist or wet hands or feet.
- Never operate the unit while barefoot.
- Before performing cleaning or maintenance operations, disconnect the machine from the power supply.
- Do not store or use flammable products near the machine.



NOTE: We strongly recommend that any servicing be performed by a qualified technician.

3 SERIAL DATA PLATE

The serial data plate is a permanently affixed label which has important electrical and refrigeration data about your product, as well as the model and serial number. This label is located in the interior compartment on all standard models.

Serial Number →

 CTRA. CO-762 KM 2.5 LOS PIEDROS-LAS NAVAS 14900 LUCENA (SPAIN) TEL:00 34 957 51 30 68 MODEL UCR xxx SERIAL N°.  x xxxx xxxxx xxxxx DATE MFG. 01/25/2012		COMMERCIAL REFRIGERATOR CONFORMS TO UL STANDARD 471 AND NSF STD 7. CERTIFIED TO CAN/CSA STD C22.2 N° 120  				
REF. AMOUNT	REF. TYPE	LIGHTS	RECPT	COND. FANS	EVAP. FANS	COMPRESSOR
DESIGN PRESSURES LOW	HIGH					AMPS
						QTY
						PHASE
					60	HRZ
MINI BRANCH CIRCUIT CAPACITY						LRA
MAX OVERCURRENT PROTECTION AMPS						TOTAL CASE AMPS

4 RECEIVING AND INSPECTING THE EQUIPMENT

- All Infrico products are factory tested for performance and are free from defects when shipped.
- When your equipment arrives, you should carefully inspect the unit for damage during delivery.
- If damage is detected, you should save all the crating material and make note on the carrier's bill of lading describing the damage. A freight claim should be filled immediately.
- If damage is subsequently noted during or immediately after installation, contact our customer care service. Under no condition may a damaged unit be returned to Infrico without first obtaining written permission.



NOTE: Infrico is not responsible for damage incurred during shipment.

5 INSTALLATION

5.1 Location

This unit is intended for indoor use only.

Be sure the location chosen for your unit must be able to provide good air circulation for most efficient refrigeration.

Avoid locations near heat sources such as stoves, ovens, fryers, and also direct sunlight where temperatures can reach extreme values. Besides, do not select a location in an area where temperatures may

drop below 55°F or increase more than 90°F.

You should allow enough clearance between the unit and the side walls in order to make use of the stay open feature of doors at 120°. The doors must be able to open a minimum of 90° in order to make use of the maximum clear door width.

Furthermore, the floor at the final location must be strong enough to support the total weight of the cabinet plus the maximum product load. Also, it must be level and free of vibration. Reinforce the floor if necessary.

5.2 Uncrating

Blast Chiller cabinets are shipped on a wooden pallet in stretch wrapped material and a wood frame. First remove the plastic cover and then remove the screws on the wooden frame.

All packaging materials used are environmentally friendly and may be recycled or reused. Actively contribute to the protection of the environment by insisting on packaging recovery and removal methods that are environmentally friendly.



NOTE: Infrico does not recommend laying the unit down on its front, side or back. However, you must be certain to allow the unit to remain in an upright position afterwards for at least 24 hours before plugging it in so that the compressor oil and refrigerant may settle.

5.3 Ventilation

To assure maximum operating efficiency, the equipment should be located where a continuous air supply may circulate around the cabinet.

It is recommended that the cabinet be installed no closer than 3" on sides and rear; and 27" on the front of the unit.

Restricting the air supply will generate an excessive heat load on the condensing unit and adversely affect its operating efficiency. Do not at any time obstruct the grill area in the front of the cabinet in any way.



27" minimum clearance
on the front of the unit in reach-in models





NOTE: Any restriction of the proper air flow, total or partial, will avoid the warranty on the unit.

5.4 Leveling

It is extremely important that the cabinet is perfectly level for proper operation.

Reach-in models are supplied from factory with adjustable legs allowing an easy cleaning of the floor under the unit. Legs should be adjusted until the unit is stable and completely level. To adjust the legs, they may be turned by hand, clockwise or counterclockwise.

Roll-in & Roll-thru models do not need to be adjusted, just assure that the floor under the unit is completely level.



NOTE: If the unit must be placed on its back, make sure it stands upright for 24 hours before being powered up to assure the oil return to compressor.

Casters instead of legs are supplied as an optional accessory for all our models. Casters are factory installed.

5.5 Initial Cleaning Procedure



Before starting up, firstly remove the protective film and then clean the complete unit thoroughly. If any adhesive remains, eliminate it with alcohol. Washing with a mild soap and warm water solution is recommended for cleaning all the stainless-steel surfaces of your cabinet. Rinse thoroughly with clear water and dry with a clean, soft cloth.



NOTE: Never use abrasive or harsh cleaners, concentrated detergents, solvents or chemicals when cleaning the unit.

6 ELECTRICAL INSTRUCTIONS

The supply voltage should be checked before connection to assure that proper voltage for the cabinet wiring is available. To determine correct unit voltage, please refer to the serial data plate located on an inner wall of the unit. Verify that this information exactly matches the electrical characteristics at the installation location.



NOTE: Infrico requires that a sole use circuit be dedicated for the unit. Failure to do so voids warranty.





 **NOTE:** The unit is designed to operate with a voltage fluctuation of 5% of the voltage indicated on the cabinet serial data plate. Burnout of the compressor due to exceeding the high or low voltage limits will automatically void the factory warranty.

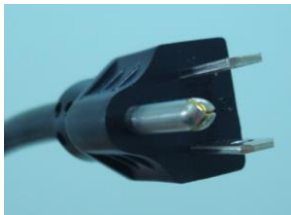
Units are provided with a U.L. approved power cord and plug which is factory installed:

- Model ABT3 is provided with a NEMA 5-15P cord and plug.
- Models ABT5 / 7 are provided with a NEMA 5-20P cord and plug.
- Models ABT10 / 14 are provided with a grounding type cord without a plug. A dedicated 115-230 / 60 / 1 volts grounded circuit should be provided by a certified electrician.
- Models ABT 20 C / P are provided with a grounding type cord without a plug. (The remote condensing unit requires a separate electrical connection of its own). A dedicated 115 / 60 / 1 volts grounded circuit should be provided by a certified electrician.

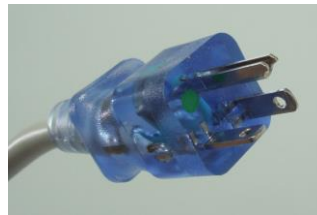
If you do not have the right outlet, have a certified electrician install the correct power source.



115 / 60 / 1 NEMA 5-15P



115 / 60 / 1 NEMA 5-20P



WARNING: Any alterations to this cord and plug could cause an electrical hazard and will void the factory warranty. Furthermore, never use an adapter plug.



WARNING: Infrico will not warranty any units that are connected to an extension cord.

7

STARTUP PROCEDURE

After the cabinet has been installed, levelled, cleaned and electrically connected in accordance with this manual, it is ready to operate.

Before using the appliance for the first time, it is recommended to run an empty cycle to precool the cabinet and check the correct operation.

7.1 Loading Product

- To achieve quickest chill times, product should be loaded into pans to a depth of no greater than 50 mm. Do not load the unit beyond the quantity recommended by the manufacturer.
- Ensure that there is sufficient clearance between trays to enable free air circulation. If the cabinet is not completely full, distribute the trays and foods evenly throughout the available space.
- For most accurate results, food probes should be used. These need to be properly placed in the centre of the thickest part of the product to insure an accurate temperature reading. Some products are not suitable for the use of food probes. In this case, these products should be chilled by time and the correct chill time should be established by the operator based upon product testing.
- The probe must be cleaned and sanitised before each new cycle to prevent inadvertent contamination.
- Some products should be covered when chilling. Products which require long chilling times may experience surface drying if they are not covered. Liquid products are highly recommended to be covered in order to prevent spillage. Finally, some foods are particularly vulnerable to drying (rice, pasta) so should always be covered.
- In case you have to cover the trays, avoid using insulating covers. The more the product is insulated, the more time is required for chilling or freezing.

8 DIGITAL CONTROL

8.1 Functions

Infrico Blast Chillers have two main functions: Blast Chilling and Shock Freezing.

Blast Chilling cycles can reduce the food temperature extremely quickly, avoiding any bacteria proliferation, which takes place when the food is at a temperature between 65°C (+150°F) and 10°C (+50°F) (danger zone).

Shock Freezing cycles can freeze food quickly enough to prevent ice crystals from forming and keeping all the organoleptic qualities of the food.

The working temperatures in chilling / freezing cycles are:

	Blast Chilling	Shock Freezing
Initial Product Temperature	90°C (194°F)	90°C (194°F)
Final Product Temperature	3°C (37°F)	-18°C (0°F)
Duration	90 min	240 min

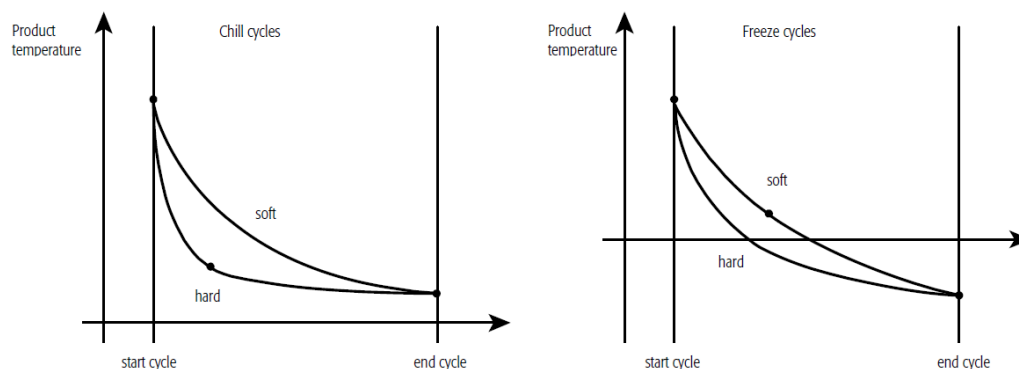
Chilling cycles may be preset by time or temperature.

- The use of the chilling mode by **time** means that the product will be constantly chilled until the set chill time, as determined by the user, has elapsed. In this case, the cycle is controlled by the room temperature probe.
- The use of the chilling mode by **temperature** means that the product will be constantly chilled until the food core probe temperature reaches the preset target temperature.

Chilling / Freezing cycles may be preset as “soft” or “hard” and the operation mode is different depending on whether it refers to a chilling or a freezing cycle.

Soft mode is designed to gently chill delicate products ensuring all their quality, and **Hard** mode is more suitable for denser products with a higher fat content or higher thickness, ensuring the food stays in prime quality.

- In **Blast Chilling Soft Mode**, blast chiller pulls the food down from start temperature to set point (approximately 0°C (32°F)) during the complete duration of the cycle.
- In **Blast Chilling Hard Mode**, blast chiller works with two different temperature set points, one lower - 20°C (-4°F) used until the product core temperature reaches the set value or a preset time elapses, and a second set point which is higher than 0°C (32°F), and it is used until the cycle ends.
- In **Shock Freezing Soft Mode**, blast chiller works with two different temperature set points, one higher 0°C (32°F) used until the product core temperature reaches the set value or a preset time elapses, and a second set point which is lower and used until the cycle ends.
- In **Shock Freezing Hard Mode**, blast chiller pulls the food down from start temperature to set point (approximately -35°C (-30°F)) during the complete duration of the cycle.



The device can manage the following operating cycles:

- Temperature-controlled blast chilling and storage
- Temperature-controlled hard blast chilling and storage
- Time-controlled blast chilling and storage

- The end of a cycle is signalled by an audible beep.

9.1 Foreword

- if a temperature-controlled blast chilling or deep-freezing operation was in progress, these will be started again from the beginning
- if a timed-controlled blast chilling or deep-freezing operation was in progress, these will be started again from the moment the power supply was cut-off
- if storage was in progress, this will be re-proposed.

Operate as follows:

-
- The diagram illustrates the EVCO control panel. At the top center is the 'EVCO' logo. Below it is a large, dark rectangular display screen. To the left of the screen are three circular buttons labeled '12V', '12V', and '12V' from top to bottom. To the right of the screen are three circular buttons labeled '12V', '12V', and '12V' from top to bottom. Below the screen, there is a small square button with a lock icon. At the bottom of the panel are five circular buttons with icons: a power button (circle with a vertical line), a 'MENU' button, a home button (house icon), an 'ESC' button, and a circular arrow button (refresh/reset).

-
- The diagram illustrates the EVCO control panel. At the top, the brand name "EVCO" is displayed. Below it is a large black rectangular touch screen. To the left of the screen, there are three circular buttons labeled (1), (2), and (3) from top to bottom. A hand icon is shown pressing button (1). To the right of the screen, there are three circular buttons labeled (4), (5), and (6) from top to bottom. A hand icon is shown pressing button (4). Below the screen, there are four circular buttons: a power button (labeled (1) with a power symbol), a menu button (labeled (2) with a "MENU" text), a home button (labeled (3) with a house icon), and an ESC button (labeled (4) with "ESC" text). To the right of these buttons is a circular button with a refresh/clock icon.

-

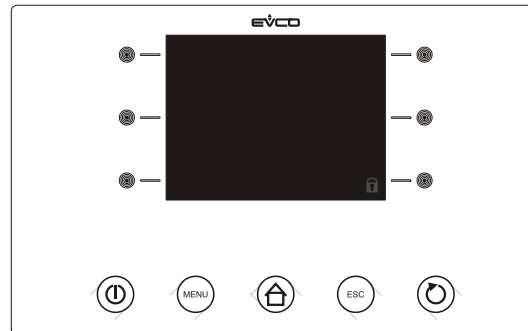
9.3 Switching the device on/off

Operate as follows:

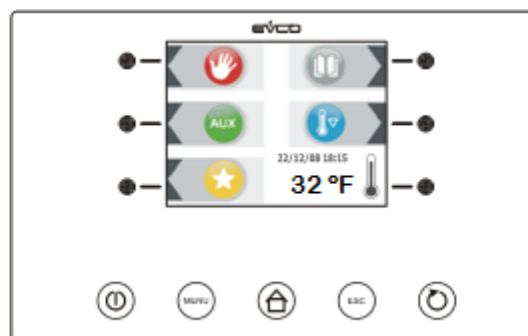
1. Make sure that the keyboard is not locked, and that no procedure is in progress.
2. Press and release the ON/STAND-BY key.

9.4 The display

The display is off during the "off" status and during the "stand-by" status.

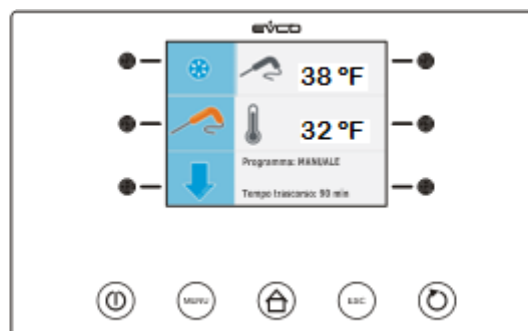


During the "on" status, the device will display the real day and time and the temperature of the cabinet.



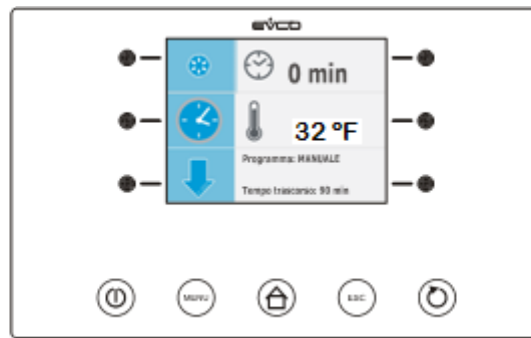
During the "run" state the device will display:

- if a temperature-controlled blast chilling or deep-freezing operation is in progress, the temperature detected by the needle probe, the temperature of the cabinet, the name of the program (if envisioned), and the time passed from the start of blast chilling or deep freezing.



- if a time-controlled blast chilling or deep-freezing operation is in progress, the residual duration of the blast chilling or deep freezing, the temperature of the cabinet, the name of the program (if envisioned),

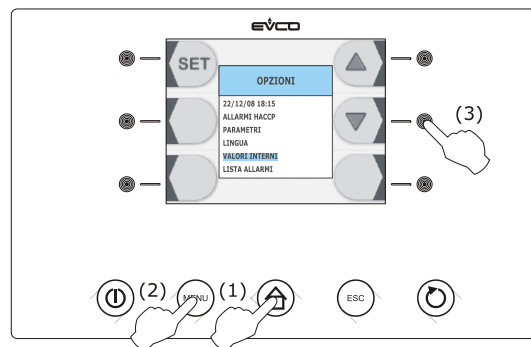
and the time passed from the start of blast chilling or deep freezing.



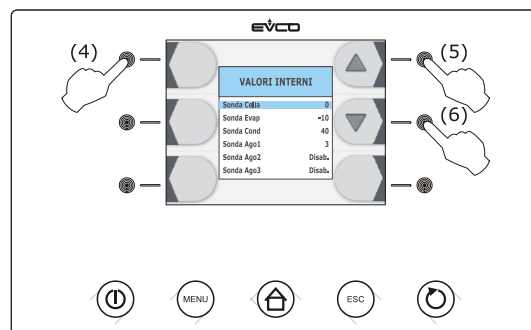
9.5 Display of inputs and outputs status

Operate as follows:

1. Make sure that the instrument is in the “on” status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key repeatedly (3) in order to select the “**INTERNAL VALUES**”.



4. Press and release the  key (4) and then repeatedly press and release the  key (5) or the  key (6) to select the input or the output.



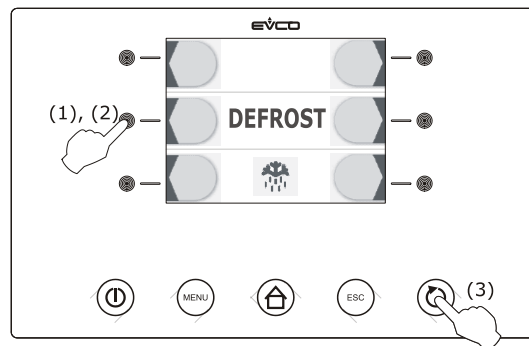
Operate as follows to exit the procedure:

- Press and release the ESCAPE key or do not operate for 60 s.

9.6 Defrosting activation in manual mode

Operate as follows:

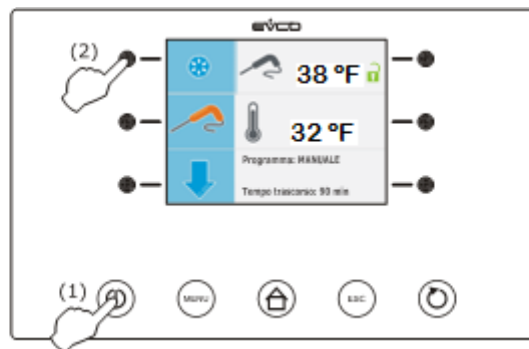
1. Make sure the device is in the "on" status, that pre-cooling or storage cycle is in progress.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the START / STOP (3) key.



9.7 Locking/unlocking of the keyboard

Operate as follows to lock the keyboard:

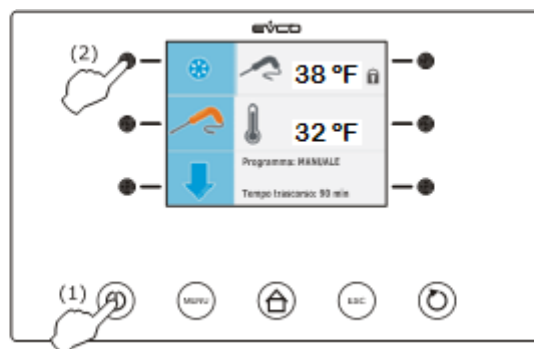
1. Make sure no procedures are in progress.
2. Press and release the ON/STAND-BY key (1) and then press the highest interactive key on the left (2).



After 60 s, the keyboard will automatically lock.

Operate as follows to unlock the keyboard:

1. Make sure no procedures are in progress
2. Press and release the ON/STAND-BY key (1) and then press the highest interactive key on the left (2).



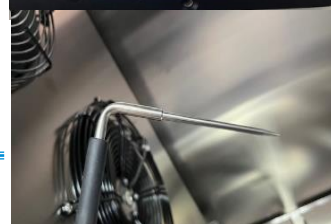
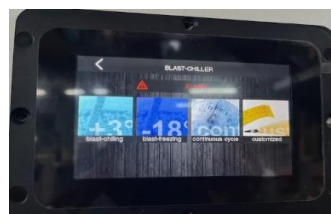
9.8 Silencing the buzzer

Operate as follows:

1. Make sure no procedures are in progress
2. Press and release the key.

10 INSTRUCTIONS TO BE FOLLOWED FOR THE USE OF THE CHILLER

1. **PRE-COOLING.** It is important to ensure that your Blast Chiller is ready to cool down product effectively. Starting a Precool Cycle will ensure that the cabin will be cold and ready to blast chill or freeze. It is highly recommended to perform a pre-cooling **before performing a new blast chilling cycle.**
2. To start a blast chill cycle, touch the Pre-Cooling tyle on the main screen and choose the temperature you want to bring you product down to. If you are blast chilling, select a positive temp. If you are blast freezing, select a negative temp for best results. Press the green check mark to start.
3. **BLAST CHILLING / BLAST FREEZING.** To blast chill or freeze select the first tyle in the main screen of the display. Once at the Blast Chill / Blast Freeze screen, choose the type of cycle you want to do. Blast chilling will bring food products down to 37F within 90 minutes and Blast Freezing will bring down food products down to 0F within 240 minutes.
4. After choosing the desired cycle, select the end temperature for your product and insert the product probe inside of the biggest piece of product (**it is very important to ensure that the food probe is inside the product, otherwise, the unit will display an error**). Once all the steps have been made, click on the green checkmark to start the cycle.



When using the needle probe, **it must be heated** before removing it at the end of the cycle. In the "SPECIALS" section **you can find** a cycle called "Needle prob.heat", **you have to click on it** and **then** press start.



DEFROSTING. The Blast Chiller must be defrosted every 3 to 4 cycles. To run a defrost Cycle, touch the special tile on the main screen and select SPECIAL/ DEFROSTING. Ensure that the door is left open when doing defrost to maximize the efficiency of the defrost cycle.

CONTINUOUS CYCLE. It is not recommended to run the Blast Chiller on continuous mode for an extended amount of time. This can cause an excess of condensation and ice.

If you need more information about this microcontroller, visit:

<https://youtu.be/1kTkCA1Fra8?si=7dRUoWwDO6tkCzT>

11 OPERATION

11.1 Foreword

The device can manage the following operating cycles:

- temperature-controlled blast chilling and storage
- temperature-controlled hard blast chilling and storage
- time-controlled blast chilling and storage
- time-controlled hard blast chilling and storage
- continuous blast chilling
- temperature-controlled deep freezing and storage
- temperature-controlled soft deep freezing and storage
- time-controlled deep freezing and storage
- time-controlled soft deep freezing and storage
- continuous deep freezing

For further information, see the next paragraphs.

Every operating cycle can be preceded by pre-cooling; see paragraph "Pre-cooling start-up".

The temperature-controlled cycles are preceded by a test to verify the correct insertion of the needle probe; see paragraph "Test for verification of the correct insertion of the needle probe".

If the needle probe is not enabled, the temperature-controlled cycles will be started with time-control.

The following functions can also be used:

- switching on sterilisation cycle

- heating the needle probe.

For further information, see the next paragraphs.

Foreword regarding needle probe

On conclusion of the test, the device will operate as indicated:

- the sensor that has detected the lowest temperature is then used as the reference temperature for heating the needle probe.
- the sensor that has detected the highest temperature is then used as the reference for the temperature-controlled cycles
- the sensors for which the test is not completed successfully are not used successively.

11.2 Temperature-controlled blast chilling and storage

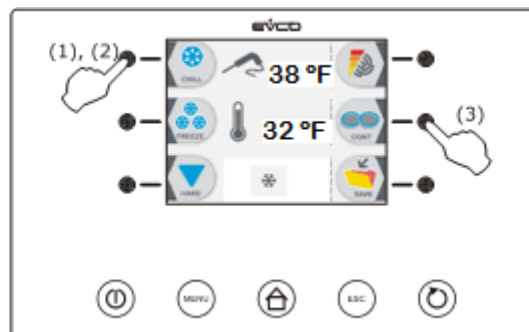
The temperature-controlled blast chilling and storage cycle is divided into the following two phases:

- blast chilling
- storage.

On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2), and then press and release the  key (3). the device will display the blast chilling end temperature and the work set point during blast chilling.



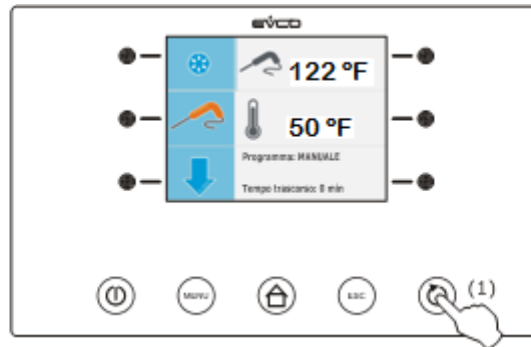
- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the blast chilling end temperature and the work set point during blast chilling.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started.
 - 5.1 If the test is completed successfully, the cycle will be started.

The maximum blast chilling duration count is started on condition that the temperature detected

by the needle probe is below that established.

- 5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed control.

During blast chilling, the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of blast chilling.



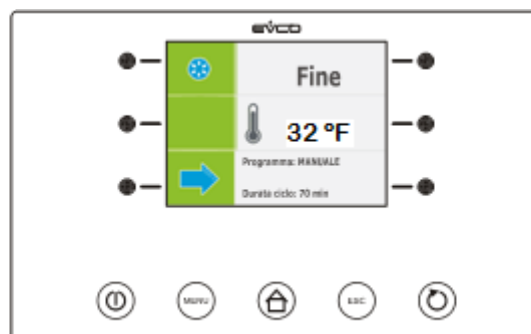
Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key during 3 s.

If the temperature detected by the needle probe reaches the blast chilling end temperature within the maximum blast chilling duration, it means that blast chilling has been completed successfully, the device will automatically pass to storage and the buzzer will be activated for the period of time established.

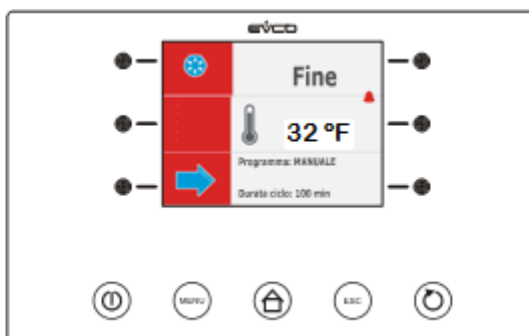
Press and release a key to silence the buzzer.

During storage, the device displays the temperature of the cabinet, the program name (if envisioned) and the time taken to complete blast chilling successfully.



If the temperature detected by the needle probe does not reach the blast chilling end temperature within the maximum blast chilling duration, blast chilling will not be completed successfully but will continue and the buzzer will be activated.

Press and release a key to restore normal display and to silence the buzzer.



When the temperature detected by the needle probe reaches the blast chilling end temperature, the device automatically passes to storage in the same way as illustrated previously.

11.3 Temperature-controlled hard chilling and storage

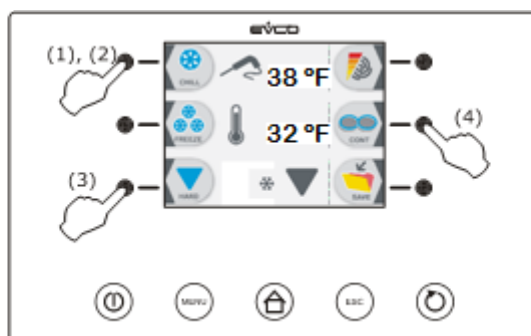
The temperature-controlled hard blast chilling and storage cycle is divided into the following three phases:

- blast chilling hard phase
- blast chilling
- storage.

On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) and finally press and release the  key (4): the device will display the blast chilling end temperature and the work set point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the blast chilling end temperature and the work set point during blast chilling.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will

5.1 If the test is completed successfully, the cycle will be started.

5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed control.

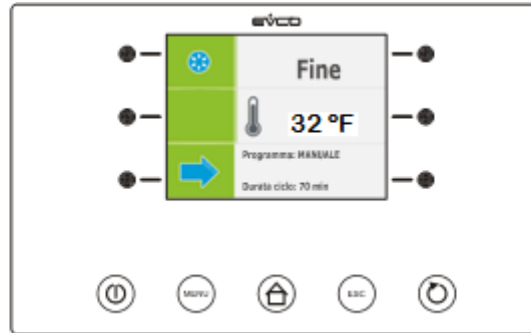
6. Press and hold the START/STOP key 3 s.

During blast chilling, the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of blast chilling.

If the temperature detected by the needle probe reaches the blast chilling end temperature within the maximum blast chilling duration, it means that blast chilling has been completed successfully, the device will automatically pass to storage and the buzzer will be activated for the period of time established.

Press and release a key to silence the buzzer.

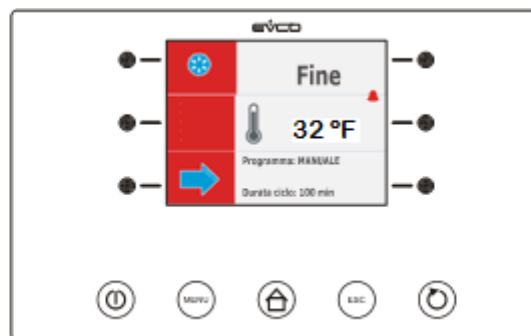
During storage, the device displays the temperature of the cabinet, the program name (if envisioned) and the time taken to complete blast chilling successfully.



If the temperature detected by the needle probe does not reach the blast chilling end temperature within the maximum blast chilling duration, blast chilling will not be completed successfully but will continue and the buzzer will be activated.

Press and release a key to restore normal display and to silence the buzzer.

When the temperature detected by the needle probe reaches the blast chilling end temperature, the device automatically passes to storage in the same way as illustrated previously.



11.4 Time-controlled blast chilling and storage

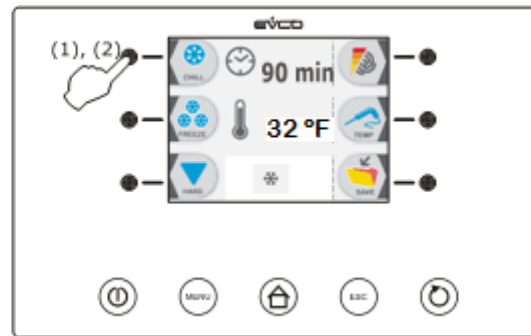
The time-controlled blast chilling and storage cycle is divided into the following two phases:

- blast chilling
- storage.

On conclusion of a phase, the device passes automatically to the next.

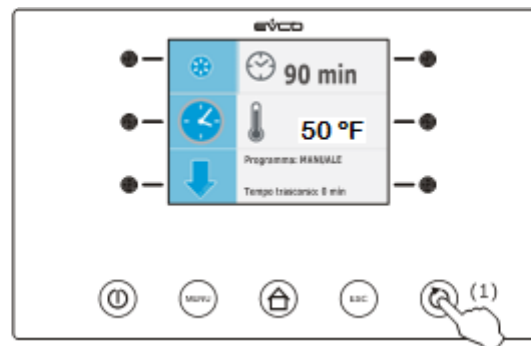
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1) and then press and release the  key (2): the device will display the blast chilling duration and the work set point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the ▲ key or the ▼ key to select the blast chilling duration and the work set point during blast chilling.
- 4.2 Press and release the + key or the - key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the cycle will be started.

During blast chilling, the device displays the residual blast chilling time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of blast chilling.



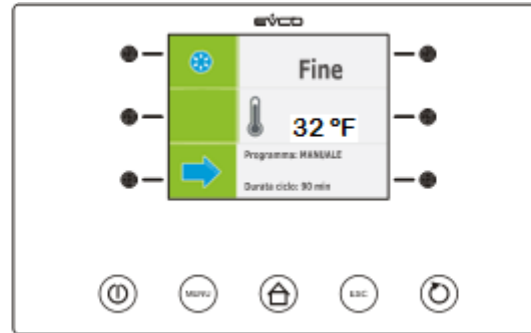
Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

On expiry of the blast chilling duration, the device automatically passes to storage mode and the buzzer is activated for the time period established.

Press and release a key to silence the buzzer.

During storage, the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of blast chilling.



11.5 Time-controlled hard blast chilling and storage

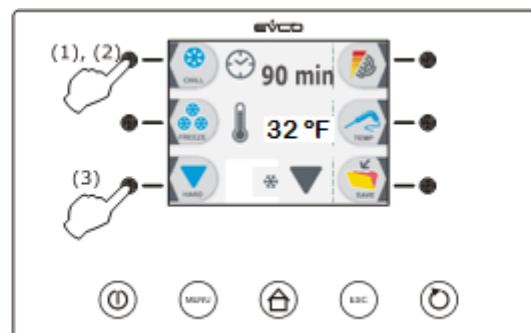
The time-controlled hard blast chilling and storage cycle is divided into the following three phases:

- blast chilling hard phase
- blast chilling
- storage.

On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3). the device will display the blast chilling duration and the work set point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the blast chilling duration and the work set point during blast chilling.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the cycle will be started.

During hard blast chilling, the device displays the residual blast chilling time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of blast chilling.



6. Press and hold the START/STOP key 3 s.

On expiry of the hard blast chilling phase duration, the device automatically passes to blast chilling.

During blast chilling, the device displays the residual blast chilling time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of blast chilling.

On expiry of the blast chilling duration, the device automatically passes to storage mode and the buzzer is activated for the time period established.

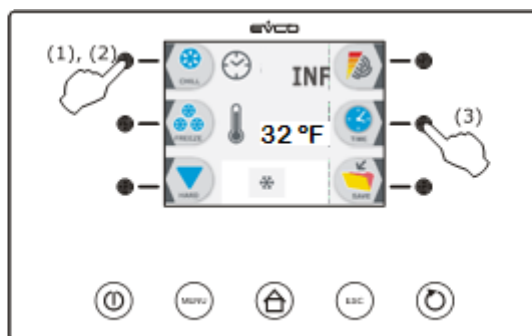
Press and release a key to silence the buzzer.

During storage, the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of blast chilling.

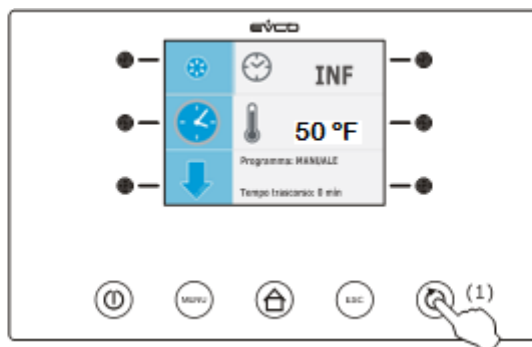


Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) twice. The device will display the work set point during blast chilling.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the work set point during blast chilling.
 - 4.2 Press and release the  key or the  key to modify this value and then the ESCAPE key to memorise it.
 5. Press and release the START/STOP key (1): the cycle will be started.
- During blast chilling, the device displays the temperature of the cabinet, the program name (if envisioned) and the time passed since the start of blast chilling.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

11.7 Temperature-controlled deep freezing and storage

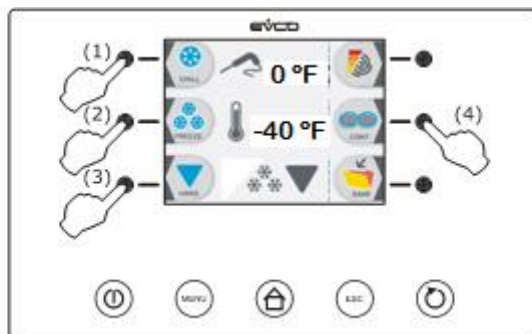
The temperature-controlled deep freezing and storage cycle is divided into the following two phases:

- deep freezing
- storage.

On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

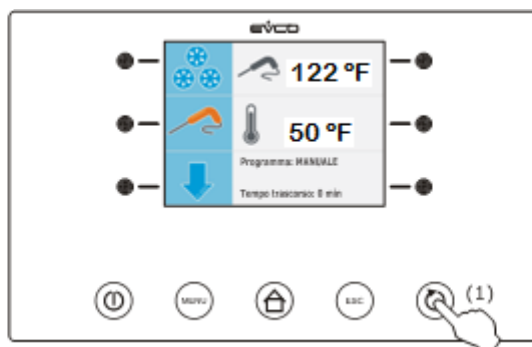
1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) and finally press and release the  key (4): the device will display the deep-freezing end temperature and the work set-point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the ▲ key or the ▼ key to select the deep-freezing end temperature and the work set-point during deep freezing.
- 4.2 Press and release the + key or the - key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started
 - 5.1 If the test is completed successfully, the cycle will be started.

The maximum deep freezing duration count is started on condition that the temperature detected by the needle probe is below that established.
 - 5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed control.

During deep freezing, the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of deep freezing.



Operate as indicated to stop the cycle:

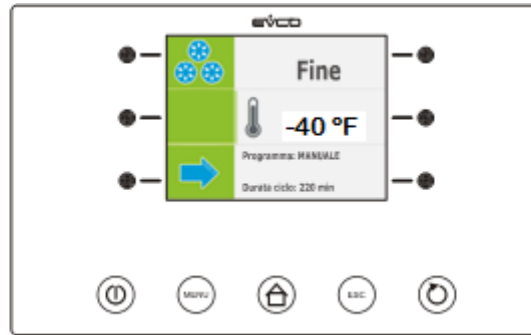
6. Press and hold the START/STOP key 3 s.

If the temperature detected by the needle probe reaches the deep-freezing end temperature within the maximum deep-freezing duration, it means that deep freezing has been completed successfully, the device will automatically pass to storage and the buzzer will be activated for the period of time established.

Press and release a key to silence the buzzer.

During storage, the device displays the temperature of the cabinet, the program name (if envisioned) and

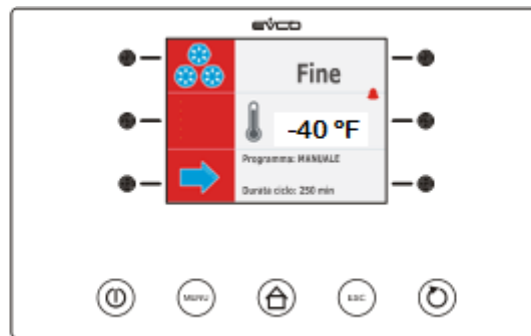
the time taken to complete deep freezing successfully.



If the temperature detected by the needle probe does not reach the deep-freezing end temperature within the maximum deep-freezing duration, deep freezing will not be completed successfully but will continue and the buzzer will be activated.

Press and release a key to restore normal display and to silence the buzzer.

When the temperature detected by the needle probe reaches the deep-freezing end temperature, the device automatically passes to storage in the same way as illustrated previously.



11.8 Temperature-controlled soft deep freezing and storage

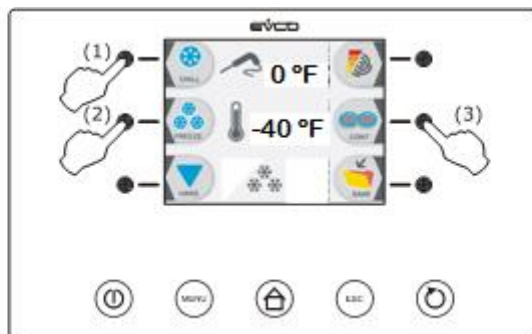
The temperature-controlled soft deep freezing and storage cycle is divided into the following three phases:

- deep freezing soft phase
- deep freezing
- storage.

On conclusion of a phase, the device passes automatically to the next.

Operate as indicated to start the cycle:

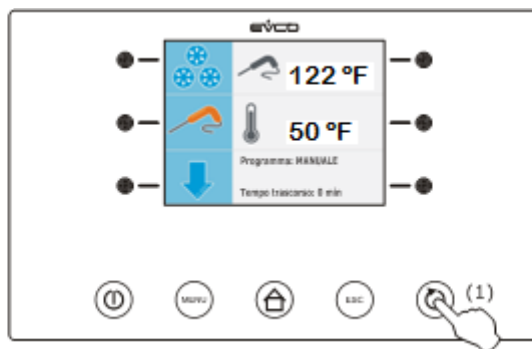
1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3). The device will display the deep-freezing end temperature and the work set-point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the ▲ key or the ▼ key to select the deep-freezing end temperature and the work set-point during deep freezing.
- 4.2 Press and release the + key or the - key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started
 - 5.1 If the test is completed successfully, the cycle will be started.

The maximum deep freezing duration count is started on condition that the temperature detected by the needle probe is below that established.
 - 5.2 If the test is not completed successfully, the buzzer will be activated for 5 s every 60 s and the cycle will be started with timed control.

During the soft deep-freezing phase, the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of deep freezing.



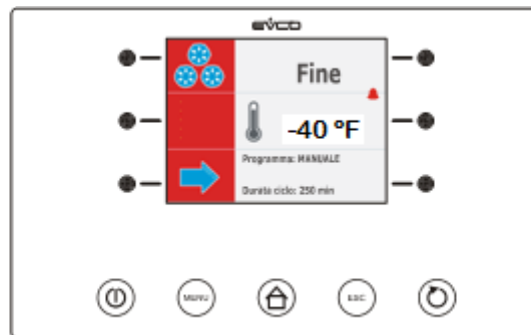
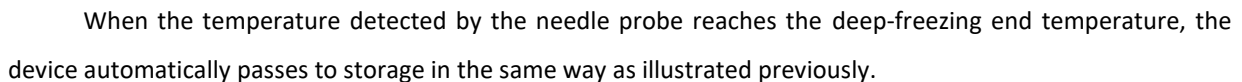
Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

When the temperature detected by the needle probe reaches the end temperature of the soft deep-freezing phase, the device automatically passes to deep freezing.

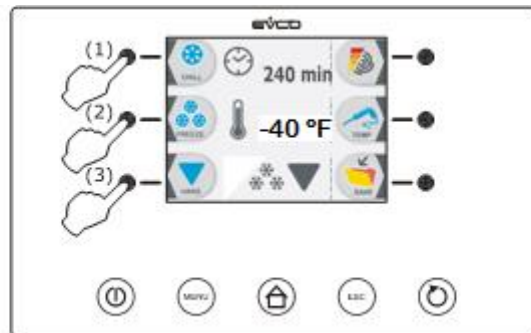
During deep freezing, the device displays the temperature detected by the needle probe, the cabinet temperature, the program name (if envisioned) and the time passed since the start of deep freezing.

During storage, the device displays the temperature of the cabinet, the program name (if envisioned) and the time taken to complete deep freezing successfully.



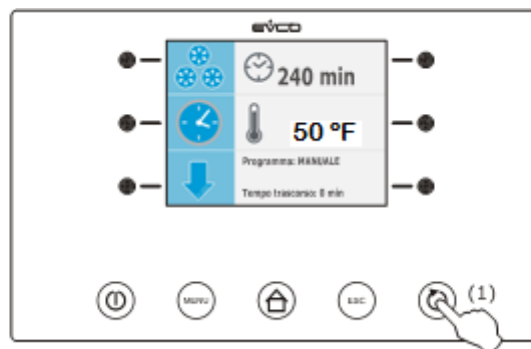
1. Make sure the device is in the "on" status.

2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3). The device will display the duration of deep freezing and the work set point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the deep-freezing duration and the work set-point during deep freezing.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the cycle will be started.

During blast chilling, the device displays the residual deep-freezing time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of deep freezing.



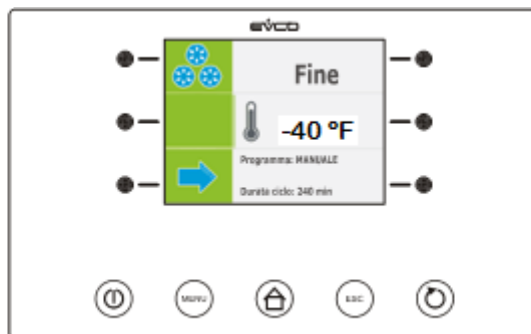
Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

On expiry of the deep-freezing duration, the device automatically passes to storage mode and the buzzer is activated for the time period established.

Press and release a key to silence the buzzer.

During deep freezing, the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of deep freezing.



11.10 Time-controlled soft deep freezing and storage

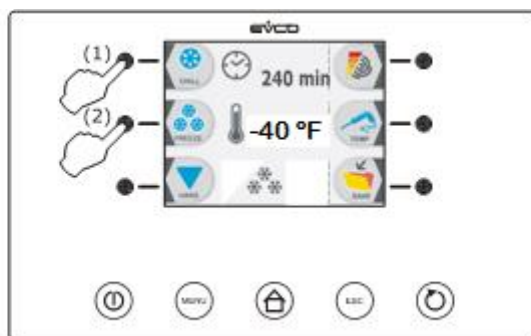
The time-controlled soft deep freezing and storage cycle is divided into the following three phases:

- deep freezing soft phase
- deep freezing
- storage.

On conclusion of a phase, the device passes automatically to the next.

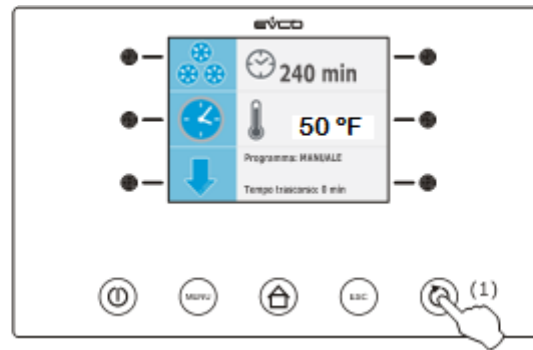
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), and then press and release the  key (2): the device will display the duration of deep freezing and the work set point during deep-freezing.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the deep-freezing duration and the work set point during deep freezing.
- 4.2 Press and release the  key or the  key to modify these values and then the ESCAPE key to memorise them.
5. Press and release the START/STOP key (1): the cycle will be started.

During soft deep-freezing phase, the device displays the residual deep-freezing time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of deep freezing.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

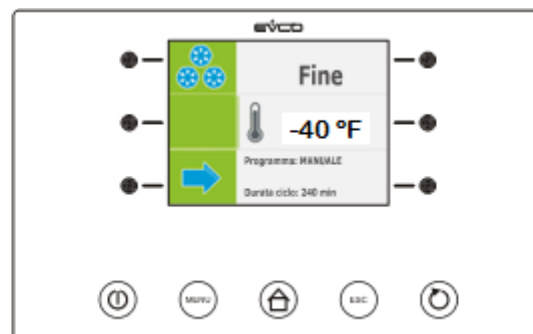
On expiry of the soft deep freezing phase duration, the device automatically passes to deep freezing.

During deep freezing, the device displays the residual deep-freezing time, the temperature of the cabinet, the name of the program (if envisioned) and the time passed from the start of deep freezing.

On expiry of the deep-freezing duration, the device automatically passes to storage mode and the buzzer is activated for the time period established.

Press and release a key to silence the buzzer.

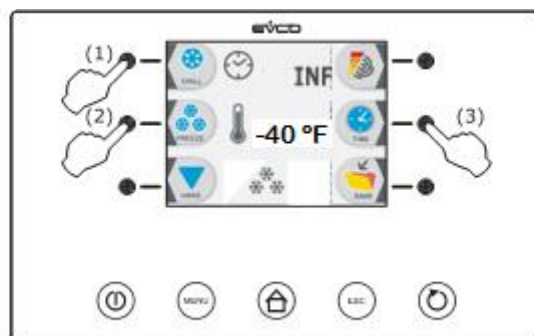
During storage, the device displays the temperature of the cabinet, the program name (if envisioned) and the duration of deep freezing.



11.11 Continuous deep freezing

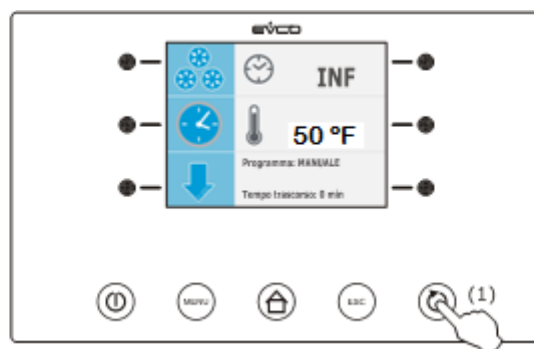
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the  key (3) twice. The device will display the work set point during deep freezing.



- 4.1 Press and release the MENU key and then press and release the  key or the  key to select the work set point during deep freezing.
- 4.2 Press and release the  key or the  key to modify this value and then the ESCAPE key to memorise it.
5. Press and release the START/STOP key (1): the cycle will be started.

During deep freezing the device displays the temperature of the cabinet, the program name (if envisioned) and the time passed since the start of deep freezing.



Operate as indicated to stop the cycle:

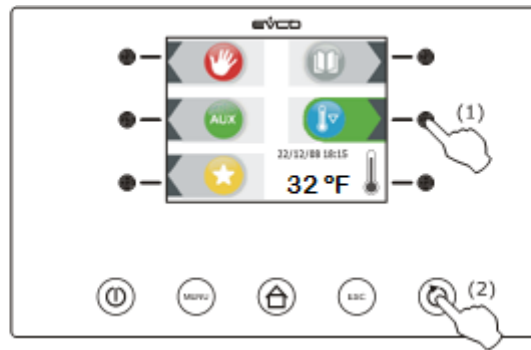
6. Press and hold the START/STOP key 3 s.

11.12 Pre-cooling start-up

Every operating cycle can be preceded by pre-cooling.

Operate as indicated to start pre-cooling:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1) and then press and release the START/STOP key (2).



Operate as indicated to cut-off pre-cooling:

4. Press and hold the START/STOP key 3 s.

Parameter r120 establishes the work set point during pre-cooling.

When the cabinet temperature reaches that established, pre-cooling continues, and the buzzer is activated for 2 s.

11.13 Management of the test regarding correct insertion of the needle probe

If the needle probe is enabled; the temperature-controlled cycles are preceded by a test on two phases for the verification of the correct insertion of the needle probe.

The second phase is only performed if the first is not completed successfully.

The first phase is completed successfully if the "temperature detected by the needle probe - cabinet temperature" difference is greater than the value established in at least 3 controls out of 5 (the controls are performed at 10 s intervals, consider the difference without sign).

The second phase is completed successfully if the "temperature detected by the needle probe - cabinet temperature" difference is 1°C/1°F higher with respect to the previous control in at least 6 controls out of 8 (the controls are performed at time intervals corresponding to 1/8 of the time established with parameter r18; consider the difference without sign).

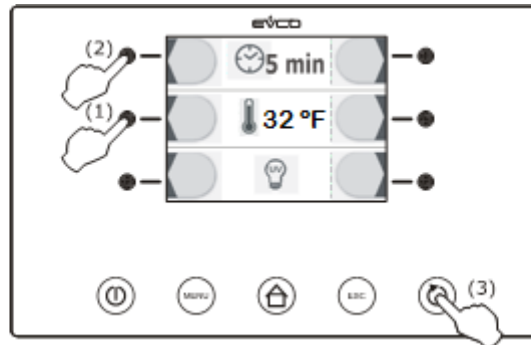
If the test is completed successfully, the cycle will be started; if the test is not completed successfully, the buzzer will be activated for 5 s every 10 s and the cycle will be started with timed control.

To start the temperature-controlled cycle, press the  key or the  key. After 1 min from the signal that the test has not been completed successfully without having operated, the cycle is started with time control.

11.14 Switching for sterilisation cycle

Operate as follows:

1. Make sure that parameter u11 is set at 2.
2. Make sure the device is in the "on" status and that the door is closed, i.e. the door micro switch is not active.
3. Make sure that the keyboard is not locked, and that no procedure is in progress.
4. Press and release the  key (1), press and release the  key (2) and then press and release the START/STOP key (3). The device will display the residual time of the sterilisator switch-on duration and the cabinet temperature.



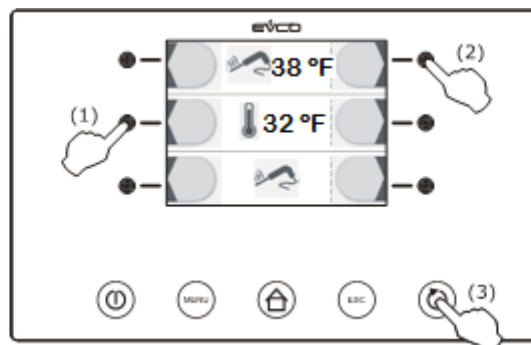
The sterilisator is switched on for the time period established; opening the door i.e. the activation of the door micro switch causes the light to switch off.

If the sterilisator is on, it will not be allowed to select or start any operating cycle.

11.15 Heating the needle probe

Operate as follows:

1. Make sure the device is in the "on" status or storage is in progress and that the door is open, i.e. the door micro switch is active.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1), press and release the  key (2) and then press and release the START/STOP key (3). The device will display the temperature detected by the needle probe and the cabinet temperature.



Output K6 is activated at maximum for the time established or until the temperature detected by the

needle probe reaches that established, closing the door, i.e. the deactivation of the door micro switch input causes heating to be cut-off.

The buzzer is activated for 2 s on conclusion of heating.

11.16 Fish Sanification

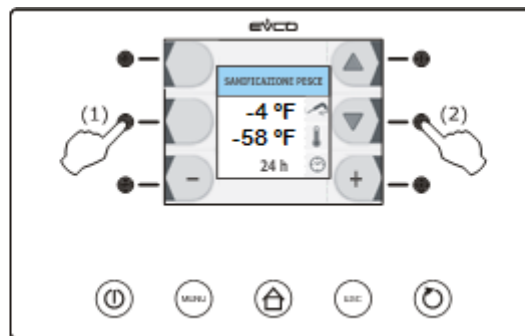
The fish sanification cycle is divided into the following three phases:

- blast chilling
- maintenance
- storage.

On conclusion of a phase, the device passes automatically to the next.

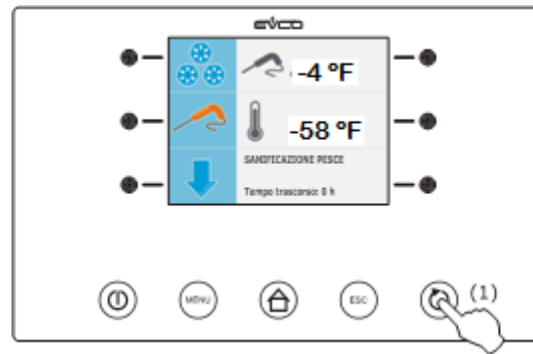
Operate as indicated to start the cycle:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key (1) and then press and release the  key (2): the device will display the blast chilling end temperature, the work set point during blast chilling and the duration of maintenance.



- 4.1 Press and release the  key or the  key to select these values and press and release the  key or the  key to modify them.
5. Press and release the START/STOP key (1): the test to verify the correct insertion of the needle probe will be started.
 - 5.1 If the test is completed successfully, the cycle will be started.
 - 5.2 If the test is not completed successfully, the buzzer will be activated, the device will display the indication "**ALARM San**" and the cycle will be stopped.
Press and release a key to silence the buzzer.

During blast chilling, the device displays the temperature detected by the needle probe, the cabinet temperature and the time passed since the start of blast chilling.



Operate as indicated to stop the cycle:

6. Press and hold the START/STOP key 3 s.

When the temperature detected by the needle probe reaches the blast chilling end temperature, it means that blast chilling has been completed and the device will automatically pass to maintenance.

During maintenance the blast chilling end temperature also establishes the work set point during maintenance.

On expiry of the duration of maintenance the device automatically passes to storage.

12 “PROGRAMS” FUNCTION

12.1 Foreword

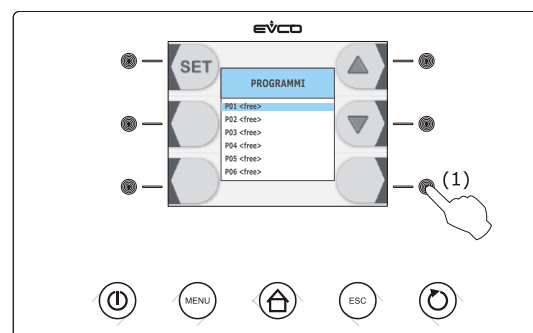
The programs function can be used to memorise some settings in a program and start an operating cycle with the settings it has memorised.

Up to 99 programs can be memorised.

12.2 Memorisation of a program

Operate as follows:

1. Make sure that the keyboard is not locked, and that no procedure is in progress.
2. Press and release the  key (1) before starting an operating cycle or during storage: the device will display the number of the first program available.

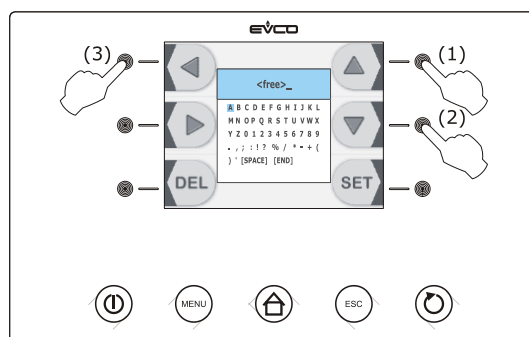


- 2.1 If the  key is pressed and released before starting an operation cycle, the device will memorise the

- type of operating cycle selected
- blast chilling/deep freezing intensity selected
- if the key is pressed before starting-up a temperature-controlled cycle:
 - the work set-point during blast chilling and the blast chilling end temperature
- if the key is pressed before starting-up a time-controlled cycle:
 - the work set-point during blast chilling and the blast chilling duration.

- type of operating cycle in progress
- the duration of blast chilling or deep freezing, i.e. the time taken to successfully complete blast chilling or deep freezing.
- blast chilling/deep freezing intensity selected before starting an operating cycle.
- the work set-point selected before starting up an operating cycle.

- Press and release the key (1) or the key (2) to select the program number and then press and release the key (3) in order to associate a name.



- Press and release the key, the key, the key or the key to select “**[END]**” and then press and release the key.

6. Press and release the ESCAPE key or do not operate for 60 s.

12.3 Execution of a program

Operate as follows:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key, press and release the  key or the  key to select the program and then press and release the START/STOP key to start it: the operating cycle will be started with the settings memorised in the program.

13 “FAVOURITES” FUNCTION

13.1 Foreword

The favourite functions can be used to execute a recently started program.
It is possible to start up to 99 recently started programs.

13.2 Execution of a program

Operate as follows:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the  key, press and release the  key or the  key to select the program and then press and release the START/STOP key to start it: the operating cycle will be started with the settings memorised in the program.

14 “HACCP” FUNCTION

14.1 Foreword

Using the “HACCP” function, it is possible to memorise up to 9 events for each of the 3 HACCP alarms, after which the most recent event overwrites the oldest.

The following table illustrates the information relative to the HACCP alarms, which the device can memorise.

Alarm	Code	Critical value	Date and time of occurrence	Duration
temperature-controlled blast chilling or deep freezing not concluded within maximum duration alarm	tiM	the maximum temperature detected by the needle probe after temperature-controlled blast chilling of deep freezing not concluded within maximum duration	yes	from 1 min to 99 h and 59 min, partial if the alarm is in progress
maximum temperature during storage alarm	AH	maximum cabinet temperature during the alarm	yes	from 1 min to 99 h and 59 min, partial if the alarm is in progress
power-cut during storage alarm	PF	the cabinet temperature at restore f power supply	yes	from 1 min to 99 h and 59 min

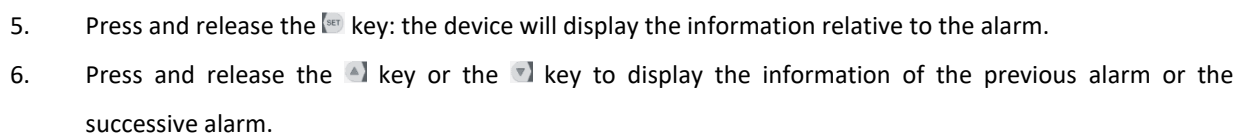
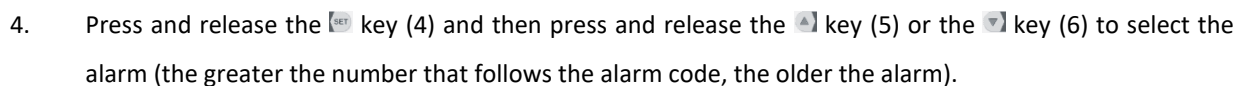
To prevent repeated memorisation of power cut alarms (“**PF**” code), make sure that the device is in the "stand-by" or "on" status before disconnecting the power supply.

If the duration of the power cut alarm (“**PF**” code) is such to cause a clock error (“**rtc**” code), the device does not memorise the date or time the alarm occurred or its duration.

14.2 Display of information relative to the HACCP Alarms

Operate as follows:

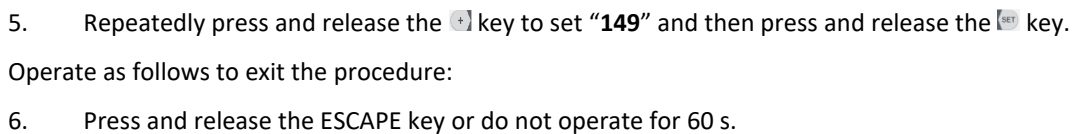
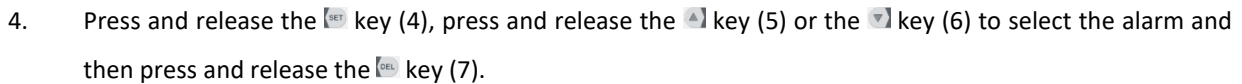
1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key (3) in order to select the “**HACCP ALARMS**”.



- Press and release the ESCAPE key or do not operate for 60 s.

Operate as follows:

1. Make sure the device is in the "on" status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key (3) in order to select the **"HACCP ALARMS"**.



15.1 Display of compressor operating hours

1. Make sure that the instrument is in the “on” status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key repeatedly (3) in order to select the “**INTERNAL VALUES**”.

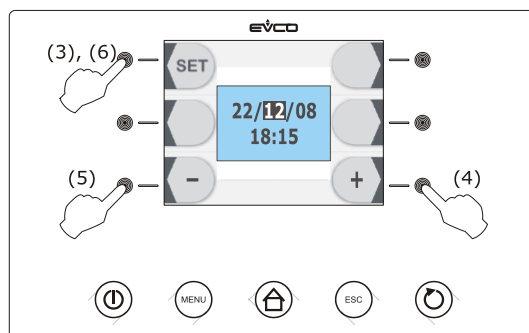


-
- The diagram illustrates the EVCO remote control interface. At the top, the EVCO logo is displayed. Below it, a central screen shows the 'VALORI INTERNI' (Internal Values) menu. The menu lists several parameters and their current status:
- | | |
|----------------|-----|
| DO Ven. Cond. | OFF |
| DO Risc. Porta | ON |
| DO Risc. Ago | OFF |
| DO Luce/UV | OFF |
| DO PDown/Alarm | OFF |
| Off | On |
- Surrounding the central screen are eight buttons, each with a hand icon and a number indicating its function:
- (4) Top-left button: A hand icon pointing to the button.
 - (5) Top-right button: A hand icon pointing to the button.
 - (6) Middle-right button: A hand icon pointing to the button.
 - Bottom row of buttons: Four buttons with icons representing power (a circle with a vertical line), menu (a circle with a horizontal line), home (a house icon), and a circular arrow (refresh/reset).

To delete the compressor operating hours.

16.1 Setting the real date and time

- Revision: 04 Ref.: MANU_BLAST CHILLERS 04/19/2016



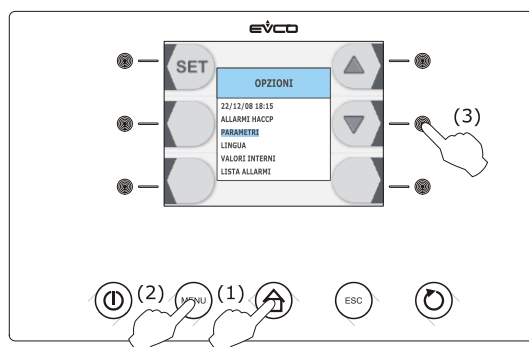
Operate as follows to exit the procedure:

- Press and release the ESCAPE key or do not operate for 60 s.

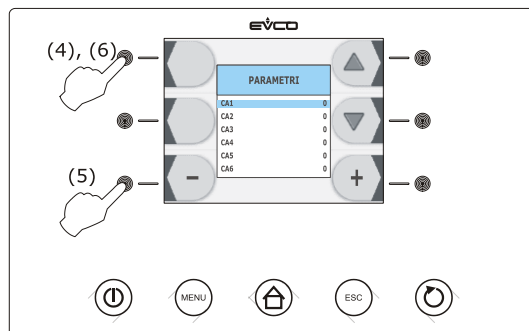
16.2 Setting the configuration parameters

Operate as follows:

1. Make sure that the instrument is in the “on” status.
2. Make sure that the keyboard is not locked, and that no procedure is in progress.
3. Press and release the HOME key (1), press and release the MENU key (2) and then press and release the  key repeatedly (3) in order to select the “PARAMETERS”.



4. Press and release the  key (4), repeatedly press and release the  key (5) to set “-19” and then press and release the  key (6) again.



Operate as follows to select a parameter:

5. Press and release the  key or the  key.

Cut the device power supply off after setting the configuration parameters.

-
- The diagram illustrates the EVCO remote control interface. The central screen displays the 'PARAMETRI' menu with the following settings:
- | Parametri | 0 |
|------------------|---|
| <u>Programmi</u> | 0 |
| Preferiti | 0 |
| rCh | 0 |
| Upgrade FW | 0 |
| pr03FA803 | |
- Hand icons indicate the sequence of button presses:
- (1) Press the right arrow button.
 - (2) Press the left arrow button.
 - (3) Press the 'SET' button.
- Below the screen are five circular icons representing additional functions: Power (I), Menu, Home, ESC, and a circular arrow (Refresh/Repeat).

3. Press and release the ESCAPE key or do not operate for 60 s.

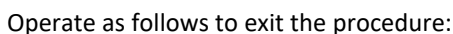
The diagram illustrates the EVCO remote control interface. The central screen displays the 'PARAMETRI' menu with the following parameters and values:

Parameter	Value
Parametri	0
Programmi	0
rCH	0
Upgrade FW	0
prj633AB03	

Hand icons indicate the sequence of button presses:

- (1) Press the 'UP' arrow button.
- (2) Press the 'DOWN' arrow button.
- (3) Press the 'SET' button.

Below the screen are five additional buttons: Power (⏻), Menu (≡), Home (🏠), ESC (⏏), and Repeat (🔄).



- ## 17 USE OF THE USB PORT

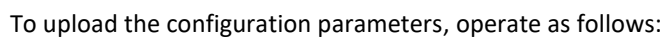
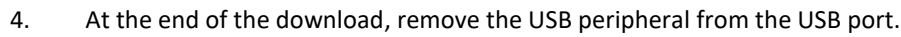
17.1 Foreword

- upload and download of the configuration parameters
- upload and download of the programs
- download of the information relative to the HACCP alarms.

The upload / download procedures are allowed on condition that the firmware of the device of origin and the one of the device (or the devices) of destination are coincident.

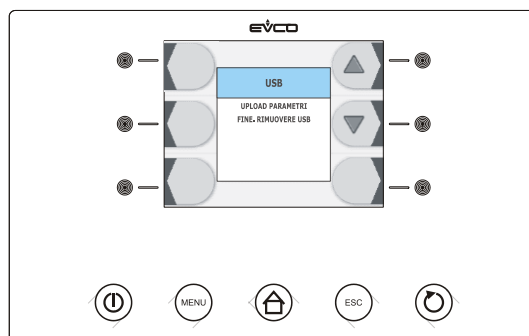
17.2 Upload and Download of the configuration parameters

1. Make sure the device is in the “stand-by” status.
2. Insert an USB peripheral in the USB serial port.
3. Press and release the  key (1) to select “**DOWNLOAD PARAMETERS**”, then press and release the  key (2): it will automatically start the writing (into the peripheral) of a text document by name “param.txt” (containing information about the configuration parameters); the writing procedure can take some minutes.



-
- The diagram illustrates the EVCO remote control interface. The screen displays the text "USB" and "UPLOAD PARAMETRI IN CORSO". The interface includes a "SET" button, a "USB" button, and a "UPLOAD PARAMETRI IN CORSO" button. The remote control has buttons for "SET", "UP", "DOWN", "LEFT", "RIGHT", "POWER", "MENU", "HOME", "ESC", and "REPEAT".

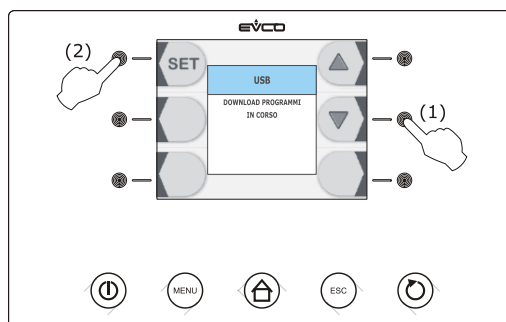
- At the end of the upload, remove the USB peripheral from the USB port.



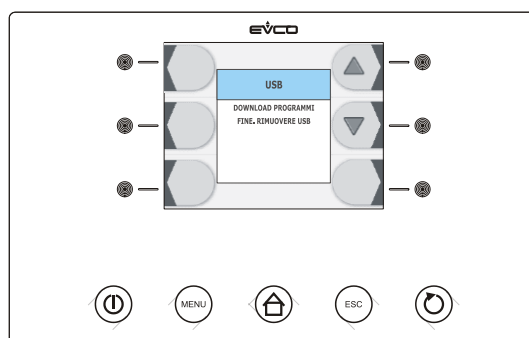
17.3 Upload and Download of the programs

To download the programs, operate as follows:

1. Make sure the device is in the “stand-by” status.
2. Insert an USB peripheral in the USB serial port.
3. Press and release the  key (1) to select “**DOWNLOAD PROGRAMS**”, then press and release the  key (2): it will automatically start the writing (into the peripheral) of a text document by name “ricette.txt” (containing information about the programs); the writing procedure can take some minutes.



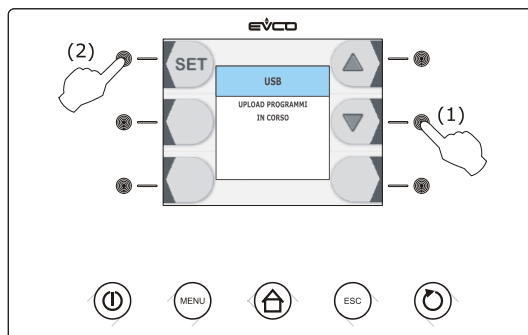
4. At the end of the download, remove the USB peripheral from the USB port.



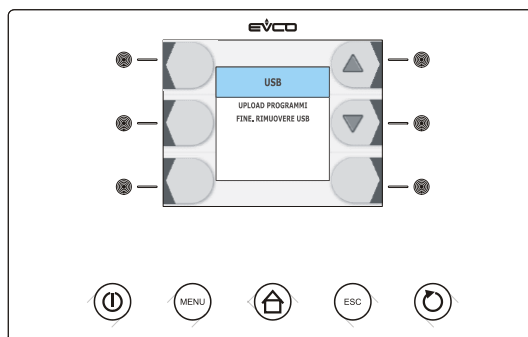
To upload the programs, operate as follows:

5. Make sure the device is in the “stand-by” status.
6. Insert an USB peripheral in the USB serial port; make sure the peripheral contains the text document by name “ricette.txt” (see point 3).

7. Press and release the  key (1) to select “**UPLOAD PROGRAMS**”, then press and release the  key (2): it will automatically start the reading (from the peripheral) of the text document by name “ricette.txt” (containing information about the programs); the reading procedure can take some minutes.



8. At the end of the download, remove the USB peripheral from the USB port.



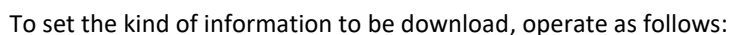
17.4 Download of the information relative to the HACCP Alarms

To download the information relative to the HACCP alarms, operate as follows:

1. Make sure the device is in the “stand-by” status.
2. Insert an USB peripheral in the USB serial port.
3. Press and release the  key (1), the  key (2) or the  key (3) to set the day and the time from which the information must begin, then press and release the START / STOP key (4): it will automatically start the writing (into the peripheral) of a CSV (Comma Separated Values) document by name (for example) “log247n00001.csv” (containing information relative to the HACCP alarms); the writing procedure can take some minutes.

The name of the CSV document is made (with reference to the example) as follows:

- “log”: fix field
- “247”: value of parameter LA (device address)
- “n”: fix field
- “00001”: progressive number of downloads of the information relative to the HACCP alarms.

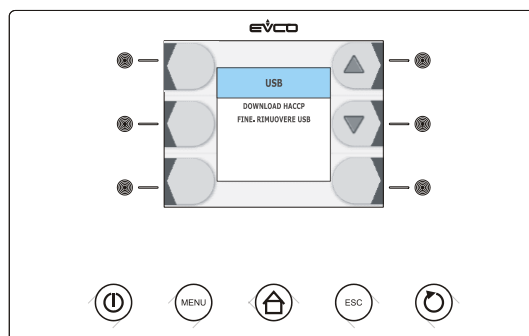


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-
- The diagram shows the EVCU remote control interface. At the top, the brand name 'EVCU' is displayed. The main screen shows a menu with the title 'OPZIONI' (Options) in a blue header. Below the header, the menu items are listed: 'LISTA ALLARMI' (Alarm List), 'SETUP REGISTRAZIONI' (Setup Recordings), and 'CANCELLA REGISTRAZIONI' (Cancel Recordings). The interface is surrounded by physical buttons: a 'SET' button at the top left, a 'VOL+' (Volume Up) button at the top right, a 'VOL-' (Volume Down) button in the middle right, and a 'PS' (Power) button at the bottom right. On the left side, there are three unlabeled buttons. A hand icon labeled (4) points to the 'SET' button, and another hand icon labeled (5) points to the 'PS' button. Below the remote control interface, there are five circular icons representing different functions: a power button, a 'MENU' button, a home button, an 'ESC' button, and a circular arrow (refresh) button.

- Operate as follows to exit the procedure:

- Revision: 04 Ref.: MANU_BLAZ CHILLERS 04/19/2016



To delete the information relative to the HACCP alarms, see “Deleting the information relative to the HACCP alarms”.

18 SIGNALS AND INDICATIONS

18.1 Signals

The following table illustrates the meaning of the signalling LEDS.

LED	Meaning
❄	Blast chilling LED. If it is on: - blast chilling will be in progress (or has been performed). If flashing: - a blast chilling and storage cycle will have been selected.
❄❄	Deep freezing LED. If it is on: - a soft deep-freezing cycle will be in progress (or has been performed). If flashing: - a soft deep freezing and storage cycle will have been selected.
HARD	hard blast chilling/deep freezing LED If it is on: - hard blast chilling or deep freezing will be in progress (or has been performed). If flashing: - a hard blast chilling and storage cycle or a deep freezing and storage cycle will have been selected.

	temperature-controlled blast chilling/temperature-controlled deep-freezing LED. If it is on: - a temperature-controlled blast chilling and storage cycle or a temperature-controlled deep freezing and storage cycle will have been performed. - temperature-controlled blast chilling or deep freezing will be in progress. If flashing: - a temperature-controlled blast chilling and storage cycle or a temperature-controlled deep freezing and storage cycle will have been selected. - the verification test for the correct insertion of the needle probe will not have been completed successfully - needle probe heating will be in progress.
	time-controlled blast chilling/time-controlled deep-freezing LED. If it is on: - a time-controlled blast chilling and storage cycle or a time-controlled deep freezing and storage cycle will have been performed. - time-controlled blast chilling or deep freezing will be in progress. If flashing: - a time-controlled blast chilling and storage cycle or a time-controlled deep freezing and storage cycle will have been selected. - setting the real date and time will be in progress.
	Storage LED. If it is on: - storage will be in progress. If flashing: - work set-point modification will be in progress (cabinet temperature).
	Blast chilling/deep freezing intensity LED bars They supply information relative to the evaporator fan speed (for example, one bar on corresponds to speed 1, two bars on correspond to speed 2, three bars on correspond to speed 3, etc.).
	Pre-cooling LED. If it is on: - pre-cooling will be in progress and the cabinet temperature will have reached that established. If flashing: - pre-cooling will be in progress and the cabinet temperature will not have reached that established.

If the ON/STAND-BY key is on, it means that the device will be in the “stand-by” state.

The following table illustrates the meaning of the indication codes.

Revision: 04 Ref.: MANU_BLAST CHILLERS 04/19/2016

19 ALARMS

The following table illustrates the meaning of the alarm codes.

Code	Meaning
tiM	Temperature-controlled blast chilling or deep freezing not concluded within maximum duration alarm (HACCP alarm). Solutions: - check the value of parameters r5 and r6 and AA. Main consequences: - the device will memorise the alarm - the alarm output will be activated.
AL	Minimum temperature alarm. Solutions: - check the temperature of the cabinet - check the value of parameters A1 and A2. Main consequences: - the alarm output will be activated.
AH	Maximum temperature alarm (HACCP alarm). Solutions: - check the temperature of the cabinet - check the value of parameters A4 and A5. Main consequences: - the device will memorise the alarm - the alarm output will be activated.
id	Door open alarm Solutions: - check the door conditions - check the value of parameters i0 and i1. Main consequences: - the effect established with parameter i0 - the alarm output will be activated.

HP	High pressure alarm. Solutions: - check the conditions of the high-pressure input - check the value of parameters i5 and i6. Main consequences: - the effect established with parameter i5 - the alarm output will be activated.
LP	Low pressure alarm. Solutions: - check the conditions of the low-pressure input - check the value of the parameter i8. Main consequences: - the compressor and the evaporator fan will be off - the alarm output will be activated.
CtH	Compressor circuit breaker protection alarm. Solutions: - check the conditions of the compressor circuit breaker protection input - check the value of the parameter i10. Main consequences: - the compressor will be switched off - the alarm output will be activated.
PF	Power supply cut-off alarm during storage (HACCP). Solutions: - check the device-power supply connection - check the value of the parameter A10. Main consequences: - the device will memorise the alarm - the alarm output will be activated.
COH	Condenser overheated alarm. Solutions: - check the temperature of the condenser - check the value of the parameter C6. Main consequences: - the condenser fan will be switched on - the alarm output will be activated.

CSd	Compressor blocked alarm. Solutions: - check the temperature of the condenser - check the value of the parameter C7 - disconnect the device power supply and clean the condenser. Main consequences: - if the error occurs during the “stand-by” status, no operating cycles can be selected or started - if the error occurs during an operating cycle, the cycle will be interrupted - the alarm output will be activated.
ALARM San	Sanification alarm. Solutions: - check the correct insertion of the needle probe and check the value of parameters r17 and r18. Main consequences: - the cycle of sanification will be stopped.

20 ERRORS

The following table illustrates the meaning of the error codes.

Code	Meaning
Pr1	Cabinet probe error. Solutions: - check the value of the parameter P0 - check the integrity of the probe - check the device-probe connection - check the temperature of the cabinet. Main consequences: - if the error occurs during the “stand-by” status, no operating cycles can be selected or started - if the error occurs during blast chilling or deep freezing, the cycle will be interrupted - if the error occurs during storage, compressor activity will depend on parameters C4 and C5 or C9 - defrosting will never be activated - the minimum temperature alarm (“AL” code) will never be activated - the maximum temperature alarm (“AH” code) will never be activated - the door heating elements will never be switched on - the alarm output will be activated.
Pr2	Evaporator probe error. Solutions: - the same as the cabinet probe error (“Pr1” code) but relative to the evaporator probe. Main consequences: - if parameter P4 is set at 1, defrosting will last for the period of time established with parameter d3 - if parameter F0 is set at 1, parameter F16 will have no effect - if parameter F2 is set at 1, the device will operate as if it were set at 2. - the alarm output will be activated.
Pr3	Condenser probe error. Solutions: - the same as the cabinet probe error (“Pr1” code) but relative to the condenser probe. Main consequences: - the condenser fan will operate parallel to the compressor - the overheated condenser alarm (“COH” code) will never be activated - the compressor blocked alarm (“Csd” code) will never be activated - the alarm output will be activated.

Revision: 04 Ref.: MANU_BLAZ CHILLERS 04/19/2016

ErL

User interface-control module communication error.

Solutions:

- check user interface-control module control module.

Main consequences:

- the control module will continue to operate normally.

21 MAINTENANCE, CARE AND CLEANING

21.1 Cleaning Procedure

Cleaning the cabinet

To clean the cabinet, the following instruction should be followed:

- Disconnect the unit from the power supply and remove all food product from inside.
- Open all doors and allow the cabinet to reach room temperature. Remove all accessories and clean them with a mild soap and warm water solution. Dry all of the accessories completely with a soft, clean cloth.
- Once the cabinet has reach room temperature, wash the entire cabinet inside and out with a mild soap and warm water solution. Rinse thoroughly with clear water and dry with a soft, clean cloth. Failure to dry all surface completely may cause water stains. There are also stainless-steel cleaners available which can restore and preserve the finish of the steels protective layer.
- Return all accessories to their initial positions and plug the unit in.
- Early signs of stainless-steel breakdown can consist of small pits and cracks. If this has begun, star to apply stainless steel cleaners in order to restore the passivity of the steel.
- Many products and foods have an acidic content which can attack stainless steel, such as mustard, mayonnaise, lemon juice, tomatoes and other vegetables.



NOTE: Never use steel pads, wire brushes or scrapers to clean the cabinet.



NOTE: Cleaning solutions need to be alkaline based or non-chloride cleaners. Any cleaner containing chlorides will damage the protective film of the stainless steel.



NOTE: The device must be disposed of in compliance with local standards regarding the collection of electric and electric equipment.



Gaskets Maintenance



- Gaskets require regular cleaning to keep their elasticity, to maintain proper sealing and to prevent mildew build up. Gasket



cleaning can be done with the use of warm soapy water. Avoid hard cleaners and sharp tools when cleaning gaskets.

- Gaskets can easily be replaced just pulling out of the groove in the door and new gaskets can be pressed back into place.

Cleaning the condenser coil

The condenser coil must be checked periodically. The frequency of cleaning depends on the operating environment. Air must be able to freely circulate through the condenser, so the surface of the condenser must be kept free of dirt and grease for proper system operation. Dirty condensers result in compressor failure and product loss. If the condenser coil is dirty or blocked, follow this instruction:

The condenser coil is located directly behind the front grill.

- Disconnect the power supply
- Take off lower grill assembly by removing the screws at the bottom. Carefully clean dirt from the condenser using a vacuum cleaner or soft brush; never use a wire brush.
- Heavier dust build up may require compressed air to blow through the condenser coil.
- Finally, replace the front panel, tighten all screws and reconnect electrical power supply.



WARNING: Never use water for this cleaning procedure as water can damage the electrical components located near or at the condenser coil.

Doors/Hinges Maintenance

Over time and with heavy use doors the hinges may become loose. If it is noticed that the door is beginning to sag, it may become necessary to tighten the screws that mount the hinge brackets to the frame of the unit.

21.2 Parts and Service



WARNING: Make sure that the equipment is unplugged before cleaning or repairing it.

In case of failure, if the problem persists after you have carried out the indicated checks, “DO NOT MAKE ANY REPAIRS YOURSELF”. Contact our Technical Service. Always provide the cabinet model and serial number (located on the data plate, 15 digits).



Technical Assistance Service Infrico

Tel: 00 34 957 51 14 68

Fax: 00 34 957 59 51 06

Email: sat@infrico.com
www.infrico.com


NOTE: When a replacement part is required, always insist on factory authorized parts only.

22 TROUBLE SHOOTING CHART

Many operating problems are derived from causes that can be easily eliminated without the need to contact the Technical Department. The following page shows a table with types of problems that may come up, their cause, and how to resolve them.

PROBLEM	POSSIBLE SOLUTION
Compressor will not start-no hum.	1.- Disconnect switch open. 2.- Blown fuse. 3.- Defective wiring. 4.- Overload protector tripped. 5.- Open control contacts (control may be defective, or unit location may be too cold). 6.- Defective overload protector. 7.- Low charge of freon-check for leaks.
Compressor will not start-no hums but cycles on overload.	1.- Low voltage. 2.- Unit wired incorrectly. 3.- Starting capacitor defective. 4.- Starting capacitor seal. 5.- Compressor motor defective. 6.- High head pressure. 7.- Bearing of pistons tight-low oil charge.

Compressors start, but starting remains in circuit.	1.- Low voltage. 2.- Unit wired incorrectly. 3.- Starting capacitor seal. 4.- Running capacitor defective. 5.- Starting relay defective. 6.- High head pressure. 7.- Bearings of pistons tight-low oil charge.
Compressor starts and runs, but cycles on overload	1.- Low voltage. 2.- Running capacitor defective. 3.- Overload protector defective. 4.- High head pressure. 5.- Fan motor, pump, etc..., wire to wrong of overload protector.
Compressor tries to start when thermostat closes but cuts out on overload, start after several attempts.	1.- Low voltage. 2.- Start capacitor defective. 3.- Overload protector defective. 4.- High head pressure. 5.- Fan motor, pump, etc..., wire to wrong of overload protector.
Compressor tries to start when thermostat closes but cuts out on overload, start after several attempts.	1.- Low voltage. 2.- Low on oil. 3.- High head pressure. 4.- Starting relay points badly pitted. 5.- Starting capacitor weak. 6.- Air or non-condensable gases in system.
Compressor starts but immediately cuts out on overload	1.- Starting relay contacts points welded together. 2.- Starting capacitor defective. 3.- Compressor short cycles.
Starting relay burns out.	1.- Low voltage. 2.- High voltage. 3.- Compressors short cycles. 4.- Incorrect running capacitor. 5.- Incorrect relay.
Running capacitors burn out.	1.- Line voltage too high.

Head pressure to high	1.- Unit overcharged. 2.- Air or other non-condensable gases in system. 3.- Clogged condenser (air-cooled) 4.- Defective condenser fan motor. 5.- Unit location too hot. 6.- Restriction in expansion valve, strainer or drier. 7.- Discharge valve partially closed. 8.- Restriction in discharge line.
Head pressure to low	1.- Insufficient refrigerant charge. 2.- Leak in the system. 3.- Cold location.
Compressor short cycles	1.- Control differential set too close. 2.- Refrigerant undercharge, check pressure control. 3.- Refrigerant overcharge. 4.- Discharge valve leaking. 5.- Cutting out on high pressure control, if used. 6.- Cutting out on overload protector because if tight bearings struck piston, high head pressure or restricted air-cooled condenser.
Running cycles too long, or unit operates continuously	1.- Insufficient refrigerant charge. 2.- Dirty or restricted condenser. 3.- Unit location too hot. 4.- Control contacts stuck. 5.- Air or other non-condensable gases in system. 6.- Expansion valve plugged or defective. 7.- Fixture doors left open too long. 8.- Insufficient, defective or waterlogged insulation. 9.- Evaporated oil logged.
Noisy unit	1.- Compressor oil charge low. 2.- Fan cable on condenser or evaporator bent causing vibrations. 3.- Bearing on evaporator or condenser motors lose or worn. 4.- Tube rattles. 5.- Lose parts on condensing unit. 6.- Case is not level.

23 WARRANTY

Dear user:

You must receive the warranty certificate duly filled out within a maximum period of 20 days from the purchase date so that the equipment you have just purchased may benefit from the warranty specified in this document. Otherwise, this warranty manufactures date.

It is very important that you read the attached documentation carefully so that you have full knowledge of the use and care applicable to your equipment. This being the case, we are sure that you will be completely satisfied with its operation.

23.1 Two Years Parts & Labor Warranty

Infrico USA, Corp. ("Infrico") warrants to the original customer that the Infrico brand equipment sold hereunder, except for parts and accessories which carry the warranty of a supplier (the "Equipment") will be free from defects in material and factory workmanship under normal conditions of use and maintenance for a period of (2) two years from the Date of Installation (Warranty Commencement Date), but in no event to exceed (27) months from the Date of Shipment. Warranty is Not Transferable.

23.2 Warranty Coverage

If there is a defect in material or factory workmanship covered by this Warranty reported to Infrico during the period the applicable Warranty is in force and effect, Infrico will repair or replace, at Intrico's option, that part of the Equipment that has become defective. Infrico will cover labor cost within (2) two years from the Warranty Commencement date or (27) months from shipment date, whichever occurs first. Infrico shall bear all labor costs in connection with the installation of these replacement parts, provided that, the installation is conducted by Infrico or its authorized representative. Charges for warranty travel time not to exceed (2) hours or up to (100) miles total. Any charges exceeding those stated herein must have prior authorization by Infrico.

23.3 Additional Four-Year Compressor Part Warranty

In addition to the warranty set above. Infrico warrants the hermetically and semi-hermetically sealed compressor (part only) for an additional four (4) years based on the installation date. This warranty is for defects both in workmanship and material under the normal and proper use and maintenance service. The four (4) years extended warranty only applies to hermetically and semi-hermetically sealed parts of the compressor and does not apply to any other part or component, including, but no limited to cabinet, temperature control, refrigerant, motor starting equipment, fan assembly, or any other electrical or mechanical component.



Parts Warranty Coverage: Infrico warrants all new case parts produced or authorized by Infrico to be free from defects in material and workmanship for a period of (90) days from the Warranty Commencement Date. If any defect in material and workmanship is found to exist within the warranty period, Infrico will replace the defective part without charge. Defective parts become the property of Infrico.

Infrico will have no responsibility to honour claims received after the date the applicable Warranty expires. Notwithstanding the foregoing, any claim with reference to the Equipment or any parts therefore for any cause shall be deemed waived unless submitted by the User to Infrico within (30) days after the date the User discovered, or should have discovered, the claim. In connection with all claims under this Warranty, Infrico will have the right, at its own expense, to have its representatives inspect the Equipment at the User's premises and to request all of User's records pertaining to the Equipment to determine whether a defect exists, whether the conditions set forth in this Warranty have been satisfied, and whether or not the applicable Warranty is in effect.

23.4 Warranty conditions for the supplied products

1. The manufacturer guarantees the product and undertakes to rectify, at no charge, any defects observed due to faults or defects in the materials or production.
2. All products that have been modified and/or components subject to natural wear and tear, as well as defects resulting from non-compliance with the instructions for use, installation, or operation, or from uses not in keeping with the intended use of the product, from abnormal environmental factors, from unusual operating conditions, from overload, from inadequate cleaning or maintenance, or from those defects resulting from repairs or handling carried out by unauthorised Services, or those caused by the use of accessories or spare parts not designated by the manufacturer, are excluded from the guarantee.
3. Users must adhere to the indications described in the instructions manual when starting up or storing the apparatus.
4. If the apparatus is not functioning correctly, users must make the checks indicated in the manual and, if the problem persists, contact their distributor. This certificate must be presented if it is necessary for the technical department to intervene.
5. This guarantee exclusively pertains to the replacement of the faulty material, and under no circumstances may an exchange for another apparatus or an increase in the guarantee period be demanded. The replaced material that is under guarantee will remain on site for examination, with the purchaser bearing the costs of installation or replacement.
6. The return of any apparatus due to manufacturing defects or faults MUST BE PREVIOUSLY AUTHORISED. Otherwise, there will be no charge under any circumstances for any costs and risks that may be derived from this

process. Any apparatus that has been authorised for



return by the manufacturer must be submitted with packaging the same as or similar to that which was used for the product when it was received.

7. Nobody is authorised to make any other concessions or accept on behalf of the manufacturer any commitment that does not comply with this guarantee.
8. If this warranty certificate is lost or mislaid, you must have express knowledge of it.
9. Any travelling, food, and workforce expenses of the technical department carrying out the repairs, including during the guarantee period of the apparatus, are not covered.
10. The time taken to repair the apparatus shall not constitute a motive for the purchaser to seek compensation of any kind or extend the guarantee period.
11. This warranty shall be invalidated in the case of faults produced as a result of force majeure (weather and geological phenomena, fires, etc.) or those derived from improper or non-compliant installation of the apparatus (connection voltage, power supply fluctuations, electrical connection not conforming to instructions, etc.) or from manipulation of the nameplate or of the data included in this certificate.

23.5 Exclusions from and conditions to warranty coverage

This Warranty does not cover parts or accessories, which (a) carry the warranty of a supplier or (b) are, abused.

23.6 Report for the client

Please, complete the following report.



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Town / City State: _____

Distributor: _____

Purchase date: _____

Model: _____ Serial No: _____

Compressor No: _____

Vendor Signature

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Purchase date: _____

Model: _____ Serial No: _____

Compressor No: _____

Vendor Signature

Purchaser Signature

Revision: 04 Ref.: MANU_BLAZT CHILLERS 04/19/2016



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