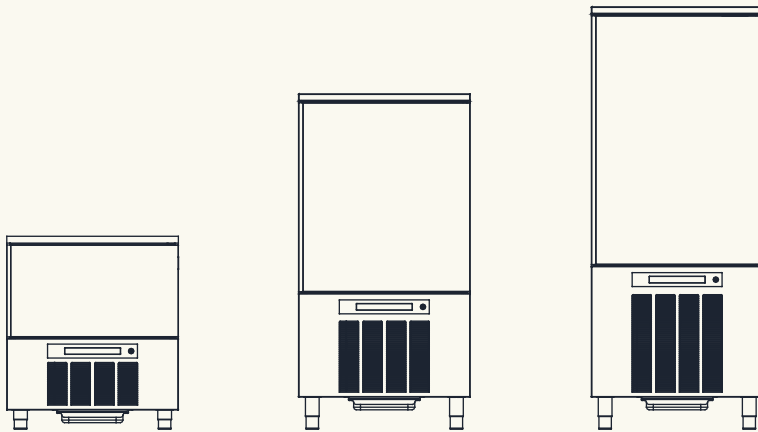


Blast Chillers  
Instruction manual

BK+5 BK+10 BK+15

EasyChill  
ChillRapid  
SurRapid



CE

Tecnomac®

Gentile Cliente,

La ringraziamo per aver preferito uno dei nostri prodotti, frutto di lunga esperienza e di una continua ricerca per un prodotto superiore in termini di affidabilità, prestazioni e sicurezza.

In questo manuale troverà tutte le informazioni ed i consigli per poter utilizzare il suo prodotto nel massimo della sicurezza ed efficienza.

Dear Customer,

We would like to thank you for having chosen our products, the result of long experience and continuous research for a superior product in terms of reliability, performance and safety.

This manual will supply all of the information and advice for the efficient use of your product in complete safety.

Cher Client,

Nous vous remercions d'avoir choisi notre produit, fruit d'une longue expérience et d'une recherche permanente d'un produit supérieur en termes de fiabilité, de prestations et de sécurité.

Dans ce manuel vous trouverez toutes les informations et les conseils pour pouvoir utiliser votre produit avec une sécurité et une efficacité optimales.

Sehr geehrter Kunde!

Wir danken Ihnen für Ihre Wahl eines unserer Produkte, welches das Ergebnis einer langen Erfahrung und stetiger Forschungsarbeit ist. Dank dieser konnte ein Produkt entwickelt werden, das ein hohes Maß an Verlässlichkeit, Leistungsfähigkeit und Sicherheit bietet. In diesem Handbuch finden Sie sämtliche Informationen und Ratschläge, damit Sie das Produkt mit maximaler Sicherheit und Effizienz nutzen können.

Estimado cliente:

Le agradecemos por elegir nuestros productos, fruto de la gran experiencia y de la investigación constante para obtener un producto superior en términos de fiabilidad, rendimientos y seguridad.








En este manual, encontrará todos los datos y consejos para poder utilizar el producto en sus máximos niveles de seguridad y eficiencia.

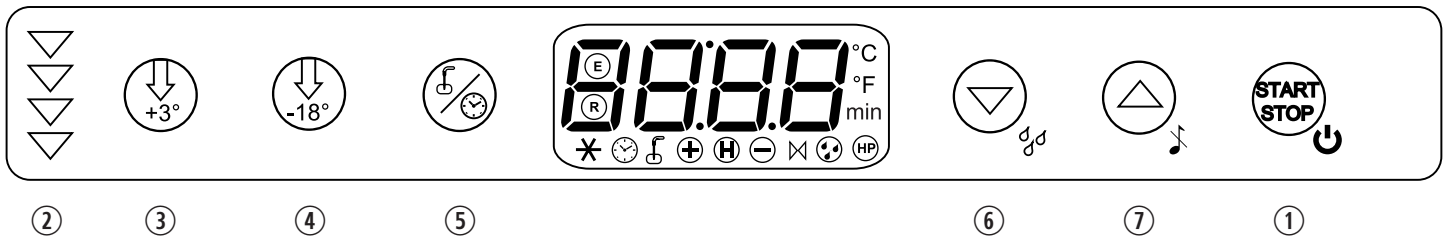
REGOLAMENTO (UE) 2015/1095      KOMISIJAS REGULA (ES) 2015/1095      VERORDENING (EU) 2015/1095 VAN DE COMMISSIE  
REGULATION (EU) 2015/1095      KOMISIJOS REGLAMENTAS (ES) 2015/1095      ROZPORZĄDZENIE KOMISJI (UE) 2015/1095  
VERORDNUNG (EU) 2015/1095      A BIZOTTSÁG (EU) 2015/1095 RENDELETE      REGULAMENTUL (UE) 2015/1095 AL COMISIEI  
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RÈGLEMENT (UE) 2015/1095      РЕГЛАМЕНТ (ЕС) 2015/1095      UREDBA KOMISIJE (EU) 2015/1095  
REGULAMENTO (UE) 2015/1095      NAŘIZENÍ KOMISE (EU) 2015/1095      KOMMISSION ASETUS (EU) 2015/1095,  
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UREDBA KOMISIJE (EU) 2015/1095      KOMISJONI MÄÄRUS (EL) 2015/1095

Modello Models Modelles Modelle Modelos	Alimentazione Power supply Source de courant Energieversorgung Fuente de alimentación	Refrigerante Refrigerant Fluide frigorigène Kühligas Fluido refrigerante	Carica refrigerante Refrigerant charge Charge de fluide frigorigène Kältemittelfüllung Carga de refrigerante (Kg)	GWP	Ciclo Abbattimento Positivo - Chilling Cycle - Cycle Chilling Kühlzyklus - Ciclo de enfriamiento				Ciclo Abbattimento Negativo - Freezing Cycle - Cycle de Congélation - Gefrierzyklus - Ciclo de congelación			
					Ciclo temperat. Temp. Cycle Cycle de temp. Temperaturzyklus Ciclo de temperat. (°C)	Capacità Capacity Capacité Kapazität Capacidad (Kg)	Durata ciclo Cycle time Temps de cycle Taktzeit Tiempo de ciclo (min)	Consumo Energia Energy Consumpt. Conso. Energie Energieverbrauch Cons. de energia (kWh/Kg)	Ciclo temperat. Temp. Cycle Cycle de temp. Temperaturzyklus Ciclo de temperat. (°C)	Capacità Capacity Capacité Kapazität Capacidad (Kg)	Durata ciclo Cycle time Temps de cycle Taktzeit Tiempo de ciclo (min)	Consumo Energia Energy Consumpt. Conso. Energie Energieverbrauch Cons. de energia (kWh/Kg)
BK+ 5.16 A	220-240V/50Hz	R404A	1,10	3922	+65° / +10°	18,4	103	0,098	+65° / -18°	13,8	266	0,337
BK+ 5.16 W	220-240V/50Hz	R404A	1,10	3922	+65° / +10°	18,4	103	0,098	+65° / -18°	13,8	266	0,337
BK+ 10.30 A	220-240V/50Hz	R404A	2,40	3922	+65° / +10°	33,6	98	0,091	+65° / -18°	29,0	265	0,361
BK+ 10.30 W	220-240V/50Hz	R404A	2,00	3922	+65° / +10°	33,6	98	0,091	+65° / -18°	29,0	265	0,361
BK+ 15.40 A	400V/3N/50Hz	R404A	2,20	3922	+65° / +10°	41,4	102	0,100	+65° / -18°	27,6	258	0,379
BK+ 15.40 W	400V/3N/50Hz	R404A	2,20	3922	+65° / +10°	41,4	102	0,100	+65° / -18°	27,6	258	0,379













L'apparecchio contiene gas fluorurati ad effetto serra disciplinati dal protocollo di Kyoto  
The equipment contains greenhouse effect fluoride gas governed by the Kyoto protocol  
L'appareil contient des gaz fluorés à effet de serre réglementés par le protocole de Kyoto  
Das Gerät enthält fluorierete Treibhausgase durch das Kyoto-Protokoll fallen  
El aparato contiene gases fluorados de efecto invernadero regulados por el protocolo de Kioto

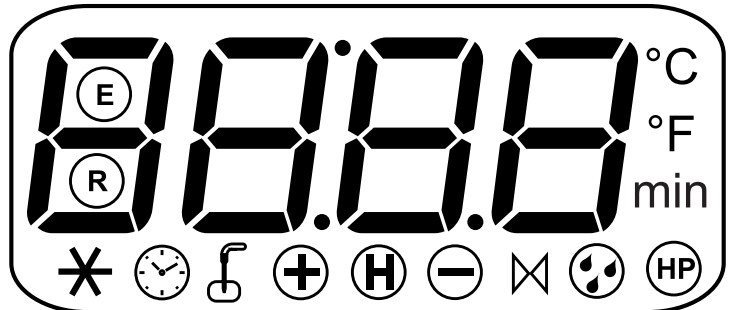
# BUTTONS AND LEDS

- ①  Start/Stop
- ②  Cycle status
- ③  Soft/hard positive blast chilling button (+3°C)
- ④  Blast freezing button (-18°C)/ice cream cycle
- ⑤  Blast chilling mode
- ⑥  Decrease value key
- ⑦  Increase value key



## STATUS ICONS

- ①  Door alarm LED
- ②  Timed cycle LED (yellow)
- ③  Temperature cycle LED (yellow)
- ④  Positive blast chilling cycle LED (green)
- ⑤  Hard blast chilling cycle LED (yellow)
- ⑥  Blast freezing cycle LED (green)
- ⑦  Storage cycle LED (green)
- ⑧  Defrosting phase LED (green)
- ⑨  High pressure alarm LED (red)
- ⑩ **min** Minutes LED (red)
- ⑪  Temperature scale LED (blue)
- ⑫  Cell sensor alarm LED
- ⑬  Evaporator sensor alarm LED



## PREFACE

---

- This manual is an integral part of the product, providing all the information required to ensure correct installation, operation and maintenance of the machine.
- **Read the manual carefully**, making reference to it for machine operation. Keep the manual in a safe place where it can be accessed by all authorised operators (installers, operators and service personnel).
- Installation must be performed in compliance with National and Local Standards, by professionally qualified staff and according to the manufacturer's instructions.
- Any contractual and extra-contractual liability of the manufacturer is excluded due to damage caused by errors during installation and use and, however, failure to comply with the National and Local Standards in force and the instructions supplied by the manufacturer.
- Make sure that the supplied or specified components are used.
- Before performing any cleaning or maintenance operation, disconnect the appliance from the electric power supply mains by operating on the system switch and/or the product switch.
- 

In the event of faults and/or bad functioning, deactivate the appliance and do not attempt any repairs or direct intervention.

## CAUTION

---



**THE FOLLOWING OPERATIONS AND THOSE HIGHLIGHTED BY THIS SYMBOL MUST NOT BE PERFORMED BY THE APPLIANCE USER**

**In particular:**

- **Electrical connections**
- **Water connections**
- **Installation**
- **Testing**
- **Repairing machine components**
- **Disassembly of the appliance and/or its components**
- **Adjustments and calibration**
- **Cleaning the appliance and maintenance of:**
  - **Electrical parts,**
  - **Electronic parts,**
  - **Mechanical parts,**
  - **Refrigeration system parts**



**THE TEXT WITH THIS SYMBOL IS OF PARTICULAR IMPORTANCE OR POTENTIAL DANGER SIGNALS**



**NOTA clarifies the current operations**

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# 1. GENERAL DOCUMENTATION

## 1.1 GENERAL INFORMATION

- This manual is an integral part of the product, providing all the information required to ensure correct installation, operation and maintenance of the machine.
- Read the manual carefully, making reference to it for machine operation. Keep the manual in a safe place where it can be accessed by all authorised operators (installers, operators and service personnel).

The machine has been constructed in compliance with the directives 73/23/CEE (low-voltage), 89/336/CEE (electromagnetic compatibility) and 98/37/CE (machines; for certain models only).

- The machine has been designed for professional applications only and should only be operated by qualified personnel.
- The machine must only be used for the purposes for which it was designed, i.e. for chilling and freezing food products. The machine must not be used for products requiring constant temperature control and recording, such as:
  - heat-sensitive chemicals,
  - medicines or
  - blood products.
- The manufacturer declines all responsibility for any damage caused by incorrect or unreasonable machine use, such as:
  - improper use by untrained persons;
  - technical modifications or operations not suited to specific models;
  - use of non-original or non-specific spare parts;
  - failure to follow the instructions given in this manual.
- This appliance is not intended for use by persons -including children- with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with appliance.

## 1.2 INSTALLATION

- The machine must be installed by a specialised technician authorised by and in compliance with the instructions given in this manual.

In the event that the machine is fitted with a remote condenser unit, the installation technician is responsible for checking all connections in compliance with the instructions given by for plant and machine installation.

## 1.3 TRANSPORT AND HANDLING

- To load or unload the machine and/or components from/onto the means of transport, use a lift truck or fork lift equipped with forks that are at least half the length of the machine housing; use a crane if the machine is fitted with eye bolts. Select the lifting equipment suited to the weight and overall dimensions of the packaged machine/components.
- When handling the machine/ components, apply all precautions to prevent damage, in compliance with the information given on the packaging material

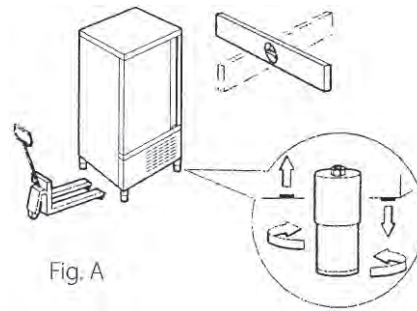
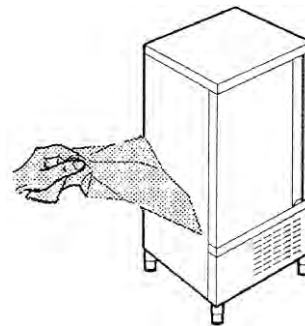


Fig. A

## 1.4 UNPACKING

- Remove all cardboard, wood or other materials from the wood base on which the machine is set. Lift the machine/components with suitable means (e.g. lift truck), remove the wood base, then position the machine / components in the allocated site.
- Once all packing material has been removed, check that the machine has not been damaged in any way.
- Remove the protective PVC film on the stainless steel panels from all internal and external surfaces.



**⚠ Always wear protective gloves when handling packing material and the wood base.**

**ⓘ Nota:** Dispose of packing materials in compliance with disposal regulations applied in the country where the machine is to be installed. Never dispose of materials in the environment. (see section 2.9).

## 1.5 GENERAL SAFETY REGULATIONS

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

- do not touch the machine with moist or wet hands or feet;
- never operate the machine while barefoot;
- do not insert screwdrivers, cooking utensils or any other object between the guards and moving parts;
- before performing cleaning or routine maintenance operations, disconnect the machine from the power supply at the master switch and the main knife switch (if present);
- never pull on the power cable to disconnect the machine from the power supply.

## 2. INSTALLATION

**THESE OPERATIONS MUST BE PERFORMED BY A CERTIFIED INSTALLATION TECHNICIAN ONLY**

### 2.1 DATA PLATE INFORMATION

- Check that the data specified on the plate correspond to the characteristics of the power supply (V, kW, Hz, no. phases and power available).
- The dataplate with appliance specifications is located at the rear exterior of the machine and/or on the electrical boards.

Machine model	AX8	Serial	000 103 03213
380-400/3N	-	50 Hz	10 A   3000 W
R404 A	2.2 kg	CLASS T	IP 21
W	W	W	11
W			

CE

The set-up of individual units and the installation of condensers are subject to the fire-safety regulations of the country in which the machine is installed; seek all necessary advice from the local fire-fighting authorities.

ties.

Bear in mind that the intervention of safety valves or plug fuses in the refrigerating circuit will lead to the immediate discharge of refrigerant into the environment.

### 2.2 REMARKS / MALFUNCTION'S CLAIMS

In case of machine malfunctioning and claim on Blast Chillers delivered in the following way :

#### • Assembled

We ask you to indicate to the dealer / service: machine model, machine code number and apparatus serial number. These information are written on the registration label, installed on the back of machine and inside the door.

#### • Disassembled

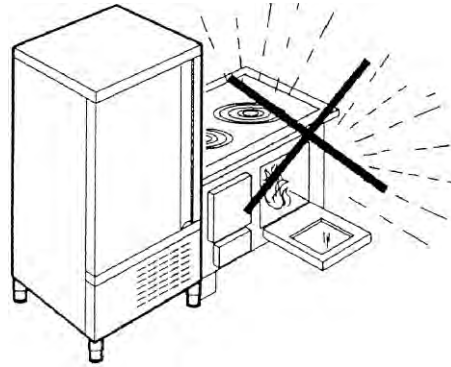
We ask you to indicate to the dealer / service: machine model, machine code number and apparatus serial number. These information are written on the registration label, installed on top of the control panel.

### 2.3 POSITIONING

- The machine must be installed and commissioned in complete compliance with safety regulations, procedures and standing laws.
- The installation technician bears the responsibility of ensuring compliance with fire safety requirements; seek all necessary advice from the local fire-fighting authorities.
- Position the machine in the allocated site.
- Adjust the machine feet until the appliance is perfectly level. In the case of particularly heavy equipment, use appropriate lifting means (fig. A - Cap. 1.3).
- If the appliance is not perfectly level, correct operation and condensate flow-off will not be assured.

### ! Avoid

- direct exposure to sunlight;
- closed sites with high temperatures and poor air circulation;
- installing the machine near sources of heat.



### 2.4 AMBIENT TEMPERATURE AND AIR CIRCULATION

For air-cooled appliances, the maximum ambient temperature for operation is 32°C. Correct operation cannot be guaranteed at higher temperatures.

The machine may operate safely to a maximum temperature of 38°C.

Remote condensing units must be installed in special rooms or outdoors, protected against direct sunlight by a shelter or roof structure (at the cost of the purchaser).

Sufficient air circulation must be guaranteed at all times.

### 2.5 ELECTRICAL CONNECTIONS

A dedicated thermal-magnetic circuit breaker compliant with established regulations must be installed on the appliance power line.

- Connected electrical cables must correspond to the technical data (as specified on electrical drawings provided by the installation technician). Connect the earthing conductor to an efficient earthing system.

**! The manufacturer declines all liability and guarantee obligations in the event of injury to persons or damage to equipment and objects due to incorrect installation and/or failure to comply with standing installation regulations.**

#### 2.5.1 Connecting the appliance to the power supply

In the event of damage to the power supply cable on the appliance, have the cable replaced only by a qualified electrician to avoid any risk of personal injury

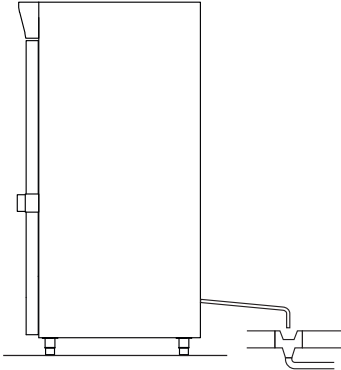


## 2.6 REFRIGERATION COMPONENT CONNECTIONS REMOTE ASSEMBLIES

Appliance power lines are sized for installation distances of up to 10 metres. For greater distances, seek advice from.

## 2.7 CONDENSATE DRAINAGE CONNECTION

Fit a condensate/wash water drainage hose with a minimum diameter of 1" ("Geberit" or similar type).



Provide a waste pipe with a trap with a diameter of at least 1 1/2" at floor level.

## 2.8 INFORMATION FOR THE INSTALLATION TECHNICIAN

Before starting up the machine, check that it has been correctly installed and commissioned (test report).

1. Check that there are no gas leaks from weldings or joints made during installation works.
2. Check that the pipes connecting the condenser to the remote condensing unit have been well insulated.
3. Check all wiring connections.
4. Check electrical input.
5. Check the standard pressure in the refrigerant system.
6. Check the water connections and efficiency of the pressure switch valve during operation, as well as the flow of condensing water (in water-cooled units).
7. Perform at least one blast freezing cycle (to the SET temperature) and one manual defrosting cycle.

In the event that the appliance or the remote condensing unit have not been transported in a vertical position (e.g. on the back) or have been overturned during installation works, allow at least 4 hours before starting up the equipment.

- Inform the customer of the exact purpose of the appliance, with specific reference to the use and requirements of the customer.



**The appliance must be installed and put into service by a technician authorised.**

## 2.9 SAFETY AND CONTROL SYSTEMS

- **Door microswitch:**  
shuts down fan operation in the cell when the door is opened.
- **General fuses:**  
protect the power circuit against short circuiting and overloads.
- **Compressor heat relay:**  
intervenes in the event of overloads or operating faults.
- **Safety pressure switch:**  
intervenes in the event of excessive pressure in the refrigerant circuit.
- **Plug fuses:**  
intervene in the event of overpressure or operating fault in the safety pressure switch (see above).
- **Chamber temperature control:**  
operated by the electronic board by means of a probe inside the cell.
- **Temperature control end defrost cycle:**  
controlled by the electronic board by means of the probe in the evaporator.

## 2.10 DISPOSAL OF WASTE ELECTRONIC AND ELECTRICAL EQUIPMENT (WEEE)

The following information regards member states of the EU. The crossed-out litter bin symbol indicates that the product cannot be disposed of as residential waste. Ensuring that this product is disposed of correctly will help prevent potential negative effects on the environment and to human health that could be caused if disposed of in an incorrect manner.



# 3. ADVICE TO ENSURE EFFICIENT APPLIANCE OPERATION

## 3.1 SHUT-DOWN PROCEDURES

In the event of emergency, shut down the appliance by switching off power at the main panel, by means of the knife switch or by removing the plug from the power socket.

## 3.2 OPERATING TIPS

Before starting up the appliance, clean the inside of the cell thoroughly.

### 3.2.1 Pre-cooling

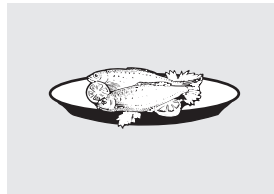
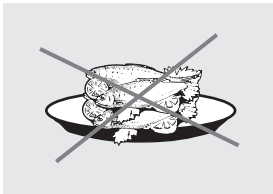
Before using the appliance for the first time, or after a prolonged period of disuse, pre-cool the cell by running an empty cycle until the set operating temperature has been reached.

To ensure optimal performance without any alteration to food quality:

- arrange food products in such a way as to favour the circulation of cold air throughout the cell;
- open the door as little as possible.

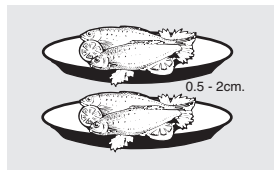
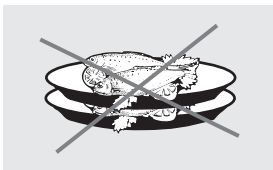
### 3.2.2 Loading the appliance

- a) Ensure that foods to be chilled and/or frozen are separate and do not have a thickness greater than 50-80 mm. Do not load the appliance beyond the quantity recommended by the manufacturer.

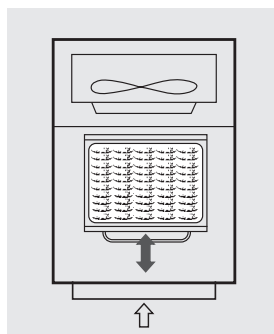
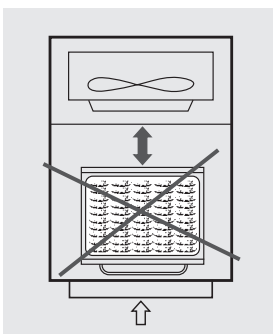


- b) Ensure that there is sufficient clearance between trays to enable free air circulation.

If the appliance is not completely full, distribute the trays and foods evenly throughout the available space.

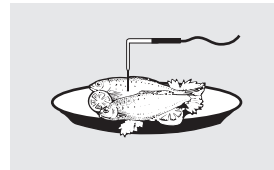


- c) Position trays inside the tray compartment as far as they will go, as close as possible to the evaporator.



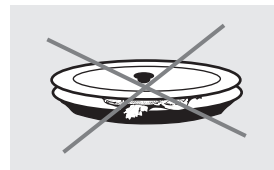
- d) Position the core probe at the centre of the largest product or food item; make sure that the tip of the probe does not protrude or touch the tray.

The probe must be cleaned and sanitised before each new cycle (operation) to prevent inadvertent contamination.



- e) Avoid covering the trays and/or containers with insulating covers or film. The more the product is insulated, the more time is required for chilling or freezing.

Trays must be packaged when the product has been chilled, before being placed in storage.



## 4. PROGRAMMING AND OPERATION INSTRUCTIONS

**IN THE EVENT OF A MALFUNCTION, CALL THE CERTIFIED TECHNICIAN**

### 4.1 MACHINE STARTUP

Power the machine up  
The machine can be in:

#### • STAND-BY.

With the machine off, the display is as follows (the keys/unlit symbols in gray), the cell probe values are displayed:



#### • OFF Condition

With the machine shut down, to move to the off status, press the Start/Stop button ① for at least 3".

- to exit the off status press the Start/Stop button ① (the only enabled button) for at least 3".

### 4.2 SETTING THE DATE AND TIME

Turn the machine off by holding the Start/Stop button ① for 3". Then hold the freeze button ④ down for 3".



- The year ( **99** ) will appear, which can be changed using the up ⑦ and down ⑥ buttons. Confirm using the freeze button ④.
- Then the month ( **MM** ), day ( **DD** ), hour ( **HH** ) and minutes ( **MM** ) appear in succession, also modifiable with the up ⑦ and down ⑥ buttons. Confirm the data each time with the freeze button ④.
- Once the minutes have been confirmed, it exits the clock setting function and returns to the OFF condition.

**⚠ Note:** in case of **ALARM RTC** on the display it's necessary to provide to set the time.

### 4.3 OPERATION

It is recommended always to pre-cool the machine the first time blast-chilling or deep freezing is performed. The work cycle is optimized in this way by reducing the time (see chap. 4.3.7).

#### 4.3.1 Selecting positive blast chilling timed cycle

With the machine in standby, select the positive blast chilling button ③; the display will show the value 90 min.



To increase or decrease the blast chilling time, use the up ⑦ and down ⑥ buttons.

To start the positive blast chilling timed cycle, press the Start/Stop button ①. When the cycle starts, the time will begin to count down.

The arrows on the left hand side ② flash during blast chilling and are steady during the storage phase. The machine may be stopped at any time by pressing the Start/Stop button ① for 3 seconds.

Once the blast chilling time has expired, it will automatically go into storage mode.

In the storage phase the cell temperature will be displayed.

#### 4.3.2 Selecting positive blast chilling temperature cycle

With the machine in standby, select the positive blast chilling button ③. The display will show the value 90 min.

To select the temperature mode press the blast chilling mode button ③ and the default value appears: +3°C



Use the up ⑦ and down ⑥ buttons to increase or decrease the end blast chilling temperature.

Insert the product inside the blast chiller making sure to position the probe on the product.

To start the positive blast chilling temperature cycle, press the Start/Stop button ①. The arrows on the left hand side ② will flash during chilling and will be steady during the storage phase.

The machine may be stopped at any time by pressing the Start/Stop ① button for 3 seconds

Once the set blast chilling temperature has been reached, the machine will automatically go into storage mode.

In the storage phase the cell temperature will be displayed

### 4.3.3 Selecting positive hard blast chilling timed cycle

With the machine in standby, select the positive blast chilling button ③ twice. The display will show the value **90 min** with the prefix h, indicating that the hard cycle was selected.



To increase or decrease the blast chilling time, use the up ⑦ and down ⑥ buttons.

To start the positive blast chilling timed cycle, press the Start/Stop button ①. At the beginning of the cycle, the time will begin to count down. The arrows on the left hand side ② will flash during chilling and will be steady during the storage phase.

The hard symbol ⑤ will flash during the second phase of the hard cycle. The machine may be stopped at any time by holding the Start/Stop button ① down for 3 seconds

On the end of the Hard cycle the system goes automatically in positive preservation phase.

In the storage phase the cell temperature will be displayed.

**⚠ Note:** the duration of the hard phase is handled automatically by the Blast chiller. The period of hard phase is determined automatically in percentage by the parameter set in the factory under password.

The duration of the hard phase will be 66% of the time setting.

**Ex:** setting the total time of hard chilling at 100', the hard phase will be hard to 66', while the soft phase will be 34'.

### 4.3.4 Selecting positive hard blast chilling temperature cycle

With the machine in standby, select the positive blast chilling button ③ TWICE, the display will show the value **90 min**, with the prefix h.

To select the temperature mode, press the blast chilling mode button ⑤ and the default value will appear: **+3°C**



Use the up ⑦ and down ⑥ buttons to increase or decrease the blast chilling temperature.

Insert the product inside the blast chiller making sure to position the probe on the product.

To start the positive hard blast chilling temperature cycle, press the Start/Stop button ①. The arrows on the left hand side ② will flash during chilling and will be steady during the storage phase.

The machine may be stopped at any time by pressing the Start/Stop button ① for 3 seconds

**⚠ Note:** the hard chilling at temperature works in the first phase at negative temperature in the cell, until the core probe will detect a temperature at core of 15 °C.

At this point the chilling will pass to the second phase of the cycle with a higher temperature in the cell until the needle probe detects a temperature in the product of +3 °C.

Then the chiller will pass to preservation phase

Once the set blast chilling temperature has been reached in the product core, the machine will automatically go into storage mode.

In the storage phase the cell temperature will be displayed.

### 4.3.5 Selecting blast freezing timed cycle

With the machine in standby, select the freezing button ④, the display will show the value **240 min**.



To increase or decrease the freezing time, use the up ⑦ and down ⑥ buttons.

To start the freezing timed cycle, press the Start/Stop button ①. At the beginning of the cycle, the time will begin to count down. The arrows on the left hand side ② will flash during chilling and will be steady during the storage phase. The machine may be stopped at any time by pressing the Start/Stop button ① for 3 seconds

Once the freezing time has expired, the machine will automatically go into storage mode.

In the storage phase the cell temperature will be displayed.

### 4.3.6 Selecting blast freezing temperature cycle

With the machine in standby, select the freezing button ④, the display will show the value **240 min**.

To select the temperature mode, press the blast chilling mode button ⑤ and the default value will appear **-18°C**.



To increase or decrease the freezing time, use the up ⑦ and down ⑥ buttons.

Insert the product inside the blast chiller making sure to position the probe on the product.

To start the freezing temperature cycle, press the Start/Stop button ①. The arrows on the left hand side ② will flash during freezing and will be steady during the storage phase.

The machine may be stopped at any time by pressing the Start/Stop button ① for 3 seconds

Once the set freezing temperature has been reached in the product core, the machine will automatically go into storage mode.

In the storage phase the cell temperature will be displayed.

#### 4.3.7 Quick selection of positive blast chilling indefinite timed cycle

With the machine in standby, select the positive blast chilling button ③ for at least 3", a positive cycle for an indefinite amount of time will start immediately, and POS will appear on the display.



The arrows on the left hand side ② will flash during blast chilling and won't go into storage mode, the blast chiller will cycle around the minimum cell temperature set for the blast chilling time cycle. The machine may be stopped at any time by pressing the Start/Stop button ① for 3 seconds

#### 4.3.8 Selecting the ice cream hardening / freezing indefinite timed cycle

This function will allow the user to use the blast chiller using the following method:

With the machine in stand-by, select the freezing cycle; the button ④ lights up. Then press the freezing button ④ for 3 seconds, the first LED will show the letter **t** and the time set for the hardening cycle will flash (time given by the Pt4 parameter). An indefinite timed freezing cycle will start immediately.



The user can modify the hardening cycle time using the up ⑦ and down ⑥ buttons while the time is flashing, and only at this time.

When the user opens the door (to put the ice cream in) and then closes it, a beep will sound confirming that it is closed and the countdown will start. The display will show the countdown time without flashing.

When the time arrives at zero, the buzzer will sound for 60 seconds and the count remains at zero and flashes. Any time the door is closed, the countdown is interrupted and a new one starts. The display is used as a timer while the cycle is ongoing and guarantees negative temperatures in the cell. The user can interrupt this function by pressing the Start/Stop button ① for 3 seconds.

#### 4.4 DRYING CYCLE

##### Selecting drying and forced ventilation

With the machine in standby, select by pressing with a single pulse the down button ⑥; Air will be flashing on the display.



Drying is timed. To stop it in advance, press the down button ⑥. Opening the door does not affect the drying cycle

#### 4.5 RAPID DISPLAY OF TIME AND TEMPERATURE VALUES

With the machine in operation, the following operation values can be seen:

- **Total time set for a Positive Soft/Hard Timed Cycle ② ④:** Pressing the positive blast chilling button ③ will display the total time set initially for 5", in flashing mode.
- **Final temperature set for a Positive Soft/Hard Temperature cycle ③ ④:** Pressing the positive blast chilling button ③ will display the final set temperature for 5" in flashing mode.
- **Total time set for a Freezing Timed Cycle ② ⑥:** Pressing the freezing button ④ will display the total time set initially for 5" in flashing mode.
- **Final temperature set for a Freezing Temperature Cycle ③ ⑥:** Pressing the freezing button ④ will display the final set temperature for 5" in flashing mode.
- **Probe temperature in a Blast Chilling/Freezing cycle:** Pressing the blast chilling type button ⑤ during a blast chilling/freezing temperature cycle, will display the probe temperature for 5 seconds.
- **Time elapsed during a blast chilling cycle:** Pressing the down button ⑥ during a blast chilling cycle will display the amount of time elapsed for 5 seconds in flashing mode.
- **Cell sensor temperature during a blast chilling cycle:** During any blast chilling cycle, pressing the up button ⑦ displays the value of the cell sensor for 5" and then the evaporator sensor for 5", if enabled (if there is a buzzer alarm, it also silences the alarm).

#### 4.6 SANITIZING CYCLE (optional)

If the password controlled parameters are enabled, a time-controlled sanitizing cycle may be started. To activate the sanitizing cycle, the equipment must be in off mode. Then, pressing the up button ⑦ for 3 seconds activates the sanitizing cycle, the set minutes will appear on the display and the countdown will begin, once it is completed it automatically deactivates and returns to the off position.



To stop the sanitizing cycle early, just press the Start/Stop button ① for 3 seconds and it will go to standby mode.

**⚠ If the door is opened, it will immediately deactivate and can only be reactivated in off phase.**

Before starting the sanitizing cycle, proceed as follows:

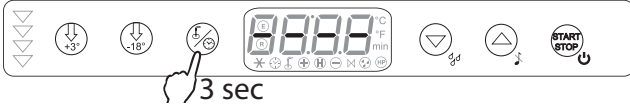
- remove products from the interior
- thoroughly clean with warm water and neutral detergent
- close the door
- start the cycle.

Use of this cycle is recommended only when processing has completed.

# 5. PARAMETERS

## 5.1 PARAMETER MODIFICATION ACCESS

The parameters can be accessed only when the machine is off. Just press the blast chilling button (5) for three seconds, **P R S S** will appear on the display and the up (7), down (6) and blast chilling mode buttons (5) will light up. Pressing only the up (7) and down (6) buttons accesses only the **user parameters**.



To scroll through the parameters, press the up (7) and down (6) buttons. To make changes, once the parameter has been selected, press the blast chilling mode button (5) and change the parameter value using the up (7) and down (6) buttons. To confirm the value and exit modification mode, press the blast chilling mode button (5).

## 5.2 LIST OF PARAMETERS

Following is the list of available parameters

Parameter	Min	Max	U. M.	DEF
P0 Choose temperature unit of measure (0 = Fahrenheit, 1 = Celsius)	0	1	1	Flag
<b>Adjustment set point</b>				
Pr1 Blast chilling cell set point	-20	30	-5	°C
Pr2 Positive storage cell set point	-20	30	+3	°C
Pr3 Freezing cell set point	-50	20	-40	°C
Pr4 Negative storage cell set point	-50	20	-25	°C
Pr6 End blast chilling product temperature	-20	30	+3	°C
<b>Cycle times</b>				
Pt0 Max blast chilling temperature cycle duration	1	200	90	min
Pt1 Max freezing temperature cycle duration	1	400	240	min
Cycle proposed for startup/after cycle stop: 0 = startup from off, 1 = startup from standby without cycle selected,				
Pt2 2 = positive timed, 3 = positive hard timed, 4 = negative timed, 5 = positive temperature, 6 = positive hard temperature, 7 = negative temperature,	0	7	0	flag
Pt3 After stop cycle offers: 0 = last cycle, 1 = cycle defined by Pt2, 2 = no cycle	0	2	2	flag
Pt4 Ice cream hardening timer time	1	20	10	min
Pt5 Duration hard time phase (blast chilling cycle %)	1	99	66	min

## 5.3 DEFROSTING MANAGEMENT (only in certain models)

Manual defrosting is started by pressing the Defrost button (6) for 3 seconds when the panel is in standby. Manual defrosting is shut off by pressing the on/off button (1) for 3 seconds

## 5.4 USB DATA RECORDER (OPTIONAL)

- The USB data recorder will register into a .txt file all the data during the cycles of the machine: Blast Chilling or Freezing and also during conservation phase.
- The data is registered every minute and will include:
  - Date and time
  - Cabinet Temperature
  - Core probe Temperature
  - Type of Cycle
  - Start and Stop of Cycle
  - Door openings
  - Alarms
- The data is constantly stored on the internal recorder, and can be downloaded anytime from the internal recorder introducing a USB pen drive into the plug on the machine.

### Instructions to download the data

- Find on the machine the USB plug and insert the USB pen drive



- IMPORTANT:** wait until the led of the pen drive stops flashing, which means that all the data is recorded on the pen drive.
- Extract the pen drive
- On the pen drive you will find a file named log00n000001.txt which is a text file, delimited with ";" (semicolon).
- The best way to see the data on the file is using Microsoft Excel, following this sequence:
  - Launch Microsoft Excel
  - Go to "open file"
  - Select "text file" on the type of file
  - Open the file registered on the pen drive
  - Select "Delimited" file
  - Select as delimiter the semicolon ";"
- As an alternative you can open the file with a normal text editor
- Every time you insert the pen drive, a new log file will be generated, with a progressive number (log00n000002.txt, log00n000003.txt, log00n000004.txt, etc).
- Every file generated will contain the complete historical data recorded, up to the moment of insertion of the pen drive. So every time the file is bigger.
- As a consequence, the time to save the file on the pen drive (see point 2.) will increase from some seconds to several minutes, depending on how much data is stored on the recorder. IT'S VERY

**⚠ WAIT UNTILL ALL THE DATA IS RECORDED ON THE PEN DRIVE BEFORE REMOVING IT, WAITING UNTIL THE LED ON THE PEN DRIVE STOPS FLASHING.**

**⚠ When updating data: time, day, and year on the board of the computer, it's necessary to remove and then restore the power supply to allow the change data is also stored in the USB recorder.**

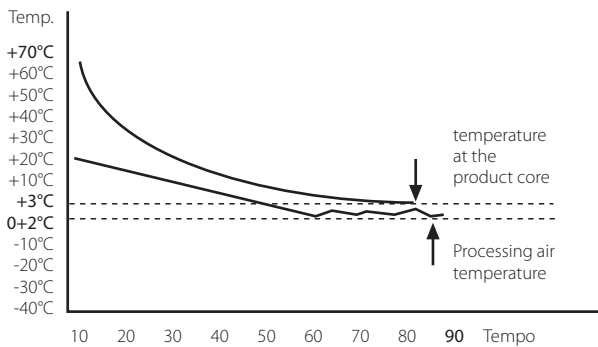


## 6 GREAT TECHNOLOGY AND PROCESS VALUE

- Putting freshly cooked food directly in the storage unit is a mistake! Cooling is static and not very powerful, the chilling time is too long and bacteria develop rapidly in large quantities.
- Only by using a chilling system with forced ventilation heat exchange can we be sure that we are preserving the high initial quality of the food: its appearance, colour, flavour and aroma.
- Cold, like heat, if not properly managed and metered can visibly damage food.
- Since every food has its own characteristics, the use of a specific chilling system every time is important. Our equipment is characterized by its versatility and the availability of several functions in the same machine.
  - Quick "Soft" blast chilling for delicate products with a reduced thickness.
  - Quick "Hard" blast chilling for all dense products, in large pieces or packaged.
  - Quick freezing.

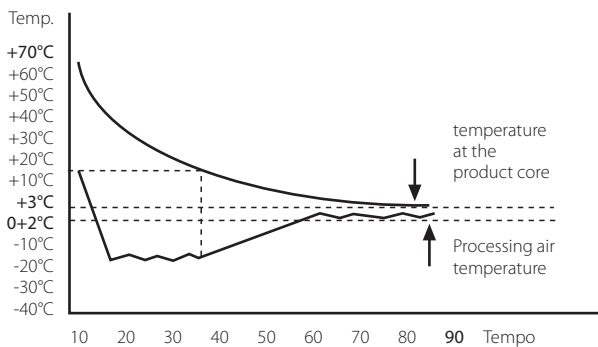
### 6.1 "SOFT" BLAST CHILLING

From +70°C to 3°C at the product core within a maximum of 90 minutes, with air temperature that is always and only positive (0/+2°C), avoiding any type of freezing of the surface of the food.



### 6.2 "HARD" BLAST CHILLING

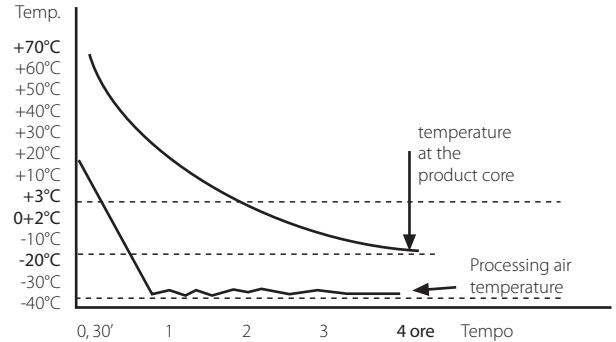
From +70°C to +3°C at the product core within a maximum of 90 minutes, with variable chamber air temperature automatically controlled by the computer. This system allows for a 25-30% time savings in comparison to the "soft" cycle!



### 6.3 QUICK BLAST FREEZING

function available only in certain models

From +70°C to -18°C at the product core as quickly as possible and within at most 4 hours, with a chamber air temperature of -40°C. Rapid cold penetration prevents the transformation of water into macro-crystals, thus not ruining the consistency and integrity of the food.



Each cycle can be **manually** controlled using the timer or automatically controlled with the food probe. The **automatic storage** function at the end of the cycle and the **automatic and manual defrosting** cycles complete the exceptional blast chiller accessories.

# 7 ALARMS LIST

**⚠ Note: Faults probes** Once the sensor is replaced, the alarm disappears after 10 seconds. The sensor alarms at -50°C are disabled during freezing at -18°C and during the ice cream hardening function. Where not specified, each alarm is accompanied by a buzzer (if present). The sound made is a five second beep that is repeated every 15 seconds. The label indicating the alarm in progress is alternately displayed with the current display.

## ALL ER1 Cell sensor failure

**Cause:** Outside of operating range (-50°C / +100°C) for more than 30 seconds with a blast chilling temperature cycle in progress.

**Effect:** In standby it prevents startup of blast chilling/freezing. In blast chilling/freezing and storage, the cycle is not blocked and the compressor is activated in cycles (according to the parameters)

**Reset:** check connections and operation of the cell sensor

## ALL ER2 Evaporator Sensor Failure (only if evaporator sensor is enabled)

**Cause:** Outside of operating range (-50°C / +100°C) for more than 30 seconds with a blast chilling temperature cycle in progress.

**Effect:** In standby, blast chilling/freezing and storage, there is no effect. Any defrost will end due to a timeout.

**Reset:** check connections and operation of the evaporator sensor

## ALL ER3 Product Probe Failure

**Cause:** Outside of operating range (-50°C / +100°C) for more than 30 seconds with a blast chilling temperature cycle in progress.

**Effect:** In standby it prevents startup of temperature controlled blast chilling/freezing. In temperature controlled blast chilling/freezing it causes a change over to a timed cycle. In storage, there is no effect.

**Reset:** Check connections and operation of the product probe.

## ALL AL1 Door Open Alarm

**Effect:** In standby and defrost there is no effect. For the effects on the compressor and fan, see parameters.

**Reset:** close the door, verify the micro door operation


## ALL AL2 High Pressure Alarm



**Effect:** In standby there is no effect. In blast chilling/freezing and storage it blocks the cycle and the panel returns to standby

**Reset:** eliminate the cause of the alarm, turn the panel off and back on.

## ALL AL4 Probe not inserted alarm

**Cause:** failure to insert the probe inside the product during execution of temperature controlled blast chilling

**Effect:** The display shows alarm AL4, the temperature icon  flashes and the buzzer sounds

**Reset:** Insert the probe and restart the temperature cycle using the button . To proceed without the probe, start a timed cycle using the button . If no choice has been made after the alarm has been sounding for one minute, the machine will automatically start a temperature cycle.

## ALL BLC Blackout Alarm

**Cause:** following a power interruption, the machine is in blackout alarm

**Effect:** the machine goes into standby or storage mode if the machine is in blast chilling mode when the blackout occurs, the set cycle will restart and the display will show the BLC alarm alternating with the blast chilling settings. The buzzer sounds every 3 seconds

**Reset:** To silence the alarm, press the  button.

## ALL SXX Temperature Alarm

**Cause:** The blast chiller doesn't reach the set temperature in the time expected during blast chilling/freezing

**Effect:** The cycle continues and doesn't go into storage mode, the display shows the alarm followed by the temperature, and the buzzer sounds for 3 seconds and then repeats after a minute

## ALL HT High Temperature Alarm

**Cause:** the cell sensor (only during storage) detects a temperature above the set parameters for a certain amount of time.

**Effect:** The display shows the Ht alarm alternating with a temperature value, the buzzer sounds for 3 seconds every 30 seconds.

## ALL RTC Clock error

Reset the date and the real time (see item 4.2).

## ALL ERI Interface error

**Cause:** User interface – control module compatibility error

**Solutions:** Check the user interface control module compatibility (check the data given on the labels)

**Effect:** The control module will continue to operate regularly

## ALL ERL Interface error

**Cause:** User interface – control module communication error

**Solutions:** Check the user interface control module connection

**Effect:** The control module will continue to operate regularly

When the cause triggering the alarm disappears, the instrument restores normal operation, except for the clock error (RTC code), which requires the date and time to be set.



# 8 ORDINARY MAINTENANCE

English

**⊘ THESE OPERATIONS MUST BE PERFORMED EXCLUSIVELY BY A CERTIFIED INSTALLER**

The information and instructions in this chapter are intended for all personnel who operate the machine: the user, maintenance personnel and even non-specialized personnel.

**⚠ All cleaning and maintenance operations must be performed with the power disconnected from the electrical system.**

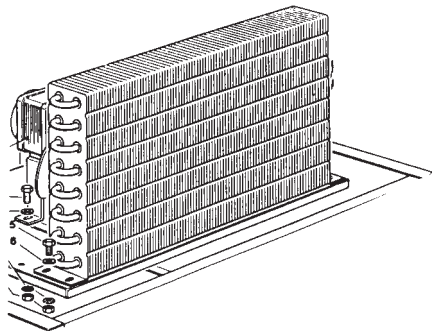
## 8.1 ELEMENTARY SAFETY STANDARDS

- In order to safely perform ordinary maintenance and cleaning operations, we will revisit the safety standards:
  - do not touch the machine with wet or damp hands or feet;
  - do not use the machine when feet are bare;
  - do not insert screwdrivers, cooking utensils or anything else between the protective devices and moving parts;
  - before performing any ordinary maintenance or cleaning operation, disconnect the machine from the electrical supply by turning off the main switch and pulling the plug;
  - do not pull on the electrical cord to disconnect the machine from power.
- Removing the safety and protective devices in order to perform ordinary maintenance operations is strictly forbidden. The manufacturer denies any responsibility for accidents caused by failure to comply with this requirement.
- Before starting the machine, the interior of the cell must be thoroughly cleaned as indicated in paragraph 8.3.

## 8.2 CONDENSER CLEANING

- For correct and efficient condenser operation, the air condenser must be kept clean to allow for free air circulation. This operation is to be performed at least every 30 days. It can be performed with a non-metallic brush to remove all of the dust and fluff from the wings of the condenser itself.
- The use of a vacuum cleaner is recommended in order to avoid dispersing the dust removed into the area. Whenever there are greasy deposits, remove them using a brush soaked in alcohol.

**⚠ Do not scrape the surfaces with pointed or abrasive objects.**



**⚠ This operation must be performed with the system shut down**

**⚠ The condenser has sharp edges. During the above-mentioned operations, always wear safety gloves, safety glasses and masks to protect the respiratory tract.**



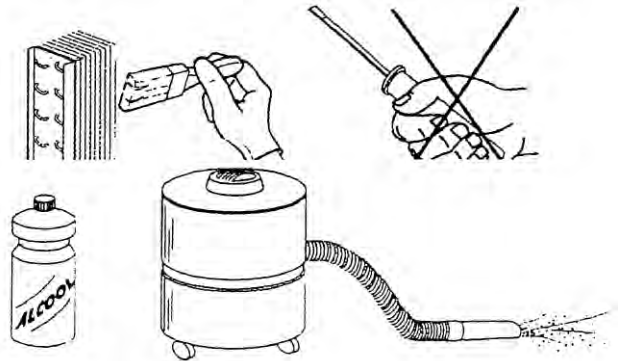
## 8.3 CELL CLEANING

- in order to guarantee the hygiene and safeguard the quality of the treated food products, cleaning of the cell interior must be done frequently, depending upon the type of food stored.
- Weekly cleaning is advised.
- The configuration of the cell and internal components do not allow cleaning using a cloth or sponge.



- Clean using water and non-abrasive neutral detergents. Rinsing can be done with a wet cloth or sponge or with a moderate spray of water (no greater than the system water pressure). Do not scrape the surfaces with pointed or abrasive objects.

**⚠ Do not use abrasives or solvents and thinners.**



**⚠ Note: during cleaning operations, always wear protective gloves.**

## 8.4 EXTERNAL MAINTENANCE AND CLEANING

- To clean the body, all that is needed is a cloth dampened with a product specifically for stainless steel, without bleach.

## ⊘ Evaporator cleaning

- The interior of the evaporator must be cleaned periodically in the following manner:

Fig. 1

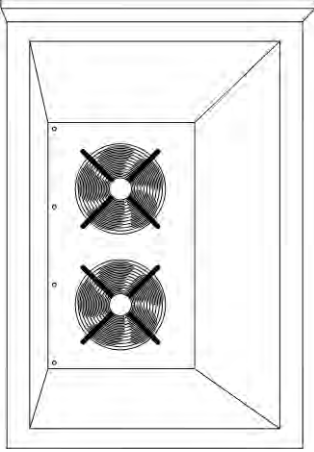


Fig. 2

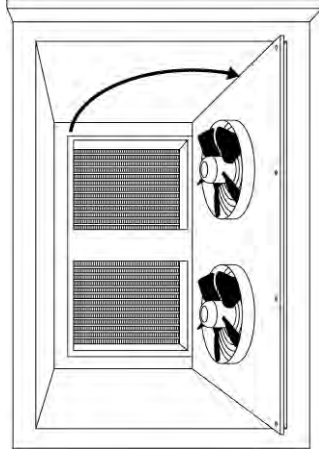


Fig. 3

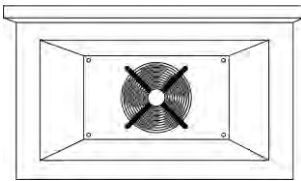
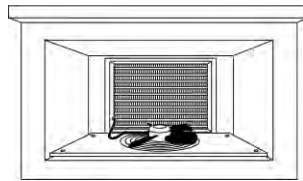


Fig. 4



- Remove the screws that hold the steel fan panel from the evaporator and open the panel as indicated
- Clean the evaporator battery using a jet of hot water at low pressure, aiming it from high to low on the evaporator. Make sure that the water is drained through the drain pipe.
- When complete, used compressed air to remove all of the water from the evaporator battery.
- Repeat the operation described above to close the fan panel.

**⚠ Before starting the machine, make sure you have removed any tools used for cleaning and that the drain plug is closed.**

## 7.5 DEFROST WATER DRAINING

- the system is set up for automatic (in certain models) and manual defrosting when necessary.
- make sure that the evaporator water is correctly draining in the collection basin, avoiding any obstructions of the drain pipe.



**Castel MAC SpA** a socio unico

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**71504057/0** Rev.01 06/2016 - Manuale uso e manutenzione