EN

# Use and maintenance manual

# NA1.18

Review 00

Edition 01

NUOVAIR

INNOVATORS OF REFRIGERATION

Dear client

Thank you for purchasing blast chiller and freezer NA1.18.

The following manual, provided with the machine, should be considered an integral and essential part of it.

Before carrying out any operation, you are advised to read the instructions it contains carefully since only careful reading will allow you to obtain the best performance from your machine.

Nuovagel reserves the right to make changes without prior warning which it feels are necessary to improve its product and the technical manual by inserting variations in the subsequent editions.

## Technical Support Service

This manual provides the instructions necessary for use, operation and routine maintenance of the blast chiller to which it refers.

All support intervention required is regulated, therefore, by the use and warranty conditions of the BLAST CHILLER itself.

For any request for further information, clarifications or technical support in general, call our support service:

**Tel. +39 0438 489097**
**mail: info@lanuovagel.com**

NOTE - If support is requested or during the order phase of the spare parts, you need to always state the identification date of the blast chiller (see the paragraph on Blast chiller identification).

## Symbols in the manual

**This symbol identifies a situation in which non-compliance with the standards indicated could cause risks for the machine and for the safety of exposed operators or people, with danger of injuries or death.**

**This symbol identifies some suggestions and details for correct operation of the machine.**

# Content

## ATTENTION!

**Before using the equipment, you are advised to carefully read and comply with the following safety warnings, to reduce risk of fire, electrocution or injuries to people:**

Ensure the voltage is compatible with the voltage range indicated on the plate, guarantee the ground to the socket and check the socket is in good conditions.

If the power supply cable is damaged, it must be replaced by the manufacturer or the service agent or however by qualified staff to avoid risks.

Do not overturn or tilt the equipment. The equipment must be placed on a flat surface during use to avoid overturning it.

To reduce the risks of electrocution:
- do not pour water on the electricity cable, plug or ventilation,
- do not emerge the equipment in water or other liquids,
- do not use the equipment with wet hands, and do not spray water on it.

This equipment is not intended for use by people (including children) with reduced physical, sensory or mental capacity, or lack of experience or know-how.

The probe at the centre must only be used for the purpose for which it was designed: to detect the temperatures at the centre of the foodstuff products to blast chill and/or freeze.

Disconnect the machine from the electricity mains, switch off the main switch and remove the plug before cleaning, maintenance operations or before moving the equipment.

Do not use equipment for purposes other than its intended use.

Do not use equipment for purposes other than its intended use.

Do not position the equipment near heat sources.

Never use abrasive detergents or hard tools.

Do not operate the equipment outdoors.

Do not use accessories not recommended by the manufacturer

Do not overload the machine beyond that established by the manufacturer

## 2.1 General information

The information contained in the manual is the property of "La Nuovagel": its diffusion and reproduction, even partial, is forbidden, without written authorisation.
The blast chiller was designed in compliance with the Machinery Directive issued by the Council of the European Community (Law 89/392/EEC and subsequent amendments) to guarantee the safety for which it was intended, provided the instructions contained in this manual are always followed.

## 2.2 Scope and content of the manual

This manual has the purpose of providing the instructions and indications necessary for installation, operation and maintenance of the BLAST CHILLER in conditions to safeguard the personal safety of those operating it.
In compliance with the Machinery Directive in force, it contains all the general information, instructions and information necessary for installation, description of the commands, start procedures and operation of the BLAST CHILLER in safe conditions and normal service operations.
The topics are subdivided into sections, in turn subdivided into paragraphs and sub-paragraphs which are progressively numbered.

## 2.3 Spare parts

You are advised to exclusively use "La Nuovagel" original spare parts. Ordering spare parts must be made to the Support Service, taking care to always state the identification data of the BLAST CHILLER.

## 2.4 Warnings on manual use

**2.4.1 Scope and limitations of the manual**

This manual is intended for all operators interested in use and supervision of the BLAST CHILLER during its useful life. The scope of the manual is to provide information regarding:
1. The technical characteristics of the BLAST CHILLER
2. Preparation of the workplace regarding the environmental characteristics and power supply sources.
3. The safety standards and information relating to the safety devices installed on the BLAST CHILLER.
4. Use of the BLAST CHILLER as outlined in the project.
5. Availability of the spare parts.

The manual cannot in any way substitute the specific preparation which operators must have previously gained on similar equipment or can carry out on this BLAST CHILLER under the guidance of previously trained staff.

**2.4.2 Manual preservation**

The manual is considered an integral part of the BLAST CHILLER and must be kept for future reference up to final disposal of the BLAST CHILLER.
The manual must always be available for consultation and must be carefully preserved, away from dust, humidity and in a safe place; if damaged, which would compromise its consultation, even partially, the user is obliged to request a new one from the manufacturer.

## 3.1 General information

**ATTENTION!**

**The information contained in this section only and exclusively refers to the BLAST CHILLER and, if necessary, should be integrated with the information relating to standards of the system/structure in which the BLAST CHILLER is used.**

This chapter contains the information, outlined by the Machinery Directive, which is essential for compliance with the safety standards in general, risk assessment deriving from use of the BLAST CHILLER and the use environmental conditions.
Non-compliance with the instructions contained in this chapter and further instructions contained in this manual can make the safety conditions planned during the design phase ineffective and may be the cause of accidents for those operating the BLAST CHILLER

## 3.2 Standard references

The BLAST CHILLER overall and the individual elements composing it were designed while taking into consideration the EC harmonised standards in force, as well as the other European and national standards, applicable according to the Machinery Directive issued by the Council of the European Community (Directive 89/392/EEC and subsequent amendments).
The main harmonised standards taken into consideration are as follows:
**UNI EN 292-1, UNI EN 292-2, UNI EN 294, UNI EN 414, CEI EN 60204-1, 89/109/EEC, Directive 2006/95/EC Directive 2004/108/EC**

## 3.3 Use environmental conditions

**1 - Temperature and humidity**

The BLAST CHILLER must be used in premises with an ambient temperature between + 5 °C and + 35 °C and with relative humidity under 85%.

**2 - Working pressure**

The BLAST CHILLER must be used to protect atmospheric agents (rain, hailstones, snow, fog etc.) and only inside the industrial/artisan environments.

Use is not planned of the BLAST CHILLER in an explosive or partially explosive atmosphere: its use is therefore forbidden in such conditions.

**3 - Lighting**

The premises hosting the machine must be lit in such a way to easily identify the buttons and command and emergency stop devices.

Good industrial lighting for works of average accuracy is approximately 300-600 lux).

**4 - Residue and environmental contamination**

The user must comply with the standards and directives in force in the country of BLAST CHILLER use for processing of lubricants and fluids possibly used in the BLAST CHILLER.

## 3.4 General safety standards

Configuration of the BLAST CHILLER and the respective safety devices correspond with the requirements of the Machinery Directive issued by the Council of the European Community.
Non-application of these provisions could make the safety conditions planned inadequate during the design phase..

**Staff proposed for use and supervision of the BLAST CHILLER must be trained by their employer on risks of accidents, safety devices installed on the BLAST CHILLER and the general safety rules planned by the European Directives and/or legislation inforce in the country of intended machine use.**

**Staff proposed for use of the blast chiller must be in excellent physical and mental shape and not be under the influence of substances which, by nature, can alter their sense of perception or delay their reflexes.**

**It is strictly forbidden to operate the BLAST CHILLER by children and unsuitable people who should also be kept away from the blast chiller.**

Nuovagel cannot be held in any way liable for damages to the BLAST CHILLER or the operator's physical safety or that of third parties due to non-compliance with the safety standards outlined in the technical documentation supplied with the BLAST CHILLER.
Before starting work, the operator should be perfectly aware of the characteristics of the BLAST CHILLER, the position and operation of all the commands; he must also have read and understood on a whole the use and maintenance manual and any reference publications.

**ATTENTION!**

**The BLAST CHILLER must only be used by operators who have participated in training carried out on site by "La Nuovogel" staff (if planned by the supply contract) and/or who have understood he instructions contained in the reference publications.**

**The instructions, warnings and rules for general safety contained in the reference publications or indicated on the signs applied to the BLAST CHILLER must be observed.**

**Tampering or unauthorised replacement of one or more parts of the BLAST CHILLER, use of accessories, tools or consumable materials differing from those recommended by the manufacturer can pose a danger for the operator's safety and relieve the manufacturer of any civil or criminal liability.**

## 3.4.1 Clothing

The clothing worn by those operating or maintaining the BLAST CHILLER must always be adequate for the type of operation in progress. Furthermore, it must comply with the safety provisions planned by legislation in force in the country of BLAST CHILLER use. In general, the operator must wear safety shoes with a non-slip sole and therefore use is not permitted of moccasins, slip-on shoes, slippers or other types of footwear that could compromise a person's mobility.
The clothing worn must be adequate for the work to perform.

## 3.4.2 Access to the work area

The work area (and in particular the zones where the command panels and emergency buttons are installed) must never be occupied by material or otherwise, in such a way that nothing interferes with the operator's freedom of movement. In the event of an emergency, immediate access must be guaranteed to the BLAST CHILLER by responsible staff. Specific signs should be used to avoid unauthorised people accessing the BLAST CHILLER work area.

**Use is forbidden of the BLAST CHILLER by children and all unsuitable people and they should be kept away from it.**

**During maintenance operations, in particular when working with open guards and disconnected safety devices, an operation only permitted to formally authorised and duly trained staff, utmost attention must be paid so the work area is inaccessible to people not directly involved in these operations.**

**At the end of the maintenance operations, check that no equipment if used remains inside the BLAST CHILLER and any guards removed are put back in place.**

## 3.5 Risk assessment

The information contained in this paragraph exclusively relates to the BLAST CHILLER and therefore must be integrated, by the user, with the risk assessment in which the BLAST CHILLER is installed.

## 3.5.1 Introduction

The risk assessment deriving from use of the BLAST CHILLER was mainly carried out based on the methodologies indicated in the relevant harmonised standards and relevant European Directives: the results of this analysis and the safety measures implemented to eliminate the risk or reduce the risks for the user are outlined in this chapter.

## 3.5.2 Risks relating to the installation environment

In the environment in which the BLAST CHILLER is installed, risky situations can be presented which could prejudice correct operation and safeguarding the safety of staff using and maintaining the BLAST CHILLER.

**Flooring**

The surface on which the BLAST CHILLER rests must be such to guarantee correct support and levelling over time.
If the blast chiller should be installed on a raised surface, e.g. table, the latter must be flat and level, with an adequate structure, to present a surface that prevents the BLAST CHILLER from slipping.

**Temperature and humidity**

The temperature and humidity of the environment stated must be ensured; elevated peaks, positive or negative, in temperature or humidity can cause operating problems for the parts composing the BLAST CHILLER (e.g. condensate inside the electric box). Position the BLAST CHILLER far from heat sources and away from sprays.

**Polluting materials**

You must assess the damage to the BLAST CHILLER in advance deriving from use in the work environment of the materials considered polluting, for example:
▪ DUST which can for example accelerate wear of the gaskets or components.
▪ MAGNETIC FIELDS, determined by passage of electrical power lines near the electronic equipment installed on the BLAST CHILLER can cause disturbance and malfunctions.
▪ TOXIC SUBSTANCES (gas, vapours, etc.) in the work environment.

**ATTENTION!**

**The user is responsible for ensuring the suitability of the location in which the BLAST CHILLER is installed, to safeguard its integrity over time.**

## 3.5.3 Risks relating to the characteristics of the BLAST CHILLER

In compliance with the directive in force, all the zones of the BLAST CHILLER were analysed, characterised by the intrinsic risks in the nature of the work process or the manufactured structure of the BLAST CHILLER.
When technically possible, the most appropriate measures were taken to reduce, if not eliminate, possible risks for the people exposed, giving the BLAST CHILLER a series of fixed and mobile guards to standard, which prevent access to the danger zones during work (refer to the Residual risks paragraph). It should however be remembered that the best way to ensure an operator's safety is for the operator to always be cautious and sensible, and the increasing experience he acquires in the time using the BLAST CHILLER can improve the safety margins of his work.

## 3.6 Safety

The BLAST CHILLER is equipped with safety devices to prevent accidents to the operator, and any exposed people, and to protect the BLAST CHILLER from any damage.
All people responsible for BLAST CHILLER operation, or however intended to come in contact with it, must carefully read the paragraphs that follow, which describe the so-called "risk areas" and the relevant interventions implemented in terms of safety, as well as the so-called "residual risk" areas, i.e. those areas which, despite the interventions implemented, still present a certain level of danger.

**The user is responsible for ensuring the suitability of the location in which the BLAST CHILLER is installed, to safeguard its integrity over time.**

**The safety devices must not be removed or disabled for any reason; any operation carried out on the BLAST CHILLER deliberately bypassing the safety devices or any type of tampering with the devices is a risk and danger for those carrying out the operation.**

## 3.6.1 Danger signalling plates

Danger signalling plates are affixed for the purpose of highlighting the zones of the BLAST CHILLER where particular attention must be paid and the residual risk zones for operator and exposed persons' safety.

**ATTENTION!**

**Removal of the plates and their replacement in the event of wear is the full responsibility of the user for all consequences which can arise or derive from use of the BLAST CHILLER without complying with the safety conditions planned by the manufacturer.**

## 3.7 Warranty

"La Nuovagel" guarantees the BLAST CHILLER NA1.18 for 12 months from date of sale.

With the aforementioned terms "La Nuovagel is committed to replacing factory defects in parts for the client, at its discretion.
The warranty does not cover labour, assembly and dismantling for replacement of faulty parts, and equally excludes transport costs for parts sent for replacement. Assumption of responsibility by "La Nuovagel" excludes resolution of the contract and every other liability and obligations for other expenses, direct damages deriving from use of the equipment, both total and partial.

"La Nuovagel" cannot be held liable for faults depending on wrong operation of the equipment by the user, or deriving from changes or repairs carried out by the user or third parties without the written consent of "La Nuovagel", independent of the causation between the changes or repairs and the facts found.
The manufacturer is only responsible for faults inherent in the parts provided and which have occurred in compliance with the planned use conditions (see the Planned use paragraphs) of the BLAST CHILLER, Unplanned use of the BLAST CHILLER, Restrictions and unpermitted use) .
Each complaint should be communicated to "La Nuovagel" by the user directly within eight days of receipt of the equipment or its spare part, by compiling the specific form which will be sent to "La Nuovagel" for acceptance. "La Nuovagel" reserves the right to accept the equipment dispatched to support without original packaging.

The material, replaced under warranty, should be kept by the purchaser and made available to "La Nuovagel" which will decide whether to ask for return of the material at its expense.

**The warranty ceases if the purchaser has not complied with contractual obligations.**

Also in the event of a validly proposed claim, the purchaser cannot suspend payments or other obligations relating to purchases.

This warranty annuls and replaces every other form of warranty, expressed or implicit; any other change has no value, if not stated on the official document issued by "La Nuovagel".

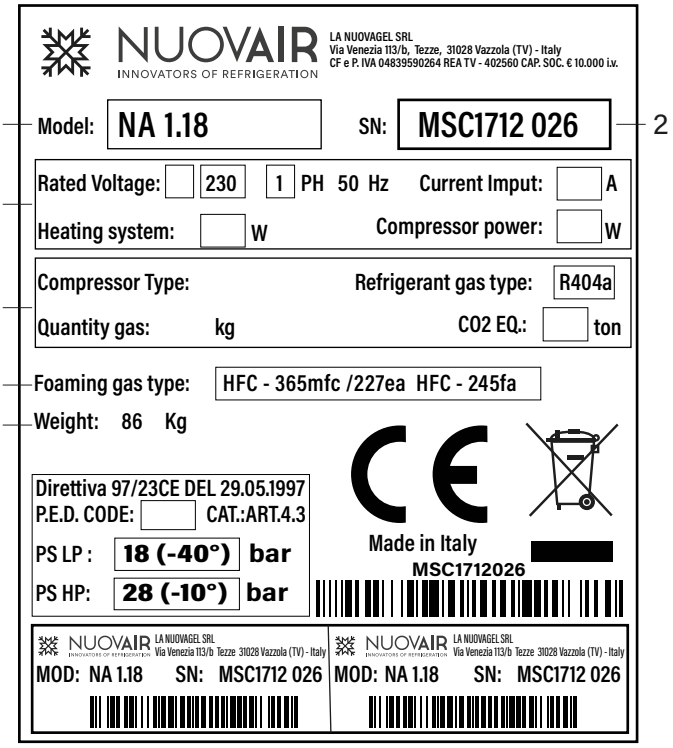
### 3.7.1 Support

"La Nuovagel" provides a support service on request for installation and maintenance of the machine.

## 4.1 BLAST CHILLER identification

The main identification data of the BLAST CHILLER are printed on the specific plate fastened to the main body of the equipment.

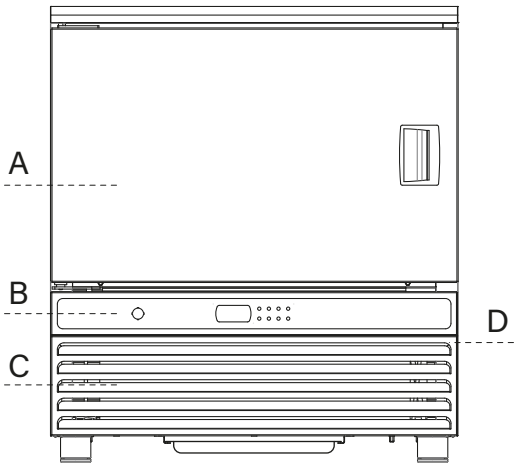
The plate outlines the following data:
1) Description of model
2) Serial Number
3) Nominal power, voltage and power supply frequency
4) Compressor, type and quantity of gas
5) No. refrigerant of insulating foam gas
6) Weight of equipment




## 4.2 CE marking

The BLAST CHILLER is equipped with CE marking in compliance with the Council of the European Union; the marking is placed on the identification plate of the blast chiller.
Together with the BLAST CHILLER, a CE Declaration of Conformity is delivered to the Directive, in a signed, original copy; this document MUST BE FILED carefully by the owner of the BLAST CHILLER to be shown on each request of the competent authorities.
The "CE Declaration of Conformity" is a document which forms an integral part of the line and in the event of changed ownership, must be given to the new owner.

## 4.3 Description of the blast chiller




The temperature blast chiller was manufactured and designed for chilling and/or freezing of food in the professional catering sector
The model NA1.18 is suitable to contain **5 trays GN/1.**
Blast chilling capacity: 18 kg
Deep-freezing capacity: 16 kg

The equipment is structured as such:

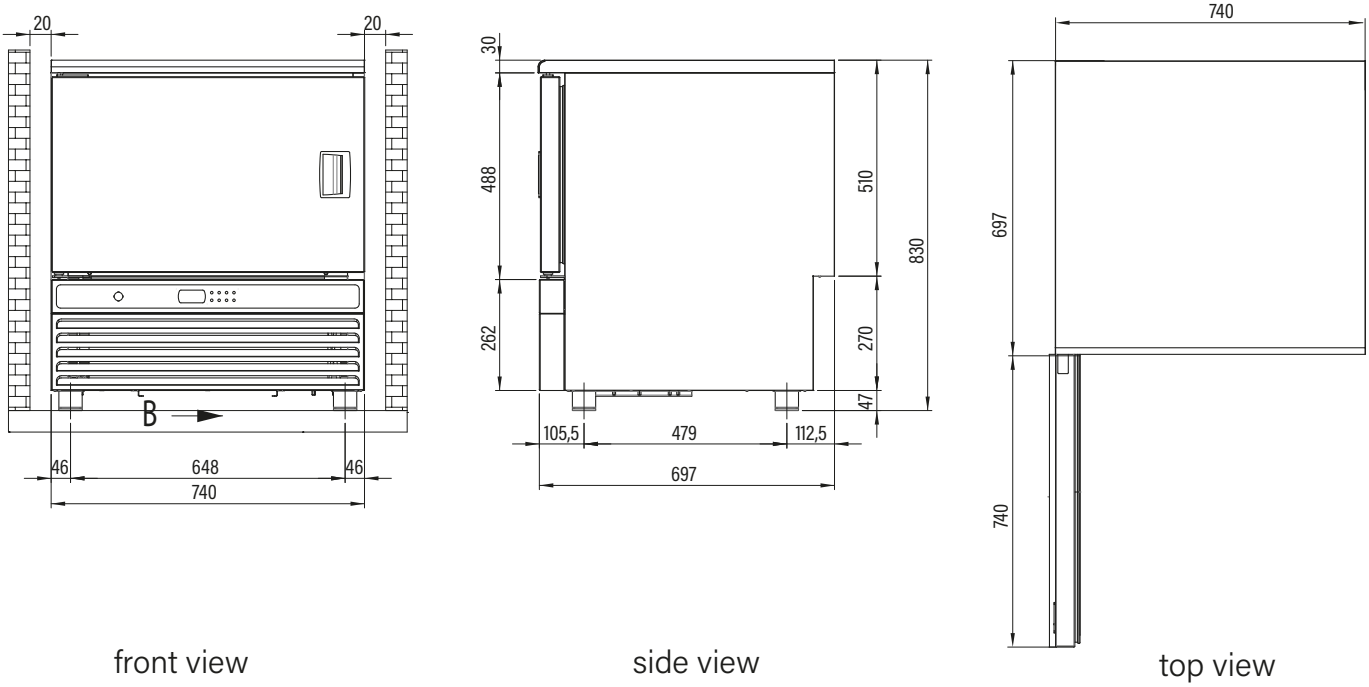
**A** - - Inside the refrigeration cabinet A, to the rear there is an **evaporation unit.**
The rest of the interior is specifically for the **storage area** for chilling and/or freezing food.

**B** - This zone contains the components for electrical **operation and control** of the evaporation unit, and all the electrical cables.

**C** - The lower part of the equipment has a **condensation unit.**

**D** - From the dashboard D using a door with vertical opening, you can access the electrical parts and condensation unit.

## 4.4 Dimensions



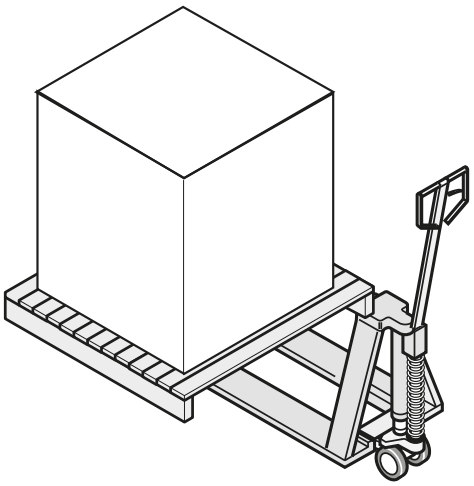

front view side view top view

## 4.5 Preliminary operations

Strictly follow the operations listed below for correct installation of the BLAST CHILLER on the proposed work area.
The BLAST CHILLER is equipped with adequate packaging to protect it from damage during transport. There can be different types of packaging: cardboard box with wooden base, wooden crate, etc.
You are advised to keep the packaging for the entire period of warranty. "La Nuovagel" reserves the right to accept the equipment dispatched to support without original packaging.
The dimensions of the packaging are: cm 86x77x110 h

## 4.6 Unpacking

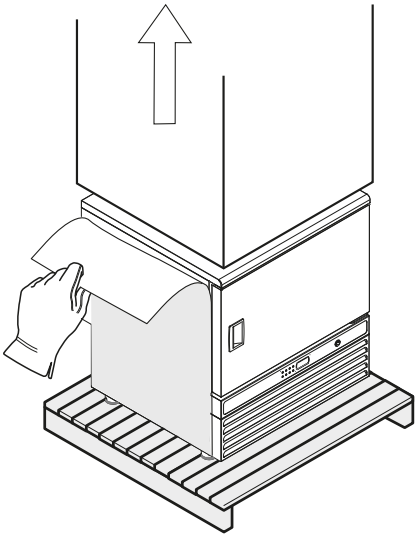
Move the BLAST CHILLER with the help of a pallet truck; if the client does not have one, the BLAST CHILLER can be moved by hand provided this manoeuvre is carried out by at least three people:



**ATTENTION!**

**the maximum liftable weight for an adult is 25 Kg if male, 20 Kg if female, excessive forces could cause skeletal muscle problems.**
**The operators should wear due protection (Safety gloves and safety shoes).**

Before removing the BLAST CHILLER from the packaging, check the container has no obvious damage. If necessary, photograph the outer damage.



Proceed to remove the protective casing used for transport by paying due attention not to damage the BLAST CHILLER.
Then, remove the protective sheet of steel, taking care not to scratch the BLAST CHILLER.

## 4.7 Positioning

The blast chiller must be installed and tested in strict compliance with the safety standards and traditional provisions and legislation in force.

Comply with the minimum distances from the walls (see par. 4.3) for correct ventilation.

Level the equipment using the adjustment feet (Fig. 1). If the equipment is not levelled, operation and flow of condensation can be compromised.

Do not position the blast chiller near heat sources or in places exposed to sunlight (Fig. 2)

Do not position the blast chiller in hot locations without air exchange.

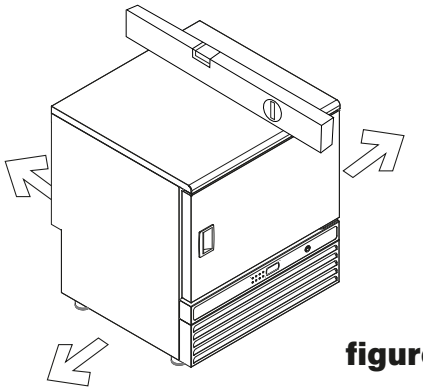


**figure 1**

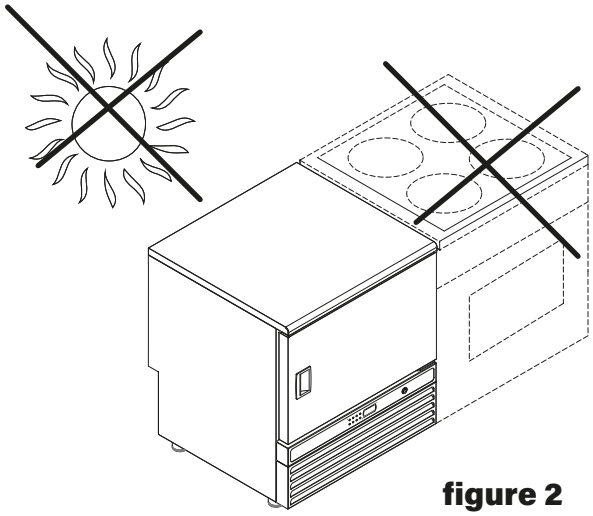


**figure 2**

## 4.8 Ambient temperature

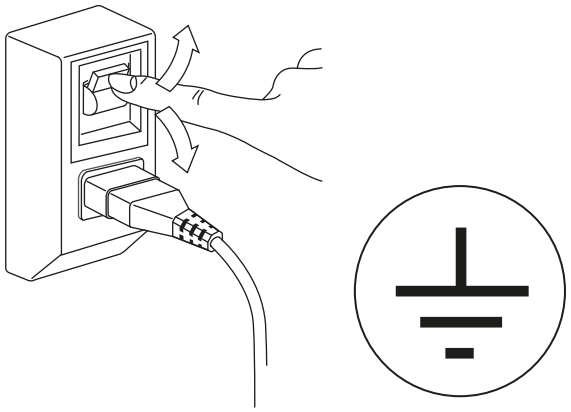
For air condensation refrigeration units, the operating ambient temperature must not exceed 32°C. Over this temperature, the performance declared is not guaranteed.

## 4.9 Refrigeration power

| | | |
|---|---|---|
| Power supply frequency: | Hz | 50/60 |
| Refrigeration yield: | W | 1450 |
| Condensation power : | W | 2200 |

Values declared at T.evap.=-10°C, T.cond.=+40°C and f.power supply=50Hz.
Overheating in compliance with EN12900

## 4.10 Electrical connection



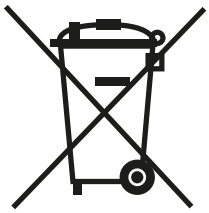
Upstream of each equipment, install an automatic differential circuit breaker switch, according to the standards in force in the country of installation.
The dimensions of the connection cable must be in compliance with the information contained in the electrical data of the technical data sheets. The voltage of the systems must be contained within the limit of +10% and unbalancing in phases voltage must not exceed 3%.
The power electrical connection must be carried out by qualified staff, in compliance with the directives and legislation in the country in which the unit is installed.

The ground conductor must be connected correctly to an efficient ground system.

**The manufacturer declines all liability and warranty obligations for damage to equipment, people and property, attributable to incorrect and/or improper installation of legislation in force.**

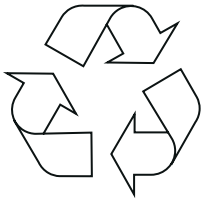
**If the power supply cable is damaged, it should be replaced by the manufacturer or the technical support service or however by a person with similar qualification, to prevent every risk!!!**

## 4.11 Disposal of the machine



Demolition and disposal of the machine must be carried out in compliance with legislation in force in the country of installation. In compliance with the Directives 2011/65/EC, 2012/19/EU and 2003/108/EC,
relating to reduced use of hazardous substances in electrical and electronic equipment, as well as waste disposal.

The symbol of the barred bin on the equipment or on the packaging indicates the product at the end of its useful life must be collected separately from other waste.
Differentiated collection of this equipment at the end of the life cycle is organised and managed by the manufacturer. The user who must dispose of this equipment should therefore contact the manufacturer and follow the system implemented by same to allow separate collection of equipment on reaching the end of its life. Adequate differentiated collection for subsequent start-up of the equipment decommissioned for recycling, treatment and compatible environmental disposal contributes to avoiding possible negative effects for the environment and health and promotes re-use and/or recycling of the materials composing the equipment.
Illegal disposal of the product by the holder leads to application of administrative sanctions outlined by law.



Most of the components used for packaging and manufacturing of the BLAST CHILLER are recyclable, we recommend the user selects them and sends them to the appropriate collection centre.

## 4.12 Technical data sheet of refrigerant gas R404A and R452A

The refrigerant gases used are fluids R404A and R452A, they quickly compose in the atmosphere because they have a very low concentration.
Overall heating power: 3,921.5
Contains fluorinated greenhouse gases regulated by Kyoto protocol. If released in large quantities, it can contribute to the greenhouse effect.
The GWP values are:
for gas R404A it is 3260
for gas R452A it is 2141

**First aid measures**
In high concentration, it can cause asphyxia. The symptoms can include loss of mobility and/or consciousness. The victims may not realise they are choking. Wearing a breathing apparatus, move the victims to a ventilated zone and keep them lying down and warm. Call a doctor. Practice artificial respiration only if the breathing has stopped.

Inhalation:
In high concentration, it can cause asphyxia. The symptoms can include loss of mobility and/or consciousness. The victims may not realise they are choking. Wearing a breathing apparatus, move the victims to a ventilated zone and keep them lying down and warm. Call a doctor. Practice artificial respiration only if the breathing has stopped.

Contact with eyes:
Immediately rinse eyes with water. Remove any contact lenses if easy to do so. Continue to rinse. Rinse with plenty of water for at least 15 minutes. Immediately visit a doctor. If medical assistance is not immediately available, rinse for at least 15 minutes.

Contact with skin:
Contact with liquid that evaporates can cause skin to freeze.
Respiratory failure. Contact with liquefied gas can cause damage (freezing) due to rapid chilling by evaporation.
Defrost the frozen parts using tepid water. Do not rub the interested part. Immediately consult a doctor.

**Fire prevention measures**
Heat can cause containers to explode. In the event of a fire, the following products can originate due to thermal decomposition: Carbon monoxide, fluorocarbons, hydrofluoric acid; carbonyl difluoride In the event of fire: block the leak if there is no danger. Continuously spray with water from a protected position until the contain cools. Use extinguishers to put out the fire. Isolate the source of fire or leave to burn.

Fire-fighting operators must use standard protection equipment, including flame-proof overalls, helmet with safety visor, gloves, rubber boots and, in enclosed spaces, a SCBA breathing apparatus.

**Measures in the event of accidental release**
Evacuate the zone. Guarantee adequate ventilation. Prevent spillages in sewers, cellars, excavations or zones where accumulation can be hazardous. Use the breathing apparatus to come in contact with the relevant zone if it is not proven that the atmosphere is breathable. EN 137 Safety devices for the airways - Breathing apparatuses with an open circuit and compressed air with full mask - Requirements, tests, marking.

**Handling and storage**
Assess a work permit system for example for maintenance activities. Ensure adequate ventilation. In the event of potential release of asphyxiating gas, oxygen detectors should be used. Guarantee adequate ventilation, including a suitable localised extraction system, to avoid exceeding the professional exposure limit defined. The systems under pressure must be regularly controlled for leaks. Preferably used permanent tightening connections (e.g. welded pipes) Do not eat, drink or smoke during product use.

## 5.0 Description of commands

Identification of the commands on the BLAST CHILLER is simple and fast. (Fig.3)

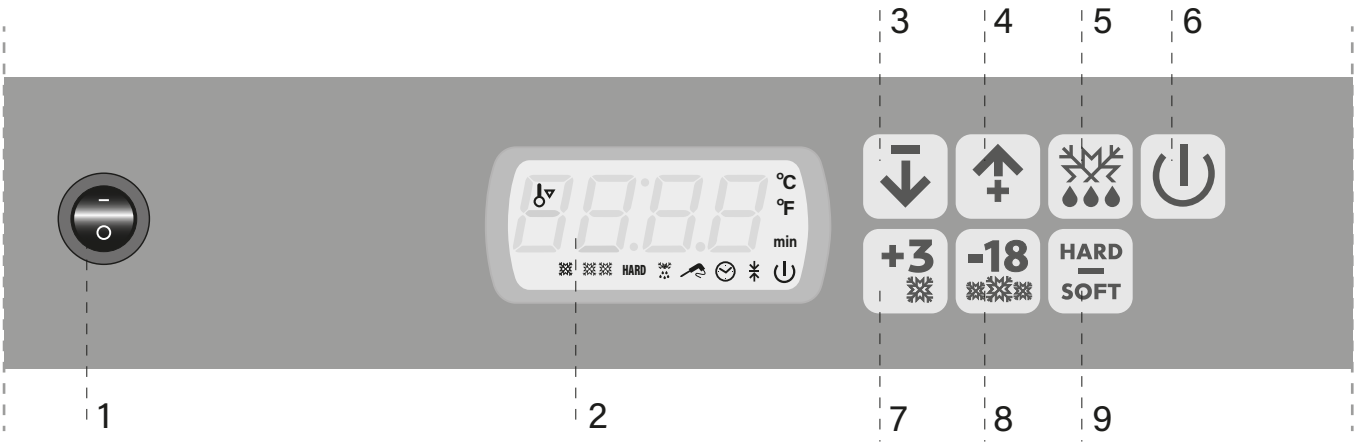



**figure 3**

1 - Mains on/off switch
2 - Function display
3 - Key to reduce time and temperature
4 - Key to increase time and temperature
5 - Defrost key
6 - Start cycle key
7 - Probe at centre blast chilling key
8 - Probe at centre deep-freezing key
9 - Blast chilling and deep-freezing timed key

## 5.1 Description of the symbols on the display

Means the signalling leds on the display


if on it indicates the blast chilling cycle is in progress; if flashing it indicates a blast chilling cycle was selected

if on it indicates the deep-freezing cycle is in progress; if flashing it indicates a deep-freezing cycle was selected

**HARD** if on it indicates the intense blast chilling or deep-freezing cycle is in progress; if flashing it indicates an intense blast chilling or deep-freezing cycle was selected

if on it indicates the blast chilling or deep-freezing cycle was selected with a temperature with the probe at the centre.

if on it indicates a timed blast chilling or deep-freezing cycle is in progress; if flashing it indicates actual day and time setting is in progress

if on it indicates the preservation cycle is in progress

if on it indicates a defrost cycle is in progress

if on it indicates a pre-chilling cycle is in progress and the temperature of the unit has reached that established with parameter r12; if flashing the temperature of the unit has not reached that established with parameter r12

**°C** if on it indicates the measurement unit chosen is in degrees Celsius

**°F** if on it indicates the measurement unit chosen is in degrees Fahrenheit

**min** if on it indicates the measurement unit of the time is the minute

if on it indicates the equipment is in "stand-by" status

## 5.2 Operating cycle

### Temperature rapid blast chilling

This cycle rapidly reduces the temperature of the food from **+90°C** to **+3°C** at the centre, in a maximum time of 90 min. The working temperature oscillates between 0°C and +2°C. It can be carried out in 3 ways: automatic, with probe temperature at the centre or timed. Figure 4.


figure 4

### Temperature rapid deep-freezing

This cycle reduces the temperature at the heart of the food from **+90°C** to **-18°C** in this shortest time possible, max 240 min. The working temperature oscillates between 0°C and +2°C. It can be carried out in 3 ways: automatic, with probe temperature at the centre or timed. Figure 5.


figure 5

### HARD blast chilling and SOFT deep-freezing

This cycle allows temperature reduction at the centre of the product from **+90°C** to **+3°C** for blast chilling and from **+90°C** to **-18°C** for deep-freezing, at a time set by you according to the quantity of type of product to blast chill and/or deep-freeze.
It can be carried out in 3 ways: automatic, with probe temperature at the centre or timed. Figure 6.


figure 6

### Defrost

For correct operation of the equipment, you need to run a defrost cycle to eliminate frost forming on the evaporator.
Operation is carried out for forced ventilation and must be carried out with the door open. The cycle can be shut-off at any time.
During the cycle on the display, the symbols highlighted in Figure 7 will be on.


figure 7

### Preservation

At the end of each blast chilling or deep-freezing in automatic mode or with the probe temperature at the centre, timed or in hard mode, a preservation cycle is automatically started for an undetermined time (you are advised to execute this cycle for a short time before storing the product in a preserver or in the event of an emergency.
During the cycle on the display, the symbols highlighted in Figure 8 will be on.


figure 8

## 5.3 Operation

### 5.3.1 Switch on/off

Having activated the main switch on the blast chiller, ensure the keypad is not locked and that no procedure is in progress.
Press for 1 sec. the START/STOP key (Figure 9) the led on the display switches on/off.

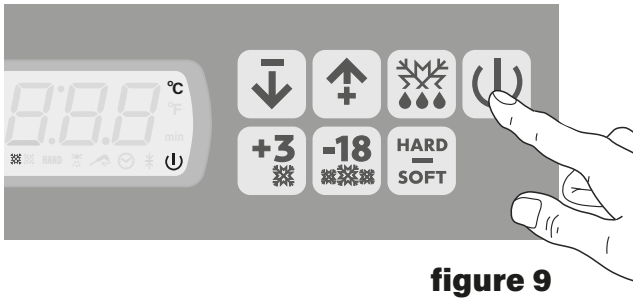



figure 9

### 5.3.2 Start pre-chilling

Before inserting the product in the compartment and before each operating cycle, you are advised to execute pre-chilling.
It can be carried out if parameter r22 is set at 0 in manual mode by pressing the "blast chilling" key for 2 seconds (Figure 10) the led on the display flashes. To shut-off the cycle, press the "blast chilling" key again for 1 sec. or start the operating cycle.
To start pre-chilling in automatic mode, pass from the "stand-by" status to the "on" status (i.e. switch on the equipment).

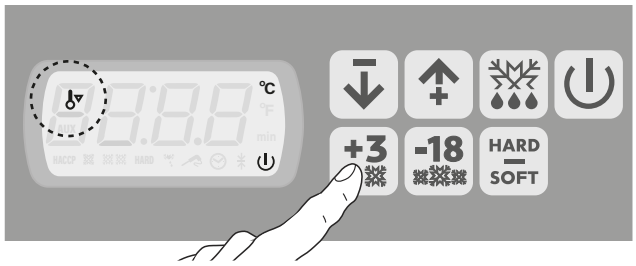



figure 10

### 5.3.3 Blast chilling and preservation

The temperature blast chilling and preservation cycle is composed in two phases: blast chilling and preservation. On conclusion of blast chilling, the equipment passes automatically to preservation.

- START-UP IN AUTOMATIC MODE

To start the cycle, press the +3 "blast chilling" key (Figure 11), the leds and on the display flash.
The test starts for correct insertion of the probe at the centre of the product, after a few seconds if the test is correct the cycle starts.
During the cycle, the leds and stay on.

START-UP WITH PROBE TEMPERATURE AT THE CENTRE

To start the cycle, press the +3 "blast chilling" key (Figure 11), the leds and on the display flash.

Using the keys, you can edit the temperature at the cycle end (+3°C). Insert the probe in the product.

Press the key to start the blast chilling cycle, the leds and stay on after start-up.
The test starts for correct insertion of the probe at the centre of the product, after a few seconds if the test is correct the cycle continues, otherwise a timed cycle starts.

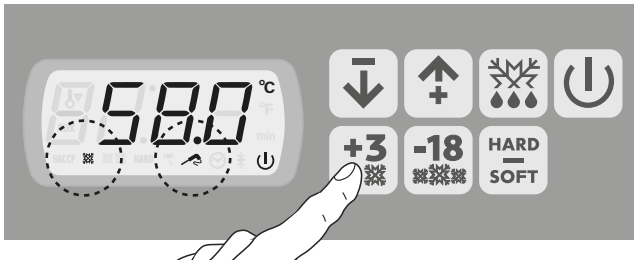



figure 11

During blast chilling, the temperature detected by the probe is shown on the display.

Pressing the key +3 the unit temperature is displayed. When the temperature set is reached, the cycle terminates and preservation starts and the light on the display stays on (Figure 12).
The buzzer emits an intermittent sound, to silence it press any key.

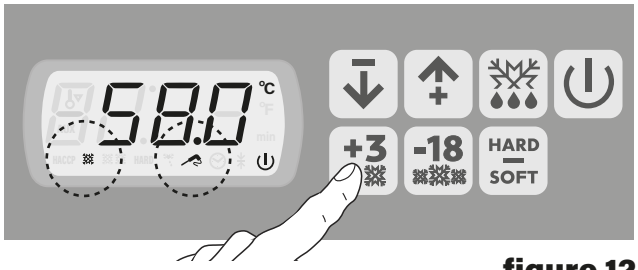



**figure 12**

N.B. If the temperature of the product does **not reach** the value set within the maximum duration established, by parameter **r5**, the cycle continues. The led on the display flashes and the buzzer emits an intermittent sound.
The blast chilling cycle automatically concludes when the temperature of the product goes under the value set and then the preservation cycle starts.

Press the key to conclude the preservation cycle.

- TIMED CYCLE START-UP

TWICE press the "blast chilling" key +3 (Fig. 13), the leds and on the display flash.
The display shows
the cycle time, using the key you can edit the cycle time.

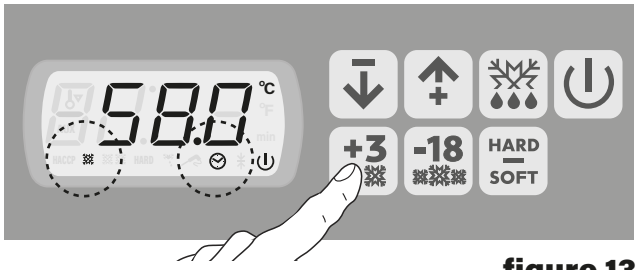



**figure 13**

Press the key to start the blast chilling cycle, the leds and stay on after start-up.
When the time set is reached, the cycle automatically terminates and preservation starts and the light on the display stays on (Figure 12).
The buzzer emits an intermittent sound, to silence it, press any key.

Press the key to conclude the preservation cycle.

### 5.3.4 Hard Blast Chilling and preservation

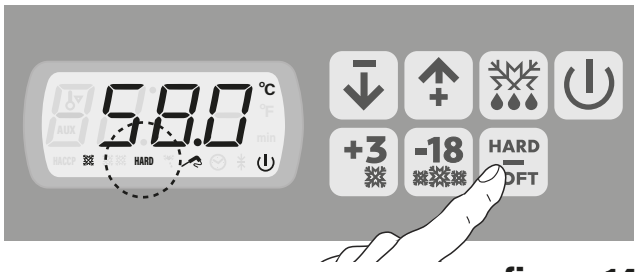



figure 14

- START-UP IN AUTOMATIC MODE

To start the cycle, press the +3 "blast chilling" key, the leds and on the display flash.

To start the hard cycle, press the HARD/SOFT "hard/soft" key (Figure 14), the **HARD** led on the display flashes.
The test starts for correct insertion of the probe at the centre of the product, after a few seconds if the test is correct the cycle starts.
During the cycle, the leds , and **HARD** stay on.

- START-UP WITH PROBE TEMPERATURE AT THE CENTRE

To start the cycle, press the +3 "blast chilling" key and then the HARD/SOFT "hard/soft" key (Figure 14), the leds, , and **HARD** on the display flash.

Using the keys, you can edit the temperature at the cycle end (+3°C). Insert the probe in the product.

Press the key to start the blast chilling cycle, the leds , and **HARD** stay on after start-up. The test starts for correct insertion of the probe at the centre of the product, after a few seconds if the test is correct the cycle continues, otherwise a timed cycle starts.

Pressing the key +3 the unit temperature is displayed. When the temperature set is reached, the cycle terminates and preservation starts and the light on the display stays on. The buzzer emits an intermittent sound, to silence it, press any key.

Press the key to conclude the preservation cycle.

- TIMED CYCLE START-UP

TWICE press the key +3 and then the key HARD/SOFT (Fig.15), the leds , and **HARD** on the display flash.
The display shows
the cycle time, using the keys you can edit the cycle time.

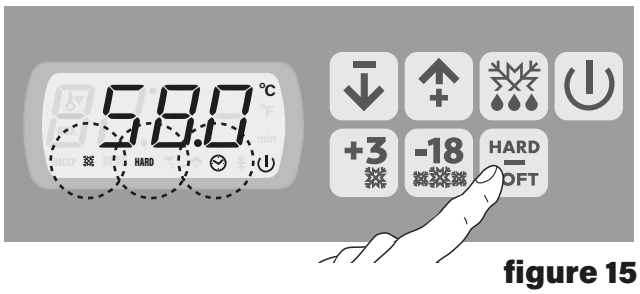



figure 15

Press the key to start the blast chilling cycle, the leds , and **HARD** stay on after start-up. When the time set is reached, the cycle automatically terminates and preservation starts and the light on the display stays on.
The buzzer emits an intermittent sound, to silence it press any key.

Press key to conclude the conservation cycle.

### 5.3.5 Deep-freezing and preservation

The deep-freezing and preservation cycle is composed in two phases: deep-freezing and preservation.
On conclusion of deep-freezing, the equipment passes automatically to preservation.
Before setting a cycle, check that:
- the machine is on
- the keypad is not locked
- no procedure is in progress.

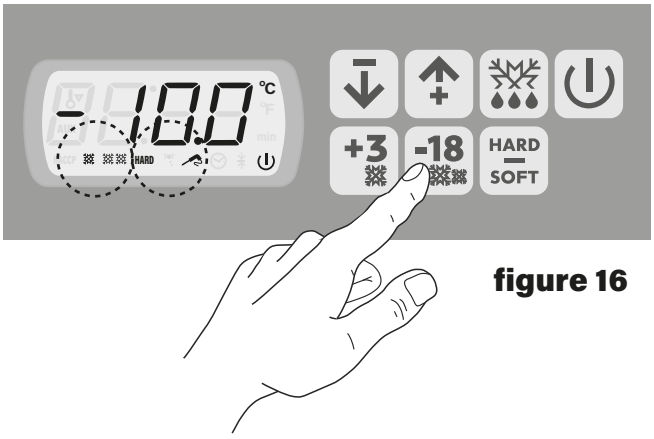



**figure 16**

- START-UP IN AUTOMATIC MODE

To start the cycle, press the -18 "deep-freezing" key (Figure 16), the leds ❄ ❄❄, , and **HARD** on the display flash.
The test starts for correct insertion of the probe at the centre of the product, after a few seconds if the test is correct the cycle starts.
During the cycle, the leds ❄ and stay on.

- START-UP WITH PROBE TEMPERATURE AT THE CENTRE

To start the cycle, press the -18 "deep-freeze" key (Figure 16), the leds ❄ , ❄❄, , and **HARD** on the display flash. The display shows the temperature at the end of the cycle.

Using the keys, you can edit the temperature at the cycle end (+3°C). Insert the probe in the product.

Press the key to start the deep-freezing cycle, the leds ❄ ❄❄, , and **HARD** on the display stay on after start-up.
The test starts for correct insertion of the probe at the centre of the product, after a few seconds if the test is correct the cycle continues, otherwise a timed cycle starts.
During blast chilling, the temperature detected by the probe is shown on the display.

Pressing the key +3 the unit temperature is displayed.
When the temperature set is reached, the cycle terminates and preservation starts and the light on the display stays on.
The buzzer emits an intermittent sound, to silence it, press any key.
N.B. If the temperature of the product does **not reach** the value set within the maximum duration established, by parameter **r5**, the cycle continues. The led on the display flashes and the buzzer emits an intermittent sound.
The deep-freezing cycle automatically concludes when the temperature of the product goes under the value set and the preservation cycle starts.

Press key to conclude the conservation cycle.

- TIMED CYCLE START-UP

TWICE press the -18 "deep-freezing" key (Fig. 17), the leds , , , and **HARD** on the display flash. The display shows the cycle time, using the keys you can edit the cycle time.

Press the key to start the deep-freezing cycle, the leds , , and **HARD** on the display stay on When the time set is reached, the cycle automatically terminates and preservation starts and the light on the display stays on.
The buzzer emits an intermittent sound, to silence it, press any key.

Press the key to conclude the preservation cycle.

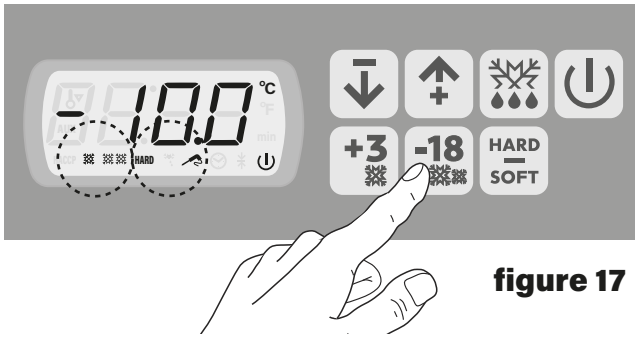


figure 17

### 5.3.6 Soft deep-freezing and preservation

Execute the same procedure chosen for "deep-freezing" (see chap. 5.3.5).
For "Soft" deep-freezing, press key HARD SOFT (Fig. 18) the **HARD** led on the display will switch off.
When the time set is reached, the cycle automatically terminates and preservation starts and the light on the display stays on.
The buzzer emits an intermittent sound, to silence it press any key.

Press the key to conclude the preservation cycle.

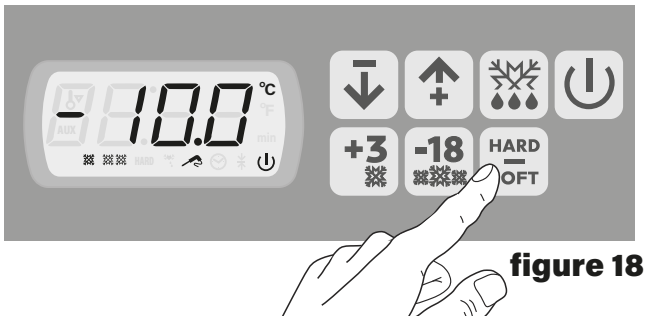


figure 18

### 5.3.7 Defrost

Before setting a cycle, check that:
- the machine is on
- the keypad is not locked
- no procedure is in progress.

Press the "defrost" key for approx. 4 seconds (Figure 19), led switches on.
It is carried out by forced ventilation with the evaporator fan, with the door opened or closed, and can be shut-off when you want by pressing key .

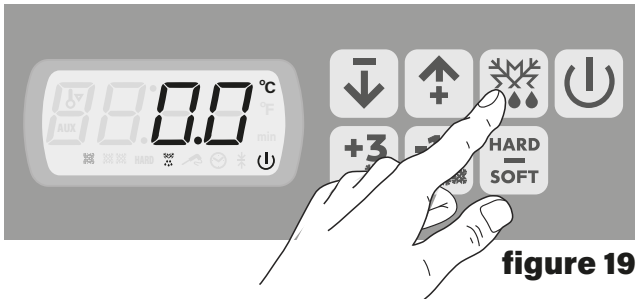


figure 19

## 5.4 UTILITY

### 5.4.1 Keypad locking and unlocking

If you want to **lock** the keypad, simultaneously press for a few seconds, key ⏻ and ↓ , on the display the writing "**Loc**" appears (Figure 20)

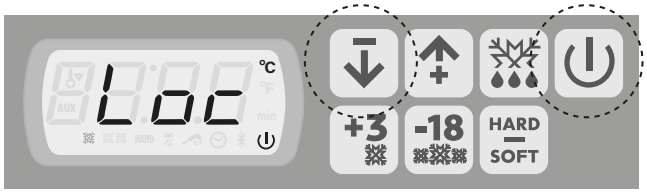



**figure 20**

If you want to **unlock** the keypad, simultaneously press for a few seconds, key ⏻ and ↓ , on the display the writing "**UnL**" appears (Figure 21)

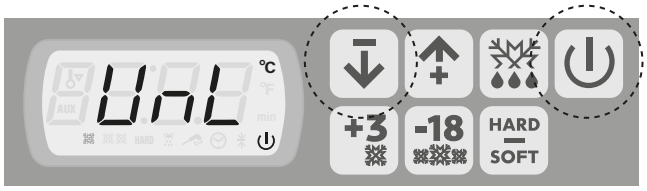



**figure 21**

### 5.4.2 Time and date setting

Check the keypad is not locked.

Press for a few seconds key ↓ . The display shows the first writing available

with the keys ↓ ↑ search the writing "**rtC**" (Fig. 22).


**fig. 22**

press the key +3 , "yy" appears on the display with two numbers that represent the year. The symbol 🕒 flashes on the display (Fig. 23).


**fig. 23**

With the keys ↓ ↑ , set the current year.

Press the key +3 to save the data and then change the month, the display shows "nn" with two numbers that represent the month. (Fig. 24).


**fig. 24**

With the keys ↓ ↑ , set the current month.

Press the key +3 to save the data and then change the day, the display shows "**dd**" with two numbers that represent the days. (Fig. 25).


**fig. 25**

With the keys ↓ ↑ , set the current day.

Press the key +3 to save the data and then change the time, the display shows "hh" with two numbers that represent the time which is displayed in 24 h format. (Fig. 26).


**fig. 26**

With the keys ↓ ↑ , set the current time.

Press the key +3 to save the data and then change the minutes, the display shows "nn" with two numbers that represent the minutes. (Fig. 27).


**fig. 27**

With the keys ↓ ↑ , set the correct minutes.

Press the key +3 to save the data and terminate adjustment. The led 🕒 will switch off.

### 5.4.3 Temperature display

Check the keypad is not locked and that no cycles are in progress.

Press for a few seconds key . The display shows the first writing available

with the keys search the writing "**Pb1**" (Fig. 28). (Unit probe)


**fig. 28**

Press the key to display the temperature read by the probe.

Pressing the key again and then key the display will show "**Pb2**" (Product probe) Fig. 29.


**fig. 29**

Press the key to display the temperature read by the product probe.

Pressing the key again and then key the display will show "**Pb4**" (Capacitor probe) Fig. 30.


**fig. 30**

Press the key to display the temperature read by the product probe.

### 5.4.4 Compressor operating hours

Check the keypad is not locked and that no cycles are in progress.

Press for a few seconds key . The display shows the first writing available

with the keys search the writing "**CH**" (Fig. 31). (Unit probe)


**fig. 31**

Press the key to display the data.

## 5.5 Alarms, instructions and errors on the display


Indicates the keypad is locked, see paragraph 6.4.1 “Lock/ Unlock keypad”


Indicates the keypad is unlocked, see paragraph 6.4.1 “Lock/ Unlock keypad”


Blast chilling or deep-freezing at temperature alarm not concluded within the maximum duration. Solutions: check the value of parameters r5 and r6 and AA


Minimum temperature alarm. Solutions: check the temperature of the unit, or the value of the parameters A1 and A2.


Maximum temperature alarm. Solutions: check the temperature of the unit, and the value of the parameters A4 and A5.


Door open alarm. Solutions: check the conditions of the door, or the value of the parameters i0 and i1.


High pressure alarm. Solutions: check the high pressure input conditions, or the value of parameters i5 and i6.


Power cut alarm. Solutions: check connection of the equipment-power supply or check the value of parameter A10.


Overheated capacitor alarm. Solutions: check the temperature of the capacitor or check the value of parameter C6.


Blocked compressor alarm. Solutions: check the temperature of the capacitor or check the value of parameter C7, or disconnect the power supply of the equipment and clean the capacitor.


Download alarm of configuration parameters not successfully completed. Solutions: press and release a key to restore the normal view: download the configuration parameters again.


Firmware alarm of the configuration parameters contained in EVKEY not matching that of equipment. Solutions: shut-off equipment power supply; check the firmware of the parameters contained in the EVKEY matches that of the equipment; download the configuration parameters again.


Upload alarm of configuration parameters not successfully completed. Solutions: reset the factory settings; upload the configuration parameters again.


Unit probe error. Solutions:
- Check the value of the parameter P0,
- Check probe integrity,
- Check connection
- Check unit temperature


Centre probe error. Solutions:
- Check the value of the parameter P0,
- Check probe integrity,
- Check connection
- Check unit temperature


Evaporator probe error. Solutions:
- Check the value of the parameter P0,
- Check probe integrity,
- Check connection
- Check unit temperature


Capacitor probe error. Solutions:
- Check the value of the parameter P0,
- Check probe integrity,
- Check connection
- Check unit temperature


Clock error. Solutions:
- set the new day and time

## 5.6 Faults and possible solutio

The blast chiller is equipped with a visual system that signals the presence of an alarm. The alarms are displayed on the display.

For any other type of alarm displayed: wait a few minutes if the problem persists contact the support centre and specify the alarm code displayed.

Some faults not present on the display:

| Description | Possible cause | Possible solution |
|---|---|---|
| The refrigeration unit won't start | No electrical power | Check the power supply cable |
| | | Check the fuses |
| | | Check correct connection of the equipment |
| | Other causes | If the problem persists, contact the support centre |
| The refrigeration unit works continuously but is not chilling efficiently | Premises too hot | Ventilate environment |
| | Dirty capacitor | Clean the capacitor |
| | Insufficient door seal | Check the gaskets |
| | Insufficient quantity of refrigerant gas | Contact the support centre |
| | Capacitor fan stopped | Contact the support centre |
| | Evaporator fan stopped | Contact the support centre |
| The refrigeration unit won't stop | Faulty probe | Have a specialist technician try and switch back on the switch |
| | Faulty electronic board | Contact the support centre |
| Presence of ice on the evaporator | | Run a defrost cycle with the door open |
| | | If the problem persists, contact the support centre |
| Noise from the equipment | Persistent vibrations | Check there are no contacts between the equipment and other internal or external objects |

## 5.7 Recommendations for use

To guarantee correct use of the equipment, you are advised to follow this advice:

- Position the trays on the most inner part of the tray holder, taking care they are as close as possible to the evaporator.

- Avoid cramming products against the walls of the unit

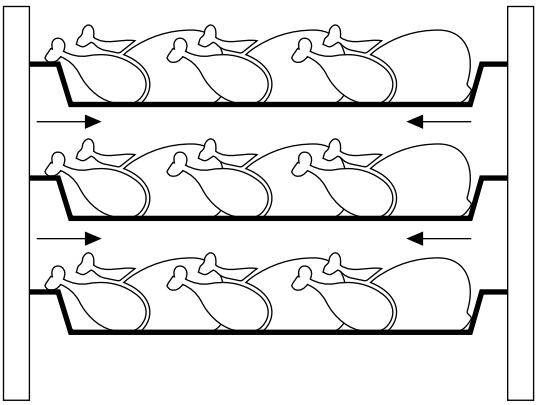
because it would prevent air circulation which guarantees a uniform temperature inside the refrigeration cabinet.

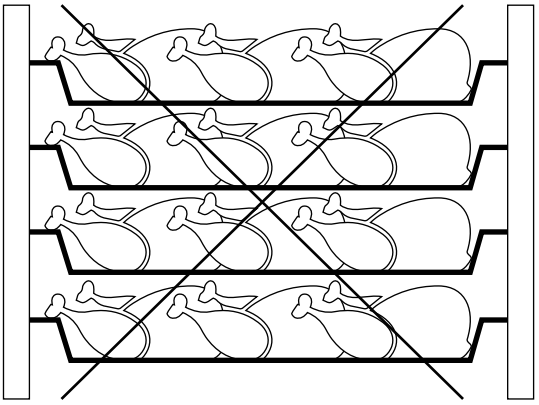
- Do not overload the machine beyond that established by the manufacturer.

- You are advised to use suitable trays and containers which are not too deep, max 6.5 cm, to guarantee the tins sufficient space for air flow circulation over the entire product.

- Do not cover food with lids or protective layers

- If possible, position the product at the centre of the tray which for composition or sizing is more critical





To guarantee correct use of the equipment, you are advised to follow this advice:

- Never obstruct the front parts of the shelves of the machine

- Keep the front part of the capacitor clean

- Avoid obstructing the evaporator fan extractor vent

- Avoid, as much as possible, numerous and long-lasting opening of the blast chiller.

- As standard, the blast chiller should be used for storage for a short time and not continuously.

- Avoid inserting dishes with temperatures over 90°C, better to leave them stand.

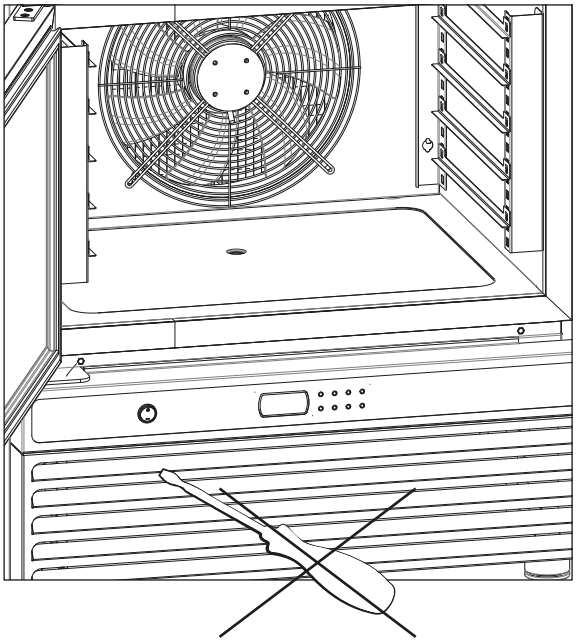
- To avoid contamination of a bacterial or biological nature among various foods, you need to disinfect the probe after each use.

- Use safety gloves on hands to remove the product which has undergone freezing or deep-freeze to avoid cold burns.

## 6.0 Routine maintenance

Disable the electrical power supply from the main switch before carrying out any maintenance intervention on the machine.

Routine maintenance consists of daily cleaning of all parts which are in contact with food.
Good maintenance allows better performance and longer duration of the equipment.



To carry out cleaning and routine maintenance in complete safety, all safety measures already described in this manual must be complied with, including:

- Do not carry out intervention with wet hands or feet
- Do not insert screwdrivers or metal casings on the mechanical parts of the machine.
- Do not pull electrical cables because they can get damaged.
- Do not remove the safety plates on the machine

Nuovagel srl cannot be held liable for accidents caused by non-compliance with the aforementioned obligations.

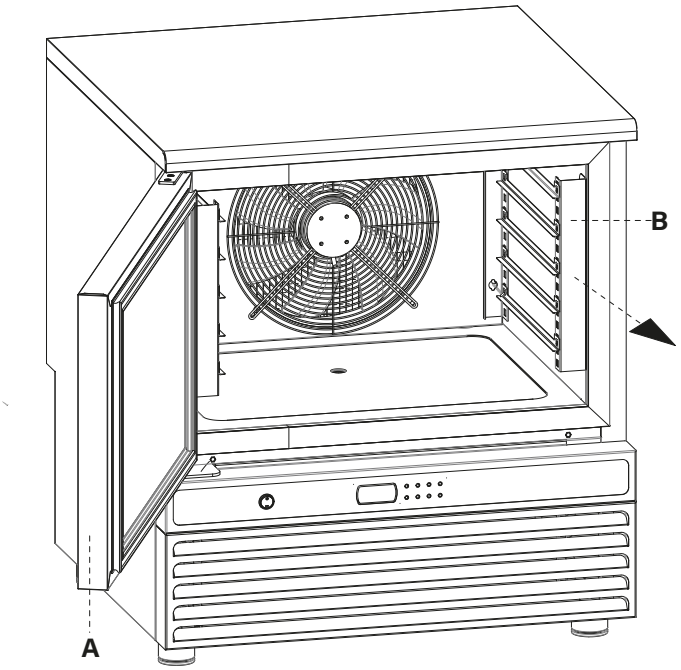
**For correct cleaning of the unit**

- do not use direct, pressurised water jets.
- Do not use steel pads or brushes to clean steel, if necessary remove hardened residue using wooden or plastic brushes or abrasive sponges.
- Do not use solvents or diluents which are dangerous and hazardous for personal health.
- Always wear safety gloves for cleaning

## 6.1 Extraordinary maintenance

**The following operations must be periodically carried out by specialist staff:**

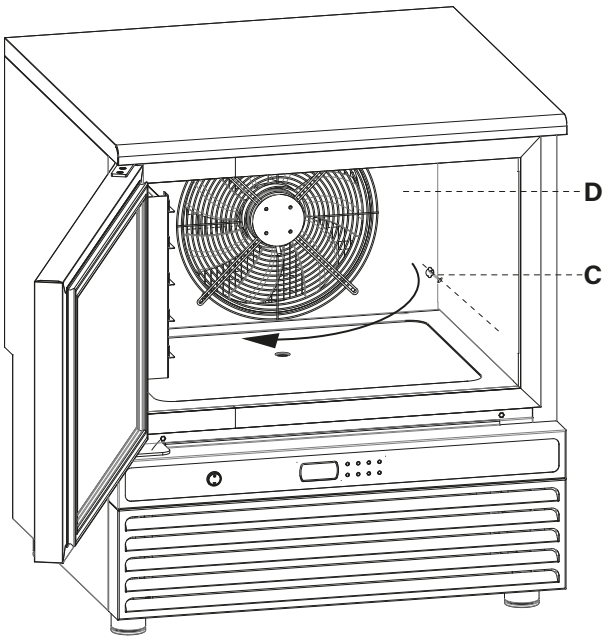
- Check perfect sealing of the door gasket and, if necessary, replace it.
- Check the electrical connections are not loose and check the system is efficient. B
- Check the board and probes are working.
- Clean the evaporator
- Clean the capacitore




#### 6.1.1 EVAPORATOR CLEANING

To access the capacitor, proceed as follows:

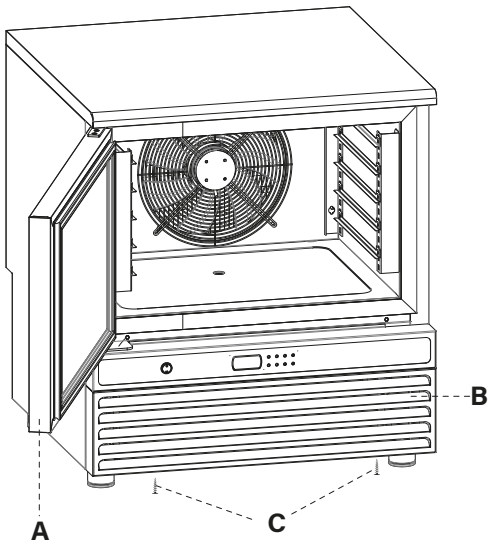
1 - Open the door of the equipment (A) C
2 - Remove the side wire shelves (B)
2 - Unscrew the two screws (C) fastening the rear panel (D) on the right
3 - Turn the panel (D) to the left
4 - Proceed to clean the capacitor (D) with the specific tools
5 - Following cleaning, re-position the panel (D) by fastening it with the specific screws and re-position the side shelves



### 6.1.2 CAPACITOR CLEANING

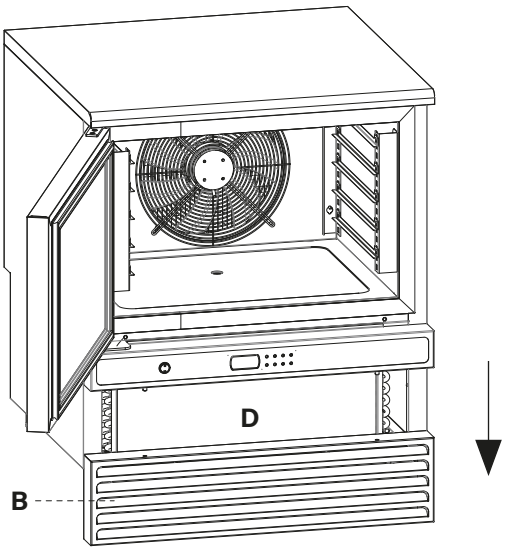
Periodically clean the capacitor, taking care to implement the following safety principles:

- use safety gloves,
- in the presence of dust, protect yourself with a mask and goggles
- remove dust from the fins with a vacuum cleaner or with a brush
- do not use unsuitable tools




To access the capacitor, proceed as follows:

1 - Open the door of the equipment (Fig. A)
2 - Unscrew the screws (C) which fasten the lower panel (B) 3 - Remove the panel (B) downwards
4 - Proceed to clean the capacitor (D) with the specific tools
5 - Following cleaning, re-position the panel (B) by fastening it with the specific screws.



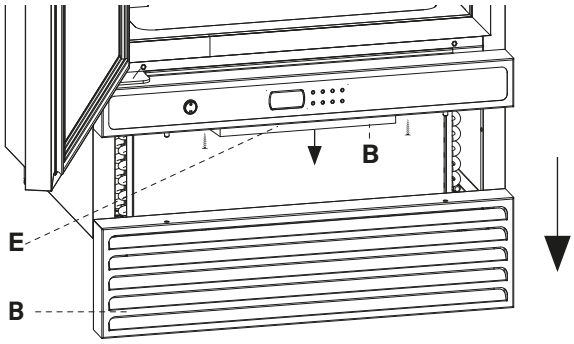

### 6.1.3 FUSEREPLACEMENT

The fuses are positioned inside the electric box (E).

To access them, simple remove the panel (B) with the same procedures used to access the capacitor.

Remove the guard in sheet metal (G) unscrewing the 2 screws fastening it.

Having replaced the fuses, reposition and fasten the guard (G) with the specific safety screws and then reposition the panel (B) fastening it with the specific screws.



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