DELFIELD®
Fresh Solutions, Fit for You

Blast Chillers
CV5E, CV10E, CV15E, CV15E-2 and T40

Original Instructions
Installation, Operation and Maintenance Manual

This manual is updated as new information and models are released. Visit our website for the latest manual.

CV_BlastChiller

WELBILT®

Safety Notices

⚠Warning

Read this manual thoroughly before operating, installing or performing maintenance on the equipment. Failure to follow instructions in this manual can cause property damage, injury or death.

⚠ DANGER

Do not install or operate equipment that has been misused, abused, neglected, damaged, or altered/ modified from that of original manufactured specifications.

⚠ DANGER

Keep power cord AWAY from HEATED surfaces. DO NOT immerse power cord or plug in water. DO NOT let power cord hang over edge of table or counter.

⚠ DANGER

All utility connections and fixtures must be maintained in accordance with Local and national codes.

⚠Warning

Authorized Service Representatives are obligated to follow industry standard safety procedures, including, but not limited to, local/national regulations for disconnection / lock out / tag out procedures for all utilities including electric, gas, water and steam.

⚠Warning

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. Never use flammable oil soaked cloths or combustible cleaning solutions, for cleaning.

⚠Warning

This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm. Operation, installation, and servicing of this product could expose you to airborne particles of glasswool or ceramic fibers, crystalline silica, and/or carbon monoxide. Inhalation of airborne particles of glasswool or ceramic fibers is known to the State of California to cause cancer. Inhalation of carbon monoxide is known to the State of California to cause birth defects or other reproductive harm.

⚠Warning

Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.

⚠Warning

Use caution when handling metal surface edges of all equipment.

⚠Warning

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 concerning use of the appliance by a person responsible for their safety. Do not allow children to play with this appliance.

⚠Caution

Use caution handling, moving and use of the R290 refrigerators to avoid either damaging the refrigerant tubing or increasing the risk of a leak. Components shall be replaced with like components. Servicing shall be done by a factory authorized service personnel to minimize the risk of possible ignition due to incorrect parts or improper service.

Notice

Proper installation, care and maintenance are essential for maximum performance and trouble-free operation of your equipment. Visit our website www.wbtkitchencare.com for manual updates, translations, or contact information for service agents in your area.

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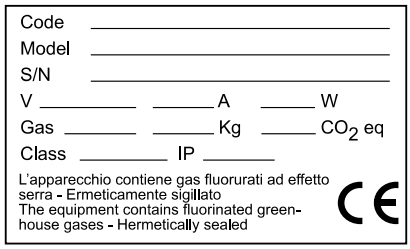
2 - TECHNICAL DATA

2.1 - Plate data

The plate bearing the equipment specifications should be applied on the outside rear part of the machine and/or on the electrical panels. Any preparation of machines only for relocation of the condensing units must follow the regulations in force in the country of installation regarding fire safety (refer to the command of the local fire department for the relevant indications). It should also be considered that the possible intervention of safety valves or fusible plugs, located in the refrigerant circuit, entail the immediate discharge of all the refrigerant into the environment.



The appliance's climate class is stated on the serial plate

Environmental climatic classes (ISO 23953-2)		
Climate class	Temperature	Humidity
1	16°C	80%
2	22°C	65%
3	25°C	60%
4	30°C	55%
5	40°C	40%
6	27°C	70%

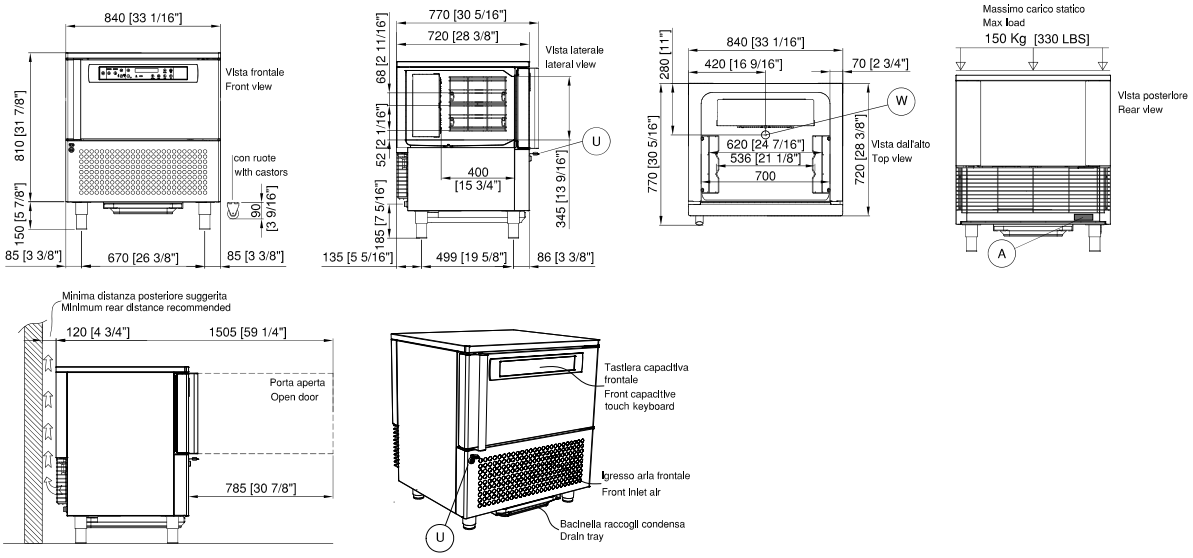
2.2 - Refrigerant

The appliance contains fluorinated greenhouse gases covered by the Kyoto Protocol in the quantities indicated on the serial plate.
The type of refrigerant gas present in the refrigerant circuit of the appliance is shown on the serial plate
The GWP (global warming potential) of the HFC R134a gas is 1430 and of the HFC R404A gas it is 3922.
The CO_2 equivalent data is shown on the serial plate

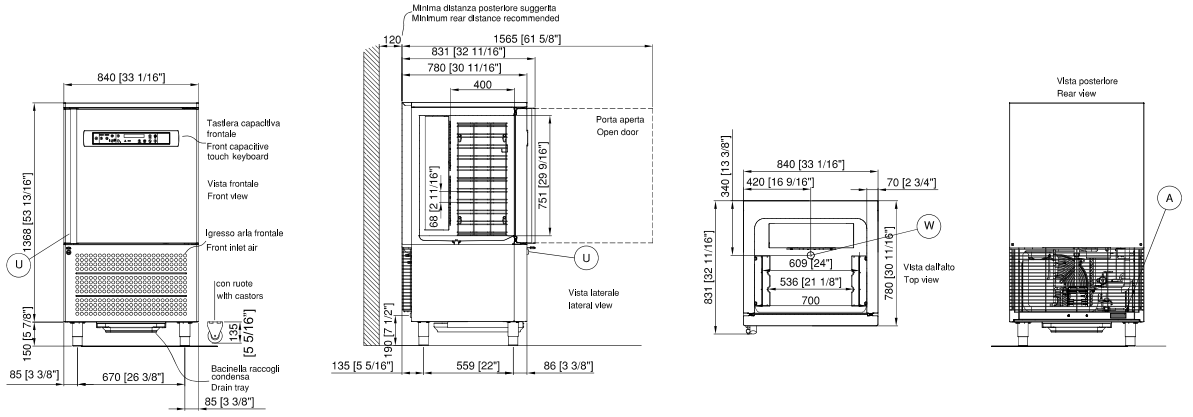
According to Regulation (EC) 1272/2008, R134a and R404A gases are non-flammable and non-toxic. In high concentrations they can be asphyxiating. Contact with liquid may cause burns and frostbite.
In the system the gas is pressurised; it may explode if heated.

2.3 - Measurements

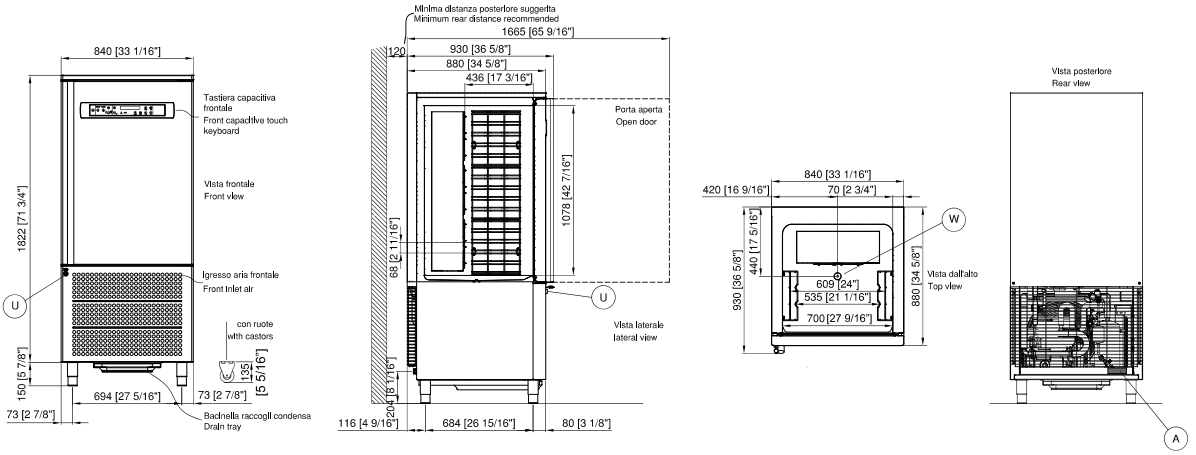
5 Trays



10 Trays



15 Trays



(A) Electrical Outlet box
Scatola colleg. elettrico

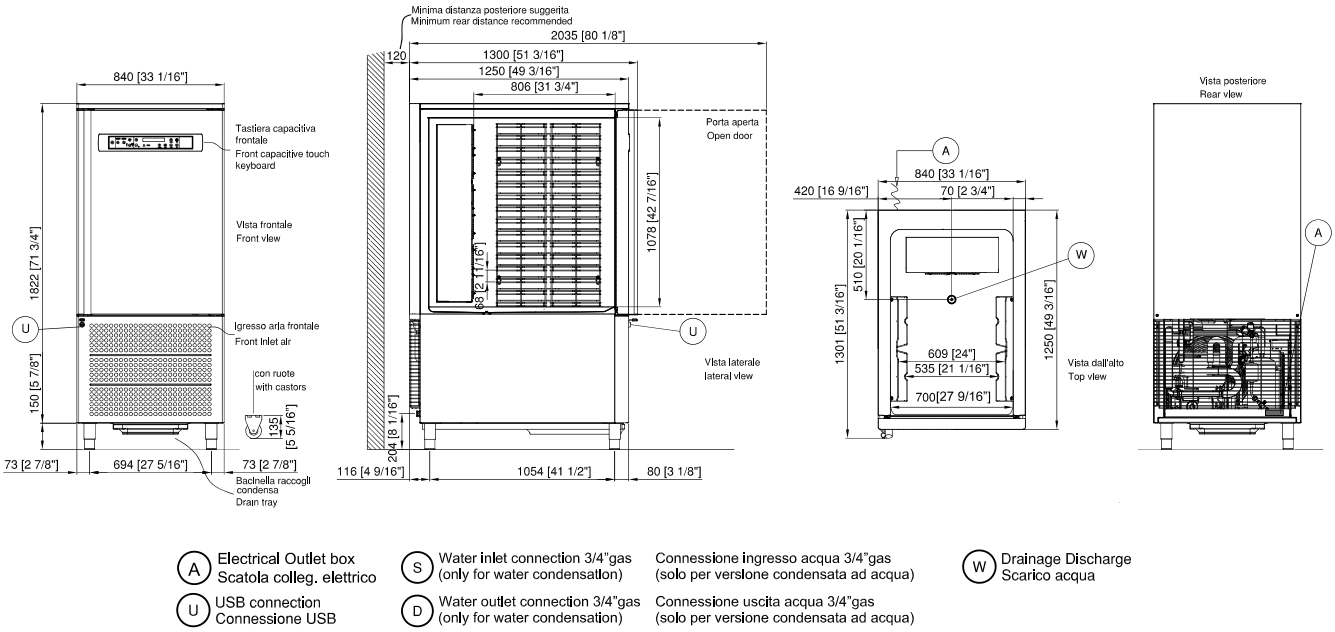
(U) USB connection
Connessione USB

(S) Water inlet connection 3/4"gas (only for water condensation)
Connessione ingresso acqua 3/4"gas (solo per versione condensata ad acqua)

(D) Water outlet connection 3/4"gas (only for water condensation)
Connessione uscita acqua 3/4"gas (solo per versione condensata ad acqua)

(W) Drainage Discharge
Scarico acqua

30 Trays



2.4 - Maximum load

Operator are strongly suggested to follow enclosed instruction

2.4.1 - Maximum load for internal structure capacity

	Maximum capacity	
Model	**Internal Structure**	**Load per shelf**
5 T	1000 oz (30 kg)	700 oz (20 kg)
10 T	1600 oz (45 kg)	700 oz (20 kg)
15 T	2800 oz (80 kg)	700 oz (20 kg)
30 T	3000 oz (85 kg)	700 oz (20 kg)

2.4.2 - Maximum trays capacity

(trays not supplied with the appliance)

Standard Internal support structure

	Model			
Size trays	**5 T**	**10 T**	**15 T**	**30 T**
15¾" x 23⅝" *(600x400 mm)*	5	10	15	30
12¾" x 20¾" *(530x325 mm)*	5	10	15	30
23⅝" x 31½" *(600x800 mm)*	n/a	n/a	n/a	15
12¾" x 41½" *(530x650 mm)*	n/a	n/a	n/a	15

Optional Internal support structure

	Model			
Size Trays	**5 T**	**10 T**	**15 T**	**30 T**
18" x 26" *(655x453 mm)*	n/a	n/a	n/a	**15**
12¾" x 20¾" *(530x325 mm)*	n/a	n/a	n/a	28
12¾" x 41½" *(530x650 mm)*	n/a	n/a	n/a	14

3 - INSTALLATION

ALL STAGES OF INSTALLATION MUST BE CARRIED OUT IN COMPLIANCE WITH THE NATIONAL STANDARDS IN FORCE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND BY PROFESSIONALLY QUALIFIED PERSONNEL

Installation of the appliance and of the refrigerating unit must only be carried out by technicians of the manufacturer or by skilled personnel.
If the machine was supplied with a remote condensing unit, it is the installer's responsibility to check all the connections in accordance with the instructions provided for the installation of systems and machinery.
The installer is advised to use the appropriate personal protective equipment necessary for processing and in compliance with the regulations in force.

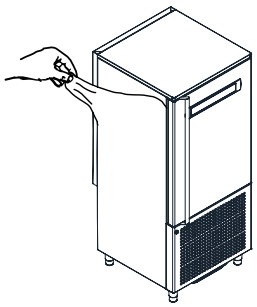
3.1 - Transportation and handling

The net and gross weight of this appliance can be found on the external packaging.
Loading and unloading of the appliance and/or of the subsystems from the means of transport can be performed using a forklift truck or fork pallet truck, the length of which is more than half that of the unit or using cranes where the appliance/subsystem is fitted with eyebolts. The lifting equipment must be chosen according to the size of the packaged machine/components and with sufficient capacity.
For handling of the appliance/subsystems, every precaution must be taken not to damage them, respecting the indications on the packaging.

3.2 - Unpacking and disposal

Remove all cardboard or the wooden crate from the base on which the machine is placed. Then lift the machine/sub-assemblies with a suitable means (forklift truck); remove the wooden base and position the machine/sub-assemblies in the place provided.
After removing the packaging, verify the integrity of the machine/sub-assemblies In case of uncertainty do not use it and contact the distributor.

Remove the protective PVC film on the stainless steel panels from all sides both internally and externally.



Note: *all the various components of the packaging must be disposed of according to the regulations in force in the country where the appliance is being used. In any case nothing must be disposed of into the environment.*

3.3 - Positioning

The appliance:

- **must be installed in places where it can be checked by qualified personnel.**
- **it must not be installed outdoors.**
- **it must not be installed in dusty environments.**
- **it must not be placed in locations with the presence of water jets.**
- **it must not be washed with water jets.**
- **It must be installed and tested in full compliance with safety laws, traditional systems and with the regulations in force.**
- **it must be positioned at a minimum distance of 120 mm from the rear wall**

The installer must verify any requirements for fire safety (refer to the command of the local fire department for the relevant indications).

Level the appliance through adjustment of the feet. For the setting up of heavier machines, use dedicated hoists (fig. A - Chap. 3.1).
If the appliances are not levelled their functioning and the flow of condensates could be impaired.

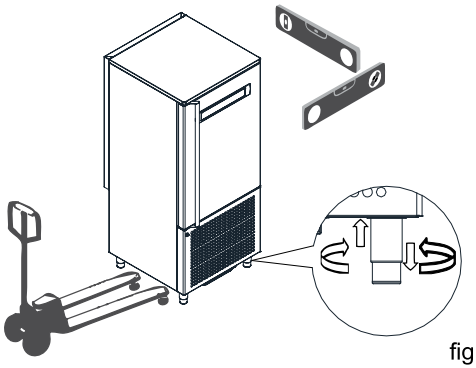


fig. A

⚠

AVOID:

- **direct exposure to sunlight;**
- **closed sites with high temperatures and poor air circulation;**
- **indoor environments at high temperatures and poor air circulation, and avoid installing the machine near any heat sources**

3.4 - Ambient temperature and air exchange

For air cooled liquid chillers, the ambient operating temperature must not exceed 90°F (32°C). Above this temperature the declared performance is not guaranteed. The machine can operate safely up to a temperature that is referred to by the climatic class indicated on the serial plate. Remote condensing units must be installed in special rooms or, if outdoors, in a place protected from direct sunlight, from adverse weather conditions and from heavy wind (above 5 m/sec). Where circumstances so require, it is the responsibility of the installer to evaluate the use of a cover or canopy (costs to be borne by the purchaser). In any case sufficient air circulation must be guaranteed.

3.5 - Hydraulic connection for water cooled condensing units

It is advisable to install a valve between the mains and the appliance's inlet hose in order to be able to stop the passage of water if necessary.
For appliances with water cooled units the water supply temperature must be between 50°F (10°C) and 86°F (30°C) and the operating pressure must be between 0.1 MPa (1 bar - 14psi) and 0.5 MPa (5 bar - 72 psi)

3.6 - Electrical connection

⚠ **No responsibility is accepted for damage to persons, animals or property caused by failure to earth the appliance and the creation of an electrical installation that does not comply with current standards.**
The mains connection must be made according to existing national rules and by experienced, qualified personnel.
Before connecting the appliance to the mains make sure that the mains voltage corresponds to the voltage indicated on the data plate.
Verify that the electrical installation is adequate to the maximum power of the appliance, as indicated on the plate.
Upstream of each device it is mandatory to install a differential thermal breaker according to current regulations in the country of installation.
The electric connecting cables must be dimensioned in accordance with the rules in force in the country of installation.
In cases where the power cord of the appliance is damaged, it must be replaced with another with characteristics that comply with the rules in force in the country of installation and performed by qualified personnel in order to prevent any risk to persons.
The earthing conductor must be correctly connected to an efficient earthing system.

The manufacturer declines any responsibility and any warranty obligation in the event of damage to the equipment, to persons and to property caused by incorrect installation and/or failure to respect the applicable laws.

3.7 - Remote group refrigerator connection

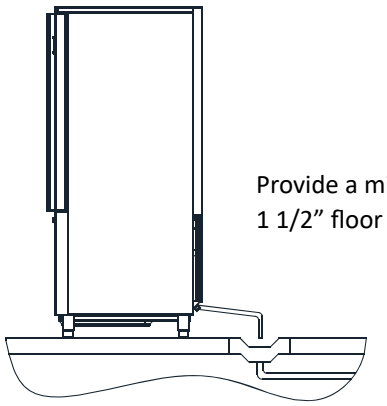
The diameters of the supply lines of the equipment are sized for distances of up to 10 meters.
Contact the manufacturer for longer distances.

3.8 - Condensate drainage connection (if applicable)

It is necessary to provide a drainage pipe for the condensation and washing water of a minimum diameter of 1".
It is advisable to dispose of the condensate through an open drain at ground level and fitted with a siphon with a minimum diameter of 1/2 "

3.9 - Notes for the installer

- Verify the correct installation and system testing before starting up the machine (test report)
- Check for any gas leaks from the welds or joints made during the installation phase.



- Check the efficient insulation of the connecting pipes between the condenser and the remote condensing unit.
- Check the electrical connection
- Check the electrical input
- Verify the standard pressures of the refrigerating system.
- Check the water connections with adjustment of the pressure valve during operation and good circulation of the condensation water (water cooled groups).

3.10 - Commissioning

⚠ **Commissioning must be carried out by authorised and qualified personnel.**

Perform at least one complete cycle of rapid storage freezing (to reach the SET temperature), and a manual defrost cycle. If the equipment or the remote condensing units were delivered in an upright position (e.g. on their back) or were overturned during installation, do not turn on immediately but wait at least 4 hours before use.
Inform the customer of the exact use of the equipment with specific reference to the use and to customer requirements.

3.11 - Safety and control systems

- Door microswitch: this locks operation of the fans in the cell when the door is opened
- General protection fuses: they protect the entire power circuit against short circuits and possible overloads.
- Compressor thermal relay: this intervenes in case of overloads or malfunctions
- Safety pressure switch: this operates in the case of excess pressure in the refrigerant circuit
- Fusible plug: this intervenes in the case of overpressure and failure of the afore-mentioned safety pressure switch
- Chamber temperature control: this is operated by the electronic card via the probe positioned inside the cell
- Defrost termination temperature control: this is managed by the electronic card via the probe located on the evaporator.

3.12 - Stop modes

In an emergency, to stop the machine remove power from the main panel using the earthing switch or by removing the plug from the socket making sure hands are not wet or damp.

3.13 - Signalling/reports of malfunctioning

In cases of malfunction of the machine and for report signalling concerning the blast chillers supplied:

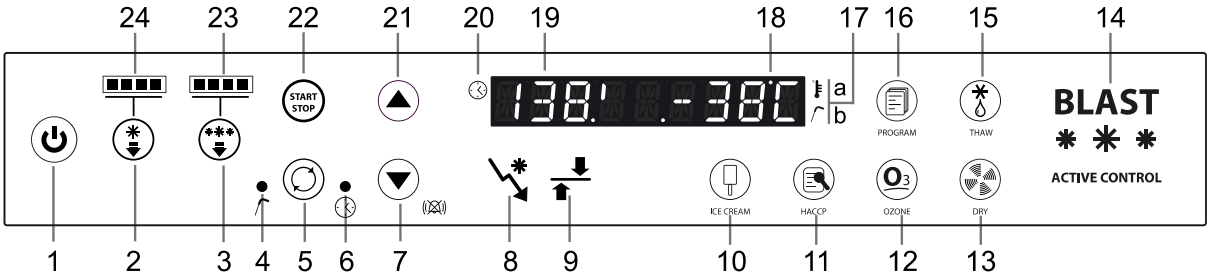
Assembled
You are requested to communicate to the retailer/service centre the machine model, code and the serial number shown on the registration plate located on the rear of the machine and inside the door.

Dismantled (with condensing units/remote condensers)
You are requested to communicate to the retailer/service centre the machine model and the code shown on the registration plate located above the control panel.

3.14 - Appliance disposal

After the useful life of the applicance has been realized, be sure to demolish and dispose of the machine in compliance with the regulations applied in the country of installation, particularly in regards to refrigerant gas and compressor lubricant oil.

4 - COMMAND INTERFACE SYMBOLS



Capacitive Interface

1 - Stand-by Button
Standby button, if pressed for more than 3 seconds it takes the card into standby or switches it on again

2 - Positive Chilling Button
used to select the mode of positive chilling

3 - Negative Chilling Button
used to select the mode of negative chilling

4 - Chill. LED Temperature
Led on means that the chilling is via Temperature mode (insert probe)

5 - Chilling mode button
A button that selects the mode of chilling with Time or Temperature (insert probe use); the selected mode is represented by ignition of one of the two LEDs located on the right and left of the button and they are marked with the temperature or time symbol

6 - Chill. LED Time
Led on means that the chilling is via Time mode

7 - Decrease Button
Parameter or setting value decrease buttons (the "-" button allows silencing of the beeper if active)

8 - Chilling Phase LED
Symbol representing the chilling phase (it flashes when at that phase)

9 - Storage Phase LED
Symbol representing the storage phase (it flashes when at that phase)

10 - Ice-cream button
The ice-cream button if pressed once starts the ice-cream cycle (see section 12)

11 - HACCP button
The HACCP button which starts the data reversal cycle onto USB

12 - Ozone Button
Button that starts the ozone sanitising cycle (if any)

13 - Defrost Button
Button that when pressed once starts drying with door open (see section 9), while if pressed for at least 3 seconds it starts the hot gas defrost cycle

14 - Status LED
RGB on mark lettering. The lettering assumes the following colours depending on the following relative connected states:
BLUE **-** Phase of chilling, deep-freezing or storage
ORANGE **-** Thawing
GREEN/BLUE **-** Machine on stand by
WHITE **-** Machine at standstill
RED FLASHING **-** Serious alarm
FLASHING YELLOW - Non serious alarm (door opening - maintenance -1° kriwan intervention)

15 - Thawing Button
Button that when pressed starts the defrost cycle

16 - Program Button
Programs recall or storage button

17 - Temperature Symbol
The symbol lights up when a cycle is active and the cell temperature (Time chilling) or Product temperature (Temperature chilling) is detected. In the second case the product probe is shown with the highest value. With the cycle in progress press the button (12) to display in sequence the values of the insert probe 1 and 2 and of the evaporator sensor probe in flashing mode and the display (19) will show the letters in sequence SP1+"probe value",SP2+ "probe value" and SE+ "value

18 - Display- Temperature
Second part of the alphanumeric display (last 4 digits) for representation of the T° cell or T° product and evaporator value

19 - Display- Time
First part of the alphanumeric display (first 4 digits) for representation of the time value remaining of chilling

20 - Time Symbol
The symbol lights up when the cycle is running; the time remaining will be displayed. If the button (5) is pressed the elapsed time will flash for 5 seconds (both for Time and Temperature chilling)

21 - Increase Button
Parameter or setting value increase buttons

22 - Cycles Start/Stop Button
Start/Stop button to start/stop the chilling cycle set; with a cycle started, the button remains lit

23 - Negative Chilling LED
The number of LEDs lit indicates the intensity of the negative chilling (increments by pressing the button (2))

24 - Positive Chilling LED
The number of LEDs lit indicates the intensity of the positive chilling (increments by pressing the button (1))

5 - MACHINE ON/OFF

When the equipment is powered, it will appear in STANDBY conditions (scrolling text on the display). To start the machine press the button (1) for at least 3". Similar to machine without cycles in progress, to switch it off simply press the button (1) for at least 3".

Where a cycle was in progress, and the situation is returning from a blackout the appliance, once reconnected, will resume from the interrupted cycle.

5.1 - Compressor preheating management

Upon ignition of the equipment a compressor preheating time of 120 minutes must be respected where the blast chiller is not available.
The scrolling text will appear “Compressor Heating-Riscaldamento Compressore” and then the fixed lettering "XXX min" to represent the time remaining. These two messages will alternate until the end of heating. This phase can be bypassed by pressing the "HACCP" (11) button for approximately 5 seconds.

6 - DATE AND TIME SETTING

Upon initial ignition, it is advisable to check the date and time set; their accuracy is beneficial in relation to HACCP management.
To access the clock setting, press for more than 5 sec the Temperature/Time button (5) with the machine in Stop mode. The Labels shown below will appear on the left display; the right display will show the 2-digit numeric value to be set:

Hour(Ora) / Minute(Minuti) / Day(Giorno) / Month(Mese) / Year(Anno)

The Temperature/Time button (5) can be used to scroll through the Labels, while with the +/-buttons (21/7) it is possible to change the values.
After the year value the change will be automatically saved

7 - BLAST CHILLING CYCLES

7.1 - General operating principles

Pre-cooling of the machine should always be performed upon initial running of a blast chilling or deep freezing operation. This optimises the subsequent work cycle, reducing the time.

Blast chillers are refrigeration systems that work with a two-phase cycle:

- **Chilling phase (limited duration)**
- **Storage phase (unlimited period).**

The chilling phase starts upon pressing of the "Start/Stop" button (22) and continues until the end of the chilling phase that is used to achieve the time set (Time chilling) or for reaching of the product temperature set (Temperature chilling); changing to the unlimited duration storage cycle takes place automatically (except for the HARD+HARD negative chilling cycle). It is possible to stop the chilling or storage at any time by pressing the "Start/Stop" button (22).

Chilling Time

During this type of chilling, the display (18) shows the cell probe temperature while the other display (19) shows the time remaining at the end of the chilling phase. The Time chilling LED (6) is lit as is the time symbol (20).

Temperature Chilling

If Temperature chilling is selected, at the start of a cycle a check is performed of the correct insertion of the product probe (if enabled). If the test provides a negative result an alert appears on the display “SONDA NON INSERITA - PROBE NOT INSERT” and the beeper sounds for 60 seconds (parameter c9); that symbol disappears when the beeper is silenced by pressing the button (7). If instead the button is pressed again (5) switching to Temperature cycle, the cycle continues based on the data read by the the product probe. If nothing is pressed, the temperature cycle automatically switches into a Time cycle for the remaining duration of the countdown.

During this type of chilling, a display (18) will show the temperature of the probe (the highest value of the two) and the other (19) will show a countdown. The countdown only starts when the insert temperature is less than 149°F (65°C). The temperature chilling LED (4) is on as is the probe insert symbol (17).

Chilling and storage status symbols

During chilling the LED that lights the symbol will be lit and flashing. Upon completion of chilling, this LED flashes alternately with the LED located beneath the storage symbol (8) while the beeper sounds for 60 sec, and the scrolling text appears “End Cycle - Fine ciclo”. After this time, the chilling LED (9) switches off, the storage one starts flashing (8) and the scrolling text disappears (even when the beeper silencer button (7)) is pressed
The LED (8) will flash when the compressor is on while if the set value has been reached, they will only remain lit until transition to storage. Similarly with storage, the LED (9) will flash when the compressor is active and will remain lit for the rest of the storage.

7.2 - Chilling phases

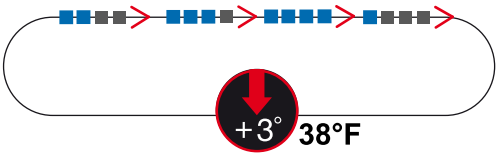
Pressing the positive chilling button (2) or negative chilling button (3) allows selection of a different chilling mode. The number of LEDs lit (23) or (24) define the "intensity" of chilling. The "Time" or "Temperature" chilling mode will be set by pressing the button (5). Lighting up of the corresponding LEDs on the sides will define the type of chilling

Each time the positive chilling button (2) is pressed the display will show successively for 3 seconds one of the following cycles: *LIGHT, SOFT, MEDIUM, FAST*

Each time the negative chilling button (3) is pressed the display will show successively for 3 seconds one of the following cycles: *LIGHT, SOFT, HARD, RUN*

7.3 - Selecting and starting the Positive chilling cycle

When the button (2) is pressed for the first time,"SOFT" mode will be selected, represented with lighting up of two of the four LEDs (24); subsequent pressing takes to 3 and 4 the LEDs lit and results in the "HARD" mode. Successive pressing reduces from 4 to 1 the LEDs lit and so on.



“LIGHT” - 1 LED only on
In this condition, there will be a cell temperature set of 27°F (-3°C). This avoids the risk of ice formation during the positive chilling phase and it will be used for loads which can be damaged by excessively heavy treatment (vegetables etc.)

“SOFT” - 2 LEDs on (Default)
In this condition, there will be a cell temperature set of 23°F (-5°C). This set will allow quicker chilling for products that in any case are fairly resistant to the freezing process.

“MEDIUM” - 3 LEDS on
In this condition, there will be an initial cell temperature set of -4°F (-20°C); after the HARD time, this will be taken to a cell temperature of 24°F (-3°C). This method accelerates cooling in the presence of products that are resistant and very hot initially.

“FAST” - 4 LEDs on
In this condition, there will be an initial cell temperature set of -4°F (-20°C); after the HARD time, this will be taken to a cell temperature of 23°F (-5°C). This method accelerates cooling in the presence of products that are resistant and very hot initially.

With the MEDIUM or FAST temperature chilling, the set change will be decided by the product temperature detected according to the parameter (Cd).

Once the MEDIUM or FAST cycles are started, to modify the HARD phase duration simply press the button (2) that will show on the display (19) the words "Hard" and will result in flashing on the display (18) the value in minutes of the HARD phase. With the +/- buttons it is possible to increase or decrease this value and confirm with the button (2) or wait 5 seconds (N.B. THE CHANGED VALUE ONLY APPLIES TO THE CYCLE IN PROGRESS).

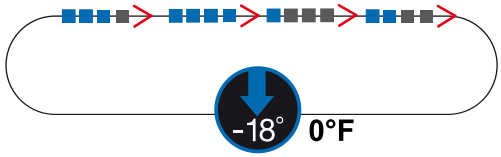
Once the cycle is selected, it is necessary to select the Time or Temperature mode by pressing the button (5) until coming on of the relevant LED.

At this point to start the cycle press the START/STOP button (22)

In the event of Temperature chilling, it is possible to change this chilling end value by pressing the button (2) or (3) depending on the type of chilling in progress. Having pressed the button, the display (19) will show the lettering "Set" and on the display (18) will appear the value of the end chilling temperature set, which can be modified within the envisaged range. Having pressed the button (2) or (3) or after 5 seconds the changed value is saved.

7.4 - Selection and starting the Negative chilling cycle

Pressing the button (3) for the first time will select the "HARD" mode, represented by coming on of three of the four LEDs (23) present. Subsequent pressing will take to 4 the LEDs lit and will return into “RUN+HARD” mode. Successive presses reduce from 4 to 1 the LEDs and so on.



“LIGHT” - 1 LED only on
In this condition, there will be an initial cell temperature set of 23°F (-5°C); after the SOFT time defined by the parameter (ts) this will move to a temperature of -22°F (-30°C). This mode is for use on large pieces where it is important to homogenise the chilling cycle.

“SOFT” - 2 LEDs on
In this condition, there will be an initial cell temperature set of -4°F (-20°C); after the SOFT time defined by the parameter (ts) this will move to a temperature of -22°F (-30°C). This mode is for use on large pieces where it is important to homogenise the chilling cycle.

In the case of SOFT or LIGHT temperature chilling, the set change will be decided by the product temperature detected according to the parameter (C2).

Once the cycle to change the duration of the SOFT phase is started (never greater than the parameter C4) simply press the button (3) which will show on the display (19) the wording "Soft" and on the display (18) the value in minutes of the SOFT phase. With the +/- buttons, it is possible to increase or decrease this value and confirm it with the button (3) or wait for 5 seconds (N.B. THE CHANGED VALUE ONLY APPLIES TO THE CYCLE IN PROGRESS).

In the case of temperature chilling, the set change will be decided by the product temperature detected (see parameter cd)

"HARD"-3 LEDs on (Default)
In this condition and in the absence of adjustments 0/10V of the compressor, there will be a set of cell temperature of -40°F (-40°C). This set accelerates the freezing process in the presence of products that do not require particular preparation.

"RUN" - 4 LEDs on flashing
In this condition and in the absence of adjustments 0/10V of the compressor, there will be a set of cell temperature of -40°F (-40°C). This set accelerates the freezing process in the presence of products that do not require particular preparation. In this case then the deep-freezing cycle will be continuous without moving into storage. The move to storage will be performed by pressing the button (3) and reducing the LEDs from 4 to 3. That process should be used in continuous insertion and extraction condition produced by the blast chiller.
During negative chilling, the compressor stops when the air temperature reaches the planned set point. In this cycle there will NOT BE automatic defrosting.

- Probes value reading

With the cycle in progress, pressing the button (12) will show in sequence, after the cell probe value, the values of the insert probe 1 and 2 and the evaporator probe in flashing mode on the display (18) while on the display (19) will appear the wording in sequence of SP1, SP2, and SE that represent the type of probe being displayed.

7.5 - Storage phase

Storage always takes over and automatically after every chilling event (apart from the negative RUN+HARD exception) and keeps the product at the storage temperature of 35,6°F (2°C) or -13°F (-25°C), depending on the type of chilling.
These values will be editable in all cases by pressing the button (2) or (3). It is possible to change during the storage phase the temperature set which appears flashing on the display (18), while on the display (19) the wording SET appears. To adjust the value (within 6 seconds) press the buttons +/-.

8 - DEFROST MODE

"Gas-hot" or "air" defrosting takes place:
- in automatic mode only during the storage phase and with a default time of 8 hours that is editable;
- manually both with machine in storage and with machine in STOP (not during chilling) by pressing the defrost button (13). All defrosting in progress can be interrupted by pressing the defrost button.

Duration of the defrost cycle is given by reaching the defrost end temperature measured by the evaporator probe; there is in any case a maximum length for defrost after which defrosting ends automatically.
Whenever possible, namely during the cycles of chilling, of ice-cream hardening, of storage, defrosting in storage and defrosting at machine standstill, it is possible to view the evaporator probe temperature by pressing the button (12): the display will show for 5 seconds the wording "S.EV + valore".
Manual defrosts cannot be activated in the event that the value of the evaporator probe is higher than a certain temperature value, in which case a series of beeps will be emitted to alert the user to the fact that it is not possible to defrost and the wording "NoDefrost" will appear for 5 seconds.

9 - DRYING WITH MACHINE AT STANDSTILL

When the machine is stopped by pressing the button (13) for more than 3 sec, ventilation will be activated for a maximum time of 20 minutes (either with door open or closed). During this function the LED flashes and the display shows the scrolling text "Air Defrost". To exit from this function press (short press) the defrost button (13). This mode is used when the machine is at a standstill for air defrost or to dry the machine after cleaning.

10 - DOOR OPENING

When the machine is running (chilling, storage, defrost), the door is opened, the display shows the scrolling text "DOOR OPEN" every 5 seconds, alternating with the values read, and the beeper emits beeps.
When closing the door, the fan starts without delays.

If the machine is running the door remains open for more than 5 minutes, the fan does NOT start again. The compressor is also locked and the open door alarm is given. Door reclosing, resetting of the audible alarm, visual and alarm relay.
If the door is opened while the machine is in "stop" the beeper does not sound but the appearance of the wording DOOR OPEN continues.

11 - OZONATOR

This function is only available when the machine is stopped and is activated by pressing the ozonation button (12) (the LED of the button comes on). The ozone is released for 120 minutes after which the release ends (the LED goes off). At the same time as the Ozonator the fan is also activated to facilitate movement.
During the sterilisation cycle the word "Ozone" will flash on the display (18) and the display (19) will show the countdown of the cycle time. If the door is opened during the 120 minutes, the sterilisation cycle will stop IMMEDIATELY; it will not even start upon closing of the door, and the scrolling text "STOP Ozone Cycle" will appear for 5 seconds. If the ozonator is not installed the scrolling text “Ozone Not Present - Ozono non presente” will appear on the display for 10 seconds.

12 - ICE-CREAM CYCLE

This cycle enables the user to use the chiller in negative chiller mode with a Timer that schedules the introduction and extraction of ice-cream containers, allowing the surfaces to harden, after leaving the ice-cream making machine.

With the machine in stop mode, press the "ice-cream" button (10); the beeper will emit a beep and the LED of the button will start to flash. The negative chilling cycle will start immediately (to cool the machine), the display (19) of the time will show the flashing cycle time while the display (18) will indicate the temperature of the cell probe.

The user has the option, at this point, to modify the time of the hardening cycle by pressing the "+" and "-", and to confirm the time by pressing the "ice-cream" button (10).

After this setting when the user opens the door (to introduce the ice-cream) and then recloses it, a beep is emitted as confirmation and the countdown will start. When the time reaches zero, the beeper will sound for 60 seconds, and the sliding text “carica gelato - charge ice cream” will appear. Then whenever the door is closed, any countdown in progress is interrupted and a new one starts.

During the cycle the user may at any time change the time and the temperature Set as default as follows:

1) by pressing the "ice-cream" button (10), with the first time press the time on the display (19) will flash and it can be changed with the buttons +/-.

2) the next press of the button (10) will acquire the new value.

3) now using the buttons +/- it is possible to change the flashing set represented on the display 1(8) with a value that can range from the minimum value to a maximum one (this theoretically allows setting of the long softening cycles for ice-cream which, extracted from the storage machine, must be placed on display).

4) pressing the button (10) allows saving of the new value followed by return to the cycle.

The user can stop this cycle at any time by pressing the START/STOP button (22).

13 - THAWING CYCLE

This function aims to safely thaw (below 50°F (10°C) of temperature) cell) previously frozen or deep-frozen products. The process is based both on cell temperature control, with a positive value between 38°F (3°C) and 50°F (10°C) average, and on the action of forced ventilation.

When the machine is stopped, select the thawing cycle by pressing the button (15); the cycle will start immediately showing on the "display 19" the standard thawing time and on display 18" the measured cell temperature .

To change the values of time and temperature set, simply press the button (15) until the display flashes which will present the time value set. With the +/-buttons it is possible to modify the thawing time. With the modification completed with the +/-buttons it is possible to change the SET which will be confirmed by pressing the button (5) or by waiting 5 seconds.

Then the temperature set value flashes on the display (8) which can also be changed with the +/- buttons. With the modification completed with the +/-buttons (6) it is possible to change the SET by pressing the button (3) or by waiting 5 seconds.

Then on the display, if VE2 is different from 100, the wording "HARD FANS" will be represented (**if fan regulation is enabled**). To confirm press the button (5), while to change press the +/- buttons until appearance of the second option "SOFT FANS" (reduced evaporator fan speed); pressing the button (5) the value selected is confirmed.

After this operation, the cycle in function is resumed which when finished will activate the beeper and the scrolling text “End Cycle - Fine ciclo” will appear. At that time the cycle will go into storage.

To see the value of the insert probe during thawing, simply press the button (12) which will display the product probe value for 5 seconds flashing on the display (18) and the wording "SP1" and "SP2" is shown on the display (19) to distinguish the probe reading.

14 - CHILLING PROGRAM STORAGE

The user has the button (16), which allows the saving or recalling of 99 chilling cycles.

To store a chilling cycle the user must:

1) set a chilling type (buttons (1)-(2)).

2) set the mode of chilling (by temperature or by time, button (5)).

3) set the total time or the final temperature +/- buttons.

4) press and hold (long press) the "PROGRAM" button (16) until the beeper emits a beep; the LED of the button starts to flash. On the basis of the first display it will flash signifying waiting for setting of the first letter/number.

4) then using the keys +/- set the first letter/number and confirm with the button (5). This will confirm the value, passing on to the next one. Arriving at the ninth character or even before, it is possible to press the START button for start and storage (ATTENTION, if a program with the same name already exists, it will be overwritten).

5) press START/STP (22).

With Start the software stores the "type" and "mode" of chilling selected.
To discontinue saving of the program, press the storage button again or wait for the Time out (approximately 10 sec.).
If time chilling has been set, the duration set is stored.

In the case of Temperature chilling, it will store the time in which the insert probe reaches the PRODUCT TEMPERATURE SET set, and will store this time as duration of the chilling.

In addition, if the chilling is Positive Hard, it also saves the time necessary to reach the core at 68°F (20°C) (Hard))

When saving a temperature (insert probe) chilling cycle, the LED of the programming button flashes to indicate that storage of the times is in progress. As soon as the temperature chilling cycle ends, the LED stops flashing to indicate that storage has been successful.

If storing a temperature cycle, this stops (due to alarms, button stop, etc.), the cycle times are not saved. The initial settings however remain saved.

15 - CHILLING PROGRAM EXECUTION

To call up and run a memory-resident program, the user must:

1) press the "PROG" button (short press), the LED lights up and with the +/- buttons, select one of the saved programs.

2) press START

If the save button is pressed by accident, pressing it again will exit that function.
While a program is running, by pressing the "PROG" button, the display shows the name of the program in progress.

16 - ALARMS

Summarised here are the main alarms that can appear and that will be represented by the scrolling text on the display:

16.1 - Evaporator probe alarm

Cause: Being outside the operating range [-58°F (-50°C) / 212°F (100°C)] for more than 30 seconds.

Effect: Interruption of any defrosting in progress. Inhibition of all periodic defrosting. Inhibition of manual defrosting (except forcing of fans with machine at standstill).

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Display: The display shows the scrolling text “AL01 - SONDA EVAPORATORE DIFETTOSA - FAULT EVAPORATOR PROBE
Flashing RED symbol (14)

Reset: It resets by itself if the value of the probe falls (approximately 20 seconds), or if the probe is excluded with parameter "/5"

16.2 - Product probe alarm

Cause: Being outside the operating range [-58°F (-50°C) / 212°F (100°C)] for more than 30 seconds with a temperature chilling cycle in progress.

Effect: Interruption of the temperature chilling cycle in progress resulting in automatic start of Time chilling. Inhibition of temperature chilling button.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed (minus (6)).

Display: The display shows the scrolling text “AL02 - SONDA PRODOTTO 1(2) DIFETTOSA - FAULT PRODUCT PROBE 1(2). The symbol flashes RED (14)

Reset: Press the alarm silencer button (with beeper off) or exclude with parameter "/9" (temperature chilling disabled)

16.3 - Cell probe alarm

Cause: Being outside the operating range [-58°F (-50°C) / 212°F (100°C)] for more than 30 seconds.

Effect: If START is given to a positive chilling (both with Time and Temperature) or if the latter is already in progress, it immediately goes into pause-work positive storage mode (C5 and C6 parameters).
If START is given to a negative chilling (both with Time and Temperature) or if the latter is already in progress, it continues (as it is not conditioned by the cell temperature (until passing into negative storage which will be in pause-work mode (C5 and C7 parameters). If the event takes over during storage, this continues in pause-work mode.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.
Display: The display shows the scrolling text "AL03- SONDA CELLA DIFETTOSA - FAULT ROOM PROBE"
Flashing RED symbol (14)

Reset: It resets by itself if the value of the probe is activated.

Note: With cell probe anomaly it is in any case possible to perform RUN+HARD chilling (compressor goes into continuous mode).

16.4) - Door micro-switch alarm

Cause: Active input for more than 5 minutes (uF parameter) with machine in start.

Effect: The blast chiller behaves as described in the section "7 Door opening 7".

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Display: The display shows the scrolling text "PORTA APERTA - OPEN DOOR"
The symbol (14) flashes YELLOW

Reset: Press the alarm silencer button (with beeper off), or it resets by itself if the input status is activated

16.5 - Alarm - Differential Thermal Breaker - Oil Pressure

Cause: When the input alarm is activated for more than 5 seconds

Effect: It places the machine in STOP. Inhibition of all the buttons except that of silence/reset, entering the parameter menu and ON/OFF.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.
Display/LED: The display shows the scrolling text "AL06-MAGNETOTERMICO-PRESS. OLIO - BREAKER - OIL PRESS."
Flashing RED symbol (14)

Reset: pressing the off beeper alarm silencer button and alarm cause disappearance.

16.6 - Automatic reset minimum pressure switch alarm 16.6.

Cause: When the machine is in start the alarm input is activated for more than 5 seconds (with machine in STOP it is not activated). The alarm is inhibited for approximately 2 minutes with each compressor start. The alarm is inhibited during "pump downs".

Effect: It places the machine in STOP. Inhibition of the Start/Stop and Defrost buttons

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.
Display/LED: The display shows the scrolling text "AL07-PRESSIONE MINIMA - MIN. PRESSURE".
Flashing RED symbol (14)

Reset: Pressing the off beeper alarm silencer button or switching off and switching on the card again (stand-by).

16.7 - Automatic reset Kriwan Alarm

Cause: When the input is activated with machine in start for more than 5 seconds, at least 3 times in the same cycle.

Effect: Each time only the compressor stops and starts up again when the input is activated. Upon the third time the machine is placed in STOP.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.
Display/LED: If the Kriwan alarm is activated, for the first two times only the word "Kriwan" appears, alternating with the Temperature and Time values represented, without locking the machine but only the compressor. Upon the third time the scrolling text "AL08 - KRIWAN COMPRESSORE -COMPRESSOR KRIWAN" will appear.
Flashing RED symbol (14)

Reset: Pressing the off beeper alarm silencer button or switching off and switching on the card again (stand-by).

16.8 - Input alarm HT1 - fusable

Cause: When the alarm is activated for more than 5 sec.

Effect: electrical disconnection of certain components downstream of the fuse.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Display/LED: The display shows the scrolling text “AL09 - CAMBIA FUSIBILE - REPLACE FUSE”.
Flashing RED symbol (14)

Reset: It resets itself when the status of the input is activated.

16.9 - Overtemperature alarm

Cause: The overtemperature alarm is activated (only during storage) when the cell probe detects a certain temperature value time time greater than the sum of the positive or negative storage set with the relevant alarm delta (parameter A2 or parameter A4). The overtemperature alarm is in any case disabled for a certain length of time (parameter A5) from the start of the storage phase and after a defrost. This alarm is not activated/managed if the cell probe is in alarm.

Effect: Storing of the alarm in the HACCP memory together with the date and time.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Display/LED: The display shows the scrolling text “AL11 - SOVRATEMPERATURA - OVER TEMPERATURE”.
The symbol (14) flashes yellow.

Reset: Pressing the off beeper alarm silencer button or switching off and switching on the card again (stand-by).

16.10 - Black-Out Alarm

Cause: it is activated when a cycle in progress is interrupted by a blackout, and when the duration of the blackout is greater than the time defined by the parameter "uL".

Effect: Storing of the alarm in the HACCP memory together with the date and time. The machine restarts the cycle set, in the case of chilling time from the total time.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Display/LED: The display shows the scrolling text “AL12-BLACKOUT DURATA 00 h 00’ - DURATION BLACKOUT 00h00’ ‘”. The symbol (14) lights up flashing YELLOW (21)

Reset: Press the alarm silencer beeper off button

16.11 - Compressor preventative maintenance alarm

Cause: When the operating hours of the compressor are an integer multiple of the hours set (if alarm activated).

Effect: none

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Display/LED: The display shows the scrolling text “SERVICE + TEL . 00000000000000 "(see parameter TEL)
Alternating with the time and temperature values represented. The symbol (14) flashes yellow.

Reset: Press the alarm silencer beeper off button

16.12 - Temperature not reached in the time set alarm

Cause: When temperature chilling lasts longer than the times for Time out (parameter c1 or c4).

Effect: signalling with flashing time or temperature display and beeper sound; press the "-" button (7) to stop the signals.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Reset: Press the alarm silencer beeper off button

16.13 - Power keypad-card connection alarm

Cause: When there is no connection between the interface and the power card

Effect: All the buttons are disabled. All the relays are deactivated. All the inputs are ignored. The LED comes on corresponding to the button that was pressed.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) indefinitely.
Display/LED: The display (with scrolling text “AL15 - CONNESSIONE TASTIERA - KEYBOARD CONNECTION”.
Flashing RED symbol (14)

Reset: Removing and restoring the power supply to the card.

Notes: As long as this warning persists, the chiller is unusable.

16.14 - Maximum pressure switch alarm

Cause: When the alarm is activated for more than 5 seconds. Or in the presence of maximum pressure gauge if the maximum pressure value defined by the parameter "uH" is exceeded

Effect: The machine goes into STOP Inhibition of all the buttons except that of silence/reset, entering the parameter menu and ON/OFF.

Beeper: The beeper sounds (3 seconds and then pauses for 30 seconds) until the silencer button is pressed.

Display/LED: The display shows the scrolling text “AL16-PRESS.. MASSIMA - MAX PRESS.”
Flashing RED symbol (14)

Reset: press the alarm silencer button (7) in the condition of the beeper off and alarm cause disappeared.

In the case of multiple simultaneous alarms, all the active alarms will be displayed alternately.

When the beeper sounds the user can silence it with the silencer button (7), by repressing the button (7). If the conditions no longer persist, the alarm can be reset.

17 - HACCP ALARM MEMORIES RESET

With the appliance in standby mode press the HACCP button (11) for at least 5 seconds; the display will show the scrolling text "OFF RESET". Use the +/-keys (6) to show "ON RESET" and then confirm the alarms cancellation by pressing the HACCP button (11). The card goes back automatically to stand-by.

18 - HACCP DATA READING

For HACCP management there will be three types of alarms recorded:

-overtemperature alarm (only active in storage mode)
-black-out alarm
-the alarm of chilling/deep-freezing that is overly long that will only be recorded in the Cycles file that can be downloaded using the USB key.

Of these alarms the last 20 alarms are stored.

To view this history press (long press) the HACCP button (11) with machine in stop. To scroll through the Alarms on the display, press the + and - buttons as if they were the UP/DOWN buttons; to exit press the HACCP button (11) again or the standby button (1)

Here is an example of what will appear in succession, by pressing the down button (7):

1) the scrolling display “Alarm 1” + “Sovratemperatura-Overtemperature” or “Black-out”

2) scrolling “ Data Inizio- Start Date” “ 01/02/15”

3) scrolling “ Ora Inizio- Start Hours” “ 01:25”

4) scrolling “ Data Fine- End Date” “ 02/02/15”

5) scrolling “ Ora FIne- End Hours” “ 01:37”

19 - HACCP DATA EXPORT WITH USB

There now follows a description on how to record data and to extract it onto a USB stick

19.1 - Extracted data format

The data that can be exported in txt format are the ***Alarms*** and the ***Working cycles***

Alarms
Each individual alarm is recorded, with its number linked to the type of alarm, in a dedicated file and marked with the following nomenclature:

Date - alarm start time - ALXX.txt

For example for a high pressure alarm we will have:

05_04_2014-12h24-AL16.txt

Inside the txt file generated should be recorded all the sizes of Digital/Analogue I/O; the alarm start and end data will also be recorded.

Work cycles
Every single work cycle in progress will be recorded with the following nomenclature:

Date - cycle start time - Cycle type .txt

In the event of positive SOFT chilling we will have:
05_04_2014-13h54-POS2.txt
By cycle Type it is meant:

Positive chilling: POS2-POS1-POS3 (depending on the LEDs lit)

Negative chilling: NEG1-NEG2-NEG3-NEG4 (depending on the LEDs lit)

Chilling program: PROG no

Defrost. THAW

Ice-cream GEL

Ozone Cycle: OZN

The cycle start and end conditions will typically be recorded. and any alarms that intervene in the cycle and sampling of all the sensitive values will be provided.

19.2 - Data downloading with USB

To extract the data with the machine at standstill insert the USB stick. The card will propose on the display (7) the scrolling text “Download Giorno-Day”; with the buttons (6) it will be possible to select the scrolling text “SETTIMANA-WEEK” or “MESE-MONTH” or “TUTTO-ALL”, which will select the time range for which to download the files recorded on the USB stick.
Downloading will be performed as soon as the HACCP button (16) is pressed. During downloading the segments that will increase from 1 to 9 will appear on the display to simulate the download. With downloading finished, for at least 10 sec (if no button is pressed), the scrolling text “FINE DOWNLOAD- END DOWNLOAD” will appear on the display (7) .

Possible saturation of the memory will be resolved by erasing older files and replacing them with new ones.
The information and instructions in this chapter are intended for all staff who work on the machine: the user, the maintainer and unskilled personnel. All cleaning and maintenance operations must be performed after disconnecting the electricity supply from the system.

20 - ORDINARY MAINTENANCE

20.1 - Operations by the user that do not require the assistance of a qualified technician

20.1.1 - Cell cleaning

In order to ensure hygiene and protection of the quantity of the food being processed, internal cleaning of the cell must be performed frequently, depending on the type of food stored.

Suggested frequency: weekly cleaning.

-The shape of the cell and of the internal components allow its cleaning using a cloth or sponge.

-Clean with water and non-abrasive neutral detergents.

Rinsing is possible with a cloth or sponge soaked in water or with a moderate water jet (not exceeding the system pressure). Do not scrape the surfaces with sharp or abrasive items.

20.1.2 - Outer casing cleaning

For cleaning of the casing simply use a cloth dampened with a chlorine-free product, suitable for stainless steel.

20.1.3 - Defrost water drainage

The system was designed for automatic and manual defrosting when needed.
Check for correct water drainage of the evaporator on the drip tray (if supplied), avoiding the occurrence of obstructions of the drainage pipe.

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20.2 - Operations only for authorised installer

Below are listed the routine maintenance operations that must only be performed by qualified installation technicians. The manufacturer declines all liability for accidents caused by non-compliance with this requirement.

Below is a list of operations useful to preserve the efficient operation of the appliance with related recommended frequencies.
Detailed maintenance operations are described in the Service Manual kept by installers and qualified technicians.

20.2.1 - Condenser cleaning
(for air cooled models only)

For the correct and efficient operation of the condenser, the air cooled condenser must be kept clean to allow the circulation of air.

Recommended frequency: operation to be performed every 30 days or in any case according to the working conditions of the appliance (the presence of dust and flour in the work environment of the appliance significantly affects dirt accumulation of the condenser thus making it less efficient).

20.2.2 - Condenser filter cleaning
(for air cooled models only)

Recommended frequency: operation to be performed every 30 days. or in any case according to the working conditions of the appliance (the presence of dust and flour in the work environment of the appliance significantly affects dirt accumulation of the condenser thus making it less efficient).

20.2.3 - Evaporator cleaning

For the correct and efficient operation of the appliance, the evaporator battery must be kept clean to allow free air circulation and especially to remove food residue and grease that can be a source of bacteria harmful to human health.

Suggested frequency: operation to be performed every 30 days. or depending on the type of food being processed.

20.2.4 - Ozonator maintenance

Dirty and dusty environments reduce efficiency of the ozonator: for longer lamp life and for greater efficiency, the bulb of the ozonator should be cleaned periodically. To ensure maximum functionality the bulb must be replaced every 12 months.
For the correct maintenance and cleaning practices comply with the instructions in the service manual.

Suggested frequency: clean the lamp of the ozonator at least every 3 months .
Replacement of the lamp every 12 months (only genuine spare parts).

21 - TIPS FOR SMOOTH OPERATION

21.1 - Operating instructions

Before operating the machine it is necessary to perform thorough cleaning inside the cell.

21.2 - Pre-cooling

Before using the machine for the first time or after a period of disuse, pre-cool the cell by running the machine empty until it reaches the working temperature set.
To obtain good performance of the machine and to avoid food alterations, it is advisable to:
• stack the products in order to promote the circulation of cold air in the entire cell;
• avoid prolonged and frequent door openings.

21.3 - Maximum Load capacity for chilling/ freezing cycles

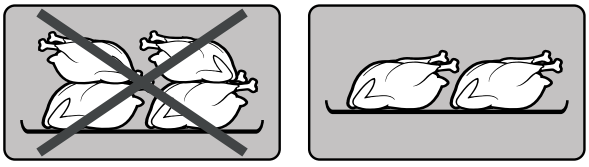
Do not overload the machine beyond what is stated by the manufacturer.

Blast chilling cycles					
	Type of Cycle				Time of Cycle
Model	Light Positive	Soft Positive	Medium Positive	Fast Positive	Related to Light Positive Cycle
	oz/kg	*oz/kg*	*oz/kg*	*oz/kg*	*minutes*
5 T	700/20	700/20	700/20	700/20	110
10 T	1235/35	1235/35	1235/35	1235/35	110
15 T	2290/35	2290/35	2290/35	2290/65	125
30 T	2470/70	2470/70	2470/70	2470/70	125

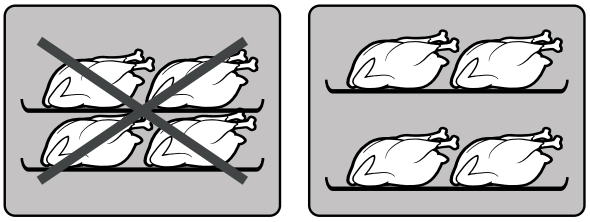
Blast freezing cycles					
	Model				Time
	5 T	10 T	15 T	30 T	
Type of Cycle	*oz/kg*	*oz/kg*	*oz/kg*	*oz/kg*	*minutes*
Light Negative	425/12	880/25	1760/50	1940/55	240
Soft Negative	425/12	880/25	1760/50	1940/55	240
Hard Negative	425/12	880/25	1760/50	1940/55	240
Run Negative	425/12	880/25	1760/50	1940/55	240

21.4 - How to load the machine

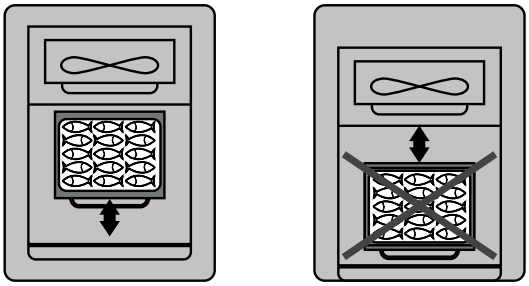
a) In order to grant chilling/freezing time ensure that food to be chilled/frozen in separated pieces (max thickness 2”/50 mm).



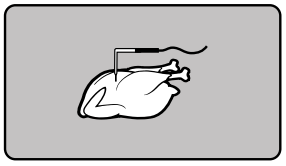
b) Ensure a sufficient distance is maintained between the trays to allow adequate air circulation.
If the machine is not completely loaded, distribute the trays and the load over the entire useful height avoiding concentrations.



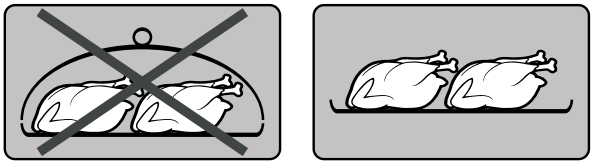
c) Place the trays in the inner part of the door, making sure that they are as close as possible to the evaporator.



d) The core probe must be positioned correctly in the centre of the product with the largest cut or piece, making sure that the tip of the probe does not protrude out or touch the tray. The probe must be cleaned and sanitised before each new cycle (work) in order to avoid undesirable contamination.



e) Do not cover the trays and/or container with lids or insulating films: the more the food is insulated the greater the time required for chilling and rapid freezing.
Packaging of the trays must be performed when the product is already frozen, before it is put into storage.



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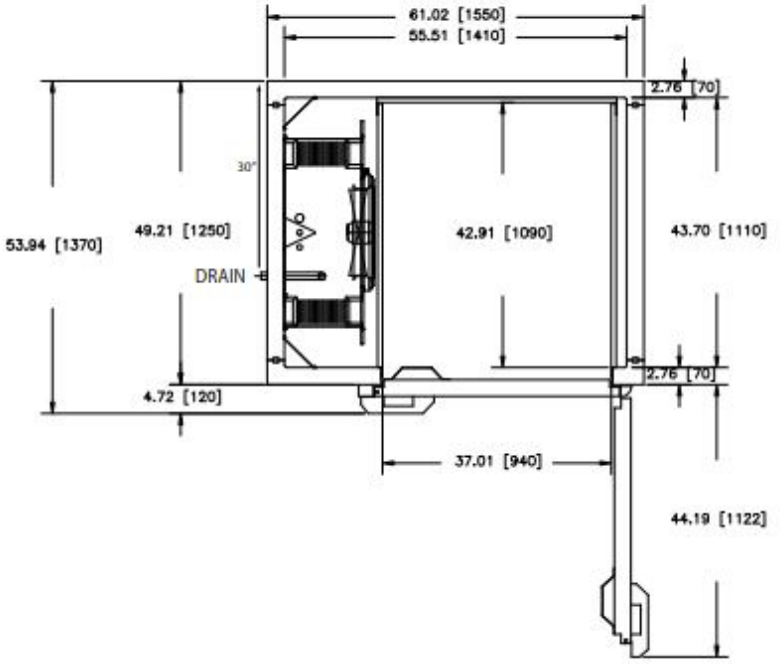
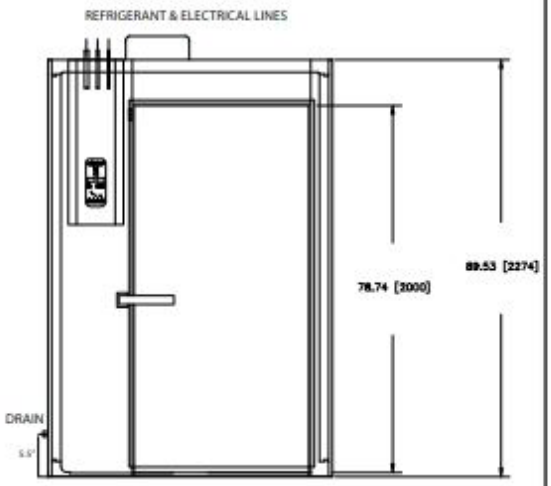
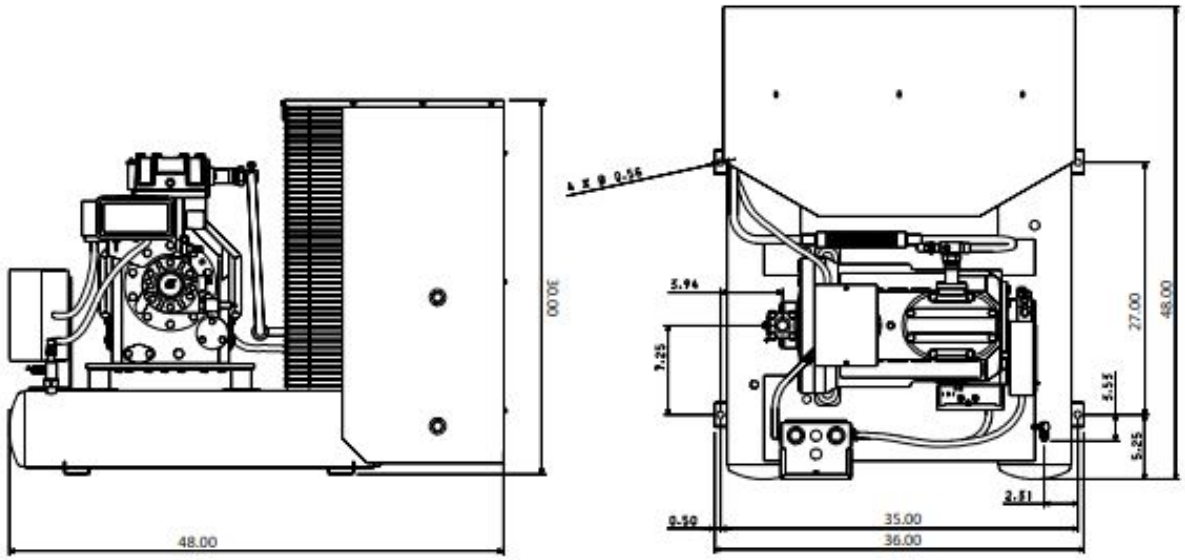
T40: Blast Chiller/Shock Freezer





Model	Voltage	Max Fuse Size	Average Heat Rejected (W)	Ship Weight
T40	220-230/1/60	15	22330	1400 lbs.

T40: Blast Chiller/Shock Freezer Remote Condensing Unit



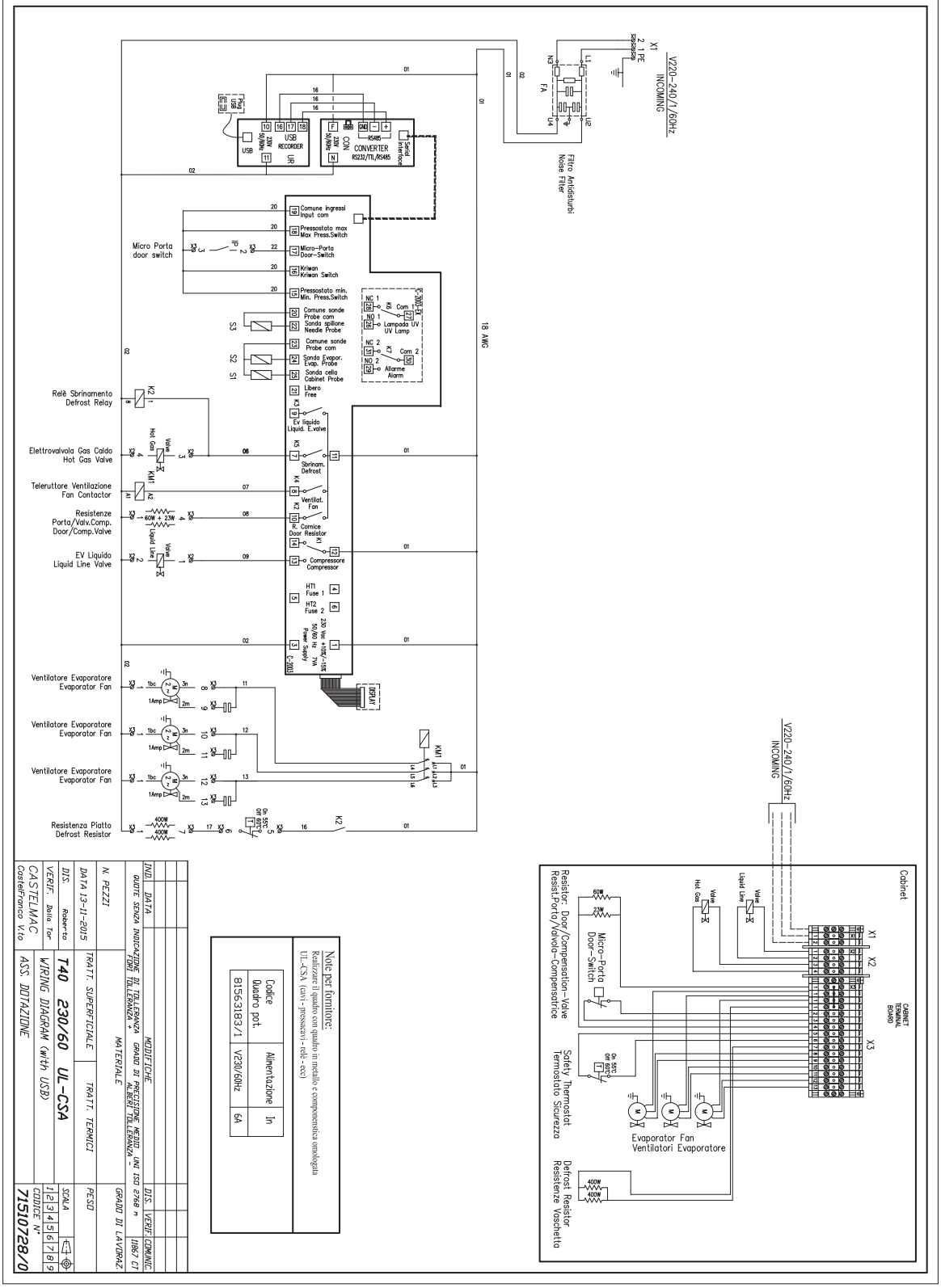
Ambient Operating Limits: -20˚F to 120˚F

Note: The Delfield Blast Chiller/Shock Freezer is wired independently of the remote condensing unit. No interconnecting wiring is required between the blast chiller and the condensing unit. All condensing units have units have crankcase heaters. Condensing unit control systems are provided wired from the factory. Field Connection is made by connecting supply power to the compressor contactor.

Outdoor condensing unit applications require the use of an optional UL listed hood, delfield P/N CUHOOD, for protection from the elements.
Interconnecting piping, curbs or other mounting methods and refrigerant are not included. Installation must be made by a qualified refrigeration technician. Piping runs of greater than 100 feet require consultation with the factory.

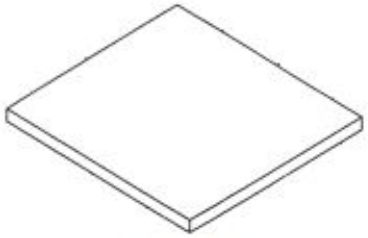
	T40	
	Delfield Model#: T40CU	
Refrigerant		404A
Compressor and wiring	Compressor and Capacity	6 HP Compressor 24,150 BTUH @ -32˚F, 90 amb, 102.2 Cond: 46,740BTUH @ -5˚, 90 amb 110.3 Cond.
	Condensing Unit Wiring	208/230V/60Hz/3Ph Max Fuse Size: 60A Max Circuit Ampacity:42.3A
Control System	High Pressure Switch	Set Point: 450 psig, 380 psig re-set
	Low pressure switch	Set Point: 25psig, Range = 1Sin to 100psig
	Oil Pressure Differential Switch	Sensotronic Oil Pressure Switch
Compressor Reliability	Crankcase Heater	65 watts
Flow Control	Condenser Capacity Control	Head Pressure Control Set at 84˚F, 185psig
	Receiver Capacity	55.4lbs. @ 90% liquid refrigerant fill (37.5lbs. max refrigerant charge)
	Accumulator	500 Cubic Inch Capacity
	Oil Separator	Yes
	Oil Filter	Yes
Optional Outdoor Hood	Delfield Model Number: CUHOOD	
Shipping Weight	Condensing Unit	600 Lbs.
	Outdoor Hood	100 Lbs.

T40 Wiring Diagram

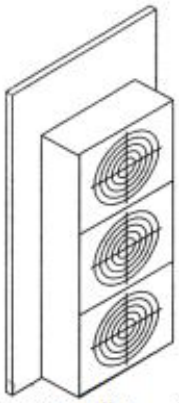


T40 Installation and Assembly

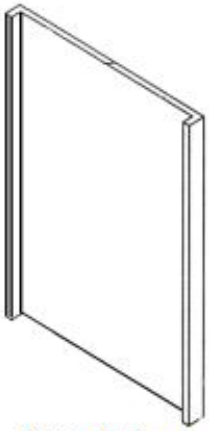
Supplied Equipment List.



T40 Base



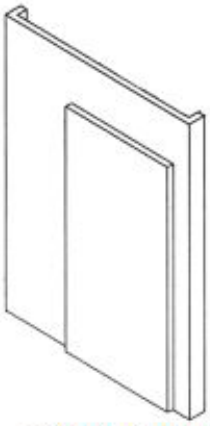
T40 LS Wall Panel



T40 Back Panel

T40 RS Wall Panel

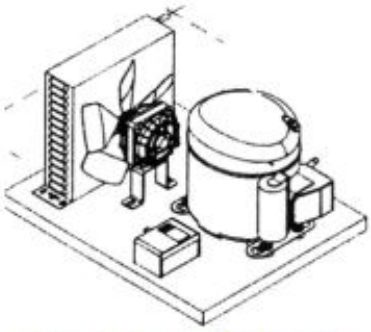
T40 Control Box



T40 Front Panel
with Door

T40 Top Panel

Alignment Blocks

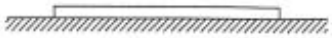


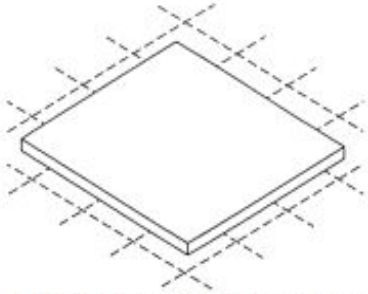
T40 Remote Condensing Unit

Cam Lock T-Handle

Cam Hole Covers

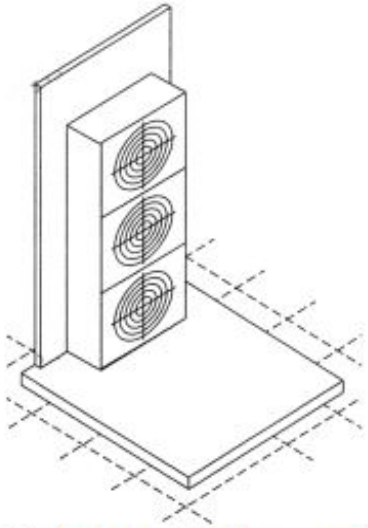
T40 Installation and Assembly





1. Position cabinet floor on a flat, level surface with the slotted end facing up.

- Ensure the entryway is facing forward (gray plastic transition piece)
- Insert one alignment block into the channel in between each of the locking cams.



2. Raise the first panel (with the evaporator, fans and air channel) onto the mounting floor with the fans facing inside.
- Place bottom of the panel into the alignment channel on the mounting floor for proper placement, using the alignment block to align panel.

NOTE: Do not break alignment block when placing panels in place.

The first panel will be the left side of the unit if you are facing the door.

NOTE: Ensure all cam locks are in the open position before placing any panels.

Make sure the skirt on the vertical panels covers the outside of the mounting floor.

Lock bottom locking cams on the outside of the first panel. Insert T-handle wrench and twist clockwise until a positive stop is achieved.

The panel will now stand on its own.

NOTE: Do not lean or push on unsupported panels.

3. Attach the back panel to the mounting floor in the same manner as the first panel. The back panel will wrap around both sides.

NOTE: Ensure all cam locks are in the open position before placing any panels.

NOTE: Do not break alignment block when placing panels in place.

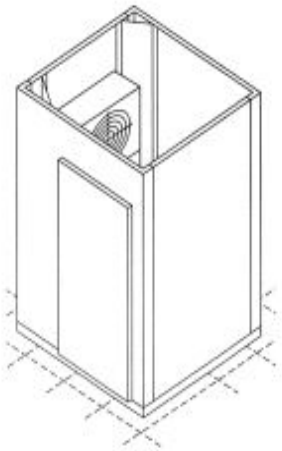
Lock the side locking cams on the outside of the first panel and the left side and bottom locking cams on the inside of the back panel. Insert T-handle wrench and twist clockwise until a positive stop is achieved.

T40 Installation and Assembly

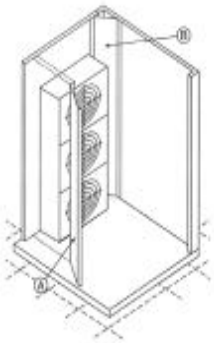
4. Attach the right side panel to the mounting floor in the same manner as the other two panels. Lock the side locking cams on the inside bottom and side of the panel. Insert T-handle wrench and twist clockwise until a positive stop is achieved.

NOTE: Ensure all cam locks are in the open position before placing any panels.

NOTE: Do not break alignment block when placing panels in place.



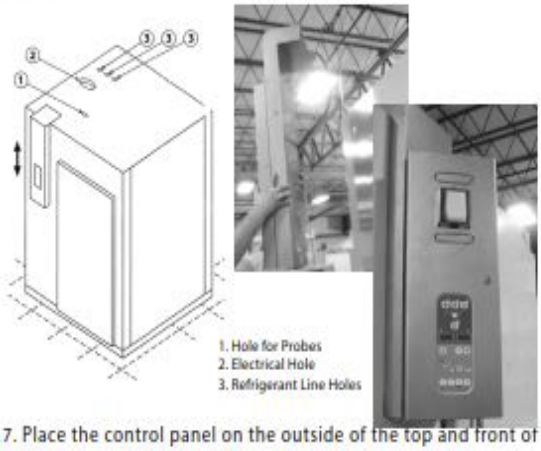
5. Attach the front panel in the same manner as the others. Front panel will wrap around the sides. Lock all side and bottom cams when the panel is in position. Insert T-handle wrench and twist clockwise until a positive stop is achieved.



6. Place the top panel on to the top of the cabinet with the refrigeration holes facing the first panel. Thread the refrigeration pipes through the supplied holes and ensure there is no binding.

NOTE: Ensure all cam locks are in the open position before placing any panels.

Lock all side cams when the panel is in position. Insert T-handle wrench and twist clockwise until a positive stop is achieved.

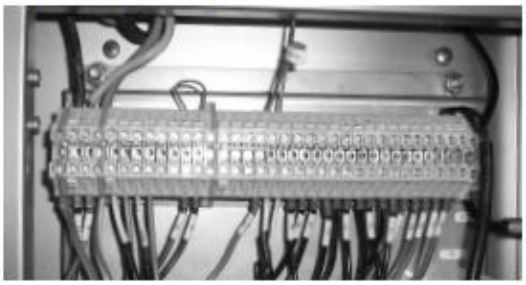


7. Place the control panel on the outside of the top and front of the unit. Attach with supplied screws and screw holes.

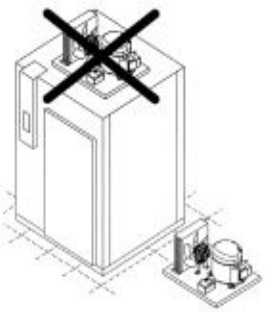
T40 Installation and Assembly

8. Thread electrical from the inside of the unit through the supplied hole in the top. Do not cut another hole to thread electrical.

9. Thread electrical wires through the top of control box and connect to controls.
• Attach labeled electrical line to the corresponding labeled connector on the control panel.

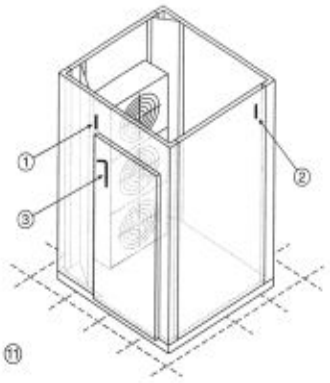


10. Pipe remote condensing unit to the refrigerant lines coming out of the top of the cabinet.
This should be done by a qualified refrigeration expert.

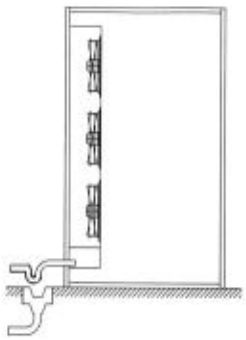


Put the compressor system in a suitable, well aired place no farther than 25 feet. from cabinet.

11. Place interior probes
1. Interior Probe1: Place on wall next to the evaporator



2. Food Probe: Place in food product for monitoring
3. Interior Probe2: Place on opposite side of cabinet from evaporator 3/4 of the way to the top of the cabinet.

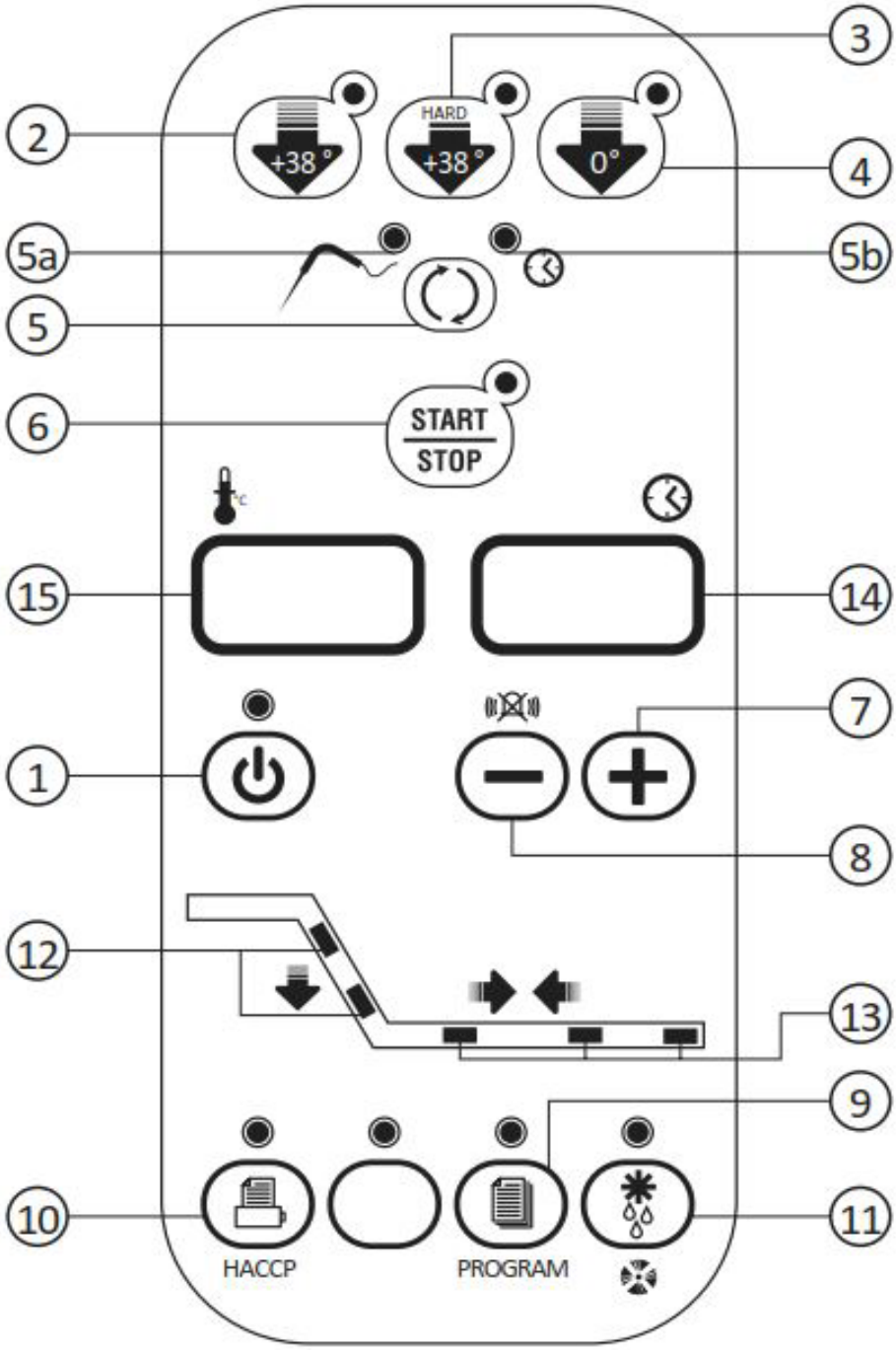


12. Unit must be plumbed with a P-trap to a drain for evaporator water discharge.

13. Place cam plugs in all cam holes to cover them. Press until seated in holes.

14. Install ramp and threshold onto the front of the outside of the door.

DESCRIPTION OF THE VERTICAL CONTROL PANEL



PUSH-BUTTONS :

1.  ON /OFF (STAND BY)
2.  SOFT BLAST CHILLING CYCLE (+38°F / +3°C)
3.  HARD BLAST CHILLING CYCLE (+38°F / +3°C)
4.  BLAST FREEZING CYCLE (0°F / -18°C)
5.  END CYCLE BY TIME / PROBE (TEMPERATURE)
5A.  PROBE CHILLING INDICATOR LED
5B.  TIMED CHILLING INDICATOR LED
6.  CYCLE START / STOP
7.  INCREASE VALUE
8.  DECREASE VALUE
9.  RECIPE PROGRAMS (CHILLING CYCLES)
10.  HACCP
11.  DEFROSTING / FORCED VENTILATION
12.  CHILLING / FREEZING CYCLE INDICATOR LED
13.  STORAGE INDICATOR LED
14.  TIME DISPLAY
15.  TEMPERATURE DISPLAY

PROGRAMMING AND OPERATING INSTRUCTIONS

5.1 STARTING UP THE APPLIANCE (only for T14D / T40)

PRE HEATING FUNCTION OF COMPRESSOR SUP

When power is initially supplied to the cabinet, a 2-hour pre-heating phase starts and the display shows some blinking dashes "---". During this phase the machine cannot be started. This important information is shown on a yellow label placed inside the door.

Initial pre-heating is necessary in order to safeguard the compressor's life. Only if strictly necessary (and under the customer's responsibility) it is possible to by-pass countdown by pressing push button "HACCP" for about 5 seconds.

This function is not activated if machine stops/starts operating due to lack of power during working cycle.

When the appliance is plugged in or connected to electrical power up, it can be:

• **ON** 14 and 15 illuminate and LED 5A is on, LED 1 is off

• **OFF-STAND-BY** push-button 1 LED is on.

To switch from one status to another, press push-button 1 .

Whenever the appliance switches from STAND-BY status to ON, a self-test is carried out: all LEDs and displays are switched on, push-buttons are checked, then the installed software version is displayed.

OPERATION

The main work cycles (chilling/freezing) performed by the appliance:

• SOFT BLAST CHILLING (+38°F / +3°C)

Pre-cooked food is rapidly chilled to a temperature of +38°F / +3°C, thus preventing proliferation of bacteria and preventing dehydration of the cooked food due to evaporation. Food can thus be stored perfectly for 5 to 7 days without altering its original qualities. The soft cycle is recommended for delicate, thin foods such as rice, vegetables and fried foods.

• HARD BLAST CHILLING (+38°F / +3°C)

This process is designed to cool food products with a thickness greater than 2-3 cm/1" and is very effective for dense, greasy or large-sized foods. Variable air temperatures are used to accelerate penetration of cold into the product.

• BLAST FREEZING (0°F / -18°C)

This function freezes the product completely to a temperature of 0°F / -18°C in approximately 4 hours. The rapidity of the process prevents formation of macrocrystals essential to ensure that the product retains its original consistency and quality when thawed for consumption.

• AUTOMATIC CONSERVATION

At the end of each cycle (chilling or freezing), the appliance will automatically switch to the required storage temperature.

Two different end-cycle modes are available for each cycle:

• **BY TEMPERATURE** - the cycle ends when the probe reaches the required temperature.

• **TIMED** - cycle length is pre-set

IMPORTANT: work cycles and modes can only be selected when the appliance is ON and a work cycle has not been started, LED on push-button 6 off

IMPORTANT: The appliance will automatically defrost if coil temperature falls below 45˚F. It will not go into defrost during a chill or freeze cycle. When it is in defrost a new cycle can not be initiated until defrost is complete.

5.2 SOFT BLAST CHILLING BY TEMPERATURE (pre-cooked, hot foods)

• To select this cycle, press push-button 2 (relative LED lights up), then press push-button 5 to select the temperature mode (LED 5A on)

• Insert the core probe into the core of the product to be chilled.

• Start up the cycle by pressing push-button 6. LED 5A and those related to the push-buttons pressed illuminate throughout the cycle, while LEDs 12 flash.

• Display 14 indicates the maximum blast chilling time (starting temperature to end of the blast chilling temperature (factory setting 90 minutes).

• The temperature measured by the core probe is shown by display 15 .

• The instrument timer starts the countdown of the maximum blast chilling time as soon as the temperature measured by the core probe falls below the temperature of +149°F / +65°C (the dot at the bottom right of display 14 flashes).

• During the blast chilling cycle, the air temperature is around +32°F / 0°C and may get as low as 23˚F/-5˚C. This function is designed to guarantee uniform cooling of the product, preventing frost formation on the surfaces. During the blast chilling cycle, the compressor may therefore stop and restart, depending on the reading of the compartment temperature probe.

• The blast chilling phase ends only when the core probe (inserted in the product core) indicates that the set blast chilling temperature (+38°F / +3°C) has been reached as signalled by an intermittent beep for a minute. During the beep, LEDs 12 and 13 flash.
Display 15 indicates the temperature inside the compartment, while display 14 shows blast chilling time reset to zero.

• If at the end of the maximum blast chilling interval the core probe continues to display a temperature higher than the value for the end of blast chilling, the displays will indicate an alarm for excessively long chilling ALL 14 alternating with the temperature and time; at the same time, the alarm will beep.

The blast chilling cycle continues until the end chilling temperature has been reached; display 14 counts back the minutes remaining until the end of the cycle.

Press push-button 8 to mute the alarm; press push-button again to clear the alarm display.

• At the end of the chilling cycle, the appliance automatically switches to the set storage temperature for an indefinite interval (like a standard storage appliance).

LEDs 12 switch off while LEDs 13 light up.

• The compartment temperature is constantly shown on display 15; during this cycle, defrost cycles are performed at regular intervals with duration set as required (parameter programming reserved for installation technician). The factory setting for positive storage temperature is +36°F / +2°C.

• Press push-button 6 to set the appliance to STOP status (relative LED switches off), ready for a new cycle.

To modify the final blast chilling temperature, consult the user programming instructions.

IMPORTANT: During chilling or shock freezing by core sensor it's possible to read:

- The room temperature by pressing push button 10 .

- The evaporator temperature by pressing push button 10 .

5.3 SOFT TIMED BLAST CHILLING

• Press push-button 2 (relative LED lights up), then press push-button 5 to select the timer mode (LED 5B on). Display 14 shows the maximum chilling time (set by default to 90 minutes).

To modify this time, press push-buttons 7 and 8 (time in minutes).

• Press push-button 6 to start the appliance. LED 5B and push-button LEDs remain on and LEDs 12 flash throughout the cycle.
Internal cabinet temperature is shown on display 15 .

• When the maximum chilling time has counted back to 0, the chilling cycle is completed and the appliance automatically switches to the set positive storage temperature for an indefinite interval.

• LEDs illuminate and the alarm will beep when the cycle is finished (as in the chilling cycle by temperature). The same applies for the positive storage function.
Press push-button 6 to set the appliance to STOP status (relative LED switches off), ready for a new cycle.

IMPORTANT: Use the storage function sparingly. After chilling, food products should be placed in storage cabinets.

HARD BLAST CHILLING

When the HARD function is used, chilling takes place in two stages:
• an initial "Hard" stage when the air temperature is brought down to below 32°F / 0°C in order to accelerate chilling;
• a second "Soft" stage, involving air temperatures around 32°F.

IMPORTANT: During chilling or shock freezing by time it's possible to read the evaporator temperature by pressing push button 10 .

HARD BLAST CHILLING BY TEMPERATURE

• Press push-button 3 (relative LED lights up), then press push-button 5 to select the temperature mode (LED 5A on). Insert the core probe into the core of the product to be chilled.

• Start up the cycle by pressing push-button 6 . LED 5A and those relative to the push-buttons pressed illuminate throughout the cycle, while LED 12 flashes.

• Display 14 indicates the maximum blast chilling time (starting temperature to end of the blast chilling temperature - factory setting - 90 minutes).

• The temperature measured by the core probe is shown by display 15 .

• The instrument timer starts the countdown of the maximum blast chilling time as soon as the temperature measured by the core probe falls below the temperature of +149°F / +65°C (the dot at the bottom right of display 14 flashes).

• Once the cycle has been started, the appliance operates initially with an air temperature below +32°F / 0°C (LED on push-button 3 flashes), then with temperatures around +32°F / 0°C (LED on push-button 3 on). The first stage of the cycle is completed when the core probe detects a temperature of +68°F / +20°C in the product core.

• The blast chilling phase ends only when the core probe (inserted in the product core) indicates that the set blast chilling temperature (+38°F / +3°C) has been reached as signalled by an intermittent beep for a minute. During the beep, LEDs 12 and 13 flash.
Display 15 indicates the temperature inside the cabinet, while display 14 shows blast chilling time reset to zero.

• The alarm ALL 14 and conservation functions cut in with relative indicators in the same way as for timed Soft blast chilling.

• Press push-button 6 to set the appliance to STOP status (relative LED switches off), ready for a new cycle.

IMPORTANT
HARD blast chilling affords a considerable reduction in working time, and is particularly suited to foods with a high fat content, for large pieces or for packaged products.
SOFT chilling is recommended for delicate and finely chopped products, such as vegetables, mousses, etc..

IMPORTANT: During chilling or shock freezing by core sensor it's possible to read:
- The evaporator temperature by pressing push button 10 .

5.5 HARD TIMED BLAST CHILLING

• To select this cycle, press push-button 3 (relative LED lights up), then press push-button 5 to select the "timed" mode (LED 5B on). Display 14 shows the maximum chilling time (set by default to 90 minutes).
To modify this time, press push-buttons 7 ⊕ and 8 ⊖ (time in minutes).

• To set the time of the first negative temperature stage, press push-button 3 for five seconds, then wait for display 14 to show the flashing value.

The time setting (in minutes) can be modified by means of push-buttons 7 ⊕ and 8 ⊖.
Press push-button 3 again to return to standard display.

• Start up the cycle by pressing push-button 6 . LED 5B and push-button LEDs remain on and LEDs 12 flash throughout the cycle.

• Internal cabinet temperature is shown on display 15 .

• Once the cycle has been started, the appliance operates initially with an air temperature below +32°F / 0°C (LED on push-button 3 flashes), then with temperatures around +32°F / 0°C (LED on push-button 3 on). For example: HARD timed chilling cycle 90 minutes. First stage of 40 minutes with negative air temperature. Second cycle stage of 50 minutes with air temperature around +32°F / 0°C.

• When the maximum chilling time has counted back to 0, the chilling cycle is completed and the appliance automatically switches to the set positive storage temperature for an indefinite interval.

• LEDs illuminate and the alarm will beep when the cycle is finished (as in the temperature chilling cycle). The same applies for the storage function.

• Press push-button 6 to set the appliance to STOP status (relative LED switches off), ready for a new cycle.

IMPORTANT: During chilling or shock freezing by time it's possible to read the evaporator temperature by pressing push button 10 .

5.6 BLAST FREEZING BY TEMPERATURE

• To select this cycle, press push-button 4 (relative LED lights up), then press push-button 5 to select the temperature mode (LED 5A on). Insert the core probe into the core of the product to be chilled.

• Start up the cycle by pressing push-button 6 . LED 5A and those relative to the pushbuttons pressed illuminate throughout the cycle, while LEDs 12 flash.

• The appliance proceeds to operate in the same way as that described for the positive chilling cycle. During this cycle the compressor operates in continuous mode to enable the appliance to reach the cycle end temperature in the shortest time possible (default temperature at product core is set at 0°F / -18°C). Maximum freezing time is 240 minutes.

• The alarm ALL 14 for excessively-long freezing and conservation functions cut in with relative indicators in the same way as for timed Soft blast chilling. The factory setting for negative storage temperature is -13°F / -25°C.

• LEDs illuminate and the alarm will beep when the cycle is finished (as in the soft chilling cycle by temperature). The same applies for the storage function.
Press push-button 6 to set the appliance to STOP status (relative LED switches off), ready for a new cycle.

IMPORTANT: During chilling or shock freezing by core sensor it's possible to read:

- The evaporator temperature by pressing push button 10 .

TIMED BLAST FREEZING

• Press push-button 4 (relative LED lights up), then press push-button 5 to select the timer mode (LED 5B on). Display 14 shows the maximum chilling time (set by default to 240 minutes).
To modify this time, press push-buttons 7 ⊕ and 8 ⊖ (time in minutes).

• Start up the cycle by pressing push-button 6. LED 5B and push-button LEDs remain on and LEDs 12 flash throughout the cycle.
Internal food temperature is shown on display 15.

• When the maximum chilling time has counted back to 0, the cycle is completed and the appliance automatically switches to the set negative storage temperature for an indefinite interval.
LEDs illuminate and the alarm will beep when the cycle is finished (as in the freezing cycle by temperature). The same applies for the storage function. The factory setting for negative storage temperature is -13°F / -25°C.

• Press push-button 6 to set the appliance to STOP status (relative LED switches off), ready for a new cycle.

IMPORTANT: During chilling or shock freezing by time it's possible to read the evaporator temperature by pressing push button 10 .

APPLIANCE FUNCTIONS

DATE AND TIME SETTINGS : PUSH-BUTTON (5)

Set the machine to ON .
Press and hold down push-button 5 for more than five seconds to access the date and time setting function. Display 15 indicates in sequence the abbreviations Hr (hours), Mn (minutes), dA (day), Mo (month) and Yr (year), while display 14 shows their respective settings. To scroll the abbreviations, press push-button 5 .
To modify the settings, use push-buttons 7 ⊕ and 8 ⊖.

ICE CREAM SURFACE HARDENING PUSH-BUTTON (6)

Set the machine to ON .
Press and hold down push-button 6 for more than five seconds to access the surface hardening function (push-button LED flashes). The compressor is switched on; display 14 shows the default cycle time. Set the cycle time (in minutes) by means of push-buttons 7 ⊕ and 8 ⊖. Open the door, place the product inside, then shut the door to start the cycle. All LEDs remain off, with the exception of the Start LED. When the cycle time has elapsed, an alarm will beep. The appliance remains on, ready for another ice cream hardening cycle. Open the door, remove the hardened product, replace it, then shut the door. The machine will perform another hardening cycle for the time set for the previous one. Every time the door is opened and closed after a cycle, the time is reset. To exit the function, press push-button 6 .

ADDITIONAL FUNCTIONS

MUTING THE BEEPER AND ALARM RESET : PUSH-BUTTON (8)

Press push-button 8 ⊖ to mute the alarm beeper.
Alarms are reset :
- by pressing push-button 8 ⊖ when the beeper is off;
- automatically if alarm conditions are removed; see also section 7 ⊕ (Alarm Management).

PROGRAM STORAGE: PUSH-BUTTON (9)

The programming function is used for cycles for processing products with the same characteristics. Up to 99 programs can be stored. Select the type of chilling process (Soft, Hard, Timed Freezing or by Temperature), then press and hold push-button 9 until display 15 shows the abbreviation P1 (push-button 9 LED flashes).
Use push-buttons 7 ⊕ and 8 ⊖ to set the number of the program on display 15 . Start up the cycle by pressing push-button 6 . When the cycle has been completed, the appliance automatically switches to the set storage temperature for an indefinite time.
Press push-button 6 to set the appliance to STOP status (relative LED switches off), ready for a new cycle.

RECALLING A STORED PROGRAM

When the appliance is **ON** , press push-button 9 briefly; display 15 will show program P1. Use push-buttons 7 ⊕ and 8 ⊖ to select the required program. Start up the cycle by pressing push-button 6 .

DISPLAYING THE THREE LATEST HACCP ALARMS (PUSH-BUTTON 10)

Set the machine to **ON** .

Press and hold down push-button 10 for more than five seconds (relative LED illuminates) to enter the alarm display function (date, hour and minute, alarm type and maximum temperature detected). Every time the HACCP push-button is pressed, the stored data are displayed.

EXAMPLE:

ALL.11	Display 15	Display 16
	---	Str (start)
	12	hr hour
	29	min minutes
	6	day days
	8	mon month
	03	yr year
	End	end
	13	Hr
	21	min
	6	day
	8	mon
	03	yr
	75	maximum temperature detected inside

FORCED VENTILATION FUNCTION

To activate this function when the appliance is ON , press push-button 11 for more than five seconds. The fan will continue to operate even when the cabinet door is open.

During forced ventilation, display 15 will show"dEF".

MANUAL DEFROSTING

To activate this function when the appliance is ON press push-button 11 (relative LED illuminates).

If conditions allow it (the temperature detected by the evaporator probe must be lower than the set point in the program parameters), the appliance will perform a defrost cycle. Display 15 will show "dEF".

To immediately stop a defrost cycle, press push-button 11 .

AUTOMATIC DEFROST CYCLES

The appliance automatically performs defrost cycles during storage. Three defrost cycles are performed during a 24-hour period (once every 8 hours).

The appliance automatically restarts once the defrost cycle has been completed.

ALARM MANAGEMENT

Storage of data/errors

The appliance electronic controller is equipped with a system of acoustic and visual signals to indicate the intervention of safety devices. The table below gives a list of the alarms shown on the panel display

The software controls the following alarms:

	Evaporator probe alarm (ALL 01)
Cause:	Exit from operating range (-58°F / -50°C - 212°F / +100°C) for over 30 seconds. Probe is defective (REPLACE PROBE).
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display:	Alternates message "ALL 01" with standard display
Reset:	Automatically resets only when probe reading has returned to normal.
	Core probe alarm (ALL 02)
Cause:	Exit from operating range (-58°F / -50°C - 212°F / +100°C) for more than 30 seconds during current chilling cycle by temperature.
Effect:	Interruption of current chilling cycle by temperature and automatic start-up of timed chilling cycle. Chilling by temperature push-button disabled. Probe is defective (REPLACE PROBE).
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display:	Alternates message "ALL 02" with standard display
Alarm relay:	Not activated.
Reset:	Press the mute push-button (with beeper off). Resets automatically if probe value returns to normal, but cycle remains in timed mode. Alternatively, switch off the panel then turn it back on (stand-by).
	Compartment probe alarm (ALL 03)
Cause:	Exit from operating range (-58°F / -50°C - 212°F / +100°C) for over 30 seconds. Probe is defective (REPLACE PROBE).
Effect:	Any current chilling cycle is interrupted. If a storage phase is in progress, the compressor and the fan set to stand-by status. When the appliance is in Stop status, press Start to set the compressor and fan to stand by.
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display:	Alternates message "ALL 03" with standard display
Reset:	Automatically resets only when probe reading has returned to normal.

	Input SW2 (ALL 05) (door microswitch alarm)
Cause:	Input active for more than 5 minutes with appliance in start status. Door open (close door) Microswitch fault (replace the microswitch)
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display:	Alternates message "ALL 05" with standard display
Reset:	Press the mute push-button (with beeper off). Automatically resets if input value returns to normal Alternatively, switch off the panel then turn it back on (stand-by).
	Input SW1 alarm (ALL 06) (T5 and T14D models only) (High pressure switch) for all models (Compressor thermal-magnetic switch) if installed (Oil diff. pressure switch) if installed
Cause:	Input active for more than 5 seconds
Effect:	Sets the appliance to STOP. Reset the max. pressure switch, thermal-magnetic switch or differential pressure switch.
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display:	Alternates message "ALL 06" with standard display
Reset:	Press the mute push-button (with beeper off) with no alarm cause displayed
	Input SW3 alarm (ALL 08) (Compressor automatic reset) only for T14D (Thermostat on the discharge line)
Cause:	Input active for more than five seconds at least three times when appliance is in start mode
Effect:	Compressor shuts down and resumes operation when input value returns to normal. The appliance sets to STOP at third alarm.
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display/Led:	Alternates message "ALL 08" with standard display
Reset:	Press the mute push-button (with beeper off). Alternatively, switch off the panel then turn it back on (stand-by).
	Input Ht1 alarm (ALL 09) (Input in voltage 1 ... fuses).
	Input Ht2 alarm (ALL 10) (Input in voltage 2 ... fuses)

	Excessive temperature alarm (ALL 11)
Cause:	(only during storage) cabinet probe constantly detects a temperature greater than the sum of positive or negative storage set points with relative alarm delta.
	Blackout alarm (ALL 12)
Cause:	(only during storage) after the return of power the cabinet probe detects a temperature greater than the sum of positive or negative storage set points with relative alarm delta. This alarm is disregarded if the storage probe is already in alarm status.
	Compressor preventive maintenance alarm (ALL 13)
Cause:	Compressor operating time is a whole multiple of hours set under password.
	Temperature not reached in set time alarm (ALL 14)
Cause:	Blast chilling by temperature has lasted longer than the time set for Timeout
Effect:	Store the alarm in HACCP memory Chilling cycle continues.
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display:	Alternates message "ALL 14" with standard display Alarm relay: Not activated.
Reset:	Press the mute push-button (with beeper off). Alternatively, switch off the panel then turn it back on (stand-by).
	Keyboard/membrane alarm (ALL 15)
Cause:	A pressed push-button has been detected when panel is switched on.
Effect:	All keys are disabled. All relays are disabled. All inputs are disregarded. The LED indicator of the pressed button flashes.
Beeper:	Activated (3 seconds, then a pause of 30 seconds) until the mute button is pressed.
Display:	Alternates message "ALL 15" with standard display
Reset:	Switch off the panel then turn it back on (stand-by).
NB:	The appliance cannot be used until this alarm has been removed.

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