NUOVAIR

INNOVATION FOR REFRIGERATION

COMPACT

Use and maintenance manual

Dear customer

Thank you for purchasing the COMPACT line blast chiller. This manual is an integral part of the machine / partly completed machine and as such must be kept for the entire useful life of the machine / partly completed machine.

For the correct and safe use of the machine it is necessary to follow the warnings contained in this manual.

These warnings provide information regarding:

- The method of installation / commissioning.
- The use of the machine.
- Machine maintenance.
- Decommissioning and disposal.

FAILURE TO COMPLY WITH THE INSTRUCTIONS PROVIDED MAY COMPROMISE THE SAFETY OF THE APPLIANCE AND IMMEDIATELY VOID THE WARRANTY CONDITIONS.

ANY INSTALLATION, MAINTENANCE, ADJUSTMENT AND REPAIR INTERVENTION MUST BE CARRIED OUT EXCLUSIVELY BY QUALIFIED TECHNICIANS.

The machine / partly completed machine manufacturer is relieved of any liability relating to breakages, direct and indirect damage to people, property or pets, and any inconvenience caused due to:

- Improper / unforeseen use of the machine.
- Incorrect installation or installation carried out by unqualified personnel.
- An incorrect power supply.
- Serious deficiencies in ordinary and extraordinary maintenance.
- Unauthorized modifications or interventions.
- The use of non-original or unspecified spare parts for the model.
- Partial or total non-compliance with this manual.

Nuovair Srl reserves the right to make any changes it deems necessary without prior notice to improve its product or its technical manual by inserting any changes in subsequent editions.

TECHNICAL ASSISTANCE SERVICE

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

All required assistance is therefore governed by the conditions of use and warranty of the BLAST CHILLER itself.

For any request for further information, clarifications or technical assistance in general, call our assistance center:

e-mail: service@nuovair.com

Tel. +39 0438 489097

NOTE - In the event of a request for assistance or when ordering spare parts, it is always necessary to quote the blast chiller identification data (see paragraph "**Identification of the blast chiller**").

SAFETY WARNINGS

ATTENTION!

Before using the appliance, it is recommended to carefully read and observe the following safety warnings, to reduce residual risks:

⚠ This manual is an integral part of the machine / partly completed machine and as such must be kept for its entire useful life. The manual is intended for all personnel, all operators and maintenance technicians concerned with the aim of providing the indications and instructions necessary for the installation, commissioning, use, maintenance and disposal of the machine / almost machine.

⚠ It is mandatory for the user to carefully read the warnings contained in this use and maintenance manual.

⚠ The machine is intended for professional use only, i.e. only qualified personnel can use it. The machine is therefore not intended for use by children or by people with reduced mental, sensory and physical abilities.

⚠ This appliance must only be used for the use for which it was designed, i.e. for freezing and blast chilling of foods and food products. Nuovair Srl declines all responsibility for any direct and indirect damage resulting from inappropriate use of the machine.

⚠ Before using the machine, carefully clean all surfaces, especially those in contact with food, with detergents suitable for this purpose. Do not clean and clean the blast chiller with abrasive or aggressive detergents that could damage and alter the surface characteristics of the steel of the machine.

⚠ The installation, handling, operation, maintenance and disposal of the machine must be carried out by professionally qualified and authorized personnel.

⚠ After removing the packaging, check the integrity of the machine / partly completed machine.

⚠ Do not leave the elements that make up the packaging within the reach of children or animals as they could generate potential sources of danger (Suffocation). The elements that make up the packaging must be disposed of in compliance with the regulations in force in the country of installation.

⚠ Before connecting the machine to the electrical network, check that the machine plate data correspond to those of the electrical distribution network where the machine is connected. The manufacturer assumes no responsibility if the electrical connection is not carried out according to the standards in force.

⚠ The electrical safety of this equipment is only ensured when it is correctly connected to an efficient earthing system, as required by the electrical safety standards. The manufacturer of the machine disclaims any
responsibility for any direct or indirect damage to things, people or animals caused by the lack of grounding of the system.

⚠ If the power supply cable of the machine is damaged, have it replaced with a completely similar one by qualified personnel in order to reduce or eliminate the resulting risks.

⚠ Do not tug on the machine's power cord to disconnect it from the mains.

⚠ Do not use the blast chiller in outdoor or potentially explosive environments.

⚠ The blast chiller is CFC-free. The refrigerant circuit can contain R455a a mixture (HFC / HFO) with a GWP <150 or R452a with GWP 2140. R455a is classified as slightly flammable. It is of fundamental importance that the pipes of the machine are intact. In case of damage to the pipes, IF POSSIBLE, immediately ventilate the room where the machine is located.

⚠ If the appliance is immersed in liquids, due to natural disasters or other, contact an authorized service center for repairs before starting the machine again.

⚠ Do not use accessories and parts that are not original and not authorized by the manufacturer.

⚠ Do not place the blast chiller near heat sources, open flames, electric heaters or direct sunlight.

⚠ In the event of noise, smoke or abnormal odors coming from the machine, disconnect the power immediately and contact an authorized service center.

⚠ Do not place the blast chiller on unsuitable surfaces, for example on surfaces that are not flat or with slopes which could in some moments turn out to be anomalous and which could cause instability of the machine or of the contained product. The machine must be leveled so that the condensate drain works properly otherwise condensation may escape from the door of the machine.

⚠ Before carrying out any routine maintenance and cleaning, disconnect the machine from the electrical power supply by operating the main switch / isolator.

⚠ The core probe (or needle) must be used only for the purpose for which it was designed, that is to detect the temperature in the center of food products to be frozen or blast chilled.

⚠ Do not insert fingers, tools or objects through the fan grilles, they could damage the machine or throw parts with the consequences of cutting, shearing and hitting people in the immediate vicinity of the blast chiller.

⚠ Do not remove the fan protection grilles for any reason.

⚠ If the machine is not used for a long time, disconnect it from the power supply. The unit must be stored in well-ventilated areas whose volume corresponds to that intended for operation.

INTRODUCTION

Generality

The blast chiller has been designed considering the directives and related harmonized standards of the European Community, as well as the relative product standards associated with it (see specific paragraph).

This manual is an integral part of the blast chiller, identified in this manual with the term machine / quasi-machine made by Nuovair Srl and part of the relative technical file.

Before carrying out any operation on the machine / partly completed machine, it is recommended that you read this manual carefully in order to carry out all the machine installation, commissioning, use, maintenance, disassembly and disposal operations correctly and safely.

NOTE:
The blast chiller is a machine

intended for professional use only and therefore must only be used by qualified and trained personnel.

NOTE:

The customer can request a copy of this documentation by sending a written request to Nuovair Srl justifying this request.

DESCRIPTION OF THE MACHINE / ALMOST MACHINE AND INTENDED USE

The blast chiller is a machine designed for the rapid cooling of products, substances or mixtures of substances in any state of the material and unprocessed, partially worked or processed structure, intended to be ingested by a human being (food products) with the aim of:

- Maintain the organoleptic characteristics of the food as much as possible.
- Promote the prolongation of the average life of foods by counteracting the bacterial proliferation that occurs naturally inside them, both during the post-cooking cooling phases and in the food storage phases waiting to produce the finished product.

If the "hot" functions are enabled, the blast chiller is also designed for heating products, substances or mixtures of substances, in any state of the material and unprocessed, partially processed or processed structure, intended to be ingested by the of a human being with the aim of:

- Regenerate
- Bump up
- Defrost

The blast chiller is a manually operated machine. Once the machine has been started, the blast chilling or freezing cycle is managed automatically and does not require the constant presence of an operator, except for the insertion and extraction of the product.

At the end of the cycle selected by the operator la the machine passes to a phase of maintenance / conservation of the product, that is to say it maintains the temperature of the cell at a predetermined value.

The rapid cooling of food can be used to freeze the product or to cool it according to the times and temperatures of the end of the cycle established by law.

The blast chiller is constituted by the union of two partly completed machines Cell and Condensing unit which form a functioning whole.

REASONABLY FORESEEABLE INCORRECT USE OF THE MACHINE

Reasonably foreseeable misuse of a blast chiller are the following:

- Place the blast chiller in potentially explosive environments.
- Place the blast chiller outdoors.
- Position the blast chiller on unsuitable surfaces, for example on uneven surfaces or with slopes which could at some moments be abnormal and which could cause instability of the machine or of the contained product.
- Use the blast chiller for freezing live animals.
- Use the machine for purposes other than those for which it was designed or to process products other than foodstuffs.

USE STRICTLY FORBIDDEN

The absolutely forbidden uses of blast chillers are the following:

- Use the blast chiller as a work surface or as a base to support other objects or machines.
- Get on or climb the car.
- Touch the internal parts of the machine with wet and bare hands and feet.
- Place live animals or humans inside the machine.
- Use pressurized water jets

on the evaporator.

- Use water jets on the outside of the machine.
- Expose the machine to atmospheric agents of any kind.
- Expose the machine to excessive concentrations of vapors, acid solutions, saline mist or extremely corrosive agents (for example acetic acid, yeast, ammonia, etc.).
- Install the machine on surfaces unsuitable to support the weight of the machine itself.
- Install the machine on non-insulated surfaces in case of bottomless cells.
- Have people with disabilities or reduced mental abilities use the machine.
- Power the machine with voltages other than those indicated on the data plate.
- Use the machine without having secured it securely.
- Use the machine without personal protective equipment according to the instructions in the machine use and maintenance manual.
- Have the cleaning and maintenance of the machine carried out by unqualified and trained personnel and without following the procedures indicated in the use and maintenance manual.
- Carry out any type of maintenance without disconnecting the power supply.
- Modify any part of the machine.
- Use the machine in a dimly lit environment.
- Use the machine in an environment with reduced air exchange compared to what is indicated in the technical data sheet of the machine.
- In monocoque blast chillers that use A2L classified flammable gases, it is forbidden to use the machine without conveying the safety valve.

- In monocoque blast chillers that use A2L classified flammable gases, it is forbidden to use the machine in environments with minimum volumes or surfaces of the room lower than those indicated in the technical data sheet
- Move the machine without using any means to lift it.
- Use condensing units other than those supplied by the manufacturer.
- Use the water that comes from the condensate drain.

SERVICE AREAS FOR INSTALLATION, OPERATION AND MAINTENANCE OF THE MACHINE

The service area for installation, operation and maintenance of the machine is indicated in the use and maintenance manual.

The blast chiller is a stationary machine and the dimensions of the area depend on:

- The model and dimensions of the machine
- From the possibility of disposing of the heat generated.
- By the type of condensing unit used.

In any case, the front of the machine must be free from objects and obstacles to facilitate its use by the operator. Furthermore, it is necessary to guarantee a minimum area behind the machine in order to facilitate the exchange of air and facilitate the dissipation of heat.

CRITICAL ENVIRONMENTAL FACTORS

- Use the machine with poor visibility and lighting.
- Use the machine without having properly blocked it taking into account the service area.
- Use the machine in potentially explosive atmospheres.
- Use the machine on inclined surfaces.
- Use the machine without minimum air recirculation indicated in the technical data sheet. Especially in the case of blast chillers that use A2L classified flammable gases.

PROFESSIONALISM AND EXPERIENCE NECESSARY FOR OPERATORS

- The operator must be adequately trained in the procedures of

ordinary operation and maintenance, through the use and maintenance manual and through training with tests together with expert personnel.

OWNERSHIP OF INFORMATION

The information contained in this manual is the confidential property of Nuovair Srl and consequently all rights are reserved. This manual may not be reproduced or photocopied in parts or in its entirety without the written consent of the manufacturer.

The use of the material contained in the following use and maintenance manual is allowed only to the customer who purchased the machine / partly completed machine.

Nuovair Srl declares that the information contained in this manual is in accordance with the technical and safety specifications of the machines / partly completed machines to which they refer.

The drawings, diagrams and technical data in this manual are updated at the date of publication of this document and are valid for the machine / partly completed machine to which they are attached.

PURPOSE AND CONTENT OF THE MANUAL

This use and maintenance manual is an integral part of the machine and as such must be kept for its entire useful life.

The manual is intended for all personnel, all operators and maintenance personnel interested in the purposes described in this point.

The purpose of the manual is to provide the indications and instructions necessary for the correct and safe installation, commissioning, use, maintenance, disassembly and disposal of the machine. The manual also provides information regarding:

1. The technical characteristics of the blast chiller.
2. Preparation of the workplace with regard to environmental characteristics e electric connections.
3. The safety devices and warnings regarding the residual risks of the machine.
4. Intended use and reasonably foreseeable misuse
5. Replacement parts.

The topics are divided into sections, which are in turn subdivided into paragraphs and sub-paragraphs numbered progressively, in order to allow rapid retrieval of information.

The manual cannot in any way replace the specific training that operators must have previously achieved on similar equipment or that they will be able to achieve on this machine / partly completed machine under the guidance of already trained personnel.

PRESERVATION OF THE MANUAL

The manual is considered an integral part of the machine and must be kept until its final dismantling. The manual must always be available for consultation and must be kept carefully, protected from dust, humidity and in a safe place. In the event of damage that even partially compromises the consultation, the user is required to request a new copy from the manufacturer.

The use and maintenance manual follows the machine even in the event of change of ownership.

Generality

⚠ **ATTENTION!**

The information contained in this chapter refers only and exclusively to the BLAST CHILLER and, if necessary, must be integrated with the information relating to the safety standards of the system or structure in which the BLAST CHILLER is used.

The entire documentation relating to the machine / partly completed machine has been developed considering the topics indicated by the machinery directive 2006/42 / EC, by the PED directive 2014/68 / EU and by other standards

on safety matters (see dedicated paragraph).

The representation or description relating to the configuration of some parts of the machine / partly completed machine may present differences between the manual and the real machine / partly completed machine, i.e. there may be optional equipment. Some indications and procedures, therefore, are of a general nature.

Non-quoted drawings and photographs are used for better clarity and are provided for illustrative purposes.

Failure to comply with the instructions contained in this manual can make the safety conditions envisaged in the design phase inefficient and cause accidents for those who work with the machine / partly completed machine.

NORMATIVE REQUIREMENTS

For the design of the machine / semi-machine, respectively monocoque blast chiller and blast chilling cells, the principles and concepts relating to the harmonized standards indicated in table 1 were followed and adopted.

STANDARDS	DESCRIPTION
	NATIONAL LEGISLATION
D. Min. Of 03/21/1973	Hygienic regulation of packaging, containers, tools intended to come into contact with food substances or substances for personal use.
	EUROPEAN LEGISLATION
Directive 2006/42 / EC	Directive of the European Parliament and of the Council of 17 May 2006 relating to machinery and subsequent updates.
Directive 2014/35 / EU	Directive on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment (PED Directive).
Directive 2014/68 / EU	Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment Text with EEA relevance.
Directive 2011/65 / EC	Directive 2011/65 / EU (RoHS) prohibits various substances in the homogeneous materials of Electrical and Electronic Equipment (EEE).
Regulation (EC) n. 1935/2004	Concerning materials and objects intended to come into contact with food and repealing Directives 80/590 / EEC and 89/109 / EEC.
	EUROPEAN LEGISLATION
UNI EN ISO 12100: 2010	Machinery safety - General design principles - Risk assessment and risk reduction. Part 1: Basic terminology, methodology. Part 2: Technical Principles.
UNI EN ISO 13857: 2008	Machinery safety - Safety distances to prevent upper and lower limbs from reaching dangerous areas.
UNI EN 13136: 2014	Refrigeration systems and heat pumps - Pressure limiting devices and related piping - Calculation methods.
UNI EN 14276-2: 2014	Pressure equipment for refrigeration systems and heat pumps - Part 2: Piping - General requirements.
UNI EN 12735-1: 2010	Copper and copper alloys - Seamless round copper tubes for air conditioning and refrigeration - Part 1: Pipes for piping systems.
UNI EN 378-1: 2017	Refrigeration systems and heat pumps - Safety and environmental requirements - Part 1: Basic requirements, definitions, classification and selection criteria.
UNI EN 378-2: 2017	Refrigeration systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation.

STANDARDS	DESCRIPTION
UNI EN 378-4: 2017	Refrigeration systems and heat pumps - Safety and environmental requirements - Part 4: Operation, maintenance, repair and recovery.
CEI EN 60204-1	Safety of machinery - Electrical equipment of machines - Part 1: General requirements.
CEI EN 60335-2-89	Household and similar electrical appliances - Safety - Part 2: Particular requirements for commercial refrigerating appliances with built-in or remote refrigeration unit or compressor.
CEI EN 61000-6-1	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light industrial environments.
CEI EN 61000-6-3	Electromagnetic Compatibility (EMC) - Part 6-3: Generic standards - Standard emissions for residential, commercial and light industrial environments.
UNI EN ISO 7010: 2017	Graphic signs - Colors and safety signs - Registered safety signs

TERMINOLOGICAL CONVENTIONS, DEFINITIONS AND SYMBOLOGIES

TERMINOLOGICAL CONVENTIONS

The term partly completed machine will indicate both the blast chilling cell and the condensing unit.

The term machine refers to the functioning set of blast chilling cell plus condensing unit, whether incorporated or remote, mutually connected. This set is also called a blast chiller.

USEFUL DEFINITIONS

Dangerous area: Any area near the machine / partly completed machine in which the presence of a person constitutes a probable risk for the person.

User / Staff: Any person who uses the machine or who entrusts its use or operations connected with its use to suitably trained persons.

Person exposed to danger: Person who is internally or partially in a dangerous area or adjacent to it.

Mechanical Maintenance Technician: Qualified technician with the necessary skills to intervene in any mechanical organ to carry out adjustments, repairs, maintenance, welding and brazing.

Electrical maintenance engineer: Qualified technician with the necessary skills for electrical interventions and, where necessary, able to operate even in the presence of voltage in electrical panels or junction boxes.

Handling officer: Qualified personnel who carry out the tasks of handling the machine / partly completed machine.

Manufacturer's technician: Qualified technician made available by the manufacturer of the machine / partly completed machine.

Personal protective equipment:PPE, or Personal Protective Equipment, are equipment and instruments that aim to minimize the damage deriving from risks to health and safety at work.

SYMBOLS IN THE MANUAL

This symbol identifies a situation for which failure to comply with the indicated standards could cause risks for the machine and for the safety of the operator or exposed persons, with the risk of injury or death.

This symbol identifies some tips and details for correct machine operation.

Indicates the need to use head protectors, suitable for carrying out the described operation.

Indicates the need to wear suitable protective gloves for the operation to be carried out. (Dielectrics in the case of live components).

Indicates the need to use safety shoes suitable for the operation to be performed.

Indicates the need to use protective clothing suitable for the operation to be carried out.

Indicates the need to use protective goggles suitable for the operation to be carried out.

Indicates the need to use protective caps for the hair suitable for the operations to be carried out.

GENERAL SAFETY RULES

The observance of the machinery directive and the observance of the relevant paragraphs with the related harmonized standards have made it possible to eliminate or reduce the risks associated with this machine / partly completed machine in the life stages of the latter.

The necessary warning and protection measures have been adopted with regard to residual risks, that is to say those risks which it has not been possible to eliminate through design choices or by using guards. For detailed information see the dedicated paragraphs.

Failure to apply these requirements could make the envisaged safety conditions inadequate.

It is recommended to strictly follow the warnings and rules of conduct given here.

The personnel responsible for the use and management of the BLAST CHILLER must be instructed by their employer for correct use and on the residual risks that the machine presents, as well as on the safety devices installed and on the general accident prevention rules provided for by the Community Directives and / or the legislation in force in the country of destination of the machine. The staff responsible for the use and management of the BLAST CHILLER must have read these instructions in full.

The personnel in charge of using the blast chiller must be in optimal psychophysical conditions and not be under the effect of substances which, by their nature, can alternate the sense of perception or slow down reflections.

It is absolutely forbidden to use and manage the BLAST CHILLER by children and unsuitable people and / or with limited mental abilities which must also be kept at a distance from the blast chiller itself.

Nuovair Srl declines all responsibility for damage to things or people caused by the BLAST BLAST CHILLER or for the physical safety of the operator or third parties deriving from the non-observance of the safety rules contained in the technical documentation supplied with the BLAST BLOWER itself.

Before starting work, the operator must be perfectly aware of the BLAST CHILLER characteristics, the position and operation of all the controls; he must also have read and fully understood this use and maintenance manual.

⚠ **ATTENTION!**

The BLAST CHILLER must be used exclusively by operators who participate in the training carried out on site by Nuovair Srl personnel (if required by the supply contract) and / or who have fully understood the instructions contained in the reference publications.

⚠ **ATTENTION!**

The instructions, warnings and general accident prevention rules contained in the reference publications or indicated in the signs applied to the BLAST CHILLER must be fully respected.

⚠ **ATTENTION!**

The unauthorized tampering or replacement of one or more parts of the BLAST CHILLER, the use of accessories, tools, consumables other than those recommended by the manufacturer may represent a danger to the safety of the operator and relieve the manufacturer from civil and criminal liability.

⚠ **ATTENTION!**

• Before using the machine, make sure that any conditions dangerous to safety have been appropriately eliminated.

- **Before using the machine, make sure that all the guards or other protections are in place and that all the safety devices are present and efficient.**
- **After removing the packaging, make sure that the machine is intact in all its parts, otherwise contact your dealer.**

- **Do not place solid or liquid objects on top of the machine / partly completed machine.**
- **Before carrying out any cleaning or maintenance operations on the machine / partly completed machine, isolate the equipment from the electrical distribution network. In case of breakdown or malfunction always deactivate the appliance.**
- **In case of breakdown and / or malfunctioning of the machine, switch it off and refrain from any attempt to repair or direct intervention. Contact qualified personnel.**

Clothing

The clothing of those who work or carry out maintenance on the machine / quasimachine must always be suitable for the type of operation in progress. Furthermore, it must comply with the safety requirements provided for by the legislation in force in the country of use of the machine / partly completed machine itself.

In general, the operator must wear the correct PPE. Wear safety shoes with non-slip soles; the use of moccasins, clogs, slippers or any other type of footwear that can compromise the mobility of the person is not allowed. The hair must be collected using a special cap. The clothes worn must be suitable for the work to be carried out, in particular avoiding wearing:

- Fluttering Dresses
- Wide sleeves
- Ties and scarves
- Necklaces, bracelets and rings.

Both clothes and hair could become entangled in rotating organs and create serious consequences.

ACCESS TO THE WORK AREA

The work area (and in particular the areas where the control panels and the emergency buttons are installed) must never be occupied by material or other, so that nothing interferes with the operator's freedom of movement. In the event of an emergency, immediate access to the BLAST CHILLER must be guaranteed by the personnel in charge. It is advisable to prohibit, using the appropriate warning signs, access to the work area to personnel who are not trained in the use of the blast chiller.

It is forbidden to use the BLAST CHILLER for children and all unsuitable people who must therefore be kept at a distance from it.

During maintenance operations, especially when working with open guards or safety devices disconnected, an operation permitted only to formally authorized and duly trained personnel, it is necessary to pay the utmost attention so that THE WORKING AREA IS INACESSIBLE to people not directly interested in these operations.

During maintenance operations, the area where this operation is carried out must always be clean and dry.

If it is necessary to carry out interventions near electrical components, always operate with dry hands and wear dielectric gloves.

At the end of the maintenance operations, check that no tools, possibly used, are left inside of the BLAST CHILLER and that any protections removed have been returned to their original position.

ENVIRONMENTAL CONDITIONS OF USE

1) TEMPERATURE AND HUMIDITY The BLAST CHILLER must be used in rooms with an ambient temperature between + 5 ° C and + 32 ° C and with relative humidity below 55%.

2) WORKING ENVIRONMENT The BLAST CHILLER must be used sheltered from atmospheric agents (rain, hail, snow, fog, etc.) and only in industrial / artisan environments. In the case of a remote condensing unit, this must be installed in a special machine room or if positioned outside it must be protected from atmospheric agents (rain, hail, snow, etc.) and in a place sheltered from the sun. In any case, a minimum air exchange must be guaranteed. The blast chiller is not intended to be used in an explosive or partially explosive atmosphere: the user is therefore prohibited from using it in such conditions.
Furthermore, in the case of use of blast chillers with slightly flammable refrigerant fluid, classified A2L,

3) LIGHTING
The room that houses the BLAST CHILLER must be illuminated in such a way as to be able to easily identify the buttons and the control and emergency stop devices. Good industrial-type lighting for medium-accuracy processing is approximately 300-600 lux.

4) ATMOSPHERES AND AGRESSIVE SUBSTANCES INSIDE THE CELL.
The freezing, blast chilling and tempering of some food products generates the release of particularly aggressive and corrosive vapors for the evaporating coil. Although it is protected by surface treatment, caution must be exercised with some products. In particular, the surface treatment adopted for the evaporating coils of the trolley blast chillers is not suitable in presence of:
1) NITRIC ACID.
2) SODIUM HYPOCHLORITE> 5% (BLEACH).
3) SODIUM HYDROXIDE> 10%.
4) CHROMIC ACID.
5) FORMIC ACID.
6) FLUORHYDRIC ACID.
7) SULFURIC ACID.
8) MIX OF ACETONITRILE; METHANOL; TE-TRAIDROFURANO; HEXANE; DICHLOROMETANO and others.
In case of doubts regarding the substances that can damage the evaporator, contact the Nuovair Srl service

5) RESIDUES AND ENVIRONMENTAL CONTAMINATIONS The user is asked to comply with the standards and directives in force in the country where the BLAST CHILLER is used for the treatment of any lubricants and fluids used in the BLAST CHILLER.

PROTECTION DEVICES

The blast chiller is equipped with active and passive protection devices. All persons in charge of using the blast chiller or in any case destined to come into contact with it, must carefully read this use and maintenance manual which describes the dangerous areas and the relative interventions adopted in terms of safety, in addition to the so-called areas. “Residual risk” ie those areas which, despite the interventions adopted, still present a certain degree of danger.

⚠ **ATTENTION!**

The safety devices must not be removed or deactivated for any reason; any operation carried out on the TEMPERATURE BLAST CHILLER deliberately excluding the safety devices or any type of manipulation of the devices themselves is at the risk and peril of those who perform it.

PASSIVE PROTECTIVE DEVICES

The following construction devices and solutions have been adopted for the blast chiller:

- Painted steel grids (outside the cell) and not (inside the cell) to protect the rotating parts or technical compartments.
- In order to highlight the areas where particular attention must be paid and the areas at residual risk for the safety of the operator and the people exposed, danger warning plates have been affixed.

⚠ **ATTENTION!**

The removal of the plates or their failure to replace them in case of deterioration causes the user to assume full responsibility for all the consequences that may arise or derive from the use of the BLAST CHILLER, without respecting the safety conditions provided for by the builder.

ACTIVE PROTECTIVE DEVICES

The following active safety devices have been adopted for the blast chiller:

- Safety pressure switch, where provided.
- Safety valve, where provided.

ASSESSMENTS OF RISKS AND RESIDUAL RISKS

The information contained in this paragraph is relative only and exclusively blast chiller and therefore must be integrated, by the user, with the risk assessment of the system in which the blast chiller is installed.

The assessment of the risks deriving from the use of the BLAST CHILLER was carried out following the standards and directives in force and indicated in the paragraph "Normative References". In order to avoid any conditions of danger to people or damage caused by residual risks, i.e. those risks that persist despite the provisions adopted, La Nuovair Srl recommends that all the blast chiller personnel follow and understand the instructions given in the following paragraphs.

However, it should be borne in mind that the best safeguard for the operator's safety is that the operator always uses caution and common sense and that the greater experience acquired over time using the BLAST CHILLER can serve to improve the safety margins in one's own work.

LIFTING AND TRANSPORT

Residual risks in the lifting and transport phases

- Possible crushing and shearing of the limbs of the operators assigned to the handling caused by loss of load stability, or by kinetic or potential energy during handling, lifting and / or transport operations.

- Impacts of parts or components of the blast chiller with people or things due to unexpected movements or incorrect behavior by the handling personnel or due to the projection of moving parts of the blast chiller not properly fixed in the packing phase.
- Unhealthy positions or excessive efforts for the operators involved in handling and transport.

Personal protective equipment required:

Special attention for the lifting and transport phases

During the lifting and transport phases, it is necessary to pay particular attention to the operations described below.

- Designate for these operations only specialized personnel trained in machinery handling procedures and able to choose and safely use the most suitable lifting and transport means.

- Before moving or lifting, check and make sure that any moving parts are properly secured.

- DO NOT LIFT THE BLAST CHILLER OR THE BLAST CHILLING CELLS OR THE CONDENSING UNITS FOR ANY REASON, GRASPING THEM BY NON-STRUCTURAL PARTS, BY THE FEET OR THE WHEELS.

- Make sure that there are no people near the area where lifting, handling and unloading operations take place.

- Always warn the start of maneuvers.
- Do not pass under suspended loads and always keep a safe distance.
- Never allow loads to pass through.

UNPACKING, INSTALLATION, CONNECTION AND TESTING

Residual risks in the unpacking, installation and connection phases

The following risks are possible during the installation and connection phase:

- Operations on machines / partly completed machines (blast chilling cell and condensing unit) by unqualified, untrained, uninformed or incorrectly equipped personnel.
- Electrocution, shock, burns, fire from contact with live elements.
- Burns and injuries from cold or heat.
- Impact, crushing and shearing by the machine / partly completed machine being handled, or by elements and components thrown by it during the handling and / or lifting phases.
- Suffocation by packaging material.
- Trip with consequent fall at the electrical connections and refrigeration pipes.
- Damage to the machine / partly completed machine during the installation and connection phase.
- Asphyxiation caused by the gas that could escape from the machine / partly completed machine during the installation phases.
- Fire caused by the flammable refrigerant fluid during the installation of the machine / partly completed machine.
- Explosion of parts or pipes of the machine / partly completed machine during the installation and welding phase of the refrigeration lines.

Personal protective equipment required:

Special attention for the unpacking, installation and connection phases

During the unpacking, installation and connection phases, it is necessary to pay particular attention to the following operations.

- Follow the instructions already provided in paragraph 3.7.1 lifting and transport during the necessary handling operations of the machine / partly completed machine.

- Do not disperse in the environment and do not leave the packaging material within the reach of children, which can cause suffocation. Dispose of the material in full compliance with current regulations.
- The compressor discharge and suction lines could
reach temperatures such as to cause burns and burns from cold and heat.

- Before touching the pipes, check their temperature. Always wear i

protective gloves.

- In the event of gas leaks from the refrigerant circuit during installation and maintenance, do not touch and inhale the leaked gas. It can cause cold burns and suffocation. Before returning to the room, ventilate and ventilate the room as much as possible and check the quality of the air (see safety data sheet of the gas used).In the event that the gas leaks concern flammable fluids, in addition to the precautions described in the previous point, disconnect the general power supply and evacuate the environment.

- Do not weld on pipes containing refrigerant, they could explode projecting sharp parts and / or molten parts that can cause perforation and collisions with people or animals in the surrounding area and in the most serious cases even death as well as generate fires in the case of flammable refrigerant fluids. .

- After installation and maintenance of the machine, check that there are no refrigerant gas leaks using the appropriate instrumentation, setting a loss rate of 3 g / year.
- Do not let the electrical panel and internal components come into contact with conductive liquids.
- Do not wash the machine with jets of water as these could damage the machine / partly completed machine and give rise to electrical and mechanical problems.
- Do not insert fingers, tools or objects through the fan grilles which could damage the machine or project parts with consequences of cuts and impacts on people in the immediate vicinity of the blast chiller.
- Do not pull the blast chiller power cord as it may damage it and cause short circuits and cause it to become conductive parts, creating the risk of electrocution, fire and shock.
- Access to electrical parts must be carried out only by electrical maintenance technicians.
- Protect the connection pipes from energy sources using rigid sheaths or suitable cable ducts.
- Insulate the heat transfer fluid pipes in order to eliminate condensation and avoid cold burns.
- Always perform the required interventions using standard tools and always pay the utmost attention to elements that could lead to stumbling or causing cuts and bruises.
- In the case of flammable refrigerant fluid, convey the discharge of the blast chiller safety valve to the outside building and ensure that there are no ignition sources in the vicinity of the unloading site.

USE

Residual risks in the phases of use

In the use phase there are the related residual risks:

- Operations on the machine by unqualified, untrained or improperly equipped personnel.
- Burns and injuries caused by contact with high or low temperature objects or materials.
- Risk of slipping caused by slippery or wet machine floor.

- Trip with consequent fall at the access ramps to the machine.

- Asphyxiation caused by the gas that could escape from the machine / partly completed machine during the operating phases.
- Entanglement, dragging, suffocation caused by rotating parts in motion.

- Musculoskeletal disorders caused by

low air temperatures inside the blast chilling cell.
- Entrapment due to closing the door.

Personal protective equipment required:

Special attention for the phases of use.

Before carrying out any cleaning operation, disconnect the machine from the power supply.

- Never remove the protective grilles of the fans, as they are rotating parts that could cause consequences of impact, entanglement, abrasion, shearing and suffocation.
- Do not insert fingers or objects through the protective grilles of the fans or into the sides of the air ducts.
- Do not work on the machine with bare feet and without the appropriate PPE, nor with damp or wet hands.
- Do not wash the machine with jets of water both internally and externally.
- If the machine is submerged by liquids, before starting it, contact the manufacturer or an authorized service center to overhaul it.
- In case of prolonged non-use disconnect the machine from the power supply.
- Do not expose people directly to cold air flows from the blast chiller as it could cause muscle discomfort and various kinds of ailments.
- Do not place the food directly in contact with the cell but in special containers suitable for contact with food.
- The water that drains from the condensate drain pipe is not drinkable and therefore cannot be used in any way.
- In the event of abnormal noises and / or odors and in the presence of smoke coming from the machine, disconnect the power cable power supply or disconnect the machine with a special switch and contact the authorized service center.
- The hair must be collected with a special cap.
- The clothes worn must be suitable for the work to be carried out, in particular avoiding wearing fluttering clothes, wide sleeves, ties and scarves, necklaces and bracelets because they could be sucked in by the fans causing serious damage to the operator.
- In case of fire, do not use water to extinguish the fire but fire extinguishers which can be used on live elements.
- In the event that the operator, loading the machine, remains trapped inside the cell, simply push the door in correspondence with the luminescent sign placed inside the cell.

MAINTENANCE AND DEMOLITION

Residual risks in the maintenance and demolition phases

In the maintenance and demolition phase there are the residual risks connected:

- Operations on partly completed machinery (blast chilling cell and condensing unit) by unqualified, untrained, uninformed or improperly equipped personnel.
- Electrocution, shock, burns, fire from contact with live elements.
- Burns and injuries caused by contact with hot elements of the machine / partly completed machine or with the instruments and equipment used.
- Impact, crushing and shearing by the machine / partly completed machine being handled or by elements and components thrown by it during the handling and / or lifting phases.
- Trip with consequent fall at the electrical connections e

of the refrigeration pipes.

- Damage to the machine / semi-machine during the maintenance phase.
- Asphyxiation caused by the gas that could escape from the machine / semi-machine during the maintenance and demolition phases.
- Explosion of parts or pipes of the quasimachine during maintenance and decommissioning.
- Contact with refrigerant fluid.

Personal protective equipment required:

Special attention for the maintenance and demolition phases

During the maintenance and demolition phases, it is necessary to pay particular attention to the operations described below.

- Always carry out the required interventions using standard tools; always pay close attention to items that could lead to tripping or causing cuts and bruises. Always wear the appropriate PPE.
- The execution of maintenance and demolition / disposal interventions must always be carried out by qualified and specially trained personnel.
- Check that the power supplies, signals (where provided) and power have been properly sectioned and that no one can reactivate them before the conclusion of the maintenance interventions (including cleaning phases) and disposal. Also check that any residual energy of the heat transfer fluid has been discharged before proceeding with any intervention.
- Operate on the machine / partly completed machine and on the relative pipes after having emptied them of the refrigerant gas and before proceeding to restart the machine, carry out the vacuum operations.
- Restore the position of the fan protection grids once the maintenance of the machine is finished, as the rotating parts can cause consequences of impact, entanglement, abrasion, shearing and suffocation.
- Do not insert fingers or objects through the protective grilles of the fans or into the sides of the air ducts.
- Do not work on the machine with bare feet and without the appropriate PPE, nor with damp or wet hands.
- Do not wash the machine with jets of water both internally and externally.
- Before restarting the machine, after maintenance or cleaning operations, check that you have not left any tools inside the machine
- Check the tightening of the moving or opening parts and that you have repositioned all the safety devices that may have been removed, as well as check that there are no refrigerant leaks. The correct positioning of the ball cocks and shut-off valves must also be checked.
- Before carrying out any maintenance, cleaning or disposal operations, disconnect the machine from the power supply.
- Do not for any reason use petrol, solvents or other flammable fluids to clean the parts, but use approved, non-toxic and non-flammable detergents.
- Do not carry out modifications or transformations of the machine / partly completed machine that could compromise its safety and without first having contacted and obtained written authorization from the manufacturer.

DANGER SIGNAL PLATES

In order to highlight the areas of the ABBAT-TITOR where particular attention must be paid and the areas at residual risk for the

safety of the operator and of the exposed persons, danger warning plates have been affixed.

⚠ ATTENTION!

The removal of the plates or their failure to replace them in case of deterioration causes the user to assume full responsibility for all the consequences that may arise or derive from the use of the BLAST CHILLER without respecting the safety conditions provided by the manufacturer. .

This symbol identifies the inability to use water, water or foam extinguishers to put out fires on electrical equipment.

This symbol identifies the prohibition to carry out work on live systems, to touch systems if not authorized, to remove the guards and safety enclosures before having disconnected the voltage.

This symbol identifies the prohibition to remove installed safety devices and protections.

This symbol identifies the danger of hot surfaces in correspondence with the surfaces where it is affixed. In our case this symbol is affixed externally to the cell but refers to the internal surfaces of the latter.

This symbol identifies the refrigerant contained inside of the plant machine is flammable therefore to be posed particular attention in case of damage of the plant or piping and undergoing maintenance.

This symbol identifies the low hazard temperature. Also in in this case the symbol is affixed externally to the cell but refers to the internal surfaces of the latter.

This symbol identifies a slip hazard due to a cold room floor that could be icy or slippery.

This symbol identifies a live electrical system.

This symbol identifies a door that opens by pushing from the side on which it is affixed.

This symbol identifies the danger of cutting yourself and is affixed to the condenser e on the inside of the evaporator.

WARRANTY

Nuovair Srl guarantees the blast chiller free from defects in material and workmanship for a period of 24 months. Within the aforementioned terms Nuovair Srl undertakes to replace free of charge to the customer those parts which in its opinion present manufacturing defects.
The guarantee excludes the provision of labor for assembly and disassembly, for the replacement of defective parts, and also excludes the transport costs of the parts sent for replacement.

The assumption of responsibility by Nuovair Srl excludes the termination of the contract and any other liability and obligations for other expenses, direct damages deriving from the use of the equipment, both total and partial.

TRANSACTIONS THAT INVOLVE THE WARRANTY

Nuovair Srl is not responsible for defects that depend on incorrect operation of the equipment by the user or deriving from modifications or repairs carried out by the user or by third parties, without the written consent of Nuovair Srl, regardless of the causal relationship between such modifications or repairs and the facts found. All tools and consumables supplied by the manufacturer are excluded from the guarantee.

The manufacturer is only responsible for defects inherent in the parts supplied and found in compliance with the conditions of use provided (see paragraphs Intended use of the BLAST CHILLER, Unintended use of the BLAST CHILLER, Prohibitions and unauthorized uses). The manufacturer also considers himself relieved of any liability in the following cases:

- Installation of the blast chiller in conditions other than those specified in Chapter 4 - TRANSPORT E INSTALLATION.
- Installation of the blast chiller not complying with the specifications given in Chapter 4 - TRANSPORT AND INSTALLATION.
- Total or partial non-compliance with the instructions contained in this manual.
- Lack of or incorrect maintenance.
- Use of non-original spare parts.
- Non-compliance with contractual obligations. Any complaint must be communicated directly to Nuovair Srl by the user within eight days of receipt of the equipment or its spare part.

The material replaced under warranty must be kept by the buyer and made available to Nuovair Srl who will decide whether to return it at its own expense.

Even in the event of a validly proposed complaint, the buyer will not be able to suspend payments or other obligations relating to the purchase. This guarantee cancels and replaces any other form of guarantee, expressed or implied; any possible modification has no value, unless specified on an official document issued by Nuovair Srl

ASSISTANCE

The Nuovair Srl technical assistance service provides:

- Telephone support regarding interventions.
- Sending of documentary material.

To contact the after-sales service:

Via Padania 9 / C,
31020 San Vendemiano (TV) - Italy
Telephone: +39.0438.489097
Fax: +39.0438.488807
e-mail: service@nuovair.com

NOTE

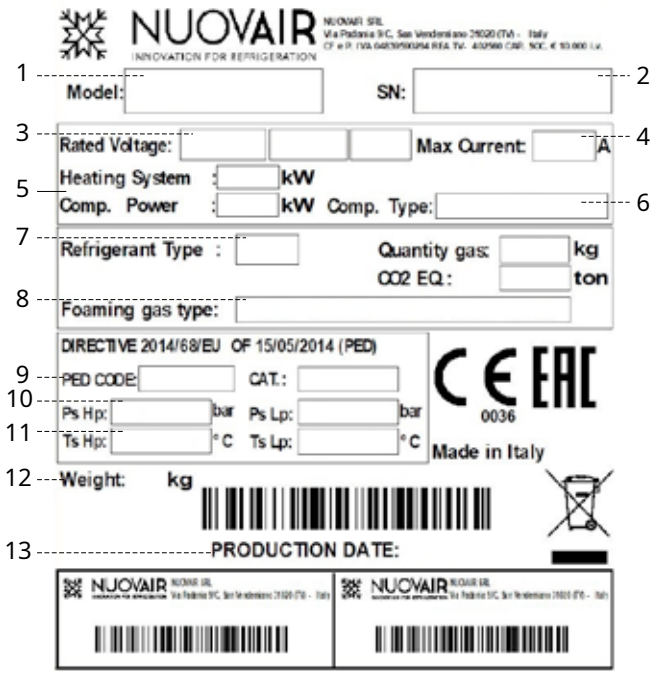
IDENTIFICATION OF THE TEMPERATURE BLAST CHILLER

1

To identify the machine / partly completed machine, a special identification label with CE marking is affixed. For panel blast chillers the label is affixed to the side of the electrical panel while for monocoque blast chillers it is affixed to the rear of the blast chiller.

Specifically, the plate shows the following data:

1. Model.
2. Serial number.
3. Power supply voltage (Volt / Ph / Hz).
4. Absorption in (A).
5. Compressor absorption and heating resistances (Kw).
6. Compressor type.
7. Type and quantity of refrigerant.
8. Type of gas used in the insulating foam.
9. PED code and Category of the machine according to directive 2014/68 / UE.
10. Maximum working pressure Ps Hp (High pressure side) - Ps Lp (Low pressure side).
11. Maximum operating temperature Ts Hp (High pressure side) - Ps Lp (Low pressure side).
12. Equipment weight.
13. Date of manufacture



1

ATTENTION!

The blast chiller is accompanied by the EC declaration of conformity. This document must be kept with care by the owner of the blast chiller to be shown at any request from the competent authorities.

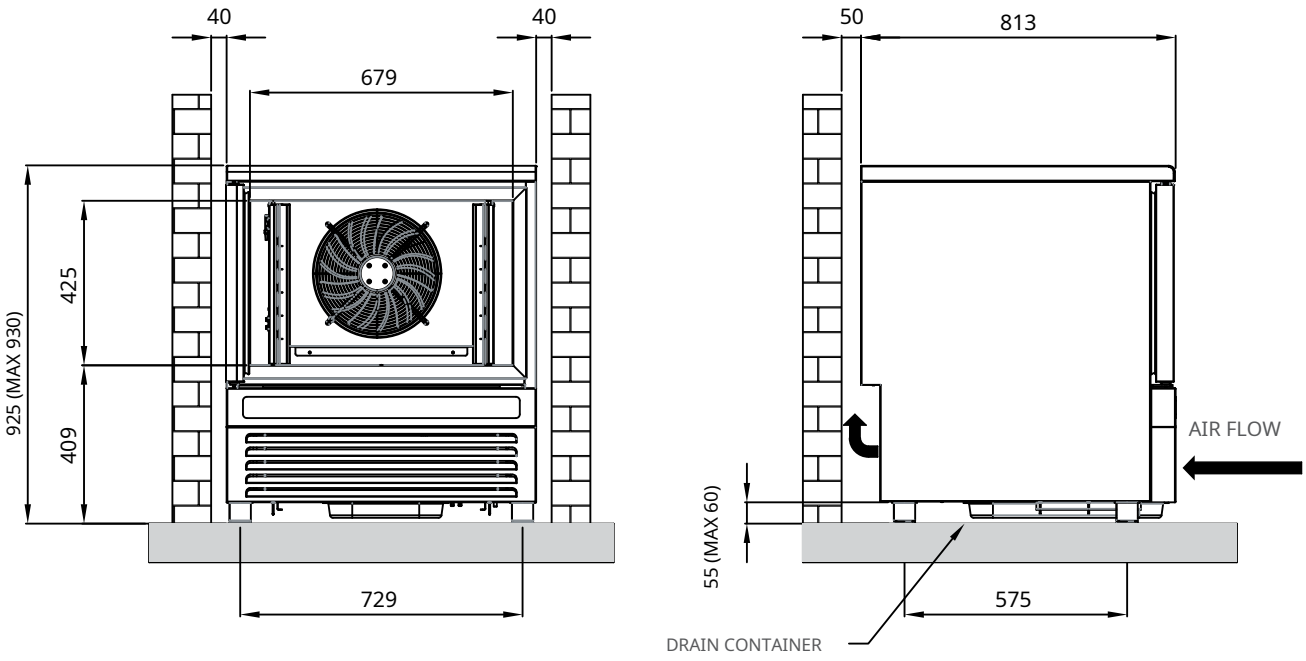
The EC declaration of conformity is a document that is an integral part of the machine and in case of transfer of the same must be delivered to the new owner.

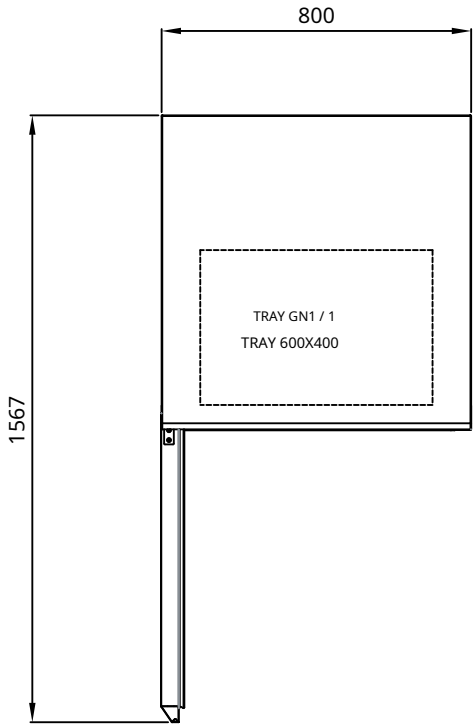
IDENTIFICATION OF THE CONDENSING UNIT IN TROLLEY TEMPERATURE BLAST CHILLERS

In trolley blast chillers, the condensing unit has its own label generally arranged on one side of the condensing unit. For more details see the condensing unit manual.

CELL DIMENSIONS AND OVERALL DIMENSIONS

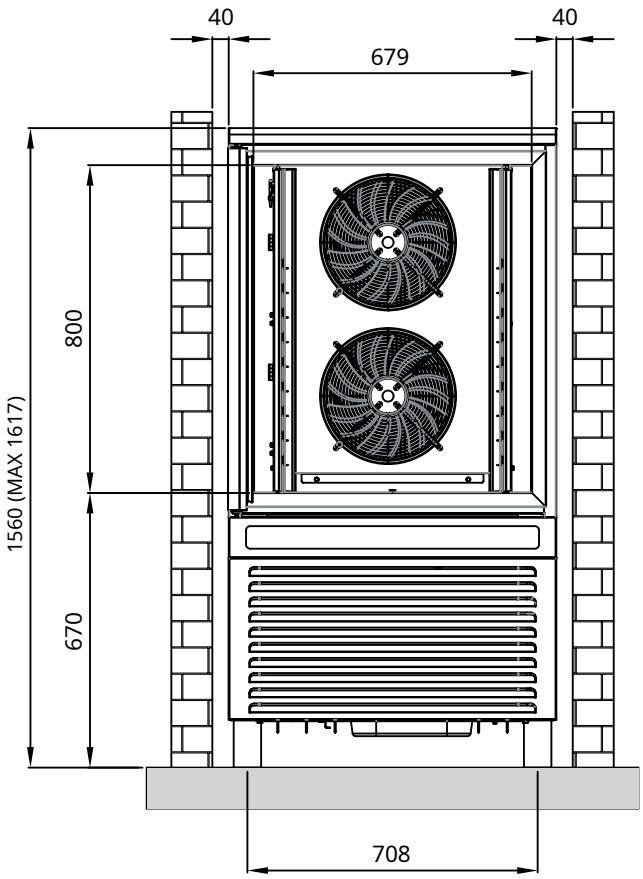
C5.1

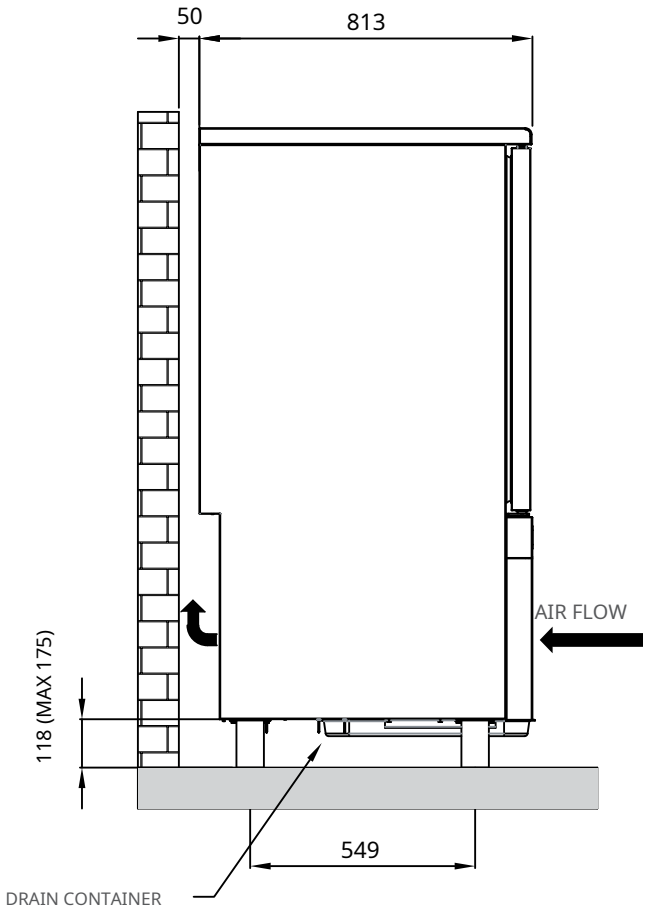


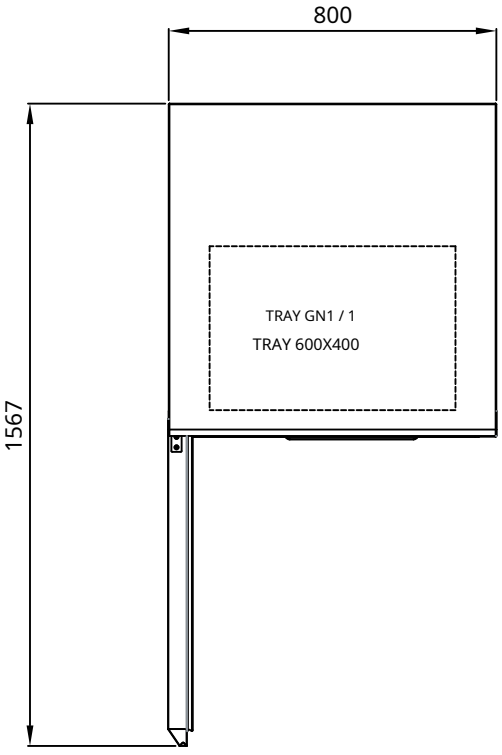


HEIGHT WITH WHEELS (120 mm): 1025 mm

C10.1

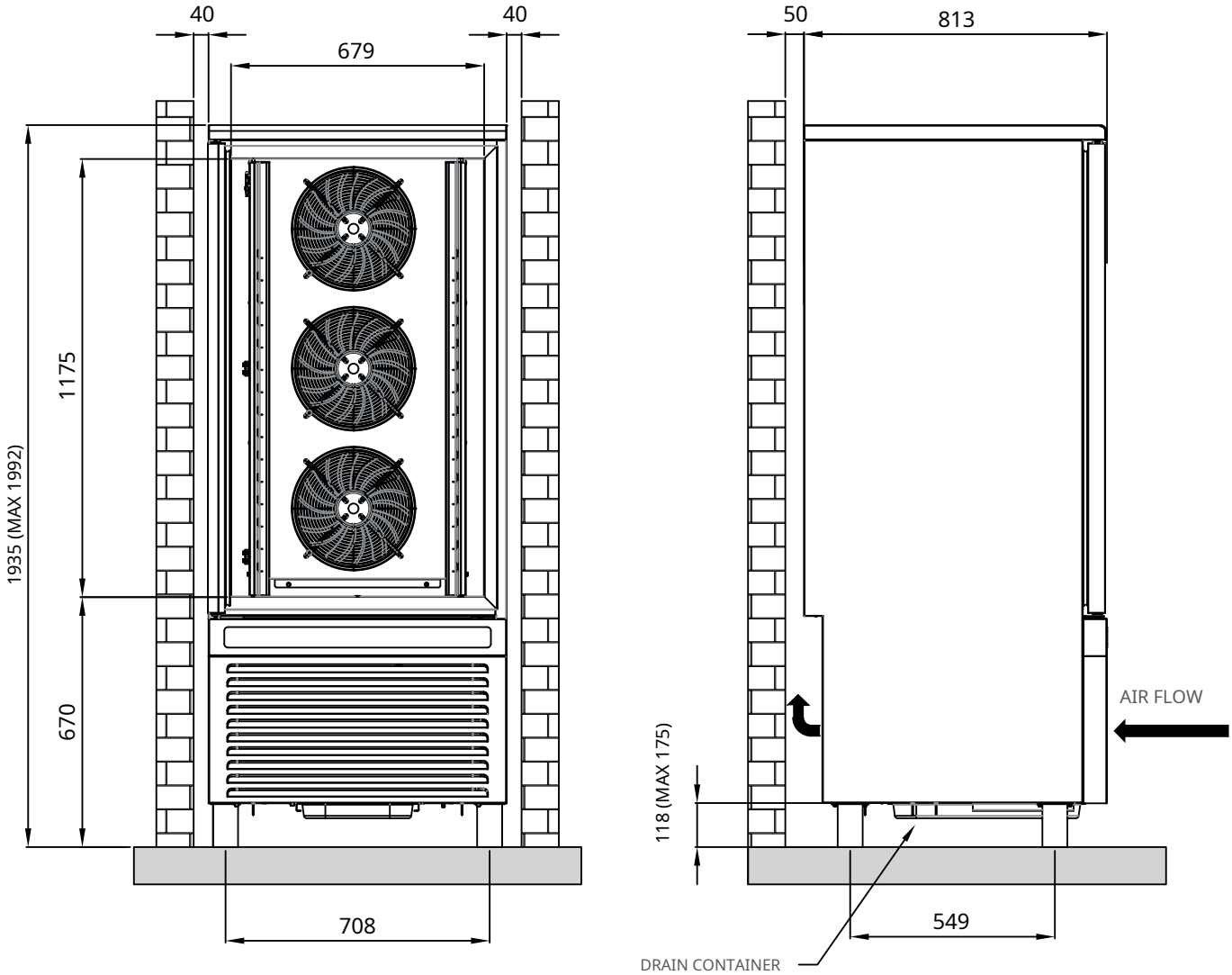


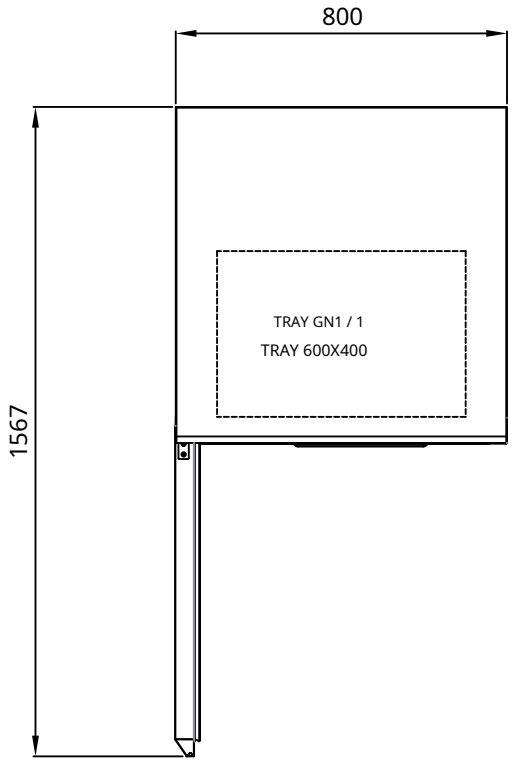




HEIGHT WITH WHEELS (125 mm): 1567 mm

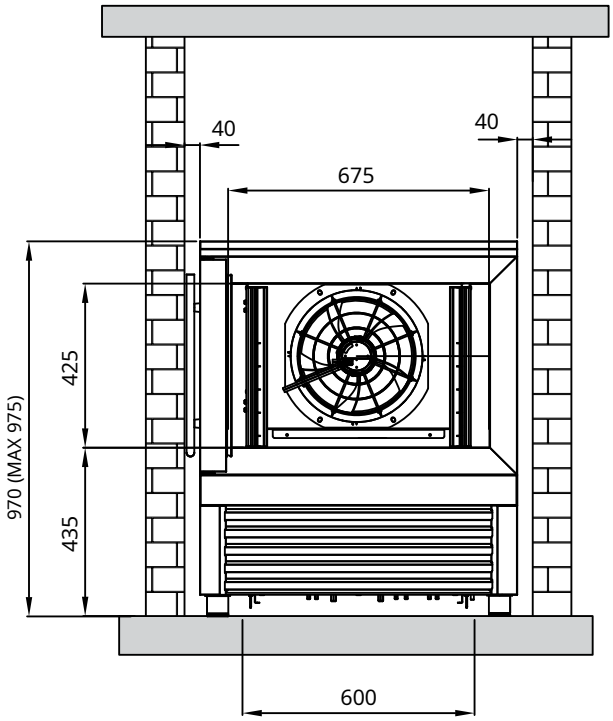
C15.1

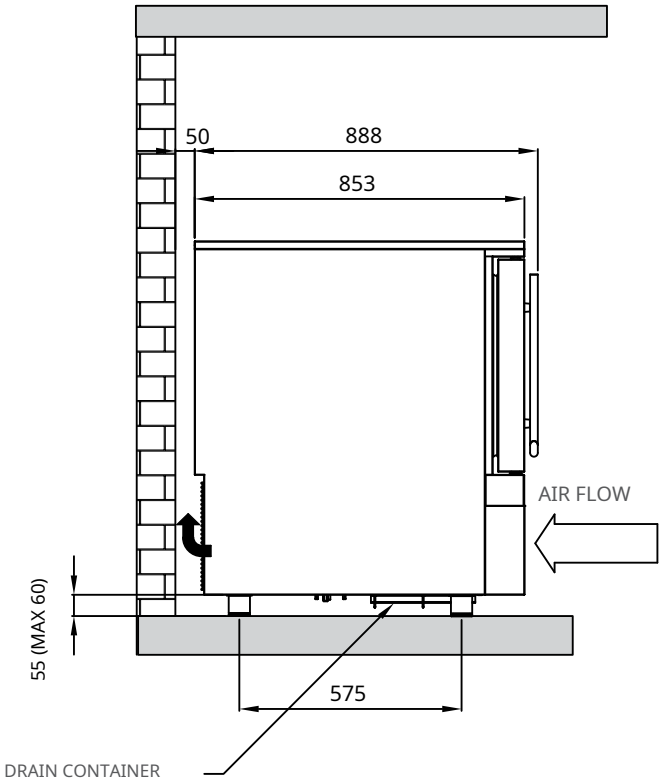


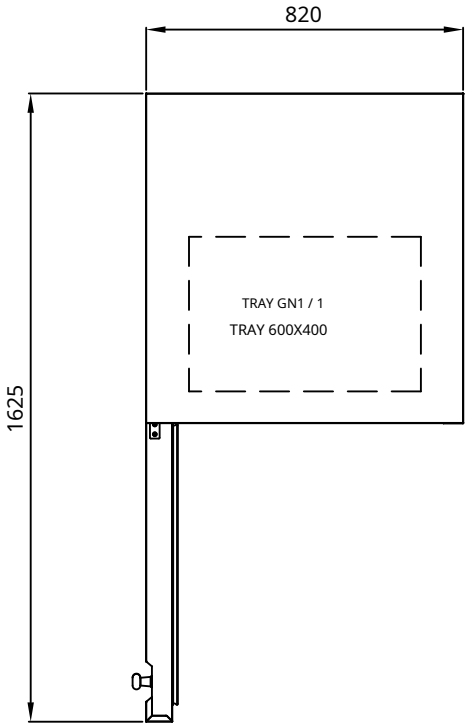


HEIGHT WITH WHEELS (125 mm): 1942 mm

P5.1

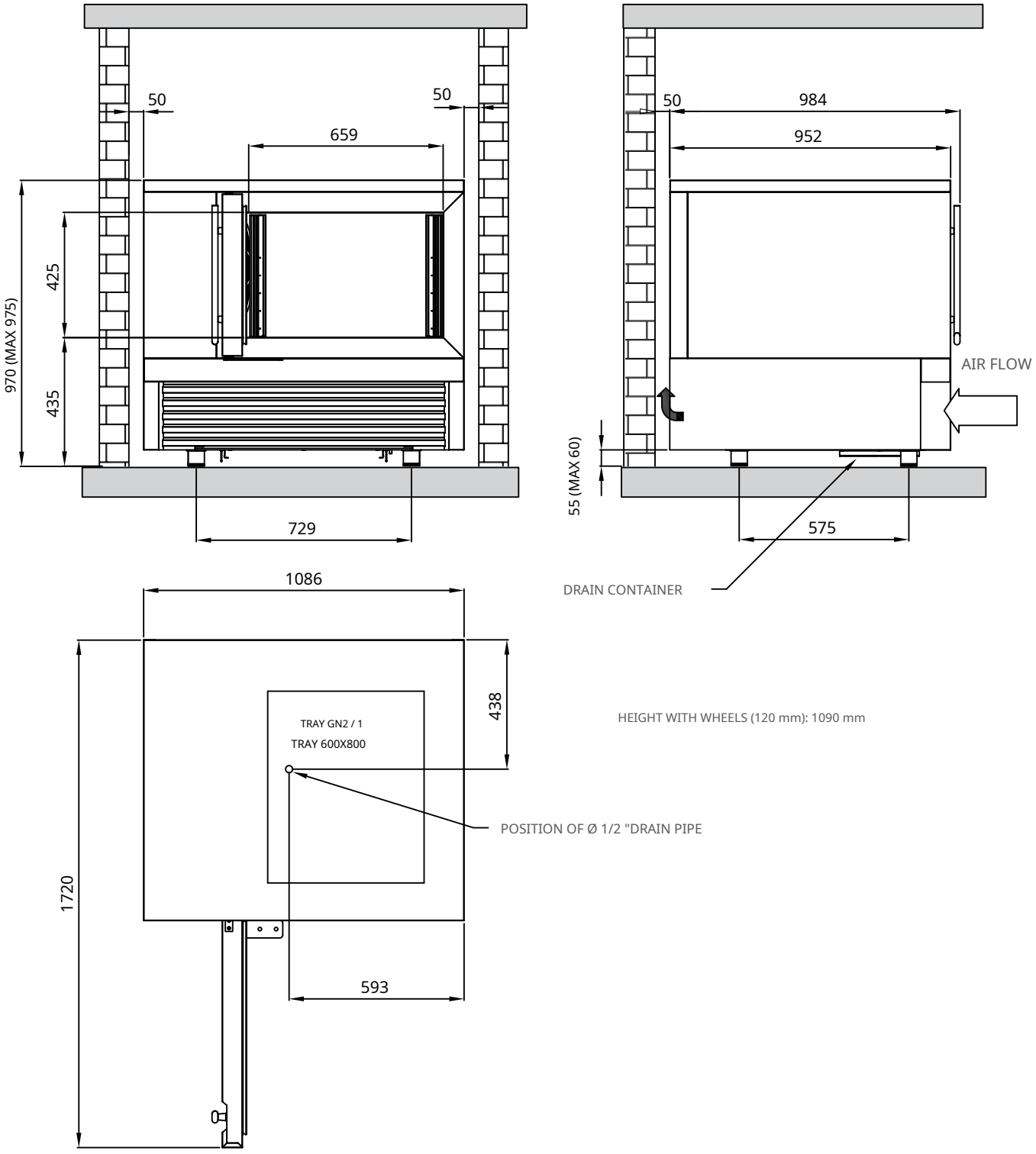






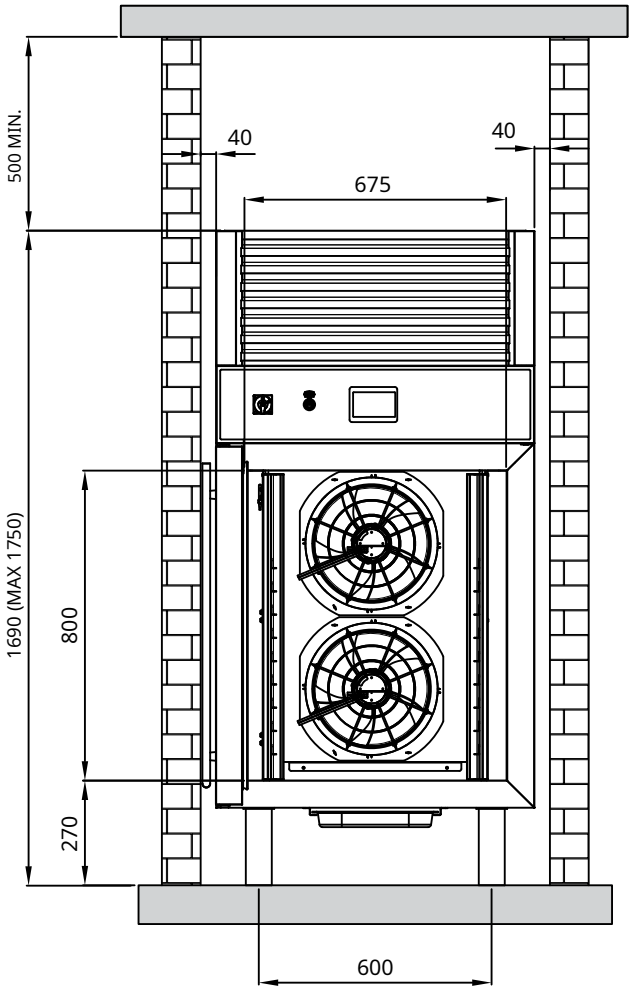
HEIGHT WITH WHEELS (120 mm): 1090 mm

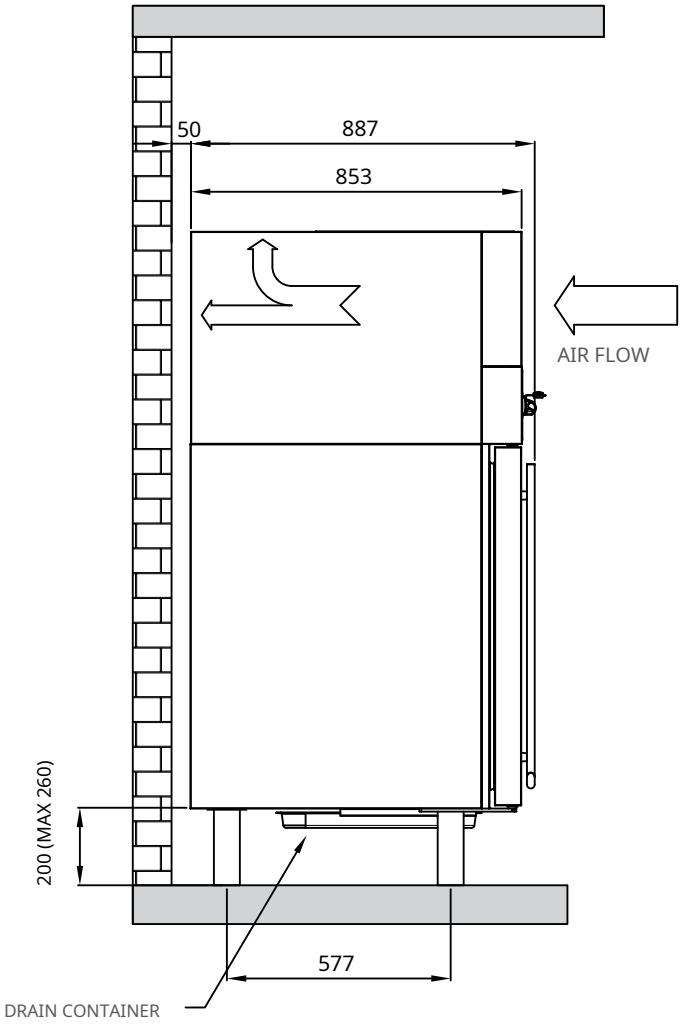
P5.2

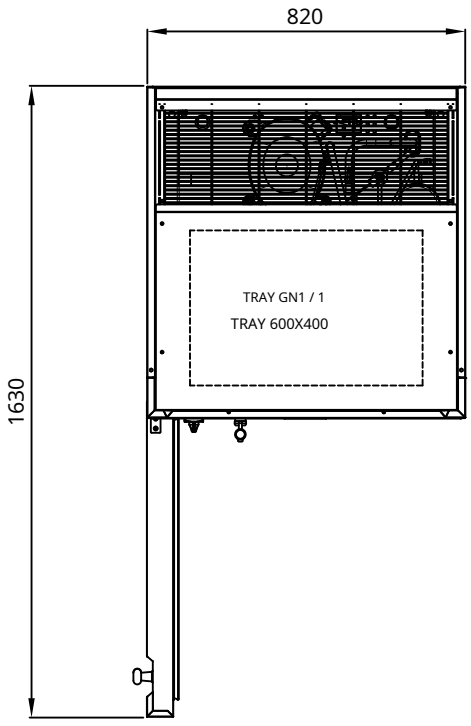


HEIGHT WITH WHEELS (120 mm): 1090 mm

P10.1

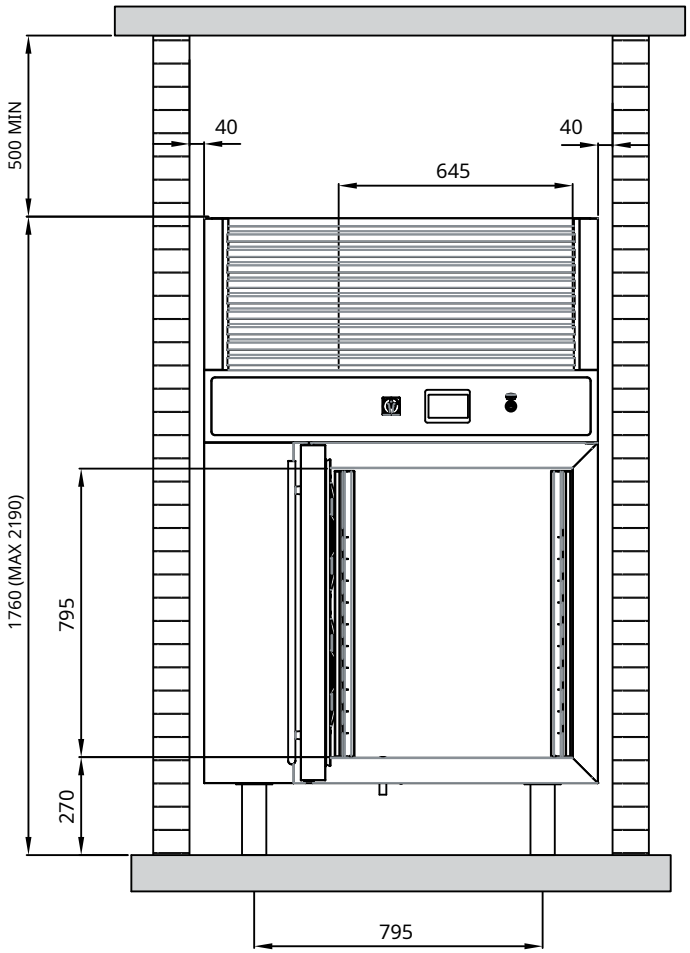


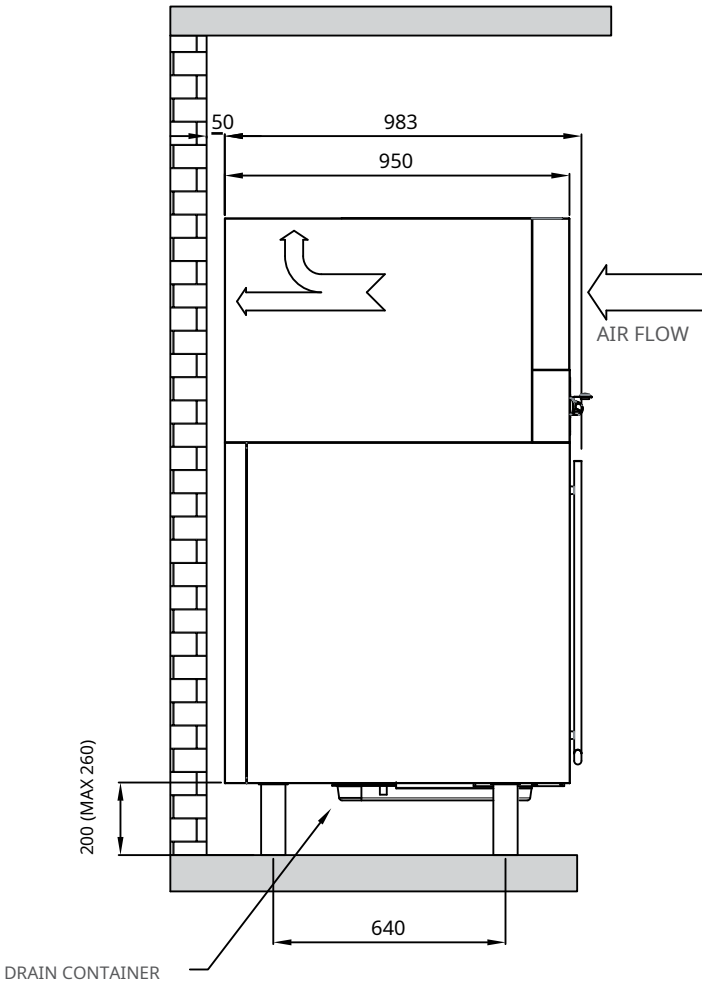


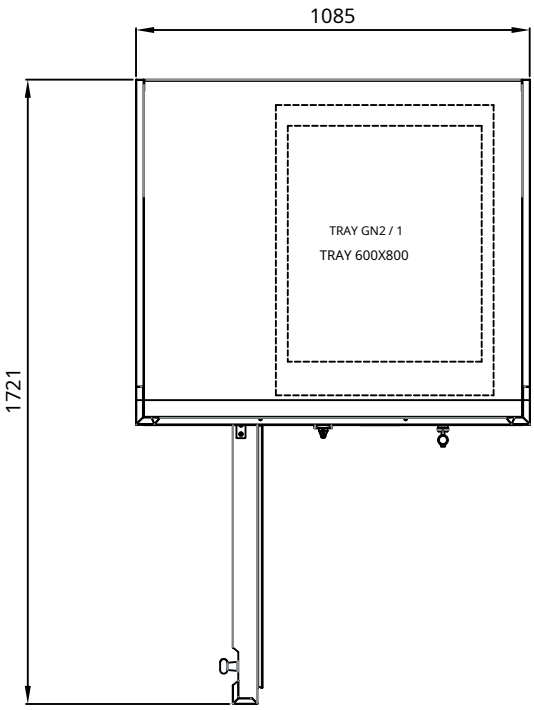


HEIGHT WITH WHEELS (200 mm): 1690 mm

P10.2

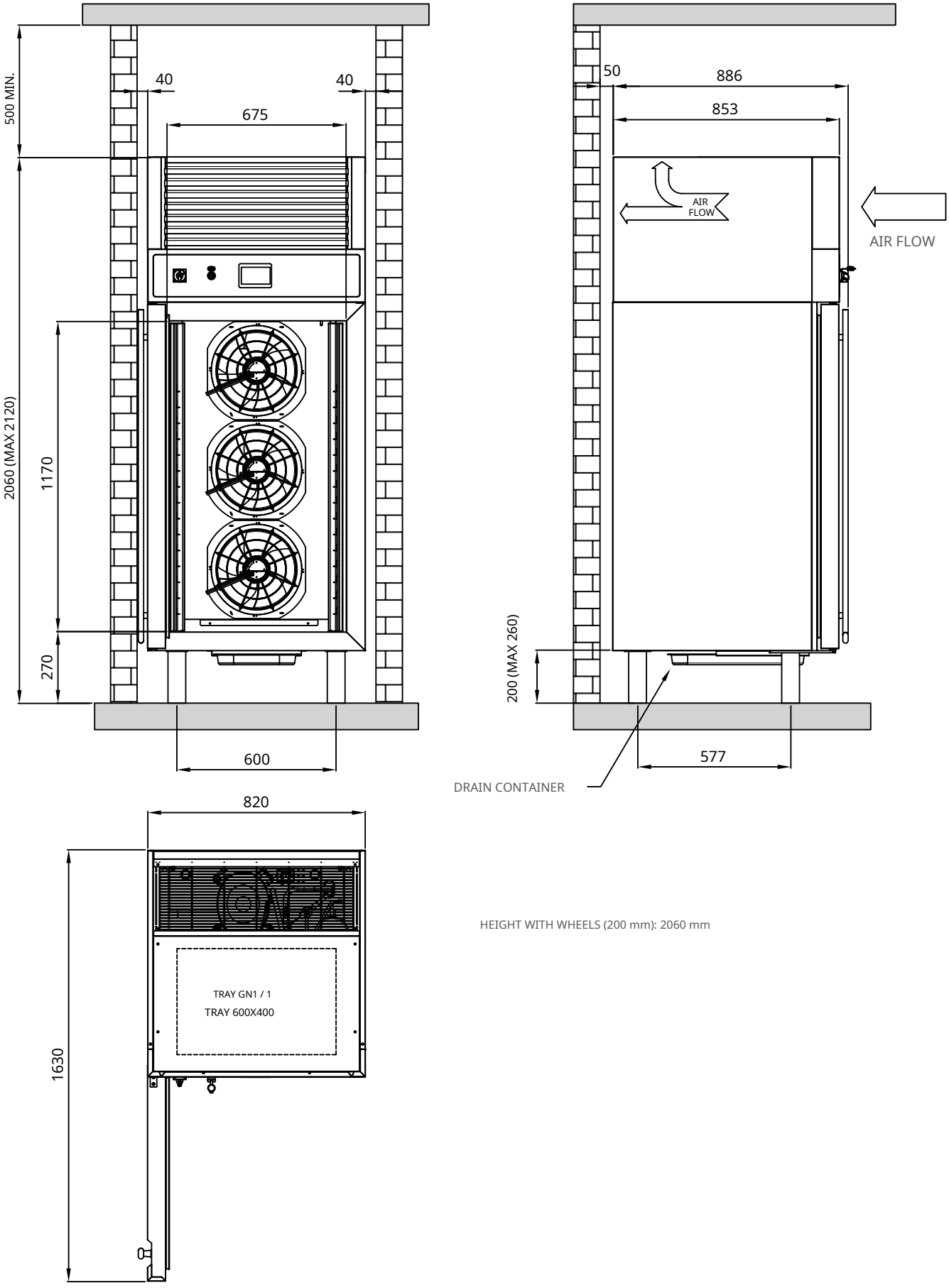






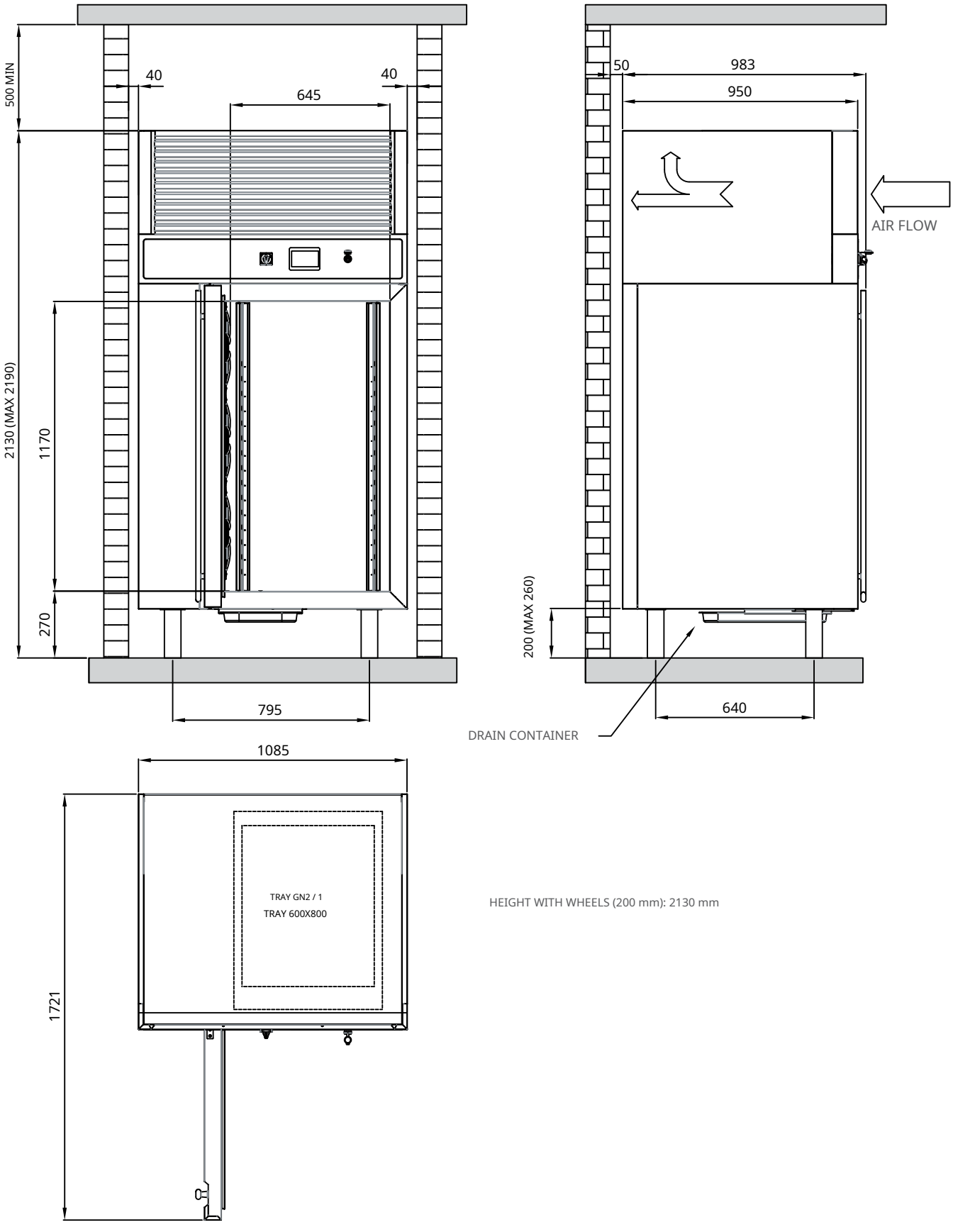
HEIGHT WITH WHEELS (200 mm): 1760 mm

P15.1



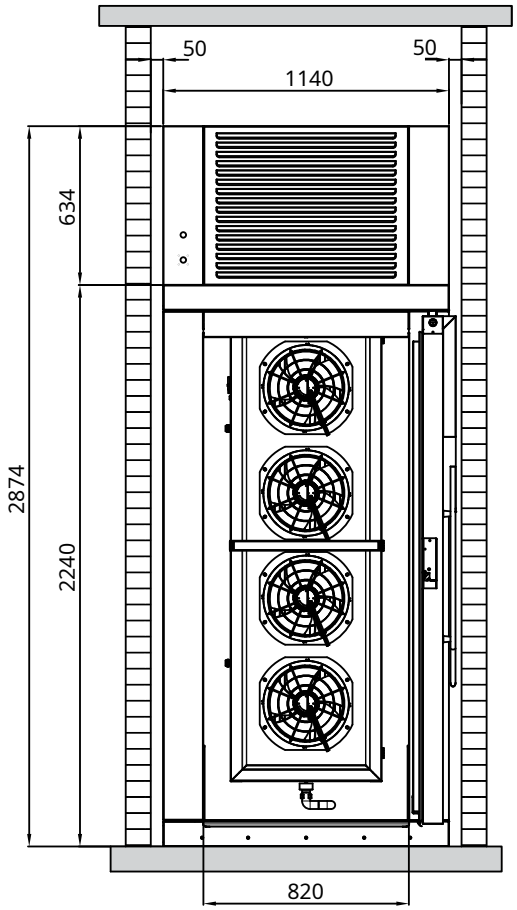
HEIGHT WITH WHEELS (200 mm): 2060 mm

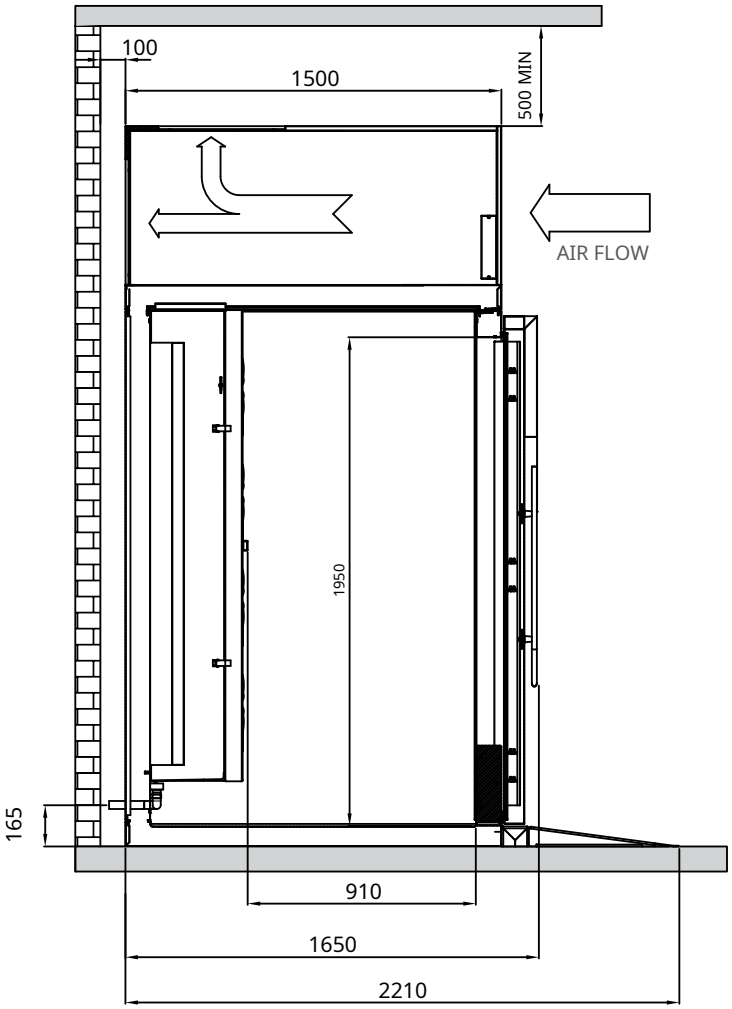
P15.2

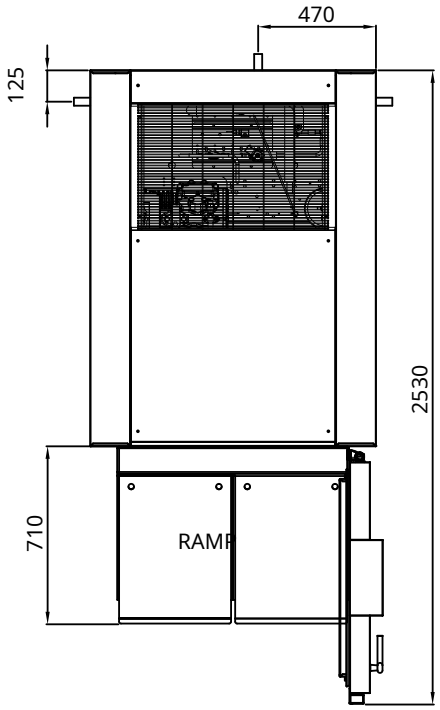


HEIGHT WITH WHEELS (200 mm): 2130 mm

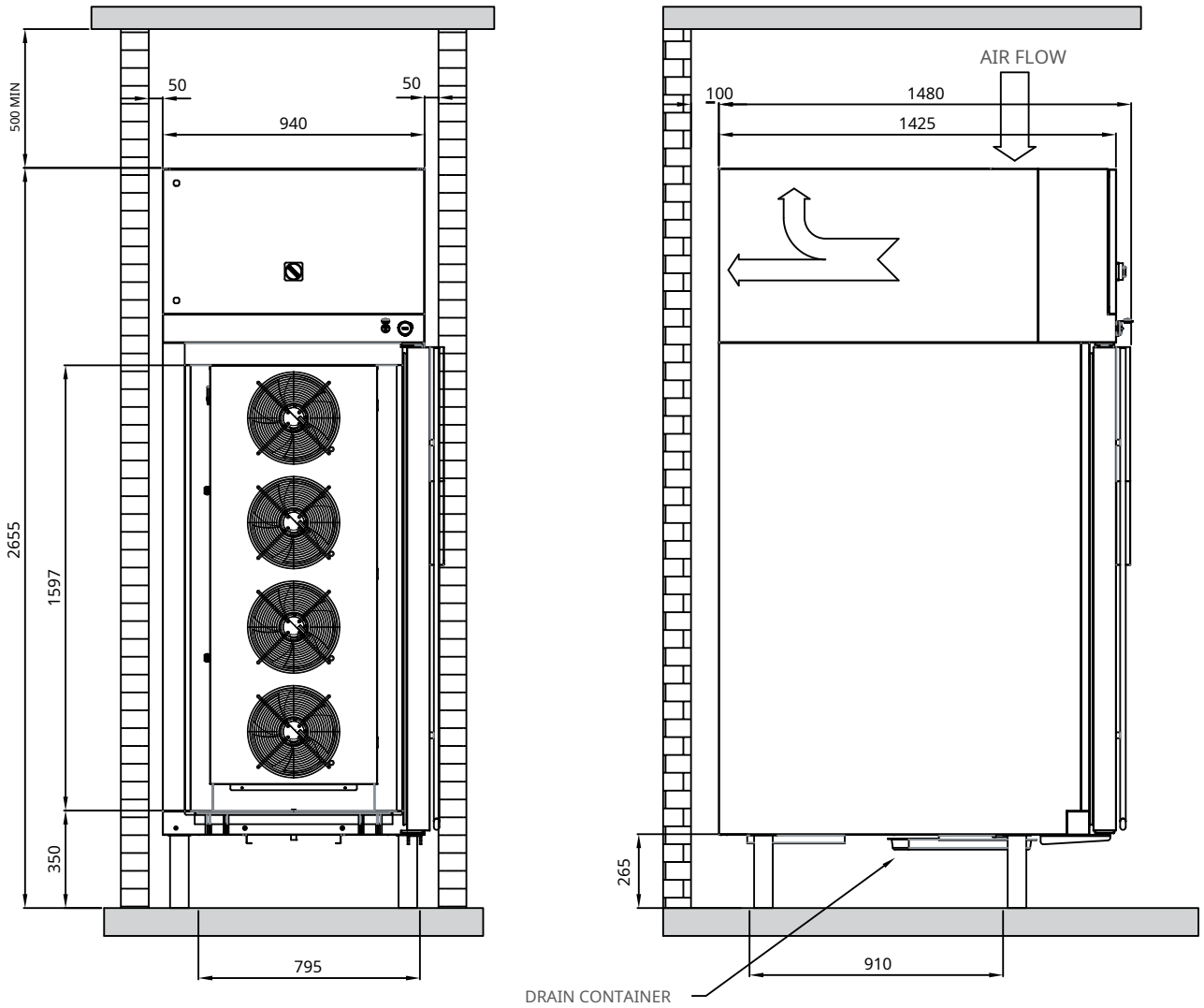
P20.2 T

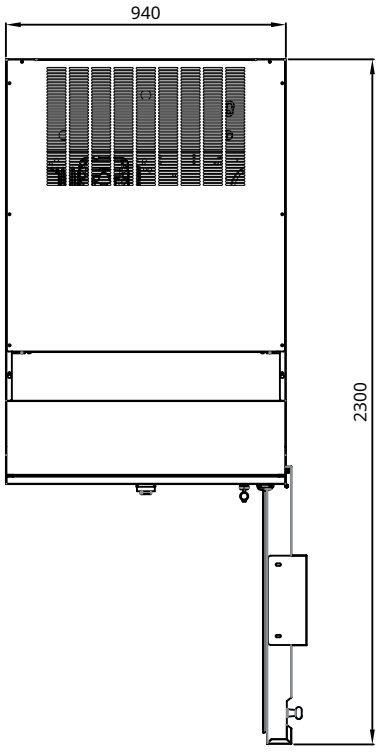

50
50
1140
634
2874
2240
820


100
1500
500 MIN
AIR FLOW
1950
165
910
1650
2210


470
125
2530
710
RAMP

P20.2 TF





HEIGHT WITH WHEELS (200 mm): 2130 mm

CELL TECHNICAL FEATURES

Technical data		MONOCOQUE BLAST CHILLERS										
		C5.1	C10.1	C15.1	P5.1	P5.2	P10.1	P10.2	P15.1	P15.2	P20.2 T1	P20.2 T1 F
Dimensions	L. [mm]	800	800	800	820	1085	820	1085	820	1085	960	940
	P. [mm]	813	813	813	887	983	887	983	887	983	1650	1470
	A. [mm]	925	1560	1935	1050	1050	1690	1760	2060	2130	2750	2500
Trays Gn 2/1	Gen 2/1	/	/	/	/	5	/	10	/	15	40	40
Trays Gn 1/1	Gn 1/1	5	10	15	5	10	10	20	15	30	20	20
Voltage	[/]	220 / 240-1-50 Hz	400V-3P + N + T-50Hz	400V-3P + N + T-50Hz	220 / 240-1-50 Hz	220 / 240-1-50 Hz	400V-3P + N + T-50Hz	400V-3P + N + T-50Hz	400V-3P + N + T-50Hz	400V-3P + N + T-50Hz	400V-3P + N + T-50Hz	400V-3P + N + T-50Hz
Alimentation cable	[n ° x mm²]	3G2.5	5G2.5	5G2.5	3G2.5	3G2.5	5G2.5	5G2.5	5G2.5	5G2.5	5G2.5	5G2.5
Total Power	[kW]	1.3	2.9	3.5	1.7	1.7	2.9	3.5	3.5	5	5.5	5.5
Total absorption	[TO]	7	6	8.5	7.8	7.8	6	8.5	8.5	10	11	11
Compressor model	[/]	NT2192GK	FH2480	TAG2513	CAJ2464	CAJ2464	FH2480	TAG2513	TAG2513	4FES-3Y	4FES-3Y	4FES-3Y
Fan Model Evaporator	[/]	FN030-4EA. WC.A7	FN030-4EA. WC.A7	FN030-4EA. WC.A7	FN030-4IA. ZC.A5P4	FN030-4IA. ZC.A5P4	FN030-4IA. ZC.A5P4	FN030-4IA. ZC.A5P4	FN030-4IA. ZC.A5P4	FN030-4IA. ZC.A5P4	FN030-4IA. ZC.A5P4	FN030-4IA. ZC.A5P4
Fan Model Capacitor		NET3T18PVN008	A4E400-AP02-01	A4E400-AP02-01	NET3T18PVN008	NET3T18PVN008	A4E400-AP02-01	A4E400-AP02-01	A4E400-AP02-01	A4E400-AP02-01	A4E400-AP02-01	A4E400-AP02-01
Defrost	[/]	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air
Maximum air flow Cell fans	[m ^ 3 / h]	1650	3300 / NA	4950 / NA	1650	1650 / NA	3300 / NA	3300 / NA	4950 / NA	4950 / NA	8000 / NA	8000 / NA
Product yield:												
Abatement (+ 90 ° C .. + 3 ° C)	[Kg]	20	50	75	25	30	55	80	80	90	90	90
Deep freezing (+ 90 ° C ..- 18 ° C)	[Kg]	15	30	50	20	22	40	70	70	80	80	80
Evaporator Power (Tev = -10; Tc = 40 ° C) *	[kW]	1.8	4.1 / 4.7	7.75 / 9.1	2.1	4.1 / 4.7	4.1 / 4.7	7.75 / 9.1	7.75 / 9.1	10 / 12.1	10 / 12.1	10 / 12.1
Power Capacitor (Tev = -10; Tc = 40 ° C) *	[kW]	2.75	6.3 / 7.5	11.6 / 13.8	3.1	6.3 / 7.5	6.3 / 7.5	11.6 / 13.8	11.6 / 13.8	14 / 16.9	14 / 16.9	14 / 16.9
Minimum air recycling	[m ^ 3 / h]	630	1400/1750	2600/3200	800	1400/1750	1400/1750	2600/3200	2600/3200	3200/3800	3200/3800	3200/3800
Liquid Diameter	[mm]	8	12	12	10	12	12	12	12	12	16	16
Suction diameter	[mm]	10	16	16	12	16	16	16	16	22	28	28
"Environmental Conditions Max. (Temp./Ur) "	[° C -%]	32-55%	32-55%	32-55%	32-55%	32-55%	32-55%	32-55%	32-55%	32-55%	32-55%	32-55%
Refrigerant	Kg (R452)	1.4	1.9	2.4	1.4	1.9	1.9	2.4	2.4	5.5	5.5	5.5
Packaging dimensions Assembled.	L. [mm]	920	920	920	940	1205	940	1205	940	1170	1170	1100
	P. [mm]	930	930	930	930	1103	1007	1103	1007	990	1950	920
	A. [mm]	1075	1740	2115	1075	1230	1870	1940	2240	2300	2930	2300
Packaging Volume	[m ^ 3]	0.9	1.5	1.8	0.9	1.6	1.8	2.6	2.1	2.7	6.7	2.3
Net weight	[Kg]	115	180	225	120	145	185	220	250	360	650	500
Gross weight	[Kg]	125	195	240	135	155	200	235	265	380	760	550

* Yields calculated according to EN12900 (20 ° C R404a aspirated gas temp)

PRELIMINARY OPERATIONS

Scrupulously follow the operations listed below for a correct arrangement of the blast chiller on the designated work area. The blast chiller is equipped with adequate packaging suitable to protect it from damage during transport. The packaging can be of different types: cardboard box with wooden bottom, wooden crate etc.

Unless otherwise indicated, the following are the responsibility of the purchaser or installer:

• Preparation of the tools necessary for installation.

• Preparation of auxiliary means and consumables.

TRANSPORT, UNLOADING AND UNPACKING

Do not stack several blast chillers on top of each other.**IT IS RECOMMENDED THAT THE MACHINE IS ALWAYS TRANSPORTED AND ONLY IN VERTICAL POSITION** to prevent the oil present in the compressor from moving inside the pipes towards other components (plate, compressor valves) also to prevent the springs that support the compressor motor from working in shear, causing possible damage to the same during transport , as well as to avoid irreparably damaging the supports of the condensing unit. This last situation could cause the separation between the condensing unit and the cell, causing the pipes to break with consequent escape of refrigerant gas.

It is forbidden to lay the machine on one side during all phases of the machine's life.

If the blast chiller is tilted to access the room where the machine will be installed, once the vertical position has been restored, wait at least 12 hours before starting the machine; this will allow the oil to flow from the components towards the lower part of the compressor.

ATTENTION!

The temperature of the machine / partly completed machine during transport must not exceed 55 ° C. Higher temperatures could cause the safety valve to intervene, if present.

ATTENTION!

Particular attention must be paid during the lifting and transport phases. Designate for these operations only specialized personnel trained in machinery handling procedures and able to choose and safely use the most suitable lifting and transport means. We decline all responsibility for non-compliance with the rules of safety regulations in force in the country where the blast chiller is installed.

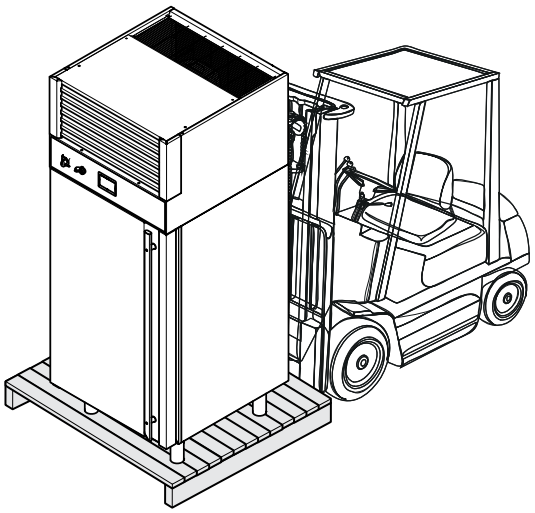
The lifting, handling and positioning operations of the blast chiller can be carried out with any suitable means that guarantees its lifting, effective and safe handling. The handling operations, for example, can be carried out with a transpallet or fork lift truck with a suitable length or with the aid of a crane if the machine / semi-machine is prepared for such handling.

Before removing the blast chiller from the packaging, check that it is intact, disputing and writing on the forwarder's delivery note any damage found before signing it. If necessary, photograph the external damage present.

Proceed to remove the protective transport wrapping and the protective sheets of the steel parts taking care not to damage or scratch the blast chiller.

Do not leave the packaging elements within the reach of children or pets as they could generate potential sources of danger (suffocation, cutting). The elements that make up the packaging must be disposed of in compliance with the regulations in force in the country of use of the machine / semi-machine and must not be dispersed in the environment.

After removing the packaging, make sure that the appliance is intact; if it is damaged, promptly notify the dealer or the manufacturer. If the damage is such as to compromise the safety or functionality of the machine, do not proceed with the installation until the intervention of a qualified technician is carried out.



ATTENTION!

• Never stand under suspended loads.

• Never use two lifting means

at the same time.

- If steel ropes are used for positioning, be careful not to create sharp folds.
- The maximum weight that an adult can lift is 25 kg if male and 20 kg if female, greater efforts could lead to musculoskeletal problems.

Operators must also wear personal protective equipment. The personal protective equipment needed in these phases are:

POSITIONING

The machine / partly completed machine must be installed and tested in full compliance with the accident prevention laws in force in the country of use of the machine / partly completed machine. For safety reasons, all handling and positioning operations of the machine / partly completed machine must be carried out by qualified technicians.

The installer is required to check any restrictions imposed by local authorities and regulations. The personal protective equipment needed in this phase are:

POSITIONING OF THE MONOCOQUE BLAST CHILLER

For a good installation of the blast chiller, it is necessary to check that there are no obstructions in the intake and exhaust air intakes in the installation area. An obstruction of the air intakes compromises the correct operation of the machine.

It is also necessary to maintain a service area in the front part of the blast chiller and minimum distances between the latter and the surrounding surfaces in order to ensure correct air flow and avoid condensation (see drawings). .

If the blast chiller is installed in a closed place, it is necessary to ensure proper air circulation to ensure proper operation.

IN BLAST CHILLERS WITH FLAMMABLE REFRIGERATOR FLUID (A2L) IT IS COMPULSORY

- **MAINTAIN A DETERMINED AIR EXCHANGE ACCORDING TO THE MODEL OF MACHINE INSTALLED**
- **2. DRAIN OUTSIDE THE SAFETY VALVE DRAIN WITH A DIAMETER PROPERLY CALIBRATED PIPE.**

- **INSTALL THE BLAST BLOWER ON ENVIRONMENTS WITH A CERTAIN MINIMUM SURFACE IN OPERATION OF THE MACHINE MODEL**

The air recirculation values, the minimum surfaces and the diameter of the pipe that conveys the discharge of the safety valve are shown in the technical data sheets blast chillers.

As regards the environmental conditions for installation, see the dedicated paragraph. Furthermore, to ensure optimal operation of the blast chiller, also pay attention to the following indications:

- Do not place the blast chiller with direct exposure to sunlight and other forms of radiation such as cooking ovens, etc. (figure**2**).
- Do not place the blast chiller outdoors. Do not place the blast chiller inside a closed niche as it compromises the correct air flow.

- Do not place trays or any object with a temperature above 85 ° C in direct contact with the blast chilling cell as this could damage the insulation.

- Check the correct positioning of the condensate drain and the condensate drain pan in the case of single-body blast chillers.
- In the case of panel blast chillers, prepare a drainage channel near the door and convey the condensate drain pipe into the waste water network. If the machine has a ramp, it is possible to install the drainage duct before the ramp, or always at the exit of the door in correspondence with the threshold.

- The machine must be installed on a flat and horizontal surface both to avoid problems related to the stability of the machine and for a correct slope of the condensate drains. If the surface is not flat it is necessary:
- Act on the feet if the machine is equipped with adjustable feet (by screwing or unscrewing them) until leveling is reached; any other different installation solution must be agreed and approved by the manufacturer (figure**3**).
- In case the machine is not equipped with feet

adjustable, that is, it is of the cell type with modular panels, it will be necessary to use suitable shims to level the support surface of the machine.

- If the machine is supplied on wheels, place it in a flat and horizontal area and block the wheels before using it.

ATTENTION!

To level the heavier machinery, use special lifts.

ATTENTION!

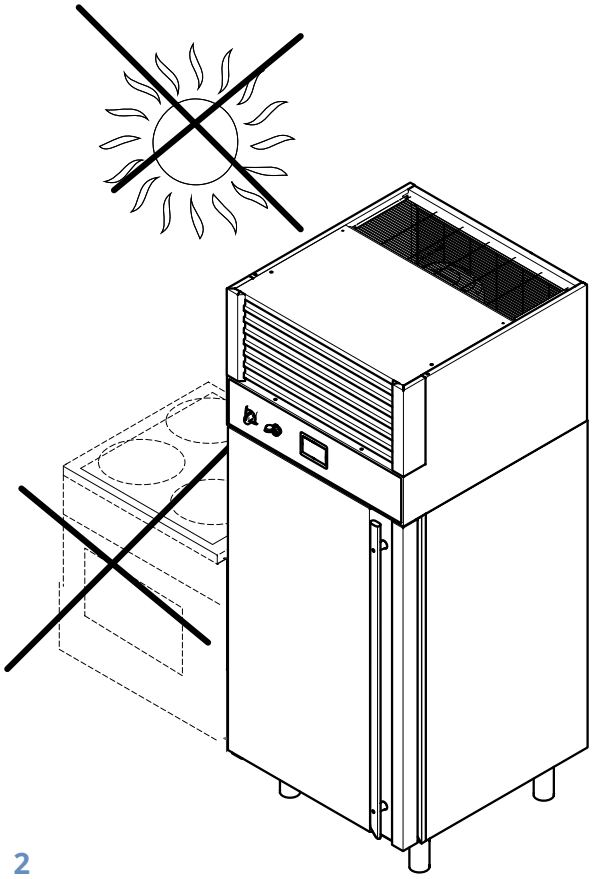
If the appliances are not level, the operation and the drainage of the condensate water are not guaranteed.

ATTENTION!

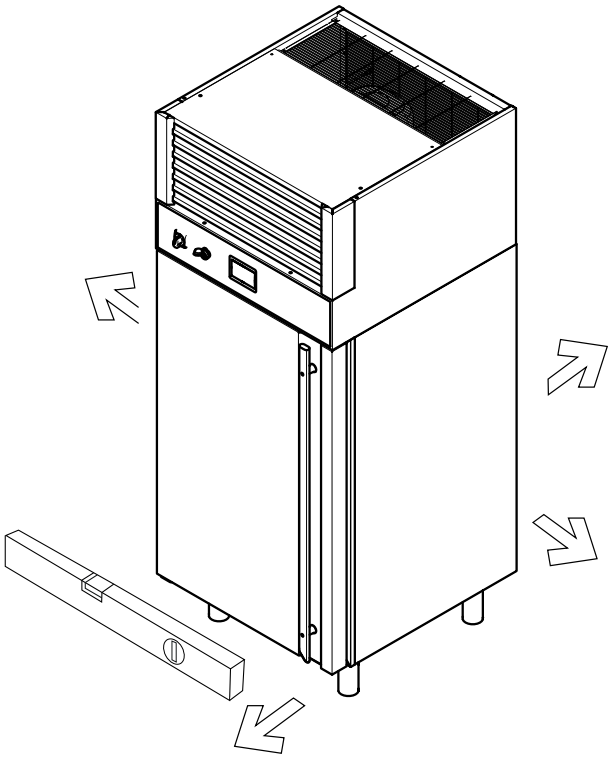
If it is not possible to optimally level the blast chiller and the latter belongs to the family of panel blast chillers, it is necessary to constrain the panel that rests on the floor to avoid abnormal movements of the blast chiller. It is also advisable to seal the gaps between the bottom of the cell and the floor using specific silicone.

ATTENTION!

It is forbidden to lay the machine on one of its sides during all phases of the machine's life.



2



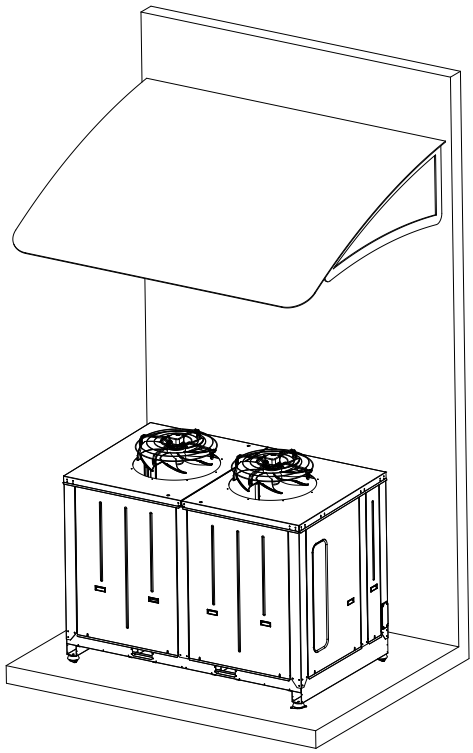
3

POSITIONING OF THE REMOTE CONDENSING UNIT

4

As regards the positioning of the remote condensing unit, i.e. not incorporated in the machine, the following indications must be adopted:

- The installation must be carried out by qualified personnel possessing the necessary technical requirements established by the country where the machine is installed.
- The remote condensing unit must not be installed in closed environments where excellent hourly air recirculation is not guaranteed (at least 150 times the volume of the room where it is installed). It is also necessary to have a visual acoustic alarm in the event of refrigerant gas leaks.
- For the installation of the control unit with condenser on board, installation in closed environments is prohibited. It is advisable to protect the condensing unit by means of a canopy, maintaining adequate distances to guarantee the discharge and return of air from the condenser (see drawing).
- The condensing unit must be installed on a flat and horizontal surface. It is also necessary to fix or constrain the condensing unit to the ground.
- For the handling of the condensing units it is necessary to use means suitable for the dimensions and weight of the equipment to be lifted.



4

ELECTRICAL CONNECTION

For safety reasons, all electrical connection operations must be carried out by qualified and authorized personnel according to the laws in force in the country of installation of the machine / partly completed machine. Furthermore, the electrical connections must comply with the relevant regulations in force in the country where the machine is installed.

Before being placed on the market, the machine / partly completed machine is subjected to functional and electrical testing.

The monocoque machines are supplied with a 1P + N + T or 3P + N + T power cable depending on whether it is single-phase or three-phase; in all other cases the power cables are not supplied.

Specifically, the following indications must be adopted:

- The power supply cable must be well stretched, not rolled up, nor overlapped, nor in traction, in a position not exposed to shocks or crushing; it must not be an obstacle or obstacle to the performance of the work activity and the passage of people. Furthermore, it must not be placed near liquids, water, heat sources, or placed in contact with sharp, hot or corrosive objects or elements.

ATTENTION!

The differential magnetothermic switch must be placed in the immediate vicinity of the machine so that it can be clearly visible and reachable by the technician in case of maintenance.

- Install a main switch in the immediate vicinity of the machine so that it can be clearly seen and reached. If the machine is single-phase, mount a bipolar isolating switch with contact opening of at least 3mm upstream from the socket. This switch is mandatory when the load exceeds 1000W or when the machine is connected directly to the electrical power supply.

- In machines with non-electronic three-phase fans, it is necessary to watch the fans start to check their direction of rotation. In the event that the direction of rotation is incorrect, it is necessary to switch off the machine, disconnect it from the mains and reverse two phases of the power supply line. Once this operation has been carried out, the machine can be reconnected to the electrical power supply and started.
- Make the electrical connections as indicated in the wiring diagram.
- The section of the power cable must be adequate for the power absorbed by the machine.

ATTENTION!

According to the law, it is mandatory to connect the machine to an efficient grounding system. We decline all responsibility for the non-observance of this layout; furthermore, no liability is accepted if the electrical system to which it is connected is not made in accordance with current regulations.

ATTENTION!

Nuovair Srl declines all responsibility and any guarantee obligation in the event of damage to equipment, people and things, attributable to incorrect installation that does not comply with the regulations in force in the country where the machine is installed.

The personal protective equipment needed in these phases are:

ELECTRICAL CONNECTION OF COMMUNICATION CABLES IN MACHINES WITH REMOTE GROUP

To connect the communication cables, consult the specific wiring diagram for the purchased machine. If the wiring diagram is not on the unit or if it has been lost, contact the manufacturer's representative who will send another copy. In case of discrepancy between what is reported on the wiring diagram and the visual inspection of the electrical cables of the command and control panel, contact the manufacturer.

ATTENTION!

The communication cables are powered at 220V. DISCONNECT BOTH THE CONDENSING UNIT AND THE CELL FROM THE POWER SUPPLY WHEN WORKING ON THE TERMINAL BLOCK OF THE COMMUNICATION CABLES, OTHERWISE THE CIRCUITS WILL REMAIN POWERED.

REFRIGERATOR CONNECTION

The blast chillers of the monocoque series are born with a built-in condensing unit and therefore do not require any refrigerator connection.

In the event that we are in the presence of a monocoque blast chiller with remote group (optional) or of a panel machine, it is necessary to make the connection between the blast chilling cell and the condensing group.

To make the refrigerator connection between the blast chilling cell and the remote condensing unit, it is necessary to install the liquid line and suction pipes according to the diameters of the ball valves on the machine / partly completed machine.

The recommended diameters and gas loads are valid:

- Up to 15 m of equivalent line length in the case of monocoque machines with remote unit.
- Up to 25 m of equivalent line length in the case of panel machines.

For lengths greater than those indicated, it is necessary to perform a new dimensioning of the line diameters. The pipes must be supported on the wall near the curves or welds and every 2 m of straight section. The joints between the pipes must be hermetically sealed by brazing with a suitable filler alloy.

If R744 is used as a refrigerant, it is necessary to evaluate and apply additional requirements for R744 refrigeration systems indicated in appendix A of EN 378-2. These adjustments are the responsibility of the installer.

ATTENTION!

In the event that the refrigeration circuit is isolated from the space occupied by a ventilated enclosure, the sizing according to 378-2 at point 6.2.14 will be the responsibility of the installer.

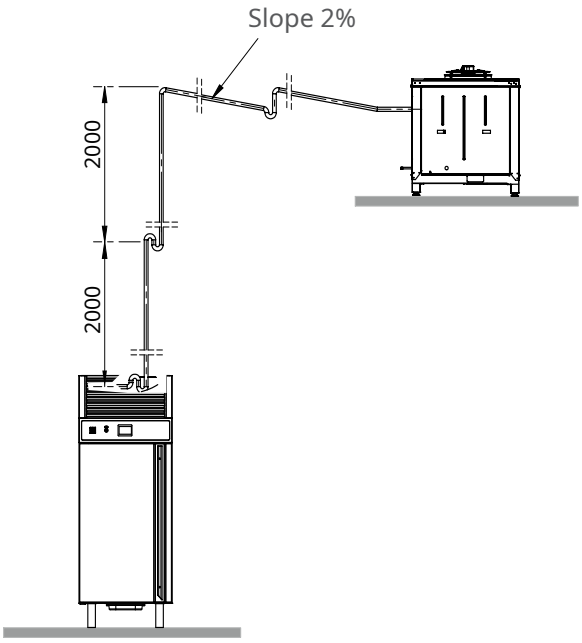
The personal protective equipment needed in these phases are:

INSULATION OF REFRIGERATING LINES

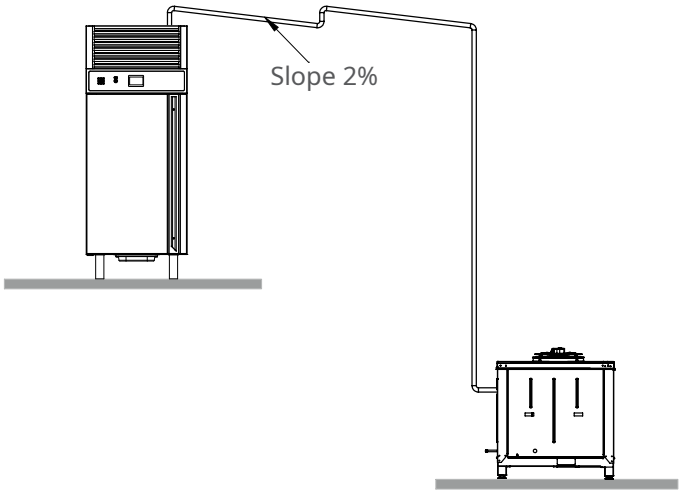
Insulate the suction pipes with an anti-condensation pipe with a minimum thickness of 19 mm. If the refrigerant fluid is R744, it is also necessary to insulate the liquid piping.

RETURN OF THE OIL

All refrigeration lines must be designed to allow correct oil return to the compressor. In the case of blast chillers with remote group, if the condensing unit is positioned above the evaporator, it is necessary to insert siphons every 2 meters of difference in height on the vertical line and a counter-siphon at the end of the ascent section.



When there are sections of horizontal line it is important that the suction pipes have a slope of at least 3% towards the condensing unit, to facilitate the return of the oil to the compressor. If the condensing unit is positioned below or at the same height as the cell, no siphon is needed, but it is sufficient to ensure the slope of the pipes in favor of the condensing unit.



EMPTY

Fundamental for an optimal operation of the machine with remote condensing unit or if it is necessary to empty the refrigerant from the machine, it is to carry out a correct degree of vacuum in the refrigeration circuit before charging the circuit with the refrigerant fluid.

For a correct degree of vacuum it is important to reach a pressure of 15 Pa with rises not exceeding 200 Pa.

⚠ ATTENTION!

Do not start the compressor at this stage to avoid irreparable damage to it.

CHARGING THE REFRIGERANT

The refrigerant gas charged must be the same as that indicated on the plate.

In the case of machines with remote condensing unit with refrigeration lines greater than 25 m (15m in the monocoque) it is necessary to load additional gas into the system.

The refrigerant gas charged must be the same as that indicated on the plate.

For a correct charging operation, once the vacuum is finished, load the refrigerant.

To correctly quantify the gas charge introduced, use pressure gauges connected to the dedicated pressure points and a precision balance.

⚠ ATTENTION!

Gas mixtures must be loaded into the system only in the liquid state.

⚠ ATTENTION!

At the end of the loading phase, carry out a leak test with instrument sensitivity calibrated at 3 g / year. This value allows according to EN378-1 point 3.1.7 to consider the group hermetically sealed.

LOSS CONTROL

It is important that periodic checks are carried out for leaks on the welds and on all those parts that can be dismantled with methods and equipment suitable for the type of gas used.

Leak checks are carried out with the following frequency:

a) for equipment containing fluorinated greenhouse gases in quantities equal to or greater than 5 tonnes of CO2 equivalent but less than 50 tonnes of CO2 equivalent: at least every 12 months or, if a leak detection system is installed, at least every 24 months;

(b) for equipment containing fluorinated greenhouse gases in quantities equal to or greater than 50 tonnes of CO2 equivalent, but less than 500 tonnes of CO2 equivalent: at least every six months or, if a leak detection system is installed, at least every 12 months;

c) for equipment containing fluorinated greenhouse gases in quantities equal to or greater than 500 tonnes of CO2 equivalent: at least every three months or, if a leak detection system is installed, at least every six months

DISASSEMBLY AND DEMOLITION

If it is necessary to disassemble the machine, carry out the following procedure:

- Disconnect the blast chiller from the power supply (both cold room and remote condensing unit)
- Recover the refrigerant. Particular attention should be paid if the refrigerant fluid is A2L, i.e. classified as flammable.
- Move the machine according to the prescriptions of the dedicated paragraphs.
- Prepare the components according to whether they need to be transported to other locations or demolished.

Nuovair Srl declines all responsibility for any damage to property or persons deriving from improper interventions carried out by unqualified, untrained or unauthorized personnel.

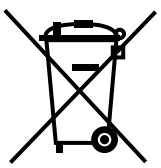
In any case, the following personal protective equipment is required to carry out maintenance and cleaning operations:

DEMOLITION AND DISPOSAL

When a machine has completed its life cycle, before proceeding to final disposal, it is necessary to carry out a series of operations aimed at ensuring a minimum environmental impact related to the disposal of the components, as required by the current regulations on waste disposal in the country of installation of the blast chiller.

The operations to be performed are:

- Separate and store the parts with environmental impact. That is, separate the parts that can generate pollution by dividing them into recycling categories.
- The gas contained inside the system must not be dispersed into the environment.
- Dispose of both the condensing unit and the cell in specialized collection centers.



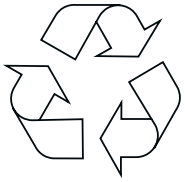
The crossed-out bin symbol shown on the appliance or on its packaging indicates that the product at the end of its useful life must be collected separately from other waste.

The separate collection of this

end-of-life equipment is organized and managed by the manufacturer.

The user who wants to get rid of this equipment must therefore contact the manufacturer and follow the system that the latter has adopted to allow the separate collection of the equipment at the end of its life. Adequate separate collection, for the subsequent forwarding of the decommissioned equipment for recycling, treatment and environmentally compatible disposal, helps to avoid possible negative effects on the environment and health and favors the reuse and / or recycling of waste materials. which the equipment is composed of.

Illegal disposal of the product by the owner involves the application of the administrative sanctions provided for by the law.



Most of the components used for the packaging and construction of the BLAST CHILLER are recyclable, we recommend the user to select them and send them to appropriate collection centers.

DATA INDICATIONS SAFETY FLUIDS

REFRIGERATORS

The machines use fluorinated greenhouse gases in compliance with the current F-Gas regulation. Some models of monocoque blast chiller use gases classified as A2L, i.e. flammable. The indications provided in this paragraph are obtained from the safety data sheets of the refrigerants provided by the manufacturers of the latter. For more exhaustive information ask the supplier or installer for the safety data sheets of the refrigerants highlighted on the machine data plate.

⚠ ATTENTION!

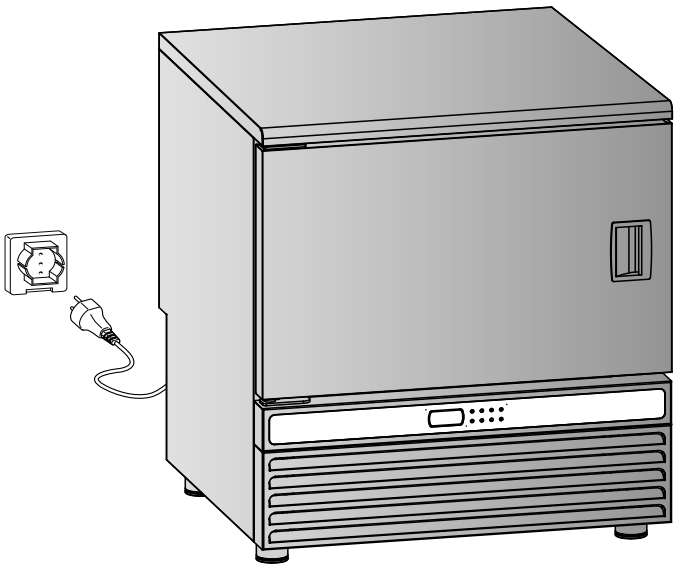
As regards the chemical-physical properties, the information relating to reactivity and stability, the toxicological and ecological information as well as for more detailed information relating to the refrigerant fluids, contact the dealer or the manufacturer.

⚠ ATTENTION!

The refrigerant fluid contained in the machine is odorless.

FIRST START-UP

After connecting the machine to the electrical power socket (according to the regulations in force in the country of installation), the blast chiller display turns on (fig.**5**).



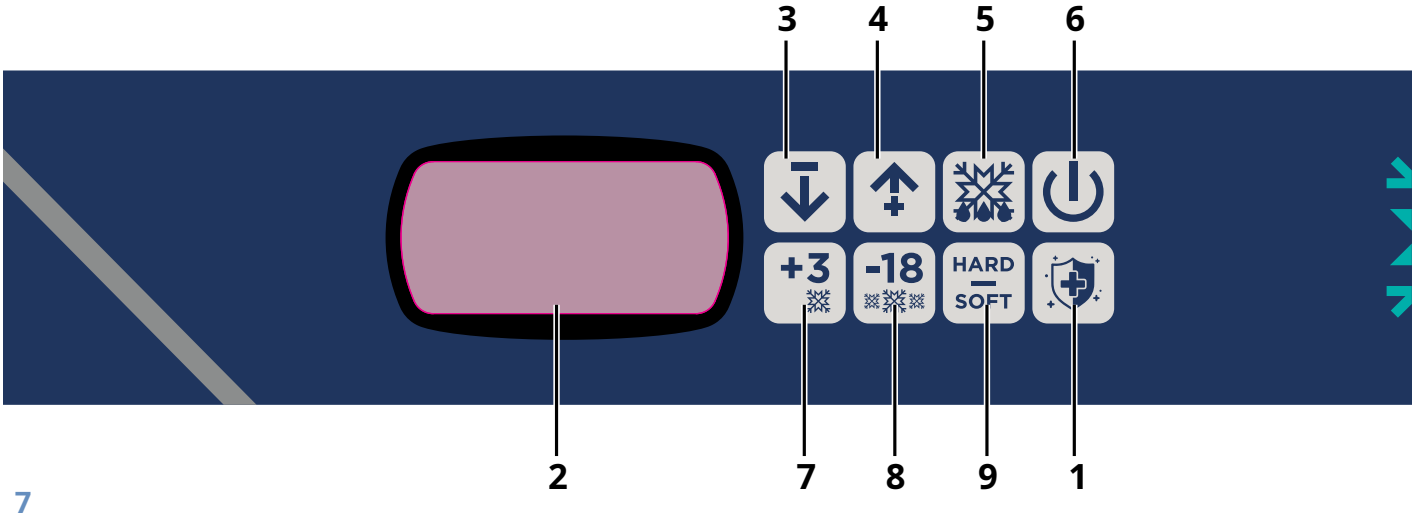
5

Wait for ac switching on the screen (fig.**6**).

6

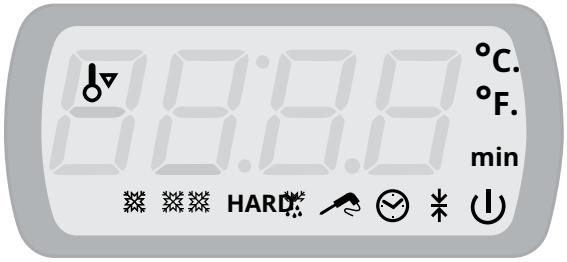
DESCRIPTION OF THE COMMANDS

The identification of the controls on the BLAST CHILLER is simple and quick (fig.**7**).



7

1 - Sanitation button
2 - Operation display
3 - Key to decrease time and temperature 4 -
Key to increase time and temperature 5 -
Defrost key
6 - Cycle start button
7 - Core probe blast chilling key 8 -
Core probe blast freezing key
9 - Timed blast chilling and freezing button



DESCRIPTION OF SYMBOLS DISPLAy

Meaning of the signaling LEDs on the display.

if it is onindicates that the blast chilling cycle is in progress;**if it blinks**indicates that a blast chilling cycle has been selected

if it is onindicates that the freezing cycle in progress;**if it blinks**indicates that a freezing cycle has been selected

HARD **if it is on**indicates that the freezing or intensive blast chilling cycle is in progress;**if it blinks**indicates that a freezing or intensive blast chilling cycle has been selected

if it is onindicates that a blast chilling or freezing cycle with core probe temperature has been selected or is in progress.

if it is onindicates that a timed blast chilling or freezing cycle has been selected or is in progress; if it flashes, it indicates that the actual day and time are being set

if it is onindicates that the conservation cycle is in progress

if it is onindicates that a defrost is in progress

if it is onindicates that pre-cooling is in progress and the cell temperature will have reached the one established with parameter r12; if it flashes, the cell temperature will not have reached the one established with parameter r12

°C. **if it is on**indicates that the unit of measurement chosen is the degree Celsius

°F. **if it is on**indicates that the unit of measurement chosen is the Fahrenheit degree

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

if it is onindicates that the appliance is in "stand-by" status

OPERATING CYCLES

Quick blast chilling

This cycle rapidly reduces the temperature of the food from + 90 ° C up to + 3 ° C at the core, in a maximum time of 90 min. The working temperature fluctuates between 0 ° C and + 2 ° C. It can be performed in 3 modes: automatic, with core probe temperature or time. (fig.**8**).

8

Rapid temperature freezing

This cycle reduces the core temperature of the food from + 90 ° C to -18 ° C, in the shortest possible time max 240 min. The working temperature fluctuates between 0 ° C and i + 2 ° C. It can be performed in 3 modes: automatic, with core probe temperature or time. (fig.**9**).

9

HARD blast chilling and SOFT freezing

This cycle allows you to reduce the core temperature of the product from + 90 ° C to + 3 ° C for blast chilling and from + 90 ° C to -18 ° C for freezing, in a time set by you depending on the quantity or type of product to be blast chilled and / or frozen.

It can be performed in 3 modes: automatic, with core probe temperature or time. (fig.**10**).

10

Defrost

For correct operation of the appliance it is necessary to perform a defrost cycle to eliminate the frost formed on the evaporator.

The operation is performed by forced ventilation and must be performed with the door open. The cycle can be interrupted at any time.

During the cycle, the symbols shown in the figure will light up on the display**11**.

11

storage

At the end of each blast chilling or freezing cycle in automatic or with core probe temperature, by time or in hard mode, a storage cycle is automatically started for an indefinite time (it is advisable to run this cycle for a short time before storing the produced in a conservatory or in an emergency).

During the cycle, the symbols shown in the figure will light up on the display**12**.

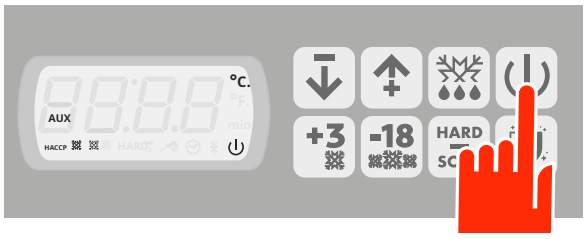
12

OPERATION

ON / OFF

After activating the blast chiller main switch, make sure that the keyboard is not locked and that no procedure is in progress.

Press for 1 sec. the START / STOP button (fig.**13**)the led the display will turn on / off.



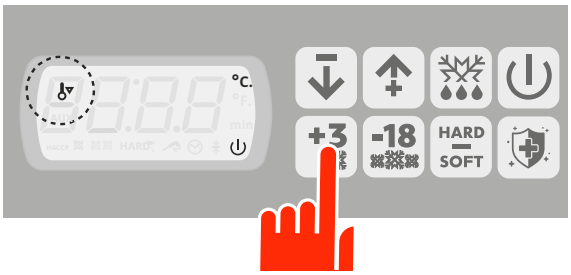
13

START PRE-COOLING

Before introducing the product into the chamber and before each operating cycle, it is advisable to carry out a pre-cooling.

It can be executed if the parameter**r22**is set to 0 in manual mode by pressing the blast chilling button for 2 seconds (fig.**14**)the led on the display flashes. To interrupt the cycle, press again for 1 sec. the "blast chilling" button or start an operating cycle.

To start pre-cooling automatically, switch from the “stand-by” to the “on” state (ie switch on the device).



14

KILLING AND STORAGE

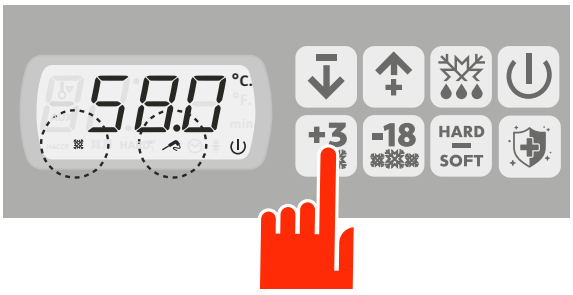
The temperature-controlled blast chilling and storage cycle is made up of two phases: blast chilling and storage. At the end of the blast chilling, the device automatically switches to conservation.

- STARTING IN AUTOMATIC MODE

To start the cycle, press the button (fig. +3 "Killing" **15**), the LEDs and flash on the display.

The test to verify the correct insertion of the probe into the core of the product starts, after a few seconds if the test is correct the cycle starts.

During the cycle the LEDs remain on.



15

- STARTING WITH CORE PROBE TEMPERATURE

To start the cycle, press the button +3 "Killing" (fig.**16**), the LEDs and flash on the display.

Using the keys you can change the temperature at the end of the cycle (+ 3 ° C). Insert the probe into the product.

Press the key to start the blast chilling cycle, the LEDs and remain on after starting.

The test to verify the correct insertion of the probe into the core of the product starts, after a few seconds if the test is correct the cycle continues otherwise a timed cycle will be started.

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

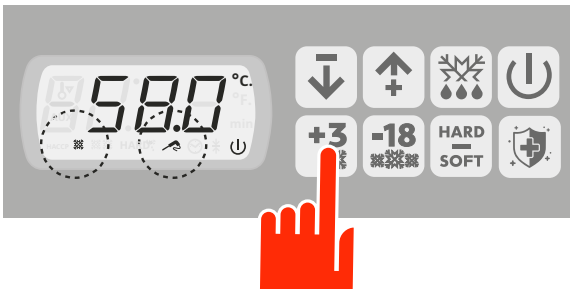
By pressing the key +3 the temperature of the cell. When the set temperature is reached, the cycle ends and storage and the indicator light are started on the display remains on (fig.**16**).

The buzzer emits an intermittent sound, to silence it, press any key.

NB If the temperature of the product**does not reach**the set value within the maximum duration established, from parameter**r5**, the cycle continues. The led on the display flashes and the buzzer emits an intermittent sound.

The blast chilling cycle ends automatically when the product temperature drops below the set value and then starts the conservation cycle.

Press the button to conclude the cycle of storage.



16

- STARTING THE TIME CYCLE

Press the LED button 2 TIMES and the "Blast chilling" (fig.**17**), i display flashes.

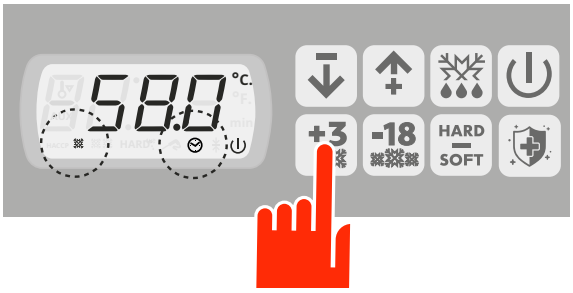
The display shows the cycle time, using the keys the cycle time can be changed. Press the button to start the blast chilling cycle,

the LEDs and remain on after starting. When the set time is reached, the cycle ends automatically and storage starts.

tion and the spy on the display remains on (fig.**17**).

The buzzer emits an intermittent sound, to silence it, press any key.

Press the button to conclude the cycle of storage.



17

CHILLING HARD E STORAGE

- STARTING IN AUTOMATIC MODE

To start the cycle, press the and "Killing" LEDs button flash on the display.

To start the hard cycle, press the button (fig. "Hard / soft" **18**), the led**HARD**flashes on the display.

The test to verify the correct insertion of the probe into the core of the product starts, after a few seconds if the test is correct the cycle starts.

During the cycle the le , And**HARD**remain on.

- STARTING WITH CORE PROBE TEMPERATURE

To start the cycle, press the button "Killing" and then the key "Hard / soft" (fig.**18**), the l , and **HARD**flash on the display.

Using the keys you can change the temperature at the end of the cycle (+ 3 ° C). Insert the probe into the product.

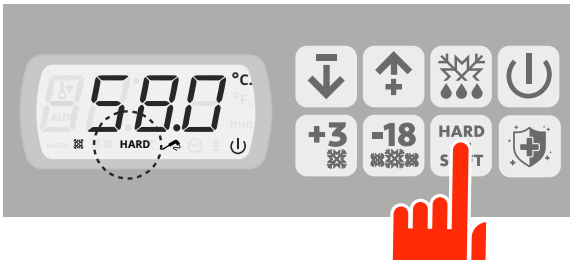
Press the button to start the blast chilling cycle, the le , and **HARD**remain on after starting - chin.

The test to verify the correct insertion of the probe into the core of the product starts, after a few seconds if the test is correct the cycle continues otherwise a timed cycle will be started.

By pressing the key the temperature of the cell.

When the set temperature is reached, the cycle ends and storage is started and the indicator light on the display stays on. The buzzer emits an intermittent sound, to silence it, press any key.

Press the button to end the conservation cycle.



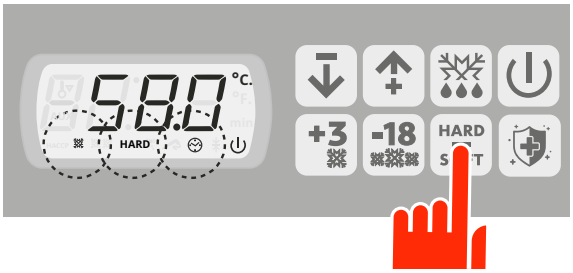
18

- STARTING THE TIME CYCLE

Press the button TWICE and then the key (fig.**19**), i led, and **HARD**flash on the display.

The display shows the cycle time, using the keys the cycle time can be changed.

Press the button to start the blast chilling cycle, i led, and **HARD**remain on after starting.



19

When the set time is reached, the cycle ends automatically and storage and storage are started

indicator light on the display stays on.

The buzzer emits an intermittent sound, to silence it, press any key.

Press the button to end the conservation cycle.

FREEZING AND STORAGE

The freezing and storage cycle is made up of two phases: freezing and storage.

At the end of the freezing process, the device automatically switches to conservation.

Before setting up a cycle check that:

- the machine is switched on

- the keyboard is not locked

- no procedure is in progress.

- STARTING IN AUTOMATIC MODE

To start the cycle, press the button -18 "Freezing" (fig.**20**), the LEDs , , And**HARD**on the display flashes peg.

The test to verify the correct insertion of the probe into the core of the product starts, after a few seconds if the test is correct the cycle starts.

During the cycle the LEDs remain on.

- STARTING WITH CORE PROBE TEMPERATURE

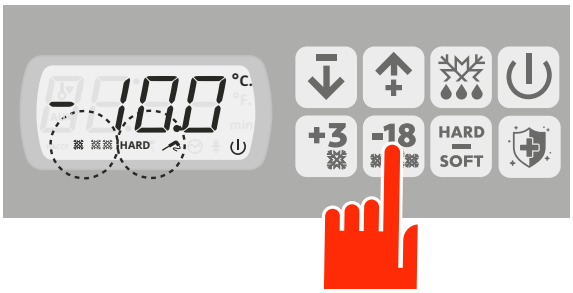
To start the cycle, press the button -18 "Freezing" (fig.**20**), the LEDs , , And**HARD**on the display flash. The display shows the temperature at the end of the cycle.

Using the keys you can change the temperature at the end of the cycle (+ 3 ° C). Insert the probe into the product.

Press the button to start the freezing cycle, the leds , , And**HARD**remain on the display lit after starting.

The test to verify the correct insertion of the probe into the core of the product starts, after a few seconds if the test is correct the cycle continues otherwise a timed cycle will be started.

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



20

By pressing the key +3 the temperature of the cell. When the set temperature is reached, the cycle ends and storage and storage are started

indicator light on the display stays on.

The buzzer emits an intermittent sound, to silence it, press any key.

NB If the temperature of the product**does not reach**the set value within the maximum duration established, from parameter**r5**, the cycle continues. The led on the display flashes and the buzzer emits an intermittent sound.

The freezing cycle ends automatically when the product temperature drops below the set value and the conservation cycle starts.

Press the button to end the conservation cycle.

- STARTING THE TIME CYCLE

Press the LED button -18 "Deep freezing" (fig.**21**), i TWICE, , , And**HARD**flash on the display.

The display shows the cycle time, using the keys the cycle time can be changed.

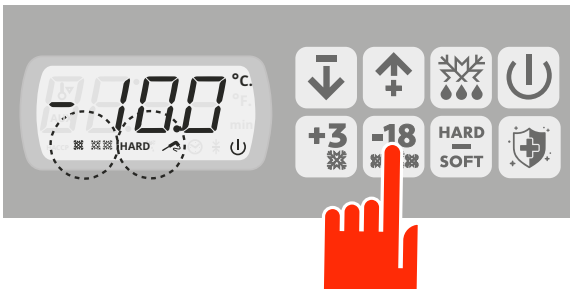
Press the button to start the freezing cycle, the leds , , And**HARD**remain on the display turned on

When the set time is reached, the cycle ends automatically and the

conservation and the spy on the display stays on.

The buzzer emits an intermittent sound, to silence it, press any key.

Press the button to end the conservation cycle.



21

SOFT FREEZING E STORAGE

Carry out the same procedure chosen for "deep freezing" (see paragraph:**Freezing and storage**).

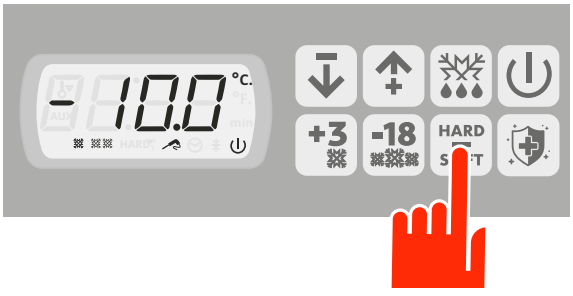
For “Soft” freezing, press the key and the LED HARD SOFT (fig.**22**) **HARD**,on the display will go out.

When the set time is reached, the cycle ends automatically and storage is started

and the spy on the display stays on.

The buzzer emits an intermittent sound, to silence it, press any key.

Press the button to end the conservation cycle.



22

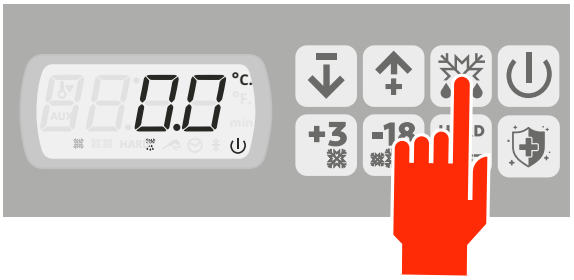
DEBRISING

Before setting up a cycle check that:

- the machine is switched on
- the keyboard is not locked
- no procedure is in progress.

Press the button “Defrost” for about 4 seconds (fig.**23**), the LED lights up on the dispay .

It is performed by forced ventilation with the evaporator fan, with the door open or closed, and it can be interrupted as desired by pressing the key.



23

DISINFECTION

Before setting up a cycle check that:

- the machine is switched on
- the keyboard is locked
- no procedure is in progress.

Press the sanitization button (fig.**24**) for 1s to start the sanitization process. The aux led will light up. The switch-on time is established by means of parameter u6 set by default at 5 min.

Opening the door causes the sanitization to be interrupted.

24

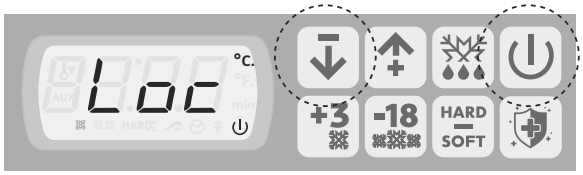
Utility

KEYPAD BLOCK AND UNLOCK

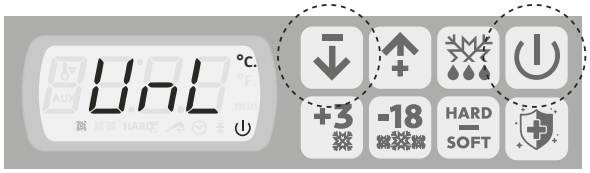
If you want**to block**the keyboard press at the same time briefly and for a few seconds, the message "**Loc** "(Fig.**25**).

If you want**to unlock**the keyboard press at the same time briefly and for a few seconds, the message "**UnL** "(Fig.**26**).

25



26



TIME AND DATE SETTING

Check that the keyboard is not locked.

Press the button for a few seconds the display displays the first available message with the keys search for the message "**rtC**"(Fig.**27**).

27

Press the button appears on the display "**yy**" with two numbers representing the year. The display flashes already the symbol (fig.**28**).

28

With the keys set the current year.

Press the button to store the data and pass when the month is changed, the display shows "**nos**"With two numbers representing the month. (fig.**29**).

29

With the keys set the current month.

Press the button to store the data and pass when the day is changed, the display shows "**dd**"With two numbers representing the days. (fig.**30**).

30

With the keys set the current day.

Press the button to store the data and pass when the time is changed, the display shows "**hh**"With two numbers representing the time which is displayed in 24h format. (fig.**31**).

31

With the keys set the current minutes.

Press the button to store the data and pass when the minutes are changed, the display shows "**nos**"With two numbers representing the minutes. (fig.**32**).

32

With the keys set the current minutes.

Press the button to store the data and terminate-re adjustment. The led it will go out.

DISPLAY OF
TEMPERATURES

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

Press the button for a few seconds the display will select the first available text, use the keys to search for the word "**Pb1**"(Fig.**33**). (Cell probe)

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

33

By pressing the key again and then the key the display will display "**Pb2**"(Product probe) (fig.**34**).

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

34

By pressing the key again and then the key the display will display "**Pb4**"(Condenser probe) (fig.**35**).

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

35

DISPLAY OF
TEMPERATURES

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

Press the button for a few seconds the display will select the first available text, use the keys to search for the word "**CH**"(Fig.**36**). (Cell probe)

Press the button to view the data.

36

ALARMS, INDICATIONS AND ERRORS ON THE DISPLAY

Indicates that the keyboard is locked see paragraph 6.4.1 "Lock / Unlocking the keyboard "

Indicates that the keyboard has been unlocked see paragraph 6.4.1 "Locking / unlocking the keyboard"

Alarm for blast chilling or freezing at temperature not completed within the maximum duration.

Remedies: check the value of parameters r5 and r6 and AA

Minimum temperature alarm.

Solutions: check the cell temperature, or the value of parameters A1 and A2.

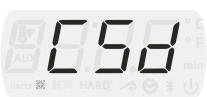
Maximum temperature alarm Solutions: check the cell temperature and the value of parameters A4 and A5.

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

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

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

Condenser overheated alarm. Solutions: check the condenser temperature or check the value of parameter C6.



Compressor blocked alarm.

Solutions: check the condenser temperature or check the value of parameter C7, or disconnect the device power supply and clean the condenser.

Configuration parameter download not completed successfully alarm. Solutions: press and release a key to restore normal display; download the configuration parameters again.

Signature alarm of the configuration parameters contained in EVKEY not coinciding with that of the device. Solutions: disconnect the device from the power supply; check that the signature of the parameters contained in EVKEY coincides with that of the device; download the configuration parameters again.

Configuration parameter upload not completed successfully alarm. Solutions: restore the factory settings; upload the configuration parameters again.

Cell probe error. Remedies:
- Check the value of parameter P0,
- Check probe integrity,
- Check connection
- Check the cell temperature

Core probe error. Remedies:
- Check the value of parameter P0,
- Check probe integrity,
- Check connection
- Check the cell temperature

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

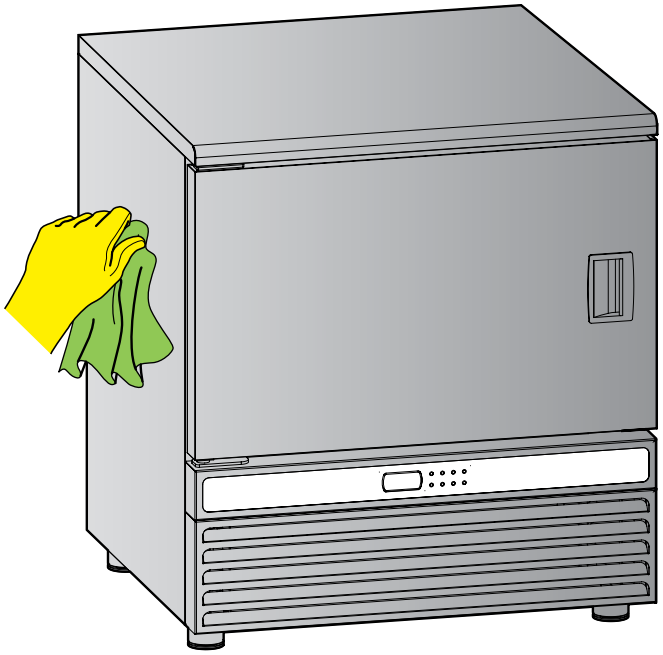
Condenser probe error. Remedies:
- Check the value of parameter P0,
- Check probe integrity,
- Check connection
- Check the cell temperature

Clock error. Remedies:
- set the day and time again

NOTE

Maintenance

ORDINARY MAINTENANCE AND EXTRAORDINARY OF THE MACHINE



GENERAL INFORMATION ON MAINTENANCE

To ensure maximum reliability and functionality of the machine and to avoid dangerous conditions, strictly follow the instructions below.

Furthermore, for safety reasons, all maintenance and cleaning operations described in this chapter must be carried out by qualified personnel equipped with suitable personal protective equipment.

In any case, the following personal protective equipment is required to carry out maintenance and cleaning operations:

ATTENTION!

Before carrying out any cleaning and maintenance operations, it is necessary to disconnect the blast chiller from the electrical power supply.

ATTENTION!

The manufacturer declines all responsibility for any damage to property or persons resulting from improper interventions carried out by unqualified, untrained, inadequately equipped or unauthorized personnel.

ATTENTION!

During the maintenance or cleaning phase, it is essential to indicate the intervention by means of suitable signs. During interventions, only authorized personnel can access the work area.

ATTENTION!

For the disposal of material with high environmental impact, rely on specialized structures.

MAINTENANCE AND CLEANING OF THE BLAST CHILLING CELL

Ordinary maintenance consists of daily cleaning:

- Of all the parts that come into contact with food.
- Parts in stainless steel inside the cell.

In addition, the following should also be checked with a certain periodicity:

- Optimal sealing of the door seal.
- Correct positioning of the door.
- Cleaning the evaporator and the tray support. Good maintenance allows for better performance and longer life of the equipment.

For proper cleaning of the cell:

- Perform a defrost leaving the door open.
- Do not use pressurized water jets to wash the internal and external parts of the blast chiller.
- Do not use metal tools such as screwdrivers to remove ice or accumulated residues; if necessary, use wooden or plastic spatulas.
- Do not use solvents, thinners, preparations containing salts, acids or any other substance that can leave residues that are harmful, toxic or dangerous for human health.

- It is essential to clean the needle probe of the blast chiller daily. Use products for cleaning stainless steel. It is recommended to rinse the surfaces thoroughly after having treated them with the appropriate detergents.
- Do not use solvents, thinners, preparations containing salts, acids or any other substance that can damage the protective oxide layer of stainless steel. To clean stainless steel appliances it is advisable to use specific detergents. Never use detergents containing abrasive powders or bleaches of any kind. A mild solution of water and dishwashing detergent can be used if necessary. Surfaces treated with detergent must always be rinsed with plenty of water and then dried.

- Avoid cleaning the blast chiller surfaces with steel wool or with water containing iron due to rusty pipes as this could trigger corrosion and compromise the oxide layer.
- In case of machine inactivity always leave the door open so that there is always air recirculation.

ATTENTION!

Stainless steel must not remain in contact for prolonged periods with acidic food products or extremely high salt concentrations such as gravies, sauces, etc. because in particular conditions they can damage the protective oxide layer of the steel. In this case it is advisable to rinse the surfaces in question with water.

CLEANING THE CONDENSING UNIT AND THE ELECTRICAL SYSTEM

ATTENTION!

Before carrying out any cleaning and maintenance operations, it is necessary to disconnect the blast chiller from the mains. Also wait until the hot surfaces have cooled down.

ATTENTION!

If you need to replace components, use original spare parts.

ATTENTION!

The manufacturer assumes no responsibility for any damage to property, people or animals due to incorrect or incomplete maintenance.

The most important routine maintenance operations are listed in the blast chiller or condensing unit manual.

The most important operations are listed below:

- Clean the condensing unit once a month by removing dust, grease and any material that may have accumulated in the air suction line. If the environment where the machine has been installed is very dusty, increase the frequency of cleaning.

- Check the power supply terminals, both inside the panel and in the terminal blocks of each service.

- Visually inspect the refrigerant circuit every 4 months, checking for any refrigerant leaks. Such leaks can also be identified by oil stains at the point of the leak.

- Check for refrigerant gas leaks with the frequency indicated in the paragraph.
- If a refrigerant leak is discovered, immediate action is required. Switch off the machine and ventilate the room as the refrigerant in some models is weakly flammable, i.e. classified A2L. Check the normal flow of coolant using the liquid sight glass if present.

  Also check the color of the humidity indicator on the sight glass. The green color indicates the absence of humidity, the yellow color indicates the presence of humidity. If the sight glass is yellow, stop the machine and replace the filter, refrigerant and compressor oil immediately.

- Also check the correct oil level using the sight glass located on the compressor base.

CLEANING THE EVAPORATOR

ATTENTION!

Before carrying out any cleaning and maintenance operations, it is necessary to disconnect the blast chiller from the electrical power supply.

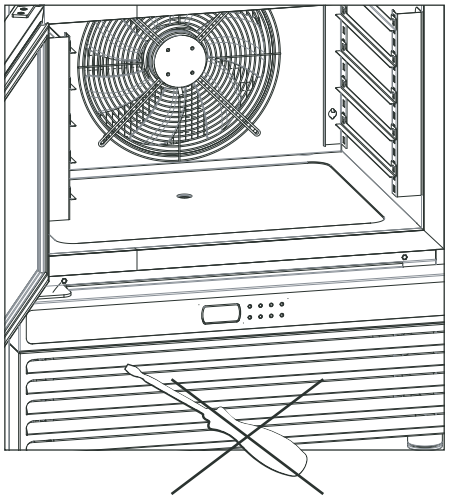
For proper cleaning of the evaporator:

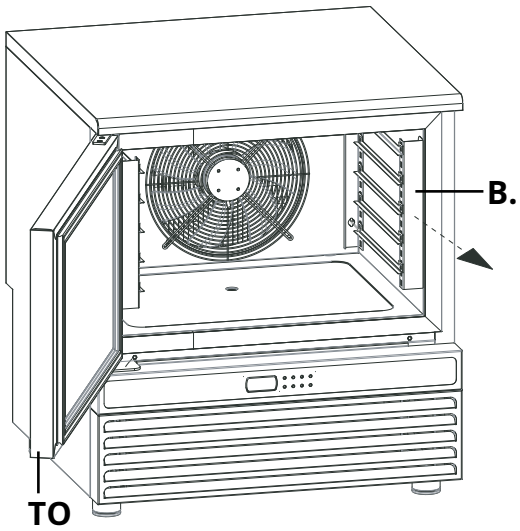
- Perform a defrost leaving the door open.
- Do not use pressurized water jets to wash the evaporating coil as the aluminum fins that make up the finned pack could be damaged.
- Do not use metal tools such as screwdrivers to remove ice or accumulated residues, as this could damage the surface protective layer or the pipes of the evaporating coil.
- Do not use solvents, thinners, preparations containing salts, acids or any other substance that can leave residues that are harmful, toxic or dangerous for human health.
- Do not use aggressive products to clean the evaporating coil.

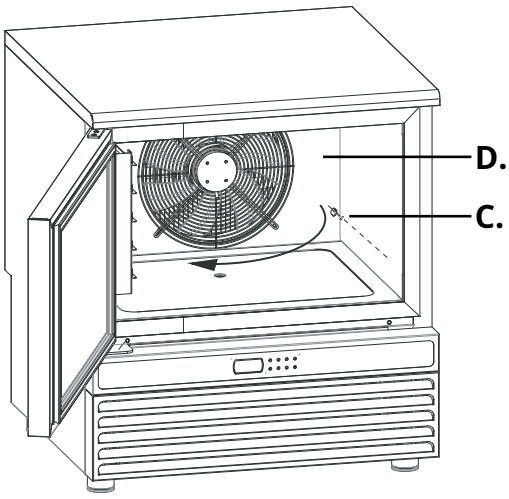
To access the evaporator, open the compartment door. Then unlock the fan door locks and open the fan doors (figure**37)**. When cleaning the evaporator, pay particular attention not to bend the aluminum fins and, if present, also pay attention to the condenser of the sanitizer. The latter could be damaged by impacts.

To access the condenser proceed as follows:

1 - Open the appliance door (**TO**) 2 - Remove the side wire grids (**B.**)
3 - Unscrew the two screws (**C.**) which fix on the right the back panel (**D.**)
4 - Rotate the panel (**D.**) to the left
5 - Clean the condenser (**D.**) with the appropriate tools
6 - After cleaning, reposition the panel (**D.**) fixing it with the appropriate screws and reposition the side grids







37

CLEANING THE CONDENSER

Periodically clean the condenser, taking care to adopt the following safety principles:

• use protective gloves,

• in the presence of dust, protect yourself with a mask and goggles,

• remove the dust from the fins with a vacuum cleaner or brush,

• do not use unsuitable tools

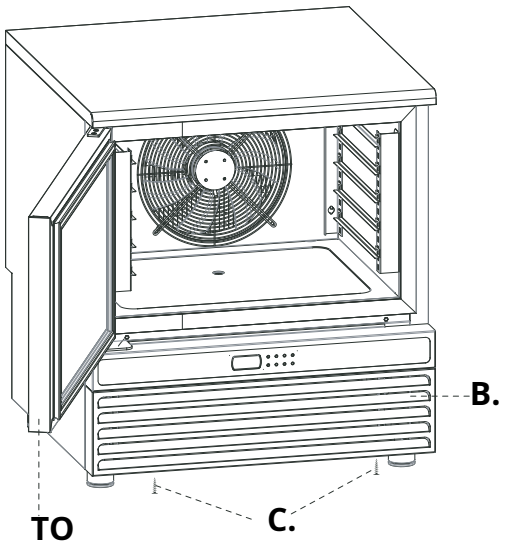
To access the condenser proceed as follows:

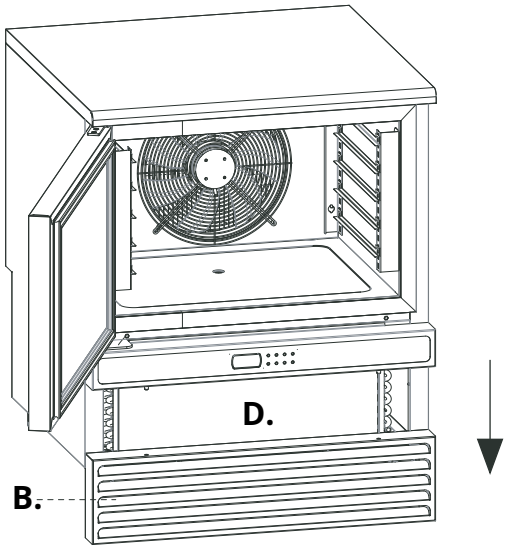
1 - Unscrew the screws (**C.**) that secure the bottom panel (**B.**)

2 - Remove the panel downwards (**B.**)

3 - Clean the condenser (**D.**) with the appropriate tools.

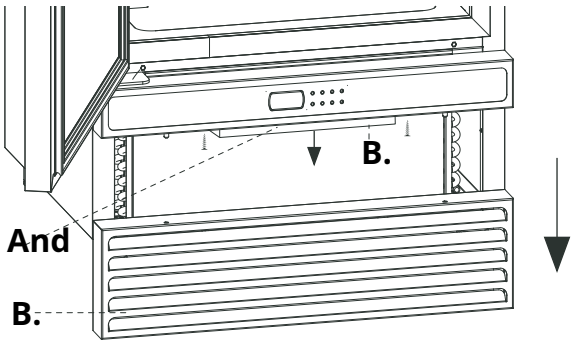
4 - After cleaning, reposition the panel (**B.**) fixing it with the appropriate screws.





IONIZER MAINTENANCE

Ionizer modules require simple maintenance consisting of periodic cleaning of the quartz condensers. Cleaning is important because it guarantees the efficiency of the devices and increases the life of the capacitors. The recommended maintenance intervals depend on the chemical composition of the air and the quantity. The lack of adequate maintenance of the device can cause a functional deterioration. The frequency of cleaning varies according to the applications: from 1 to 3 months, depending on the quality of the treated air. The replacement of the capacitors is recommended after approximately 8,000 hours of continuous operation or when the quartz appears strongly opacified. It is the customer's duty to carry out all maintenance operations on the device. If a malfunction is found,

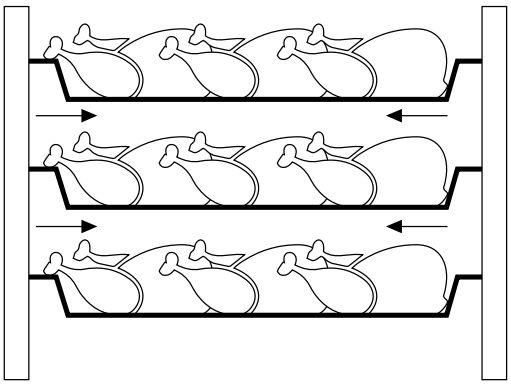


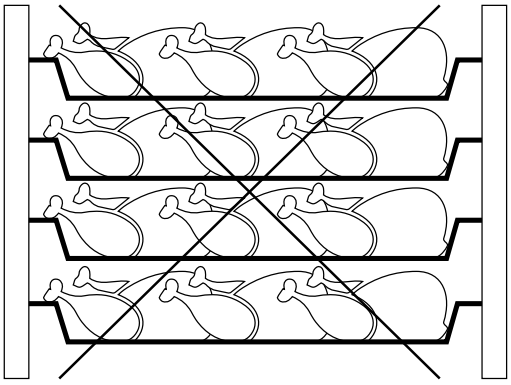
RECOMMENDATIONS FOR USE

In order to ensure correct use of the equipment, it is recommended to adopt the following suggestions:

- Avoid cramming products adhering to the cell walls because they would prevent the circulation of air which guarantees uniformity of the temperature inside the blast chilling cell.
- Do not overload the machine beyond what is established by the manufacturer.
- We recommend the use of suitable trays and containers with a maximum height of 6.5 cm. Ensure sufficient space between the trays for air circulation.
- It is possible to cover the food with protective lids or layers, however the blast chilling and freezing times are longer depending on the type of cover made.
- If possible, place the product that is the most critical in terms of composition or size in the center of the pan.

- When inserting the core probe, be careful not to pierce the product with the needle.





⚠ ATTENTION!

In order to ensure correct use of the equipment, it is advisable to follow the following recommendations:

- Keep the condenser clean.
- Avoid obstructing the suction of the evaporator fans.
- Cover food which, due to its low weight, could be sucked into the fans.
- Avoid as much as possible the number and duration of the blast chiller door opening.
- Normally the blast chiller should not be used as a conservator.
- To avoid bacterial or biological contamination between different foods, it is necessary to clean and disinfect the needle after each use.
- Use protective gloves for hands and a hair cover to handle the products during the freezing and blast chilling phases, as well as to load and unload the product.

⚠ ATTENTION!

Personal protective equipment required when using the machine:

Assistance

If the machine does not work or you notice functional or structural alterations, disconnect it from the power supply.

Contact an assistance center authorized by the manufacturer, communicating:

- the nature of the defect;
- the code and serial number of the appliance which can be found on the data plate of the same.

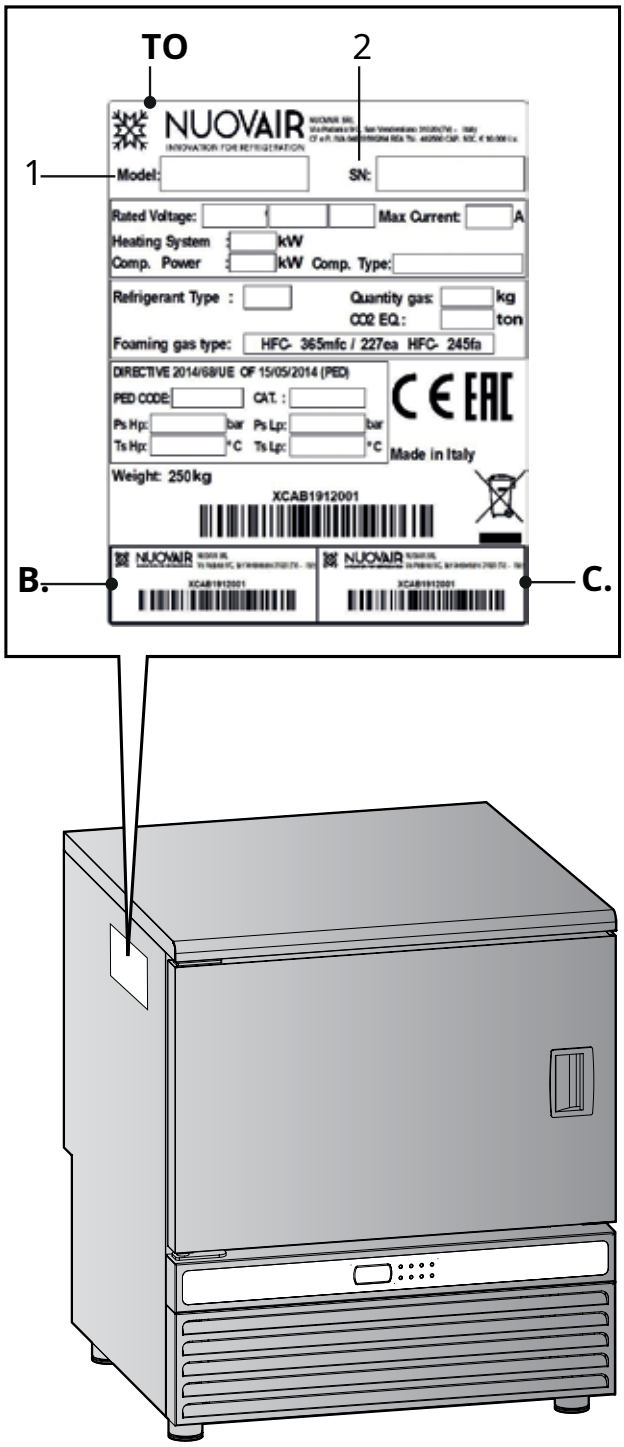
SERIAL PLATE

WHERE IS THE SERIAL PLATE

To identify the machine, a special identification label with CE marking is affixed. In the temperature conservators, the label (A) is positioned on the upper left side in correspondence with the dashboard, the second and third labels (B) (C), which only show the serial number, are positioned respectively under the dashboard and in correspondence of the electrical panel.

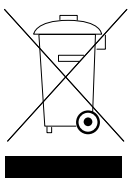
Specifically, the plate shows the data necessary for the assistance center to recognize the machine in its original characteristics:

1. Model.
2. Serial number.



DISPOSAL AT THE END OF LIFE

The demolition and disposal of the machine must be done in compliance with the regulations in force in the country of installation. In implementation of Directives 2011/65 / EC, 2012/19 / EU and 2003/108 / EC, relating to the reduction of the use of hazardous substances in electrical and electronic equipment, as well as the disposal of waste.



The crossed-out bin symbol shown on the appliance or on its packaging indicates that the product at the end of its useful life must be collected separately from other waste.

The di erentiated collection of the present end-of-life equipment is organized and managed by the manufacturer.

The user who wants to get rid of this equipment must therefore contact the manufacturer and follow the system that the latter has adopted to allow the separate collection of the equipment at the end of its life. Adequate di erentiated collection for the subsequent sending of the decommissioned equipment for recycling, treatment and environmentally compatible disposal contributes to avoiding possible negative effects on the environment and health and

it favors the reuse and / or recycling of the materials of which the equipment is composed. Illegal disposal of the product by the owner involves the application of the administrative sanctions provided for by the law.

INFORMATION ON DISPOSAL IN ITALY

In Italy, WEEE equipment must be delivered: to the Collection Centers (also called ecological islands or ecological platforms) or to the dealer where you buy a new machine, who is required to collect them free of charge (“one-on-one” collection).

INFORMATION ON DISPOSAL IN THE COUNTRIES OF THE EUROPEAN UNION

The EU WEEE Equipment Directive has been transposed differently by each country, so if you wish to dispose of this machine we suggest you contact your local authorities or dealer to ask for the correct method of disposal.

CONSTRUCTION MATERIALS

Stainless steel: construction of the

cabinet; Parts in plastic material;

Refrigerant gas: in the refrigerant circuit;

Compressor oil: in the refrigeration circuit;

Copper: electrical system and refrigeration circuit.

FAULTS AND POSSIBLE SOLUTIONS

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

Faults signaled on the display:

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

Description	Possible cause	Possible solution
The refrigeration unit does not start	• Lack of voltage	• Check the power cord • Check the fuses • Check the correct connection of the equipment
	• Other causes	• If the problem persists, contact the service center
The refrigeration unit runs continuously but does not cool sufficiently	• Room too hot • Dirty condenser • Insufficient door tightness • Insufficiemnte quantity of refrigerant gas • Condenser fan stopped • Evaporator fan stopped	• Ventilate the environment • Clean the condenser • Check the seals • Contact the service center • Contact the service center • Contact the service center
The refrigeration unit does not stop	• Probe faulty • Electronic board faulty	• Contact the service center
Presence of ice inside the evaporator		• Carry out a defrost cycle with the door open • If the problem persists, contact the service center
Noisiness of the appliance	• Persistent vibrations	• Check that there is no contact between the equipment and other external or internal objects

Via Padania 9 / C,

31020 San Vendemiano (TV) - Italy

Phone:**+39.0438.489097**

Fax:**+39.0438.488807**