

# **EVOLUTION ROLL-IN AND TUNNEL BLAST CHILLER INSTALLATION MANUAL**



INSTALLATION MANUAL

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

## ENGLISH

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# MULTI-PURPOSE ROLL-IN BLAST CHILLERS



# **1- General instructions**

## 1.1 - GENERAL INFORMATION

The precautions listed in this documentation provide important instructions regarding the safety, operation and servicing of the equipment.

To ensure maximum safety, hygiene and performance, it is recommended to carefully file all documentation near the equipment and to deliver it to technicians and operators responsible for its use.

The choice of materials and manufacture of products complies with EC safety directives. Moreover, complete testing of all machines guarantees the quality of this equipment.

Compliance with the recommendations included in this manual is essential in order to ensure the safety of machine installation/operation and of the user.

The manufacturer, retailer and authorised service centres are available to clarify all doubts regarding the use and installation of the equipment.

The manufacturer reserves the right to make changes without any prior notice in order to make the improvements deemed necessary.

FAILURE TO COMPLY WITH THE PROVIDED INSTRUCTIONS SHALL COMPROMISE THE SAFETY OF THE EQUIPMENT AND RESULT IN THE IMMEDIATE INVALIDATION OF THE WARRANTY TERMS.

ELECTRICAL DEVICES MAY BE HAZARDOUS TO HUMAN HEALTH. CURRENT LAWS AND REGULATIONS MUST BE COMPLIED WITH DURING THE START-UP AND USE OF SAID EQUIPMENT.

ALL INSTALLATION, MAINTENANCE, REGULATION AND REPAIR ACTIVITIES MUST BE CARRIED OUT BY QUALIFIED TECHNICIANS ONLY.

THE HIGH PERFORMANCE AND DURATION OF THE MACHINE DEPEND ON THE CORRECT EXECUTION OF ROUTINE MAINTENANCE, CARRIED OUT EVERY 4 MONTHS BY QUALIFIED TECHNICIANS.

This manual constitutes an integral part of the machine and must therefore be kept for the entire life of the equipment.

The manufacturer is released from all liability in the following circumstances:

- improper use of the machine;
- incorrect installation, not performed according to the procedures listed herein;
- defective power supply;
- serious shortcomings in the proposed maintenance schedule;
- unauthorised modifications or tampering;
- use of non-original spare parts or parts not specifically designed for the model in question;
- total or partial failure to comply with instructions.

## 1.2 - RISK ANALYSIS

### List of hazards:

- Electrical parts
- Sharp parts
- Moving components
- Fans in motion
- Refrigerant gas
- Air flows
- Non-drinking water
- Food contamination
- Inaccessible gas pipes
- Cold environments

### Precautions relative to hazards posed by electrical parts. Risk of electric shock, burns and fire:

- Only qualified technicians are allowed to access electrical parts.
- Do not touch the machine with damp or wet hands and feet.
- Do not use the machine with bare feet.
- Do not insert fingers or objects or tools through the grilles or air inlets.
- Do not pull on the power cord.
- Do not wash the machine with jets of water.
- Before performing maintenance or cleaning operations, disconnect the machine from the electrical power supply from the main switch and disconnect the power cord.
- In the event of flooding in the room where the machine is installed, contact an authorised service centre to perform the necessary repairs before using the machine again.
- When the machine is not being used, disconnect it from the electrical power supply.

### Precautions relative to general hazards. Risk of injury:

- Presence of sharp parts. Use protective gloves when performing any operations on the machine.
- The machine and its components must be safely handled using suitable means, taking care to avoid damage to persons and property.
- Presence of fans in motion. Do not remove the protective grilles.
- Read the ID plate to identify the type of refrigerant gas used in the machine: the gas may be flammable.
- In the event of a flammable gas leak from the machine's cooling circuit, disconnect the power cord, open the windows to ventilate the room and immediately contact the technical service centre.
- In the event of a refrigerant gas leak, do not touch or inhale the leaking gas.
- After installing or repairing the machine, always check for any refrigerant gas leaks.
- Presence of air flows. Do not directly expose people to cold or hot air flows.
- Do not obstruct air inlets or outlets.
- Presence of non-drinking water. Do not drink the water drained by the machine.
- To avoid the contamination of food, the latter must not be brought into direct contact with the machine but rather stored in suitable containers.
- Presence of high or low temperature gas pipes. Before touching the pipes, check their temperature. Use suitable protective gloves.
- Presence of Plexy parts. Do not strike Plexy parts with force.
- In the case of anomalous noise, odours or fumes coming from the machine, disconnect the power cord and contact an authorised service centre.
- Do not install the machine in places directly exposed to salty sea air or direct sunlight.

## 1.3 - POSITIONING AND UNPACKING

The machine must be installed, tested and serviced in total compliance with health and safety laws, traditional regulatory standards and current legislation.

The installer must check for any restrictions imposed by local authorities.

### Avoid:

- Places exposed to direct sunlight.
- Closed areas characterised by high temperatures and poor ventilation.

Remove the protective films, labels and any residual foam from all sides including the floor and roof.

To ensure the correct installation of machines with incorporated condensing unit, check the installation area to ensure that air inlets of the machine or rooms necessary for correct operation are not obstructed. Maintain a minimum distance of 50 cm from the sides where the air inlets and outlets are located.

The machine must be installed and levelled on the floor, so as to guarantee its stability; all other installation solutions must be agreed upon and approved by the manufacturer.

Use suitable lifting means for the installation and levelling of heavy machines.

If the equipment is not levelled, its operation and the flow of condensate may be compromised.

If the machinery is the modular cell type with bottom panel rested on the floor, the bottom panel must be anchored to the floor using suitable brackets (not supplied) and sealed using specific silicone.

If the machine is the modular cell type with bottom panel built into the floor, air circulation must be guaranteed under and along the edges of the flooring to prevent the formation of condensate water.

When handling the machine, it is advisable not to tilt or recline, push or pull the machine in any way whatsoever. When handling a previously assembled cell, it must be dismantled and its components must be handled individually.

Before removing the packaging, make sure it is intact. If not, note any defects on the courier delivery slip before signing it. After removing the packaging, check that the device is intact; if it is damaged, promptly inform the retailer by fax or registered post, and if the damage is such that it compromises the safety of the machine, do not proceed with installation until a qualified technician has inspected the machine.

Packaging elements (plastic bags, cardboard boxes, nails, etc.) must not be left within reach of children and domestic animals insofar as they represent a hazard.

## 1.4 - INTENDED USE

Blast chillers and shock freezers are machines used to rapidly cool food, both to prevent the spread of food bacteria and to maintain the qualities, flavour, aromas and texture of chilled food.

These machines are used in three distinct ways:

- Blast chilling to bring the temperature of the food down to +3°C.
- Shock freezing of food down to -18°C.
- Thawing of food up to max +10°C

Machines defined as ALL IN ONE 20T, 40T and 40TC can also be used for the following purposes:

- Slow cooking at low temperature
- Proving

Bast chiller users can set the cooling or cooking cycle most suited to the food type.

At the end of the cycle, blast chillers and shock freezers can also store food at a constant temperature, but only for a limited time, at most for two days. These machines are not temperature holding devices.

## 1.5 - POWER CONNECTION

400V 3-PHASE VERSIONS OF THE EQUIPMENT ARE SUPPLIED WITHOUT A PLUG FOR CONNECTION TO THE MAINS.

THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY CLAIMS RESULTING FROM CONNECTIONS MADE BY THE USER OR UNQUALIFIED PERSONNEL

- Check the condition of the power cord; if it is damaged, have it immediately replaced by qualified personnel.
- The electrical power supply must be compatible with the instructions reported on the machine's wiring diagram.
- To make the connection, an omnipolar main breaker switch is required, which interrupts all contacts including the neutral, with a distance between open contacts of at least 3 mm with thermal magnetic trip unit and coupled with fuses, which must be dimensioned or calibrated in accordance with the power indicated on the machine plate.
- The main breaker must be located on the power line near the installation and must serve only one device at a time.
- An efficient GROUNDING system must already exist, to which the machine must be connected.
- Adaptors, power boards, incompatible wire gauges or extension cords that do not comply with current regulations, must not be used.
- For details on the electrical operating principle, see the attached machine wiring diagram in the machine's electrical cabinet.
- The power cord must not be pulled or crushed during normal operation or routine maintenance.

**CAUTION :** In order to avoid hazards derived from the automatic resetting of the compressor's thermal protection, the equipment must not be powered by switching equipment such as switches, relays, timers or connected to circuits that are regularly manually opened and closed.

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

## 1.6 - RULES OF USE

- Do not stack foods to be blast chilled and/or shock frozen
- Do not exceed the declared number of kilograms and distribute the product evenly in the trays
- Blast chilling and shock freezing times always refer to products with a maximum thickness of 40 mm
- Maximum allowed load for each shelf: 5 Kg.
- After** After having selected the blast chilling or shock freezing cycle, wait approximately 30 minutes before starting the cycle, so as to allow the machine to properly pre-cool the chamber.
- After having selected the slow cooking cycle, wait approximately 30 minutes before starting the cycle, so as to allow the machine to properly pre-heat the chamber.
- Blast chill or shock freeze only one type of food at a time; different foods have different densities and therefore cycle times may vary.
- The core probe must be correctly positioned at the centre of the largest piece of the product, and the tip must never exit the product and/or touch the tray.
- To prevent the core probe from breaking, do not insert it into foods characterised by a temperature higher than 100°C.
- The core probe must always be cleaned after use to avoid malfunctioning.
- Do not cover foods with a lid or other object; the more isolated the product is, the more time will be needed for blast chilling
- If foods are inserted with a temperature greater than 70°C, the machine may be overloaded, increasing blast chilling times and power consumption.
- Do not obstruct the ventilation air inlets.
- Make sure the drain pipe is free of obstructions and connected to a pipe (not supplied) for the elimination of condensate water
- For climate class 5 equipment, EN 60335-2-89 conformity tests (chapters 10, 11, 13) are performed at an ambient temperature of 43°C ±2°C.
- Machines with incorporated condensing units are not built-in appliances.
- Never store explosive substances in the cell, such as pressurised containers with flammable propellants.

Following is a table indicating the power consumption of the various blast chiller and shock freezer models.

**Blast chilling cycle:** Manual with set Air -25°C

**Shock Freezing cycle:** Manual with set Air -40°C

Model	Power consumption blast chilling kWh/Kg	Power consumption shock freez- ing kWh/Kg	Output blast chilling Kg	Output shock freez- ing Kg	Gas load R404A (GWP 3922) R452A (GWP 2141) Kg	Duration of blast chill- ing cycle (+65°C÷+10°C) min	Duration of shock freezing cycle (+65°C÷-18°C) min
40 Compact	0.0295	0.0342	110	95	3.7	90	270
20 / 4 HP	0.0295	0.0342	110	95	3.5	90	270
40 / 9 HP	0.0271	0.0310	200	175	7	90	270
60 Start / 20HP	0.0302	0.0345	400	350	15	90	270
80 Start / 25HP	0.0299	0.0333	500	450	20	90	270
100 Start / 30HP	0.0308	0.0336	600	550	25	90	270
120 Start / 40HP	0.0320	0.0345	700	650	30	90	270

The gas load for machines with remote condensing unit may vary depending on the dimensions and length of the pipes.

## 1.7- TECHNICAL ASSISTANCE

After-sales technical assistance is guaranteed by the manufacturer through its network of retailers - dealers and installers. To receive technical assistance, contact your authorised retailer and provide the details of your equipment, found on the serial ID plate.

## 1.8- IDENTIFICATION & MARKING

MOD. ....							
CODICE CODE .....				MATR. S/N .....			
ALIMENTAZIONE RATED VOLTAGE	.....	(V)	.....	(Hz)	.....	(W)	..... (A)
SBRINAMENTO (W) DEFROSTING	.....						
REFRIGERANTE COOLING GAS	.....	MASSA (Kg) QUANTITY		.....			
CLASSE CLIMATICA CLIMATIC CLASS	.....					Max Pressure Gas	
GAS ISOLAMENTO FOAMING GAS	.....					.....	
ORDINE CONFIRM NR. ....				ANNO YEAR . . . . .			

Fig. 1 Example of ID plate attached to the machine.

To ensure the proper consultation of this manual, identify the model in your possession by referring to the ID plate. The machine is identified by the following parameters:

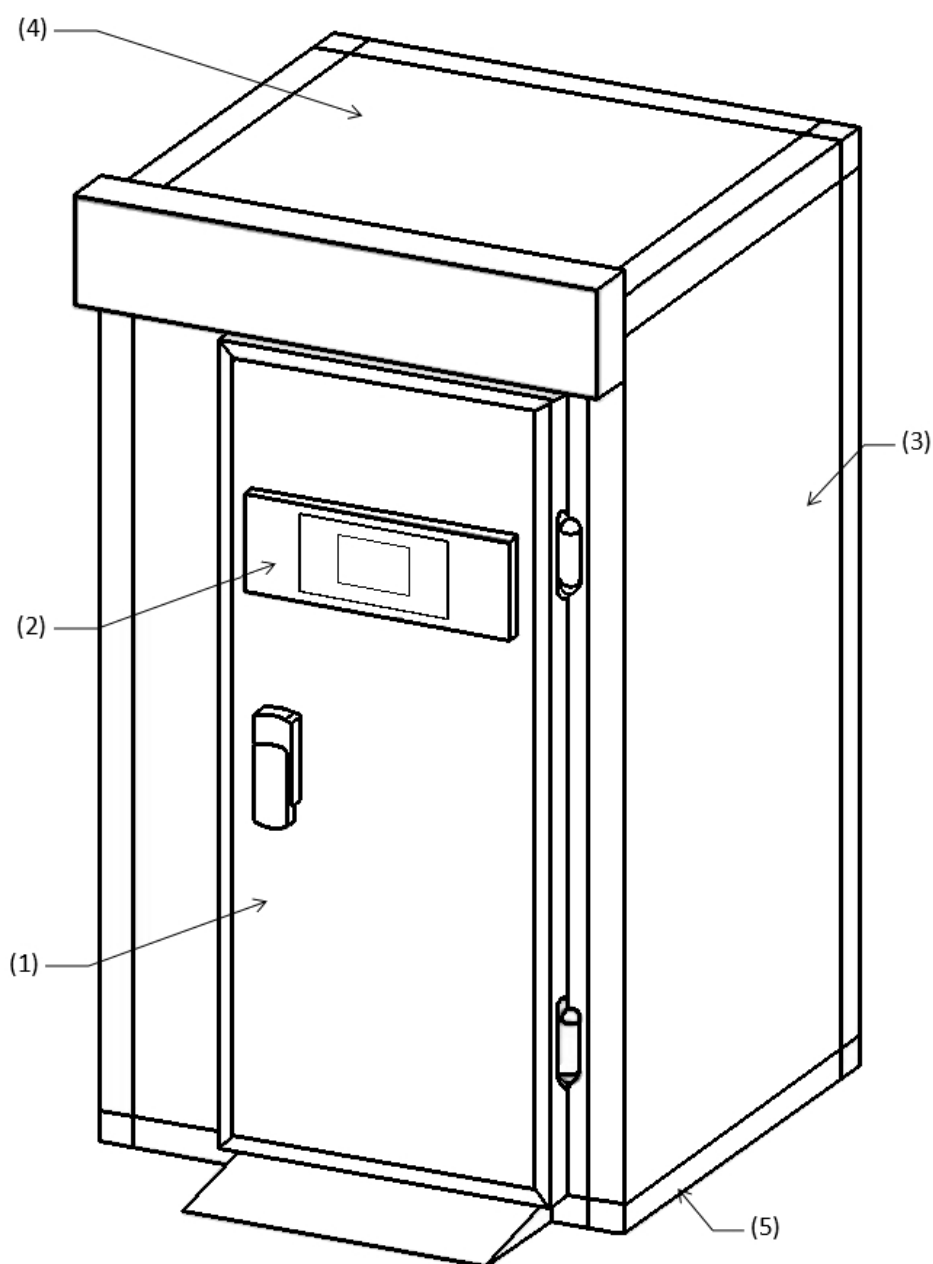
**Serial number**

**Technical specifications**

**Year of manufacture**

Machine installation and use must comply with the contents of the ID plate and data sheet.

## 1.9 - IDENTIFICATION OF PARTS



(1) DOOR	(4) MOTOR COMPARTMENT ( FOR 40T COMPACT ONLY)
(2) CONTROL PANEL	(5) BASE
(3) CHILLER COMPARTMENT	



## 1.10 - CLEANING

DO NOT USE JETS OF PRESSURISED WATER OR STEAM.

### CLEANING THE EXTERNAL UNIT

The external unit must be cleaned with a damp cloth moistened with a water and bicarbonate solution, or other neutral detergents, and dried with a soft cloth.

### CLEANING THE DISPLAY

The display must be cleaned with a clean, soft cloth (free of powders and slag), moistened with water and soap or water and alcohol at a maximum of 10%. Other detergents or dirty and dry cloths may ruin the material. Dry with a soft, clean cloth.

### CLEANING THE INTERNAL COMPARTMENT

Remove the trolleys, trays, grilles and tracks that can be cleaned like the internal compartment, clean with a damp cloth moistened in a water and bicarbonate solution, or other neutral detergents, and dry with a soft cloth.

### CLEANING THE CORE PROBE

Each time the blast chiller is used with the core probe, the latter must be cleaned with a damp sponge moistened with a water and bicarbonate solution.

### CLEANING THE CAPACITOR (MAINTENANCE)

To ensure the machine's correct operation, the capacitor must be kept clean to ensure the free circulation of air. This operation must be performed every 120 days at most. The capacitor must be cleaned with a soft-bristle brush so as to remove all dust and fluff deposited on the capacitor fan blades.

Alternatively, it is preferable to use a vacuum cleaner to prevent the spread of dust into the atmosphere.

In the case of oil deposits, it is recommended to remove them using a brush dipped in alcohol.

## 1.11 - MACHINE DISPOSAL

Machine demolition and disposal must occur in compliance with current regulations in the country of installation, particularly in the case of the refrigerant gas and air compressor lubricant.

Materials used to build the equipment:

Stainless steel: Construction of unit

Parts in plastic: Construction of unit and other components

Refrigerant gas: In cooling circuit

Compressor oil: In cooling circuit

Copper: Electrical system and cooling circuit.



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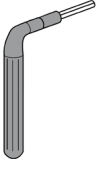












Information for users regarding the correct handling of electrical and electronic waste (WEEE) is provided below:

- WEEE must not be disposed of as urban waste; said waste must be sorted;
- Public or private waste collection systems provided for by local laws must be used for their disposal. At the end of its useful life, the device can also be returned to the distributor if a new, equivalent device is purchased;
- This device may contain hazardous substances: improper use or incorrect disposal may have a negative impact on human health and the environment;
- The symbol (crossed-out wheeled bin) shown on the product and to the side, indicates that the device was released onto the market after 13th August 2005 and must be sorted separately;
- If electrical and electronic waste is incorrectly disposed of, users shall be subject to fines in accordance with current local waste disposal regulations.

## **2 - Necessary equipment and materials**


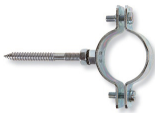






# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

The following equipment is needed to assemble the cell and its relative components:

DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Slotted screwdrivers		Manual tube cutter	
Phillip's screwdriver		Adjustable wrench	
Wrench set		Pipe collar forming tool	
Spirit level		Pipe bending machine	
Screw gun - power drill		L hex key size 8 to secure cell panel closure hooks. (The key, complete with spacers, is supplied in the cell accessories kit)	
Silicone sealant for temperatures -50°C ÷ +85°C		Torque wrench 12-60Nm	
Welding torch		Specific electronic leak detector for gas used to develop the system	
Nitrogen cylinder for pipe washing		Pliers for threaded inserts	
Vacuum pump with pressure gauges		Electrician scissors	
Refrigerant gas (see technical data sheet of cell for gas type)		Digital multimeter	
Polyurethane foam insulation spray		Current clamp	

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

To complete the installation, following is a list of materials not included in the standard supply of components, but which are advisable during assembly:

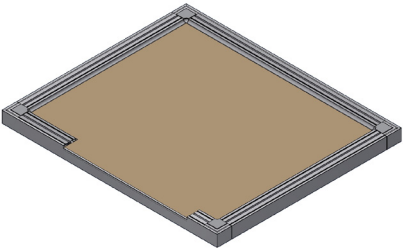


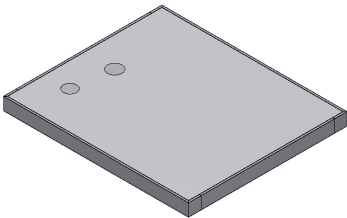







DESCRIPTION	REFERENCE
Copper pipes for delivery, suction and hot gas (the pipe diameter depends on the system being developed, see technical data sheets)***	
Anchors for piping (see diameter of system pipes)	
Flexible anti-condensation insulation for piping ***	
Electrical cables (see wiring diagram for cable sizes and types) ***	
Cable glands with anchors	
Plates and screws to anchor cell bottom to the floor	
Condensate drain pipe extension	
Various sized Velcro strips	

\*\*\* the indicated materials can be purchased at the time of placing the order in the pipe kit and cable kit.

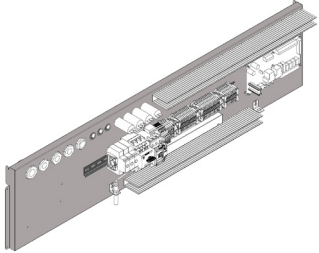
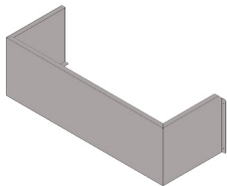
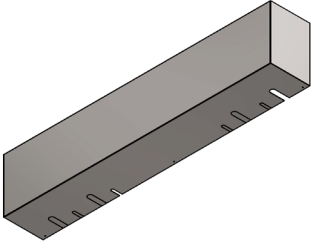
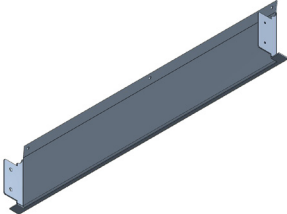
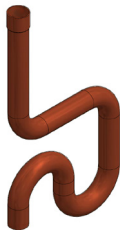


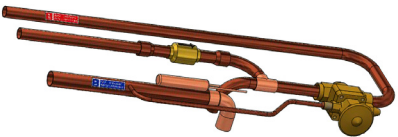

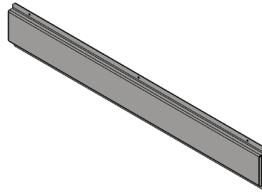
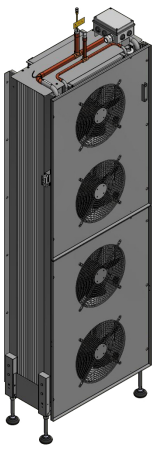

## **3 - Cell box components**

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Following is a list of the main components supplied for the assembly of the 20T and 40T cells:

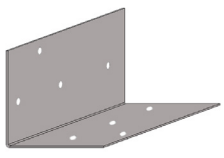
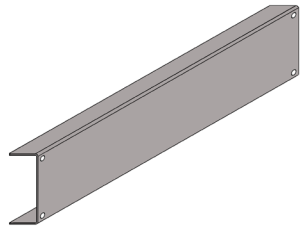
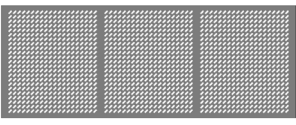
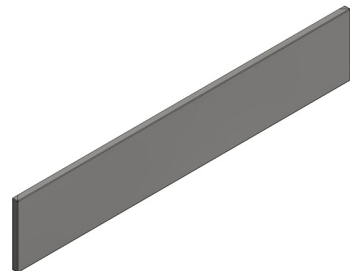
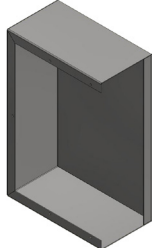
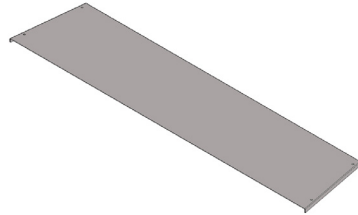
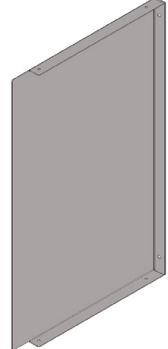

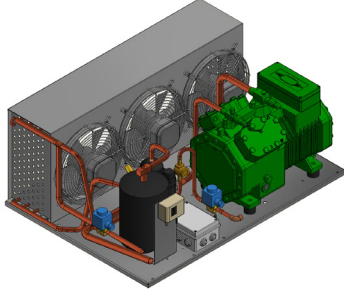
DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Bottom panel (floor)		Vertical corner profiles (4 pieces)	
Door panel with handle and hinges		Top panel with compensation valve (roof)	
Rear panel		L joints (16 pieces)	
Side panel (EVAPORATOR SIDE)		Star joints (16 pieces)	
Side panel		Cap to plug holes inside cell	
		Food probe kit	

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Electrical panel		Evaporator top covering plate	
Electrical panel covering panel		Doorstep plate	
Gas return pipe extension with trap		Ramp	
Gas delivery pipe extension		Welded pipes kit with expansion valve	
Deflectors evaporator side		Internal cell buffers	
Evaporator assembly		Electrical panel and display with support assembly	

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS



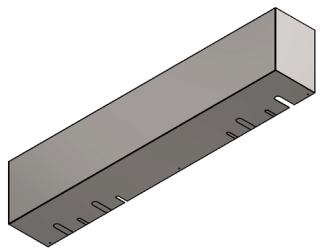
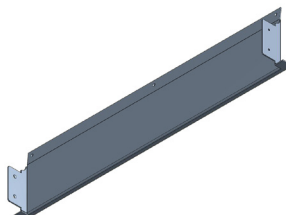

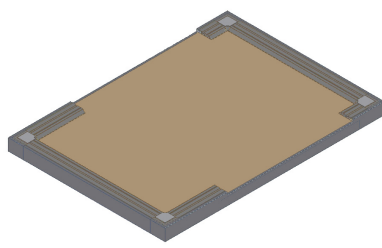
Following is a list of the additional components for the 40T COMPACT cell:

DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Cell fixing plates		Rear guard plate	
Side guard plates (2 pcs)		Front guard plate	
Electrical panel side plate		Capacitor air conveyor	
Capacitor side conveyor plates		Electrical panel components support plate	
Condensing unit		Condensing unit fixing kit	M5 screws and rivets kit

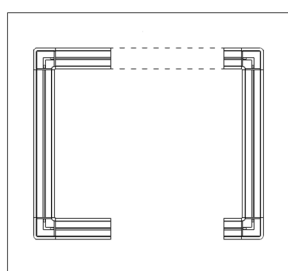




# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

It is also possible to order tunnel cells, that is, with two doors. In this case the additional components are:

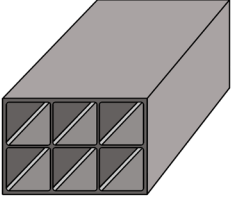
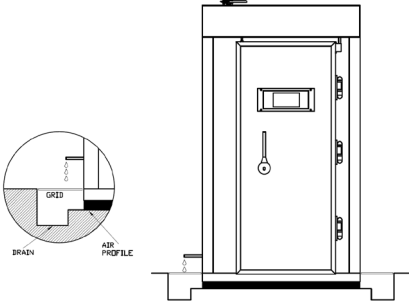
DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Blind electrical panel		Additional ramp	
Additional electrical panel covering panel		Doorstep plate	
Second door panel (supplied instead of the rear panel)		Bottom panel (floor) with double door opening	

If necessary, it is also possible to order cells without floor (we remind you that in these cases, the cells can only be used for blast chilling cycles and not for shock freezing and cooking cycles). In this case, the bottom panel (floor and platform) is not supplied, but rather the following components:

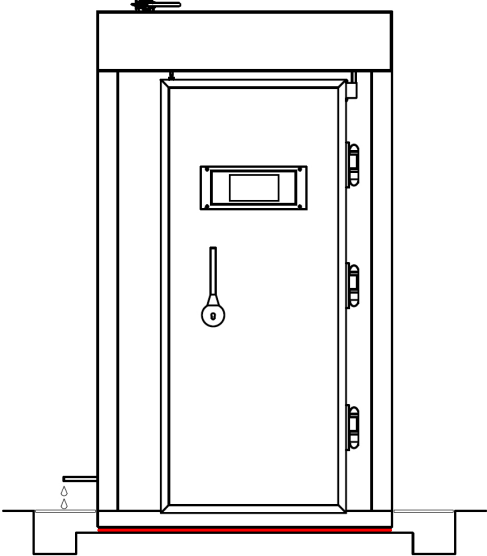
DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Profile positioning jig to be printed in 1:1 scale		Door terminals for panel fixing profiles	
U profiles for panel fixing			

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Cells can also be installed with a built-in floor, flush with the flooring. To guarantee the insulation of the cell floor and proper ventilation, during the order phase it is possible to purchase aeration profiles. For installations with built-in floor, the cell access ramp/s will not be supplied. Moreover, it is advisable to provide condensate water drainage channels around the cell. These channels will then be covered with grilles. See indicative diagram.

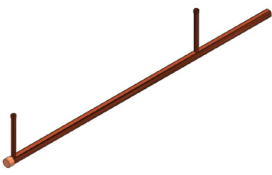
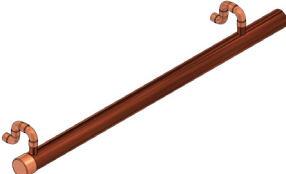
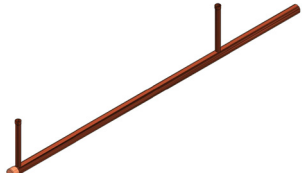
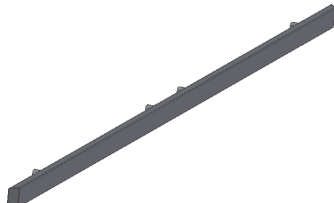
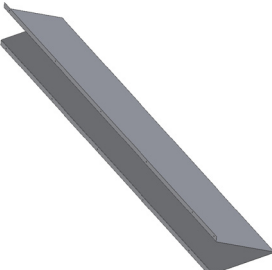

DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Panels for floor ventilation		Diagram for installation with built-in floor	

For installations without ventilation panels, we remind you that it is essential to silicone the edges of the cell floor to prevent the formation of condensate.

DESCRIPTION	REFERENCE
Diagram for installation with built-in floor without ventilation panels	

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Following is a list of the additional components for 60-80-100 and 120 tray cells:

DESCRIPTION	REFERENCE	DESCRIPTION	REFERENCE
Gas manifold		Return manifold	
Hot gas manifold		Trolley stops wall side	
Central deflector plate		Trolley stops wall side	

As the cells are modular, the number of side, roof and floor panels may vary depending on the model. The number of evaporators, manifolds and expansion valves also varies depending on the model.

The images in the tables from pg.15 to pg.23 are purely indicative.

# **4 - Cell assembly 20-40T**

## 4.1 - SIDE PANEL IDENTIFICATION

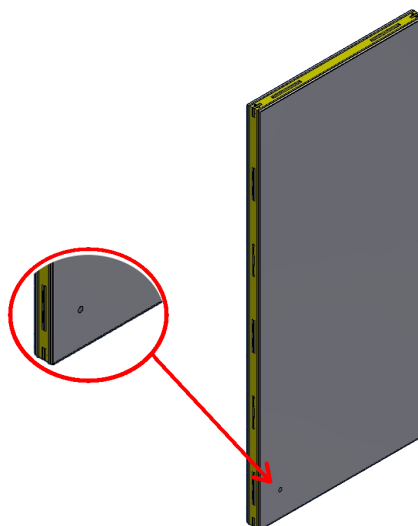
After having unpacked the cell box, proceed to identify the side panels and direction of installation:

The side panels are differentiated by the presence of a hole through which the evaporator condensate water drain pipe passes.

Generally, except in the case of special products, the panel with the hole must be installed on the left with respect to the door fitted with the display.



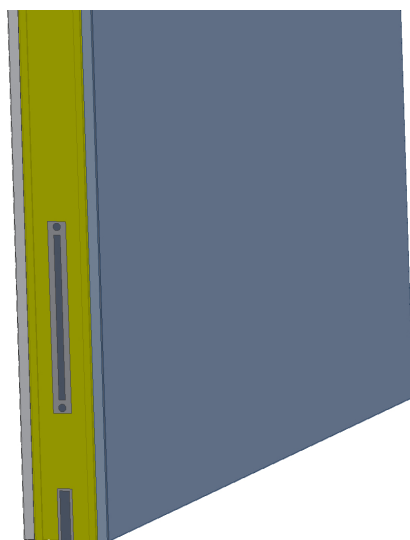
Right panel



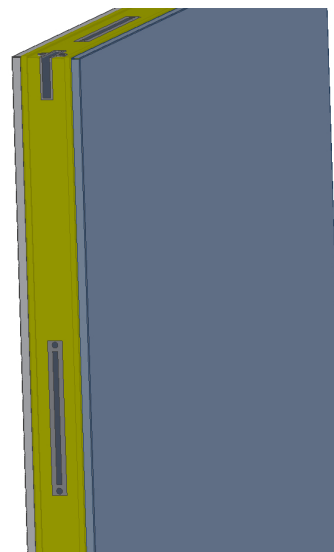
Left panel with hole for drain pipe

### N.B. THE DRAIN PIPE MUST ALWAYS BE POSITIONED FACING THE FLOOR OF THE CELL

To determine the orientation of the side panels, refer to the position of the hooks located on the shoulder of the panels. In the lower part, the distance between the edge of the panel and the hook is less with respect to the top hook:



Bottom hook



Top hook

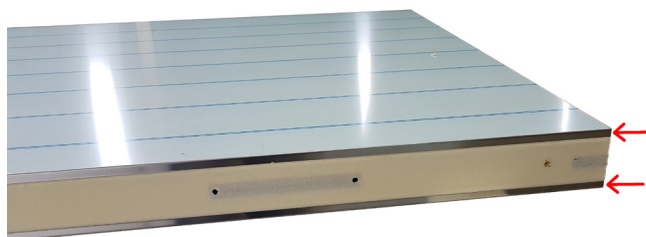
## 4.2 - PANEL PREPARATION

All panels needed to assemble the cells are supplied wrapped in protective film.

To prepare the panels for installation, the protective film must be removed from the edges, which will end up in contact with each other and with the other panels. This is because the joints need to be siliconed to guarantee the proper sealing of the panels, and moreover, it would be impossible to remove the film once the panels are assembled.

Moreover, there may be labels on some of the panels; these must be removed as well as any glue or foam residue in the joints.

Do not remove the protective film from the walls, to prevent any damage to the finish during assembly.



Remove the film as indicated by the arrows

Moreover, on all side panels, to facilitate insertion into the guides and alignment between the various panels, “star” and “L” joints are supplied.



The L joints are to be inserted in the bottom and top corners of the panels, the star joints in the slots on the side edges of the panels (2 per side):



“L” joint

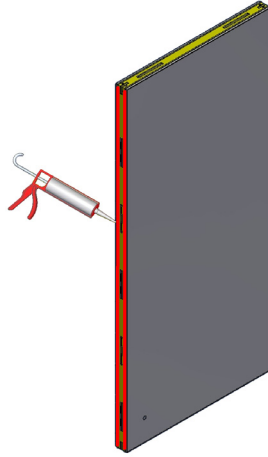


“Star” joint

## 4.3 - INSTALLATION OF CELL COMPONENTS

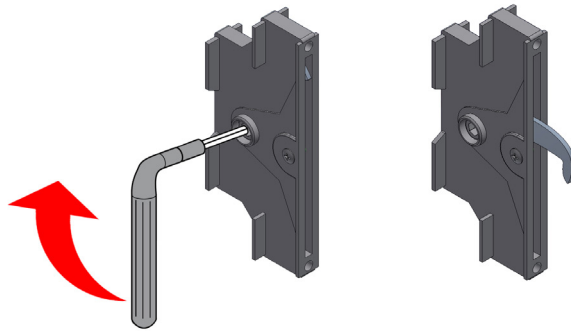
1 - The first assembly operations involve the insertion of both corner profiles on the left side panel (panel with hole for evaporator condensate water drainage).

Apply the silicone on both vertical edges of the panel:

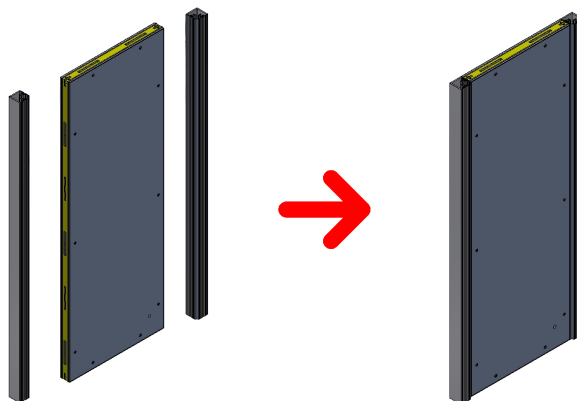


Position the corner profiles with the rounded edge facing the inside of the cell and join the corners, making sure both the L and star joints are properly inserted in their housing.

To connect the components to each other, the L hex key supplied with the panels must be used. The holes to rotate the hooks and secure the panels are found on the inner side of the vertical panel. Insert the key and rotate by 90° to activate the cam:



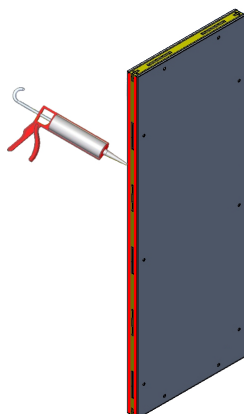
Following is the left panel assembled with both corner profiles:



## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

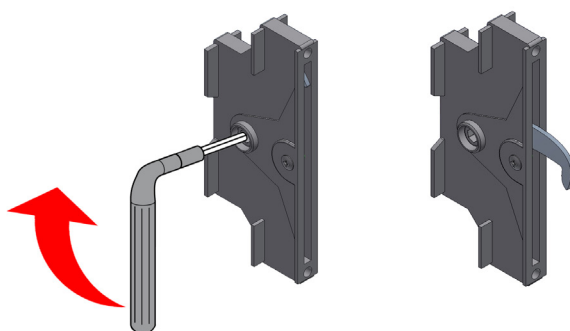
2 - Proceed to install the rear corner profile only (left from inner side) of the right side panel.

Apply the silicone on the vertical edge of the panel:

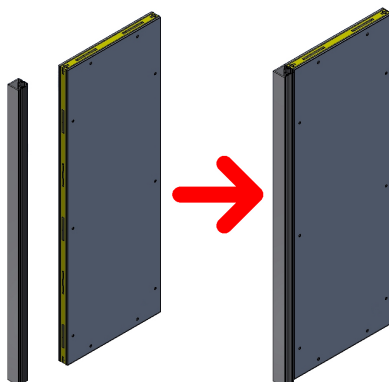


Position the corner with the rounded edge facing the inside of the cell and connect it to the panel, making sure both the L and star joints are properly inserted in their housing.

To connect the components to each other, the L hex key supplied with the panels must be used. The holes to rotate the hooks and secure the panels are found on the inner side of the vertical panel. Insert the key and rotate by 90° to activate the cam:



Following is the right panel assembled with the corner profile:



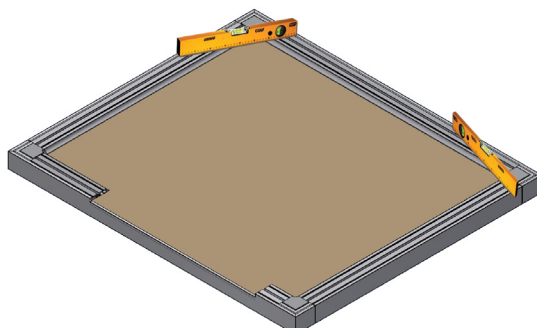


## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

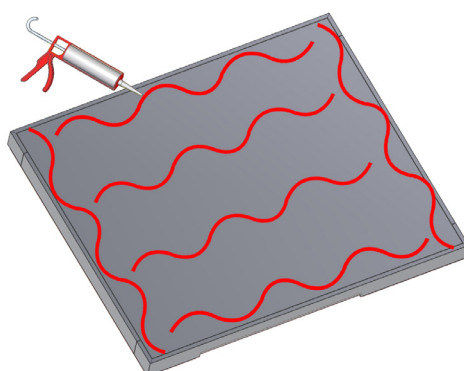
3 - Position the floor panel in the area where the cell will be installed.

Remove all the protective film from the external surfaces of the panel.

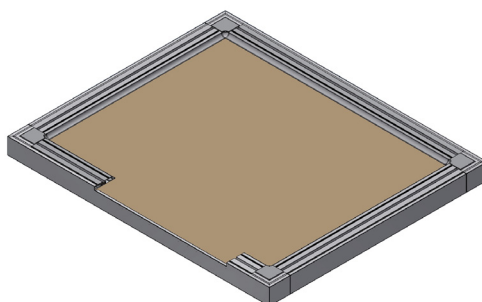
Make sure the floor is levelled, otherwise level it by inserting shims under the floor panel.



Apply the silicone on the bottom of the floor panel, this is needed to make sure there are no water infiltrations under the panel. Moreover, the silicone will ensure improved insulation of the panel against the floor itself:



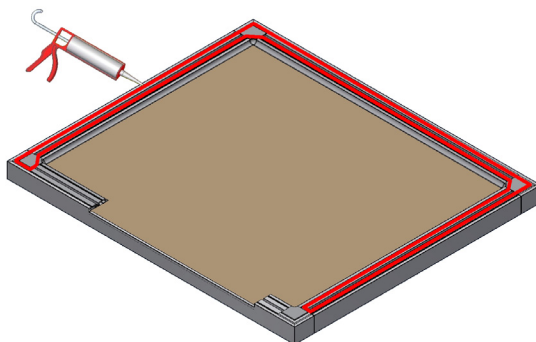
Turn the floor panel over and then lay it in the position where the cell will be installed.



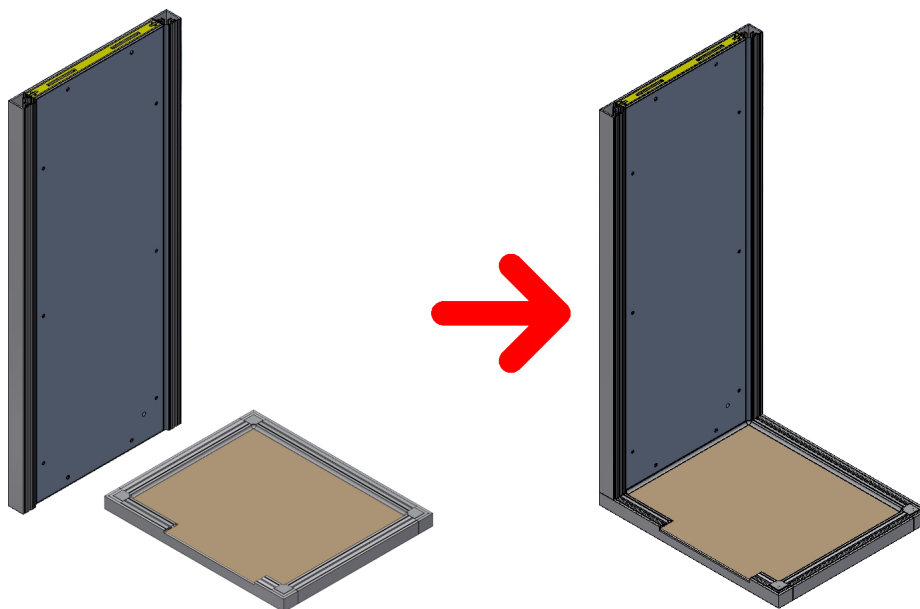
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

4 - The next step explains how to position the side panels and the rear panel for the cell structure.

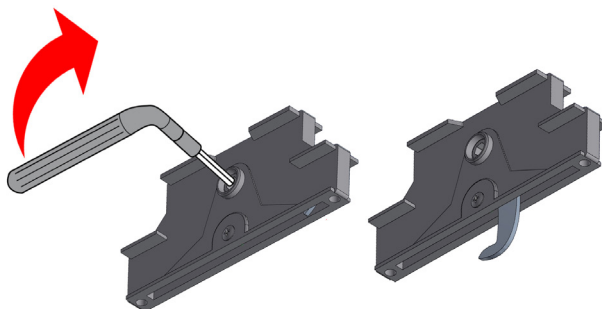
Apply the silicone on the contact areas of the left, rear and right panels



Lay the left panel so that the L and star joints match up in the slot along the entire median perimeter:



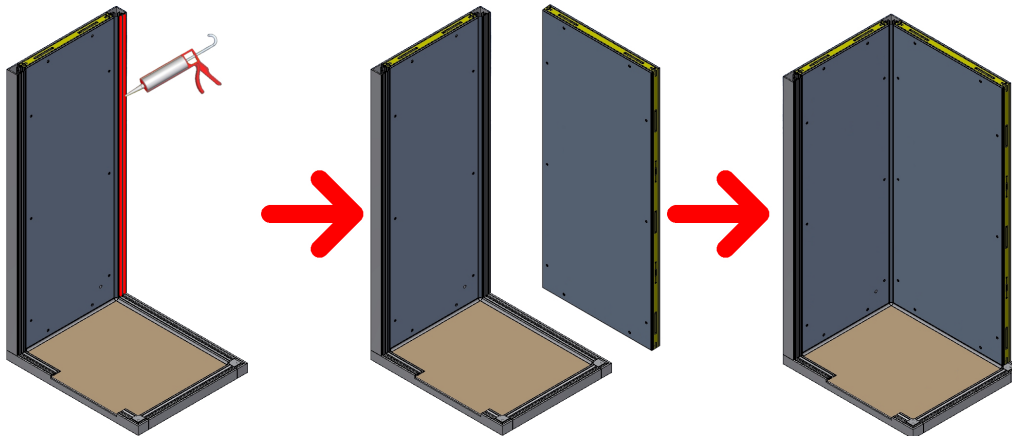
To connect the components to each other, the L hex key supplied with the panels must be used. The holes to rotate the hooks and secure the panels are found on the inner side of the vertical panel, in the bottom part. Insert the key and rotate by 90° to activate the cam:



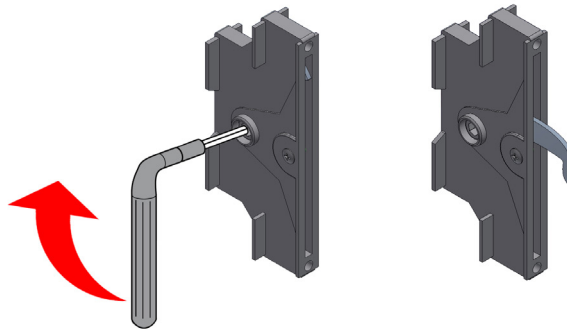
N.B. Lift the PVC covering and close the holes of the hooks that have just been tightened using the caps supplied with the cell components.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

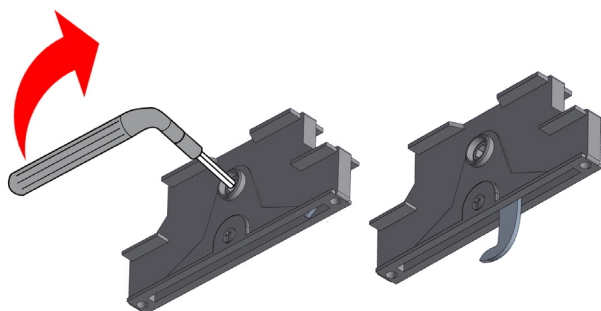
Apply the silicone along the vertical edge of the rear corner profile, position the rear panel alongside the corner profile and interconnect the L and star joints on both the vertical side and the bottom side on the floor panel:



To connect the components to each other, the L hex key supplied with the panels must be used. Secure the two vertical panels to each other first, inserting the key and rotating it by 90° to activate the cam:



After having secured the two vertical panels to each other, secure the rear panel also to the floor. Always use the L key:

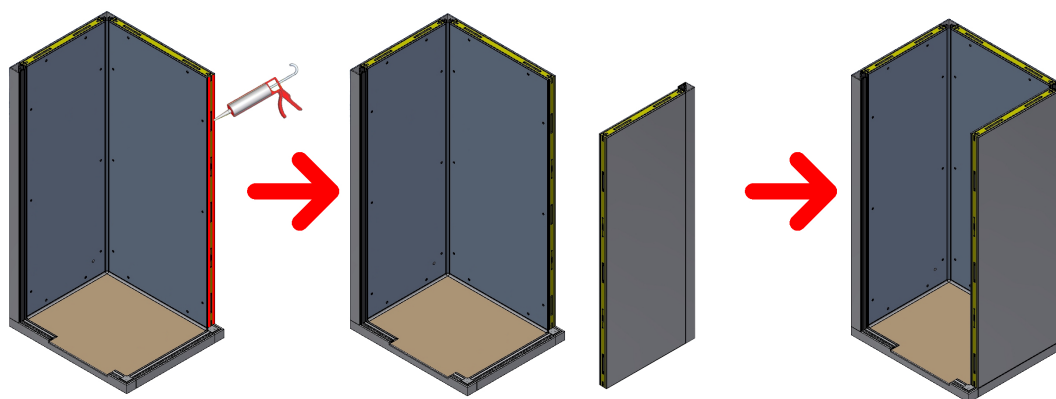


After having tightened all the hooks, make sure the panels are properly adhered and correctly aligned with the outer edge of the floor. If not, loosen the hooks and correct the positioning of the panels, otherwise any misalignments will complicate the closure of the cell.

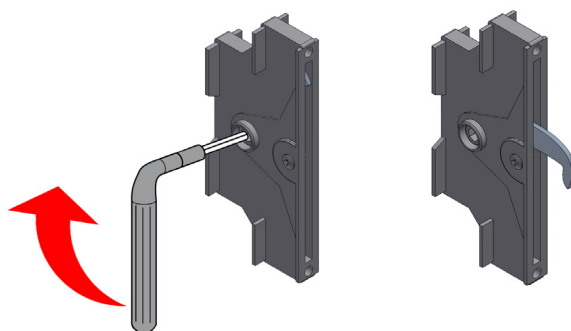
N.B. Lift the PVC covering and close the holes of the hooks that have just been tightened using the caps supplied with the cell components.

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

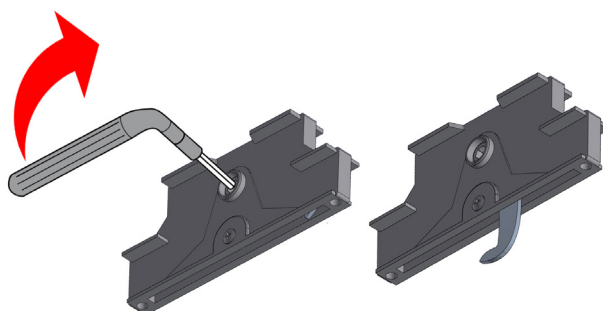
Apply the silicone along the vertical edge of the rear panel, position the right side panel and interconnect the L and star joints on both the vertical side and bottom side on the floor:



To connect the components to each other, the L hex key supplied with the panels must be used. Secure the two vertical panels to each other first, inserting the key and rotating it by 90° to activate the cam:



After having secured the two vertical panels to each other, secure the rear panel also to the floor. Always use the L key:



After having tightened all the hooks, make sure the panels are properly adhered and correctly aligned with the outer edge of the floor. If not, loosen the hooks and correct the positioning of the panels, otherwise any misalignments will complicate the closure of the cell.

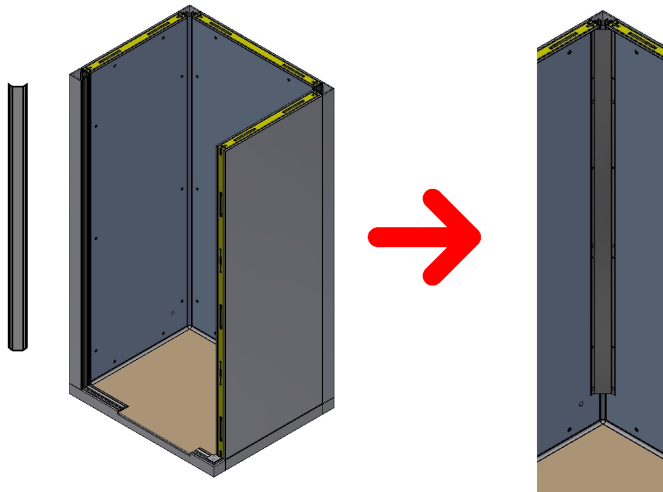
N.B. Lift the PVC covering and close the holes of the hooks that have just been tightened using the caps supplied with the cell components.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

5 - Once the three walls of the cell have been assembled, the right deflector can be installed and the evaporator assembly can be inserted inside the cell.

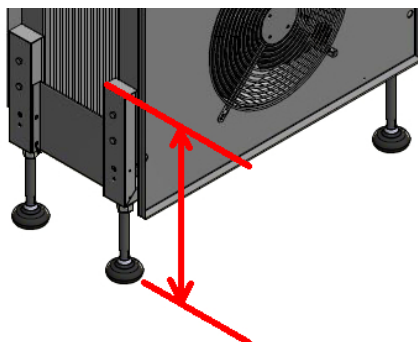
**REMOVE THE PROTECTIVE FILM FROM THE LEFT AND REAR PANELS.**

The deflectors are used to ensure the air flow from the evaporator. Align the upper edge of the deflector with the upper edge of the panels and secure it with at least 6 self-tapping screws, in the inner right corner.

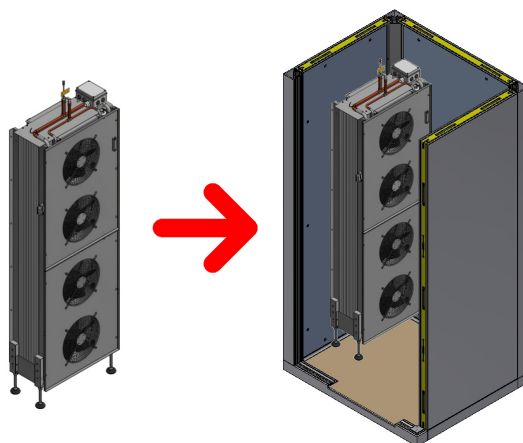


N.B. Lift the PVC covering and close the holes of the hooks that have just been tightened using the caps supplied with the cell components.

Take the evaporator assembly, from its extended position, unscrew the legs and extend them to a total length of **395 mm (+0;-5 mm)**. This measurement must be inclusive of the leg cap and the end of the leg support itself:



The measurement refers to the evaporator for 20T cells, for other cells see the specific chapter. Once all four legs have been adjusted, position the evaporator alongside the left and rear panel.

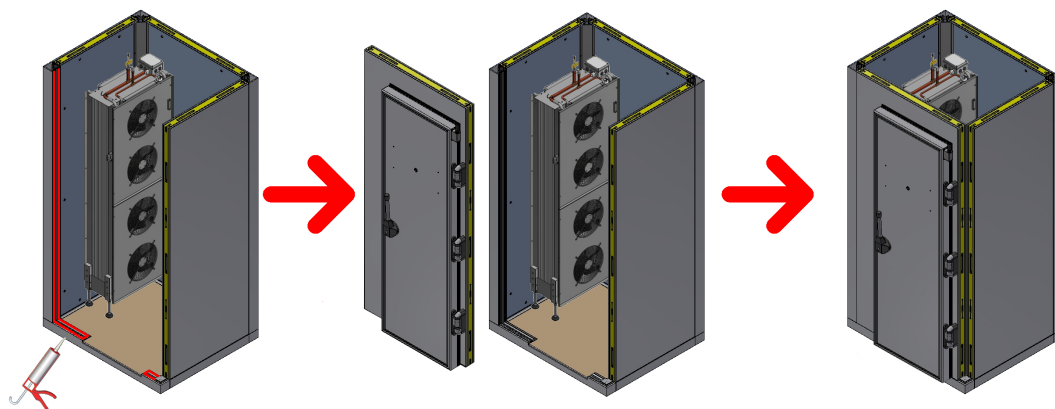


## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

6 - The door panel can now be positioned.

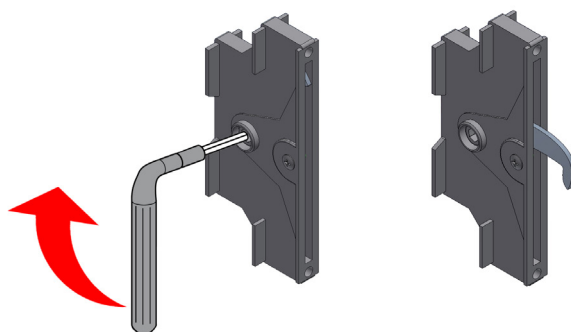
In order to guarantee the rigidity of the entire panel, it is advisable to move the panel with the door closed and to open the door only once assembly is complete.

Apply the silicone along the vertical profile and on the bottom edges, position the door panel and interconnect the L and star joints on both the vertical side and bottom side on the floor:

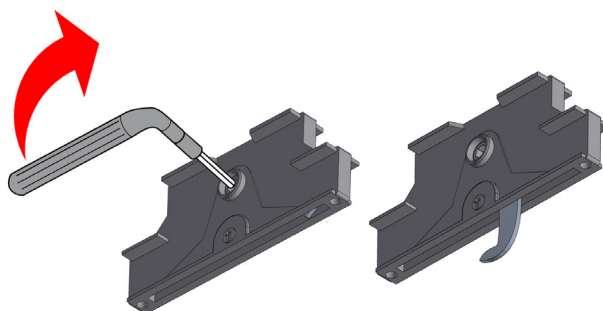


To connect the components to each other, the L hex key supplied with the panels must be used.

Secure the vertical panel to the corner upright first, inserting the key and rotating it by 90° to activate the cam:



After having secured the vertical panel, secure the door panel also to the floor. Always use the L key:



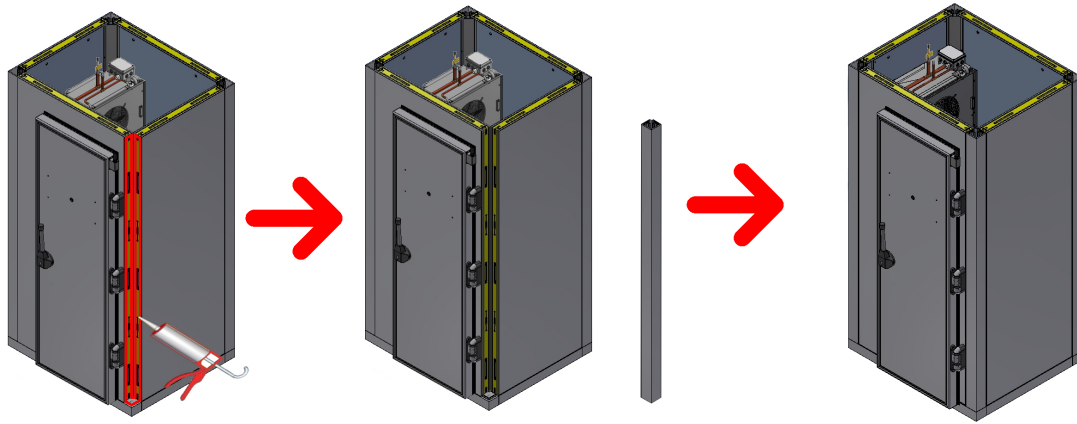
After having tightened all the hooks, make sure the panels are properly adhered and correctly aligned with the outer edge of the floor. If not, loosen the hooks and correct the positioning of the panels, otherwise any misalignments will complicate the closure of the cell.

N.B. Lift the PVC covering and close the holes of the hooks that have just been tightened using the caps supplied with the cell components.

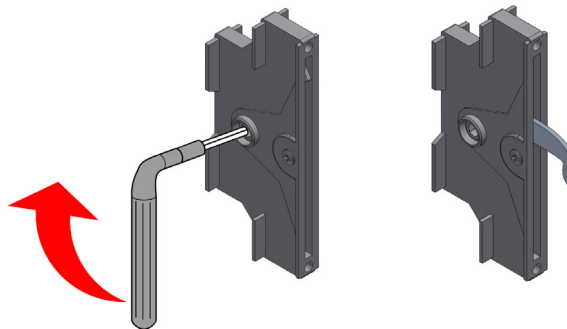
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

7 - It is now possible to close the cell and assemble the last corner profile.

Apply the silicone on the vertical profiles, position the corner profile and interconnect the L and star joints:



To connect the components to each other, the L hex key supplied with the panels must be used. Attach the corner upright to the door panel and the right side panel, inserting the key and rotating it by 90° to activate the cam:



After having tightened all the hooks, make sure the panels are properly adhered and correctly aligned with the outer edge of the floor. If not, loosen the hooks and correct the positioning of the panels, otherwise any misalignments will complicate the closure of the cell.

REMOVE THE PROTECTIVE FILM FROM THE INNER SIDES OF THE CELL ON THE DOOR SIDE AND RIGHT SIDE.

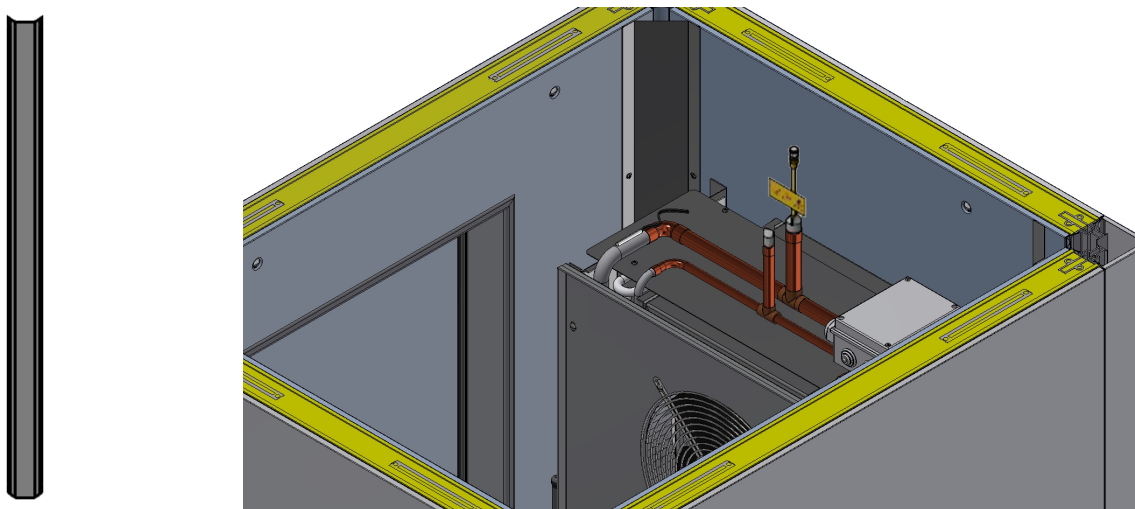
N.B. Lift the PVC covering and close the holes of the hooks that have just been tightened using the caps supplied with the cell components.

At the end of this step, the only holes that should still be open are those of the top panel (roof) tightening hooks.

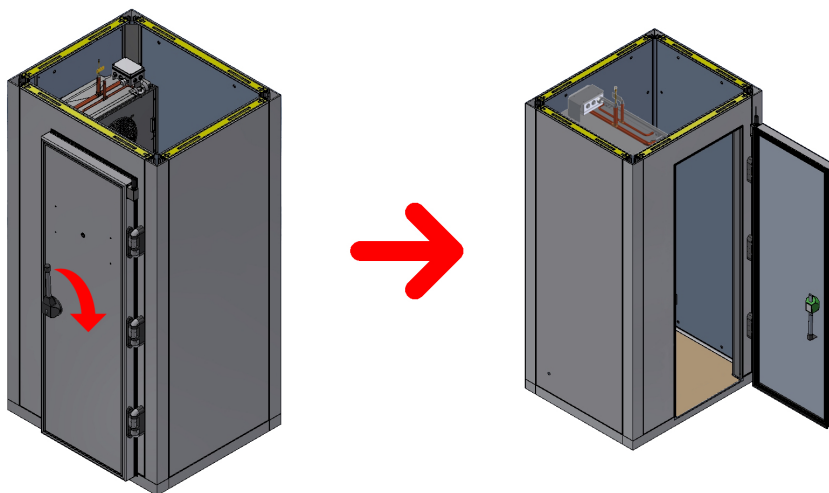
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

8 - Once the external panels of the cell have been assembled, it is possible to mount the second deflector, the door stop and permanently position the evaporator.

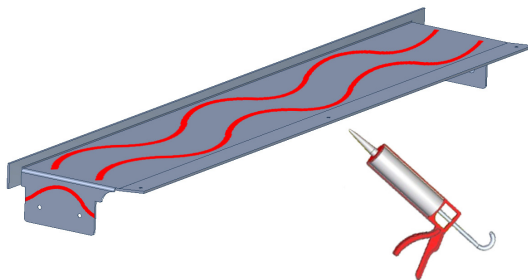
Align the upper edge of the deflector with the upper edge of the panels and secure it with at least 6 self-tapping screws, in the inner left corner.



Open the door, turning the handle in a clockwise direction:



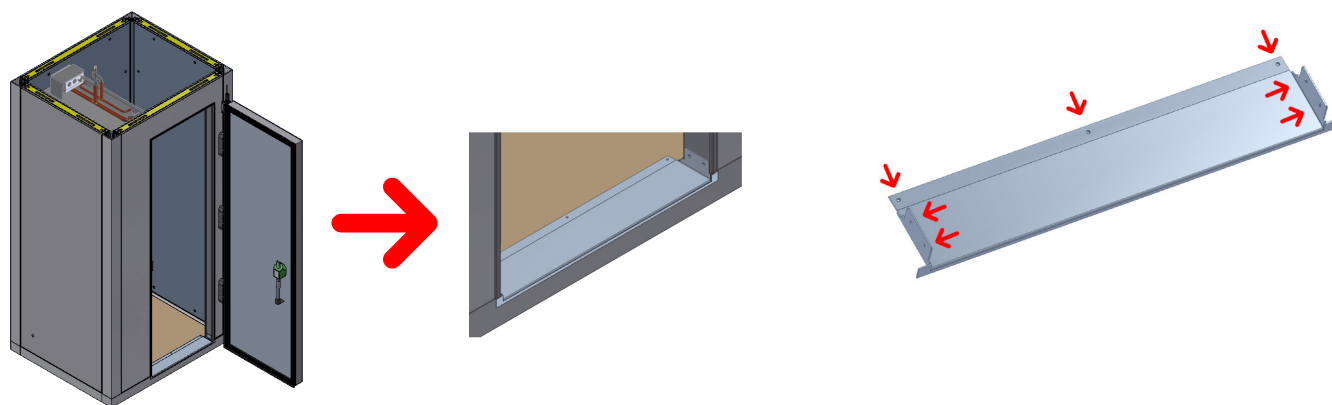
Take the doorstep plate and apply silicone on the bottom part:



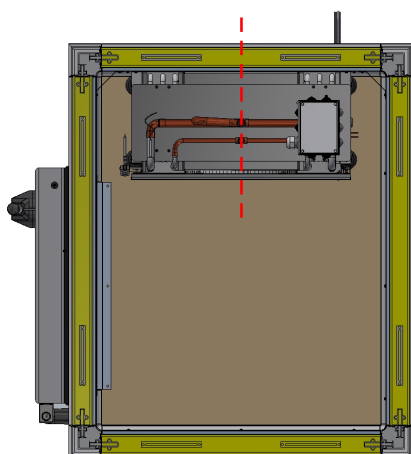


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

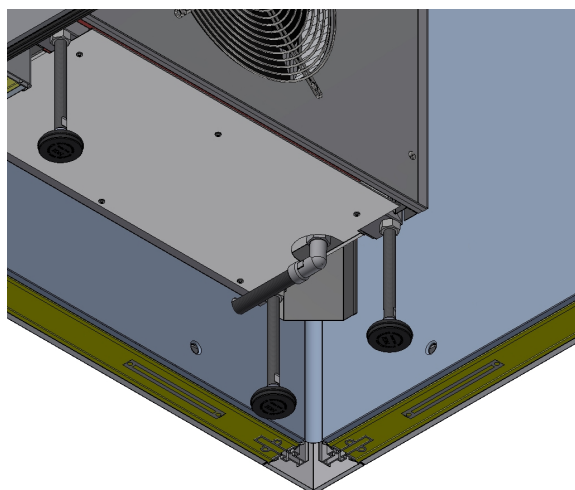
Align the doorstep plate and once positioned, attach it using the 7 supplied screws.



To permanently position the evaporator, it must be moved to a central position between the two deflectors. In the lower part of the evaporator there is a condensate water drain pipe, rotate the pipe and insert it in the hole located on the bottom right of the side panel. Make sure the pipe is properly positioned before permanently securing the evaporator.



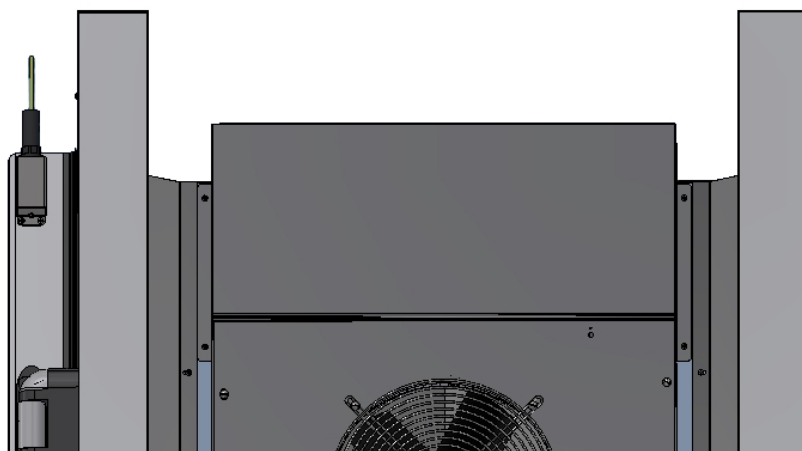
Halfway position of evaporator



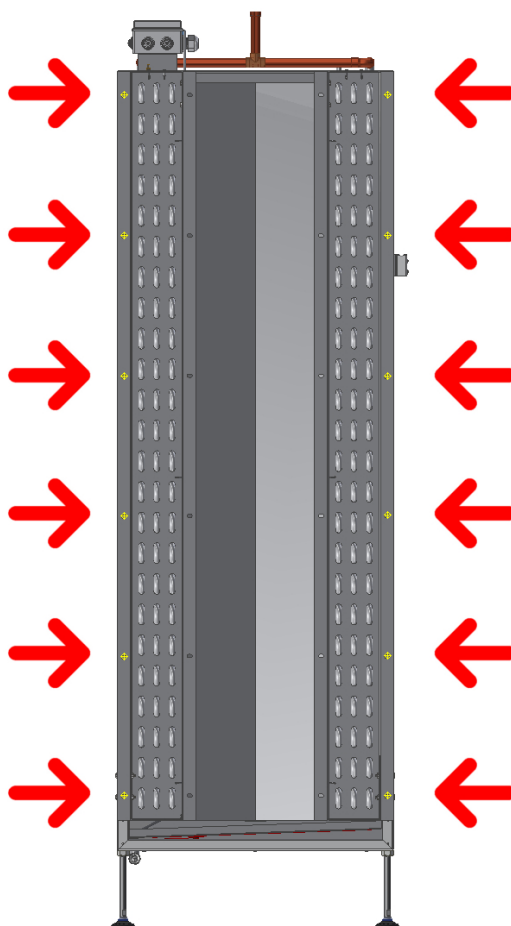
Positioning of condensate water drain pipe

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Try to insert the upper covering plate of the evaporator, if it remains flush with the upper edge of the panels or slightly lower (2-3 mm), then the evaporator legs have been properly adjusted. Otherwise, lower the evaporator as explained in point 5.



To firmly secure the evaporator on the left wall of the cell, use the supplied self-tapping screws and attach it in the predefined points



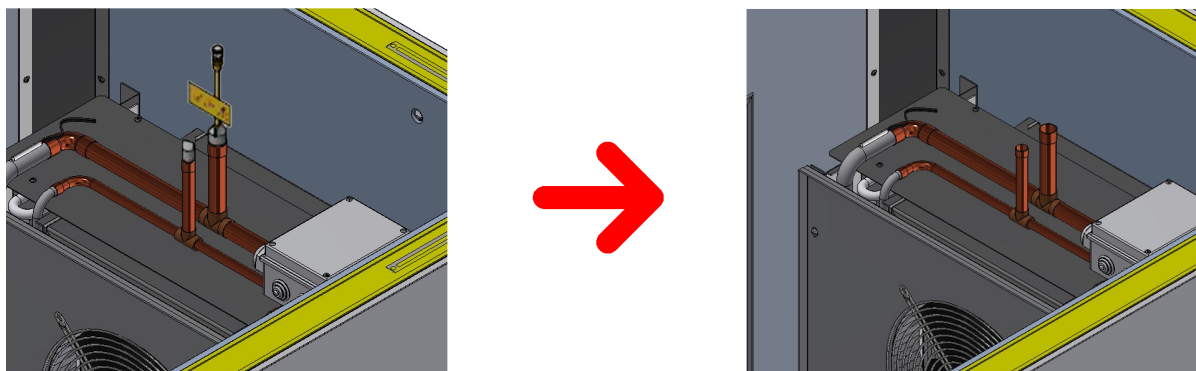
For ease of identification, the photo shows the back of the evaporator. The fastening holes are highlighted. Fasten one screw for each hole.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

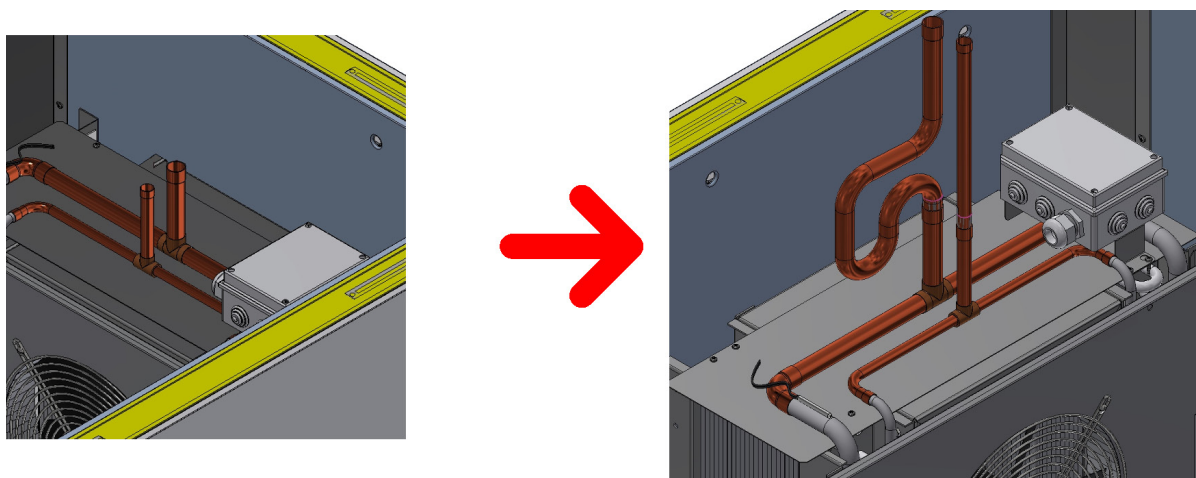
9 - Once the evaporator has been positioned and secured, the extension delivery and suction pipes can be secured. The pipes must be welded, therefore the wall behind the evaporator and any components that may be damaged by heat must be protected with refractory materials.

The evaporator is delivered pressurised with Nitrogen, open the filling valve and completely empty the evaporator.

Unsolder the closing caps of both the delivery and return pipe:



Using the same protective means for components subject to damage by heat, install the delivery extension pipe and the pipe with trap for the gas return:



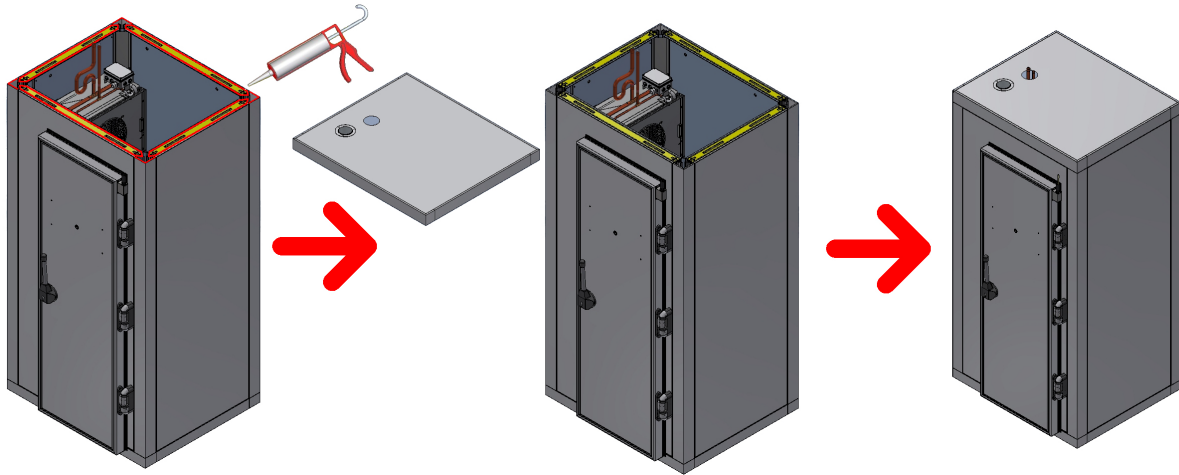
Wait for the pipes to cool before carrying out the subsequent assembly operations.

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

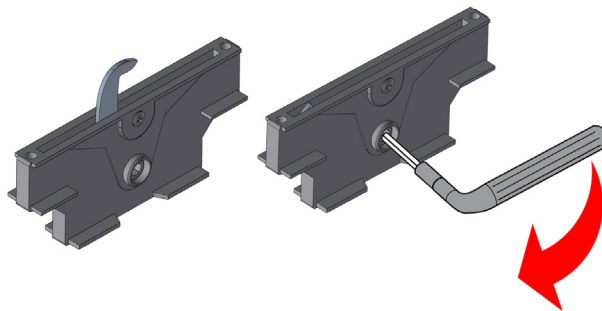
10 - It is now possible to close the cell by mounting the top panel (roof).

Remove the inner film from the top panel.

Apply silicone on the upper horizontal profiles, position the panel so that the gas delivery and return pipes pass through the existing circular hole and interlock the L and star joints:



To connect the components to each other, the L hex key supplied with the panels must be used. Insert the key in the hole and rotate by 90° to activate the cam:



After having tightened all the hooks, make sure the panels are properly adhered and correctly aligned externally. If not, loosen the hooks and correct the positioning of the panels.

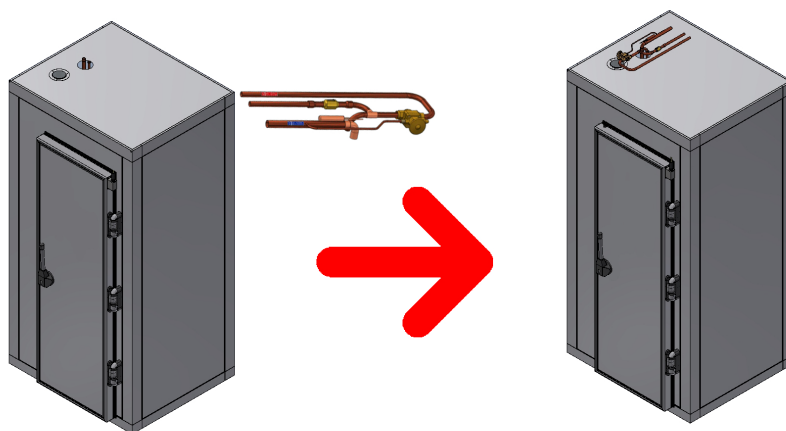
N.B. Lift the PVC covering and close the holes of the hooks that have just been tightened using the caps supplied with the cell components.

Once all the cell panels have been assembled, it is advisable to wait at least 24 hours before running a blast chilling or shock freezing cycle in order to allow the silicone to completely dry.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

11 - After having completed the installation of the top panel, proceed to install the pipes kit with thermal expansion valve.

Insert the pipes on their respective counterparts emerging from the roof, protect the valve with a damp cloth and the hole in the top panel using a refractory material, then proceed to weld the gas delivery and return pipes.



Once welding is complete and after waiting for the welds to cool, the cables can be inserted into the cell through the pipe through-hole.

A multicore cable protrudes from the junction box above the evaporator, pass this cable through the hole alongside the delivery and return pipes. Moreover, take the food probe supplied with the cell components, position the probe on the support to the left of the evaporator and pass the wiring alongside the gas delivery and return pipes. Finally, pass the evaporator temperature probe and the cell probe cable alongside the other cables. Secure them temporarily above the top roof panel.

After passing the cables, isolate the delivery and return pipes with insulating material more or less until the open ends of the pipes. Moreover, it is now possible to close the top panel hole with expanding foam so as to completely insulate the inside of the cell from the outside.

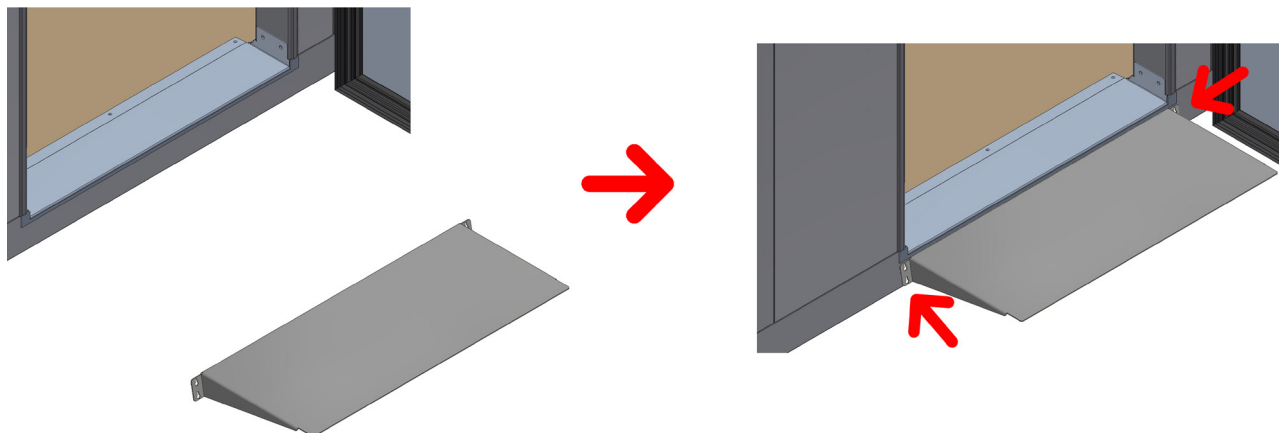
Then proceed to make the connections of the delivery, return and hot gas pipes to the condensing unit and insulate them as specified.

Remove all the PVC coverings still present on the inner and outer walls of the cell.

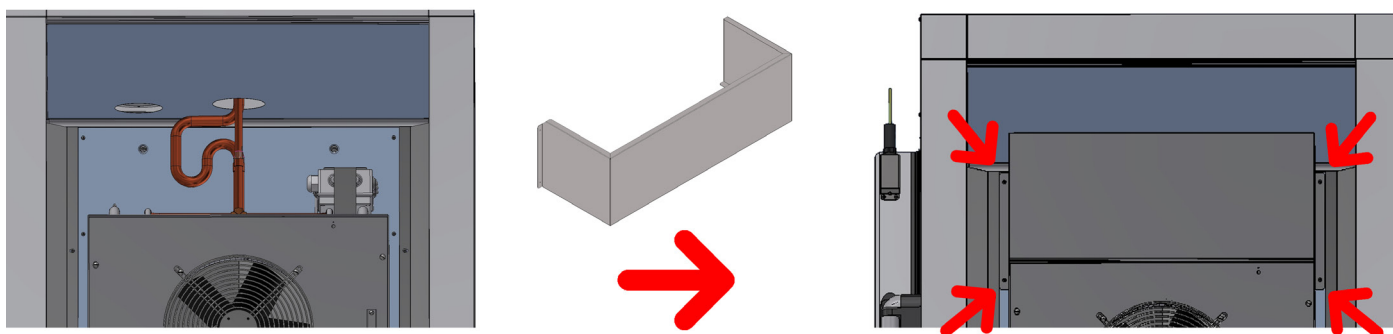
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

12 - It is now possible to install the ramp, pass the cables coming from the evaporator and install the top evaporator cover. Moreover, the trolley stop profiles can be installed:

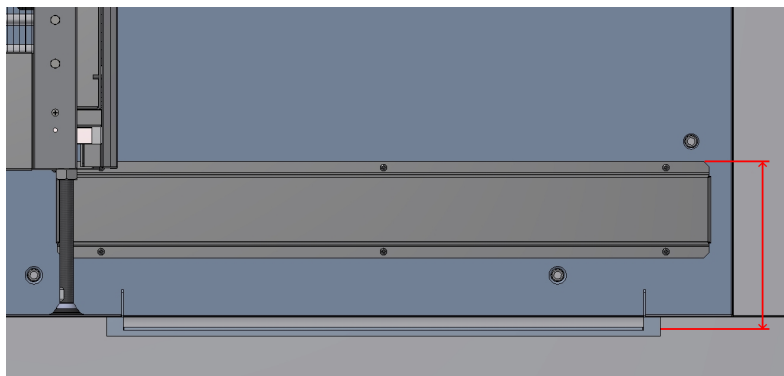
a- Take the ramp and the 4 supplied screws. Open the door, rest the door on the floor and bring it into contact with the base of the cell; once the fixing points have been identified, using a screw gun, secure the 4 screws.



b - Take the evaporator covering plate. Position it on top of the evaporator and use a screw gun to secure the 4 screws.



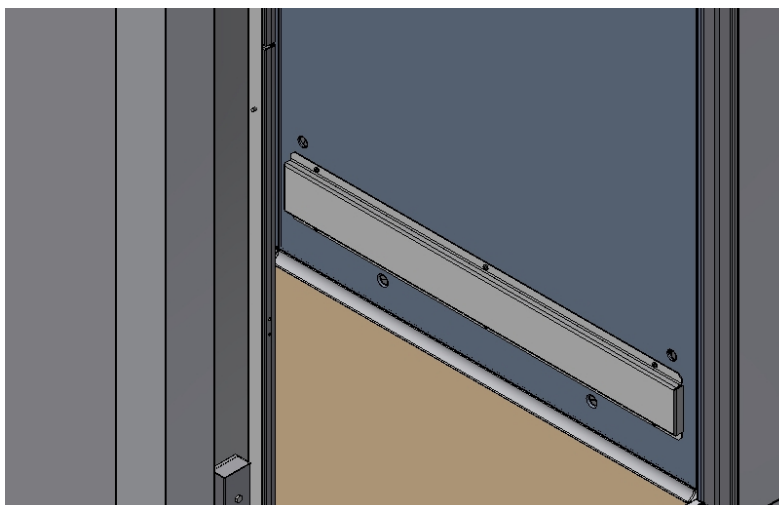
c - Take the two trolley stop profiles, these must be secured to the bottom wall and right side wall of the cell at a height of 195 mm, measured from the top edge of the trolley stop plate to the floor of the cell:



## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

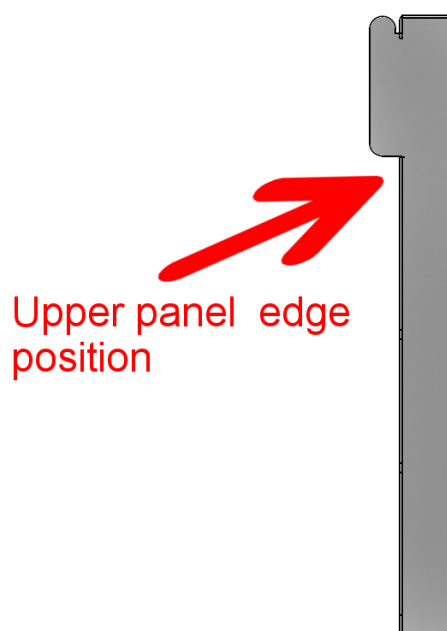
Keeping the trolley stop plate in a horizontal position, use a screw gun to secure the 6 front plate screws.

Repeat the same operations for the right side plate.



13 - Once the last components have been assembled inside the cell, the electrical panel can be installed. This too is installed using self-tapping screws.

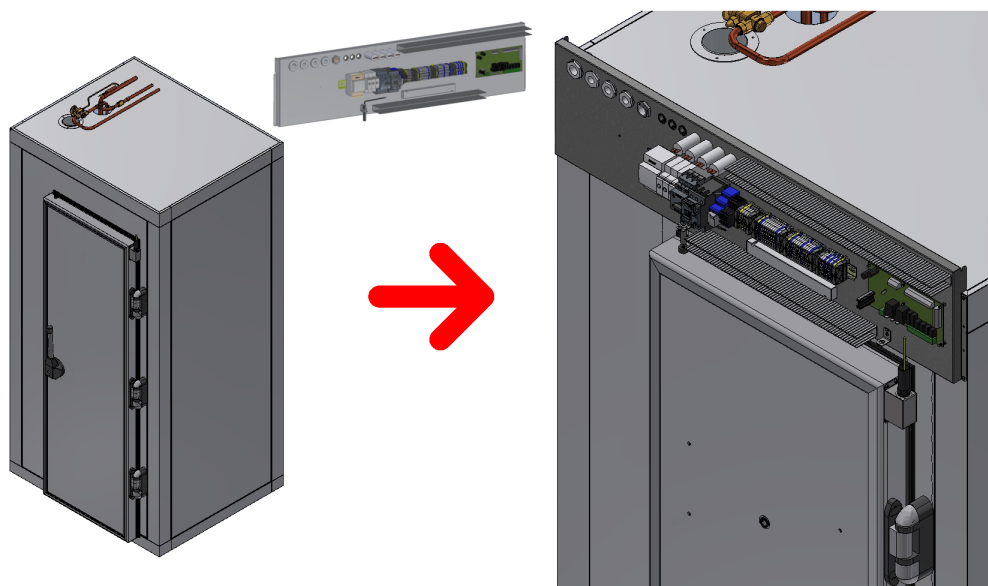
The structure of the electrical panel allows it to be laid on the top edge of the top cell panel and then secured using the supplied screws.



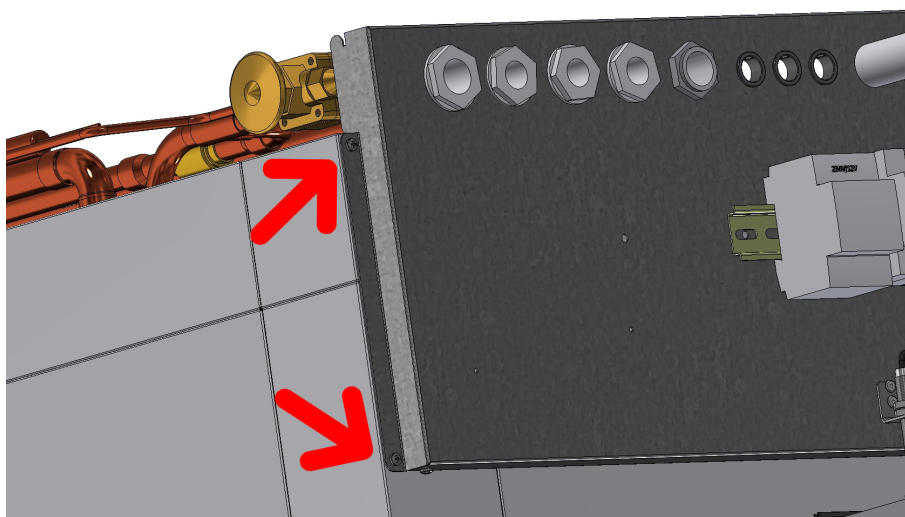


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

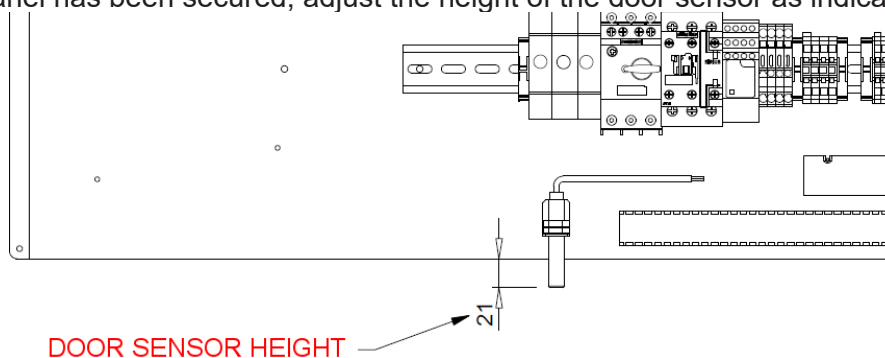
Position the electrical panel on the top cell panel, and using a screw gun secure the 4 fastening screws.



Following is an illustration of the four fixing points for the electrical panel.



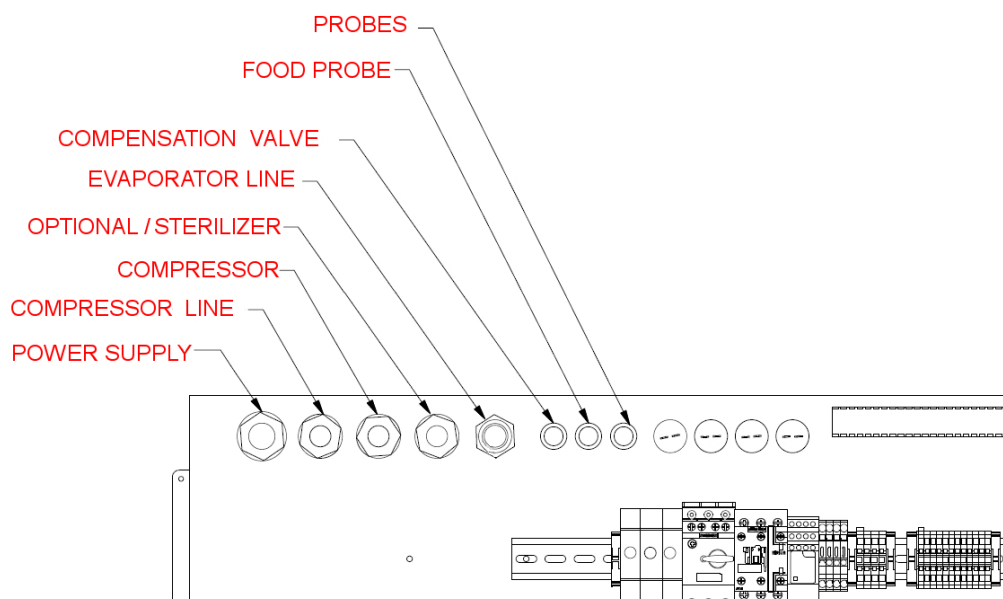
Once the electrical panel has been secured, adjust the height of the door sensor as indicated below:



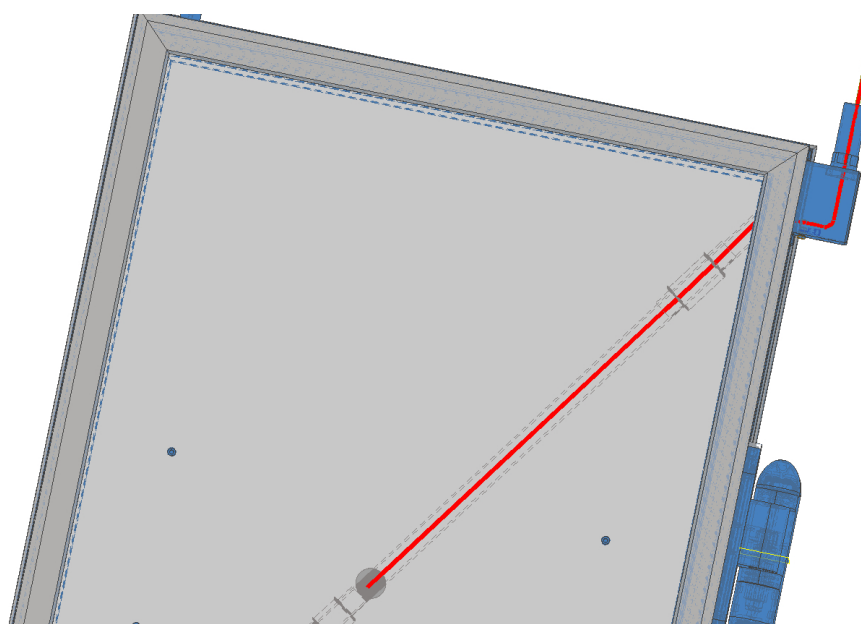


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

**14 - Electrical connections.** After having positioned and secured the electrical panel, proceed to make the electrical connections as indicated by the supplied wiring diagrams. Pass the wiring as indicated below:



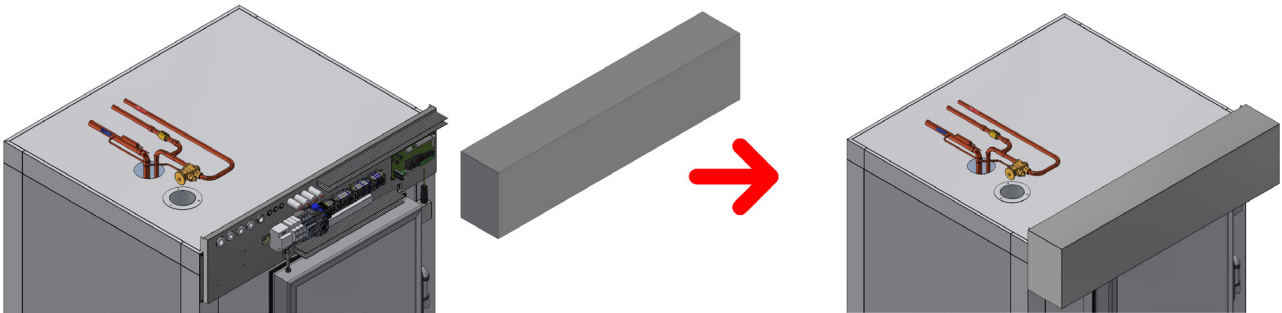
Now pass the display wires through the cable through-hole on the door. Insert the wires from the ends without terminals and pull them out from the junction box in the top corner of the door.



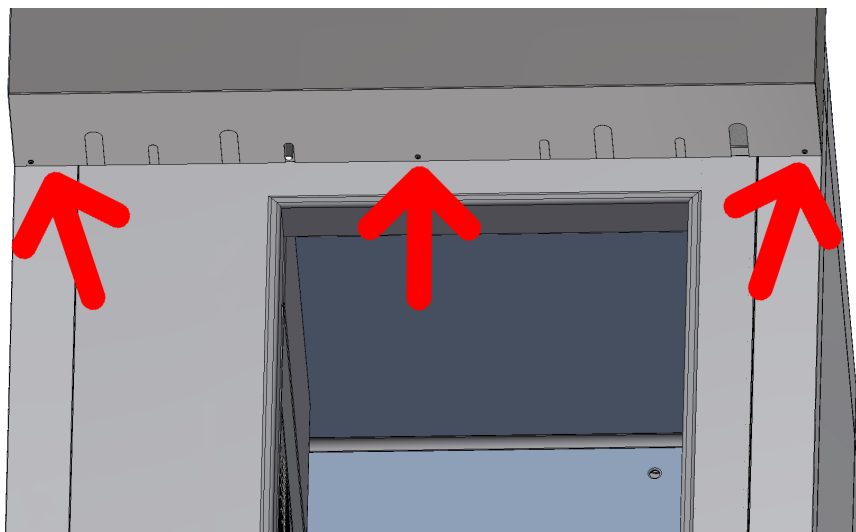
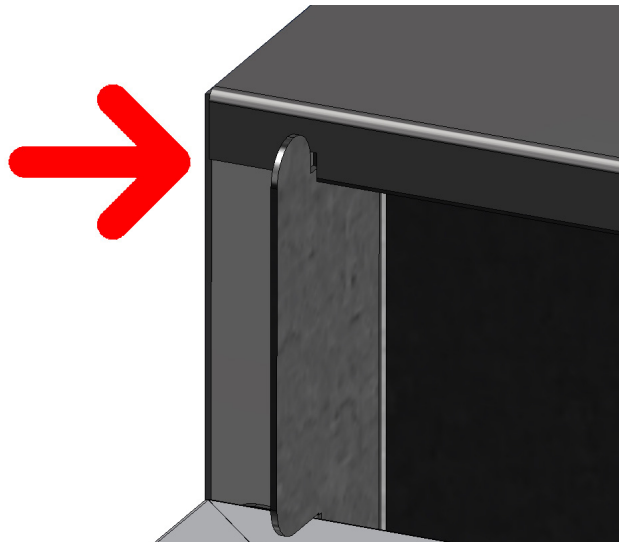
Once the display wires have been passed, connect them to the relative terminals of the power board as indicated in the supplied wiring diagram.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

15 - After having made all the electrical connections, the electrical panel cover can be installed. The panel locks into the two slots located at the ends of the electrical panel, and once positioned, is secured with the three supplied screws.

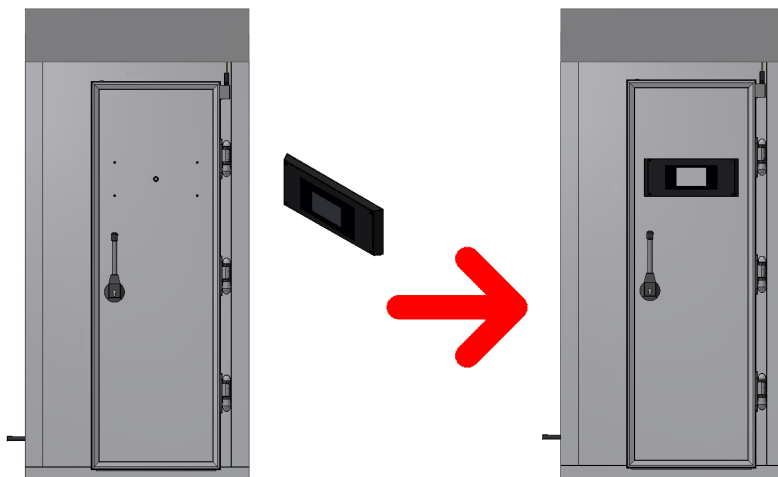


Following is an illustration of the two interlocking points of the electrical panel cover, and the three screw fastening points are highlighted.

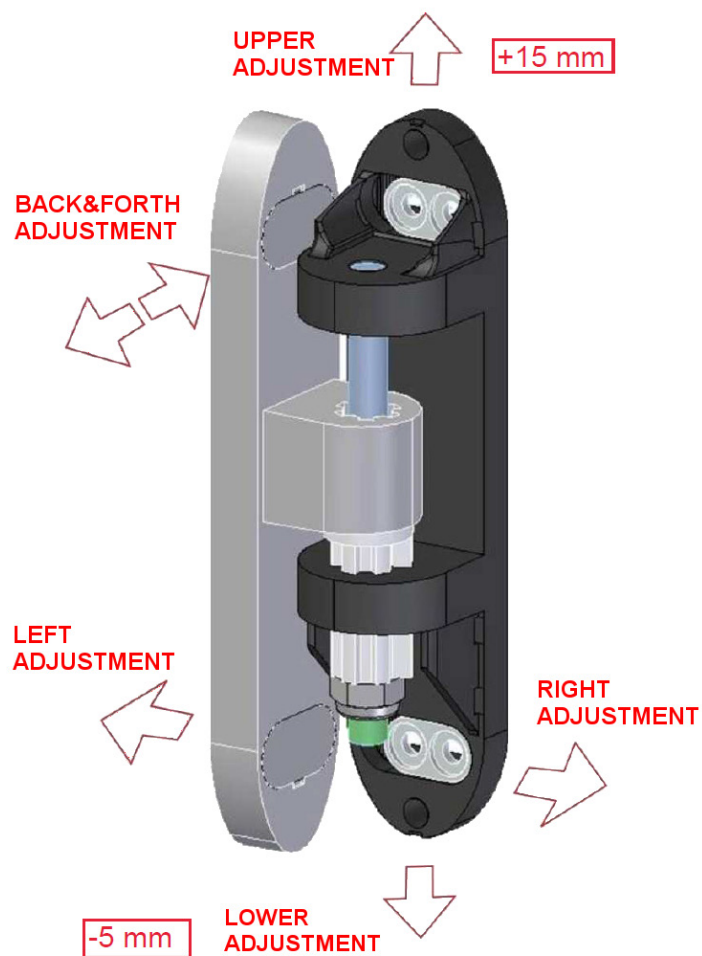


## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

16 - The final operations for the assembly of the cell involve the installation of the display and its support structure. The display is supplied already assembled on the support structure with 6 screws. It is sufficient to insert the previously passed wire connector into its counterpart on the PCB and secure the structure to the door, using the 4 supplied screws.



Check that the door closes properly, if necessary adjust the hinges as shown in the figure.

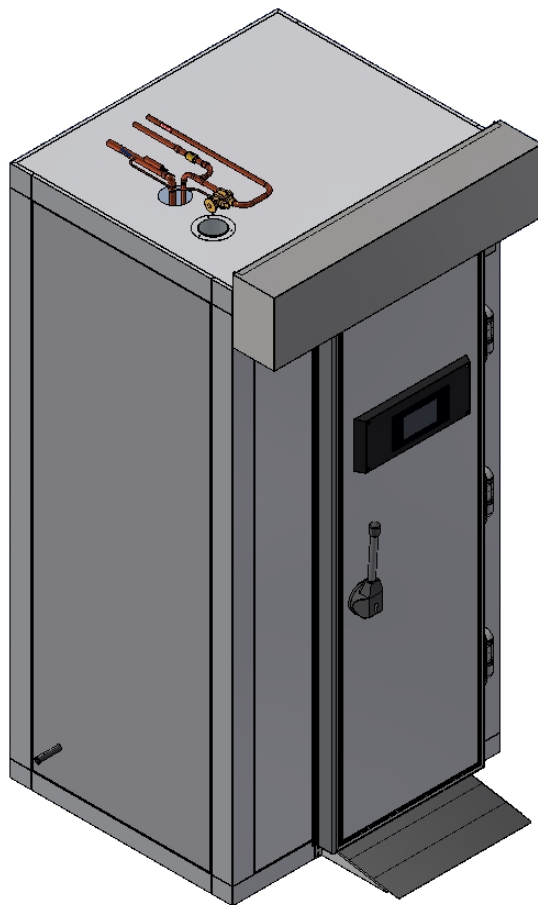


## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Lastly, from the inside of the cell, close the door and adjust the position of the lock by checking that the lever is properly blocked and that the door seal is compressed. Now reopen the door and secure it with the supplied screws.



Assembly operations for the ROLL-IN blast chiller cell are now complete.



# **5 - Cell assembly 40T COMPACT**

## 5.1 - OPERATIONS SPECIFIC TO 40TC ONLY

For 40TC cells defined as COMPACT, certain assembly operations are specific to this type of cell, especially insofar as the condensing unit is located above the cell itself.

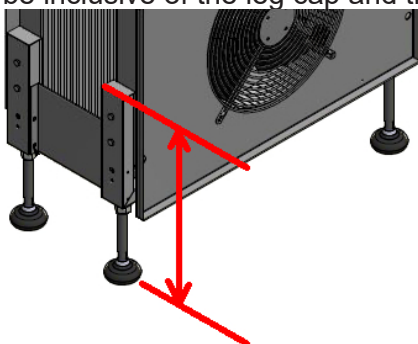
**CAUTION HAZARD:** The condensing unit weighs approximately 150Kg.

- Do not lift by hand.
- Lift only using mechanical means in good working order and make sure personal protective equipment (PPE) is worn
- All equipment must have been approved for the relative loads.

Following are the operations that differ with respect to the normal cells.

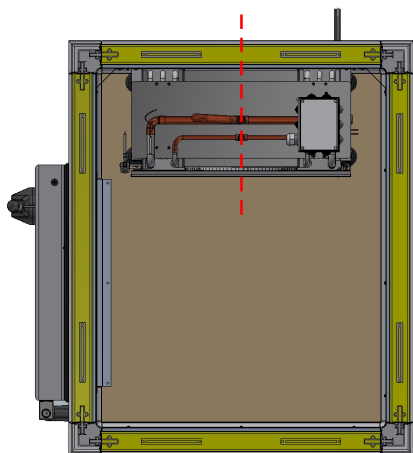
Perform all panel preparation and cell assembly operations up to **chapter 4.3 step 5** for 20 and 40T cells.

With the evaporator in the extended position, unscrew the legs and extend them to a total length of **265 mm (+0;-5 mm)**. This measurement must be inclusive of the leg cap and the end of the leg support itself:

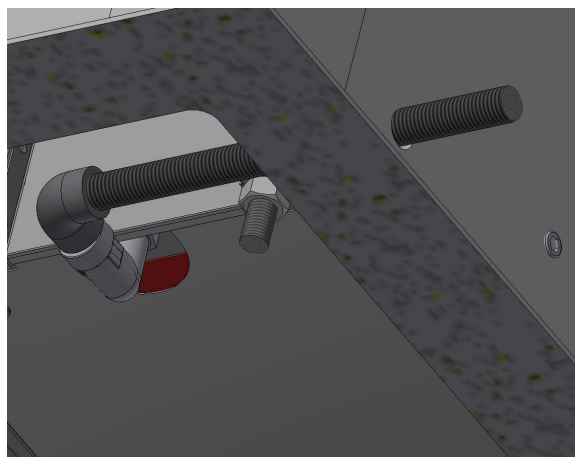


Continue with the assembly operations until **chapter 3 point 8** and position the deflector and doorstep.

To permanently position the evaporator, it must be moved to a central position between the two deflectors. In the lower part of the evaporator there is a condensate water drain pipe, rotate the lower elbow fitting toward the outside and insert the drain pipe in the hole located on the bottom right of the side panel. Make sure the pipe is properly positioned before permanently securing the evaporator.



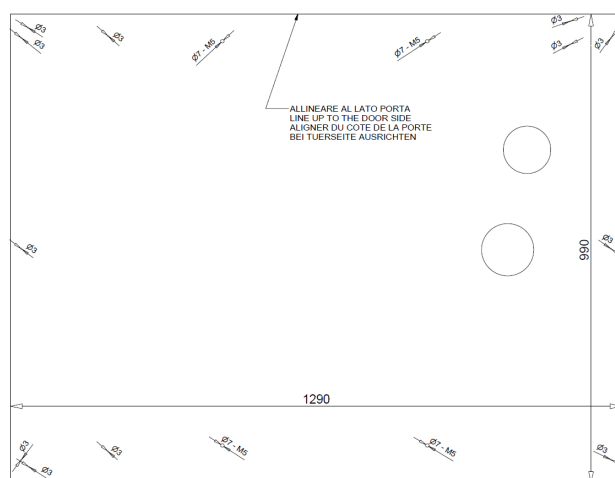
Halfway position of evaporator



Condensate drain pipe position

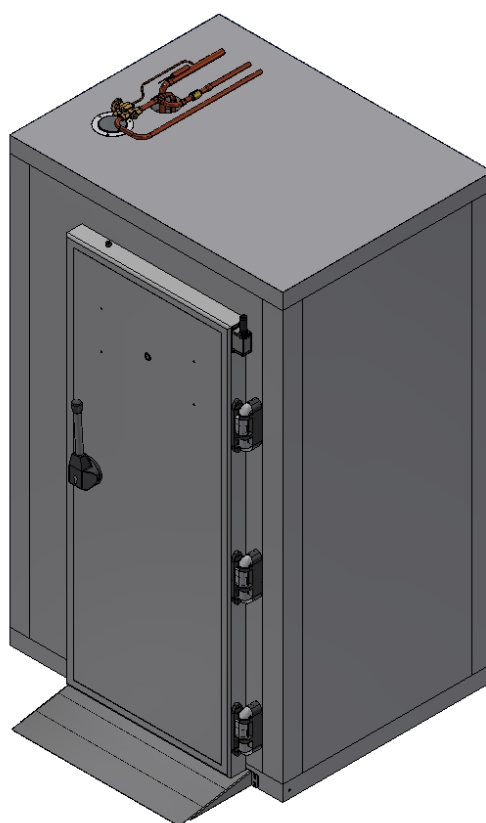
# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Continue until **chapter 4.3 step 10**. Before installing the top roof panel, using the template supplied in the kit, drill the pre-holes as indicated and using the pliers for inserts, position the four M5 inserts to secure the condensing unit. Drill the holes only for the outer plate!



Once all the holes have been drilled and the inserts have been installed, continue to assemble the cell until **chapter 4.3 step 13** of 20 and 40T cells.

At this point, your cell will look as follows:



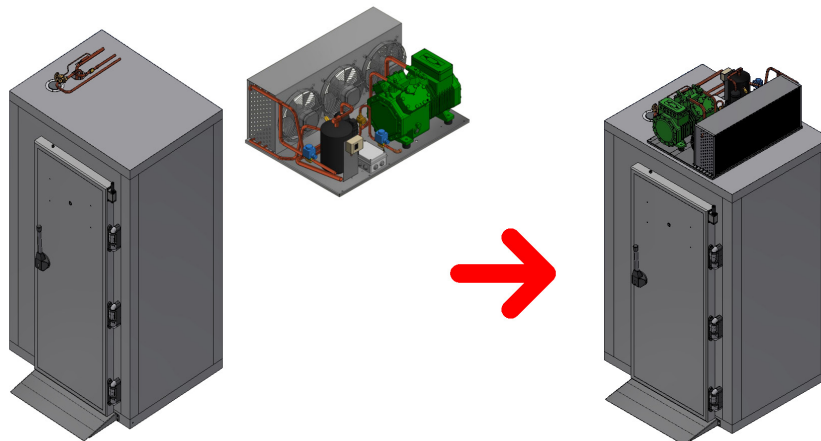
A multicore cable protrudes from the junction box above the evaporator, pass this cable through the hole alongside the delivery and return pipes. Moreover, take the food probe supplied with the cell components, position the probe on the support to the left of the evaporator and pass the wiring alongside the gas delivery and return pipes. Finally, pass the evaporator temperature probe and the cell probe cable alongside the other cables. Secure them temporarily above the top roof panel.

**From this step on, the operations are specific to this type of cell.**

## 5.2 - INSTALLATION OF CONDENSING UNIT

To install the condensing unit, the relative holes must have been drilled and the M5 inserts installed, otherwise installation cannot be guaranteed.

Lift the condensing unit using the dedicated equipment and position it on the top cover of the cell.

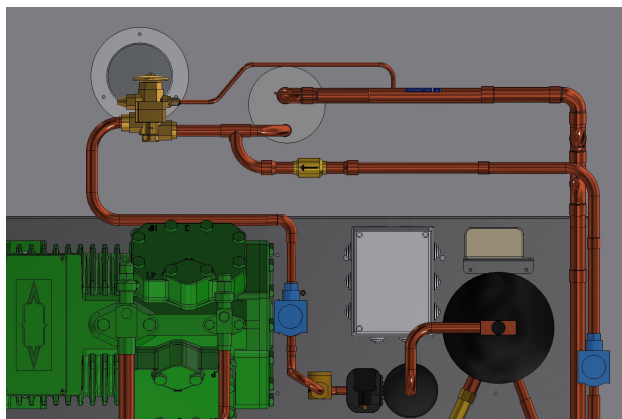


Secure the condensing unit using the dedicated screws:



Once the condensing unit has been secured, the pipes can be welded. Protect areas that may be damaged by heat with refractory materials.

The system can also be washed with Nitrogen and the refrigerant gas can be preloaded.



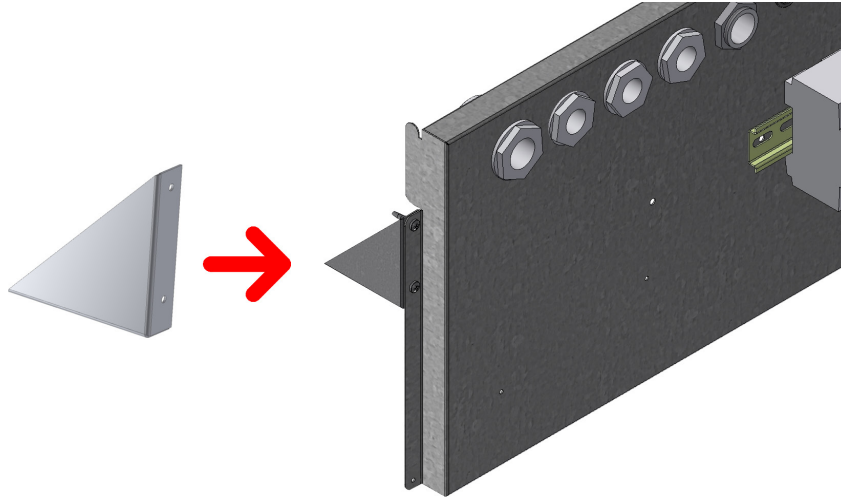


## 5.3 - INSTALLATION OF ELECTRICAL PANEL AND CELL COMPONENTS

After having carried out the steps in chapter 5.2, the electrical panel can be positioned. This too is installed using self-tapping screws.

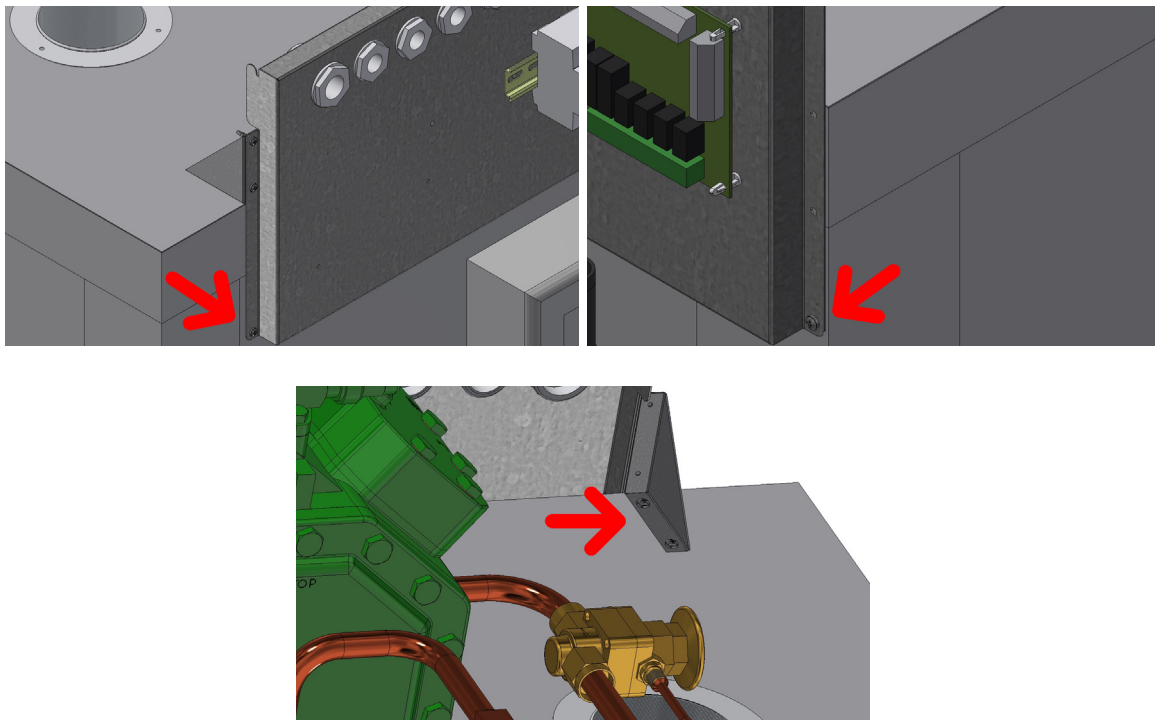
1 - Take the electrical panel and dedicated screws, insert the small reinforcement plate on the left side in the two upper holes.

The plate is needed as a reference to lay the electrical panel above the top cell panel.



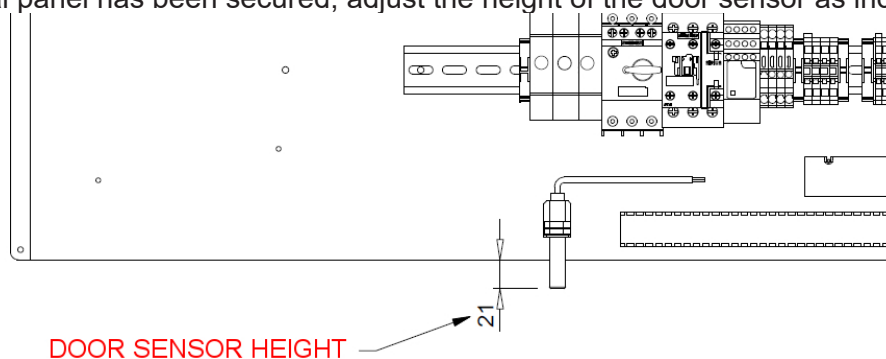
Position the electrical panel on the cell, aligning it with the structure on the door opening side (right door in these instructions).

Check that the electrical panel is level (use a spirit level) and proceed to fasten first the two lower screws on the right and left side, and then the other two screws to anchor the reinforcement plate to the top panel.

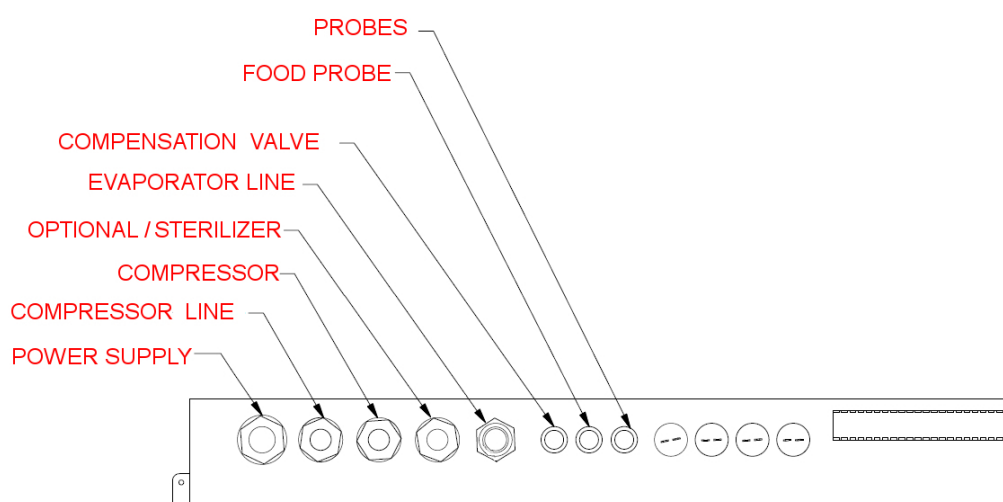


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

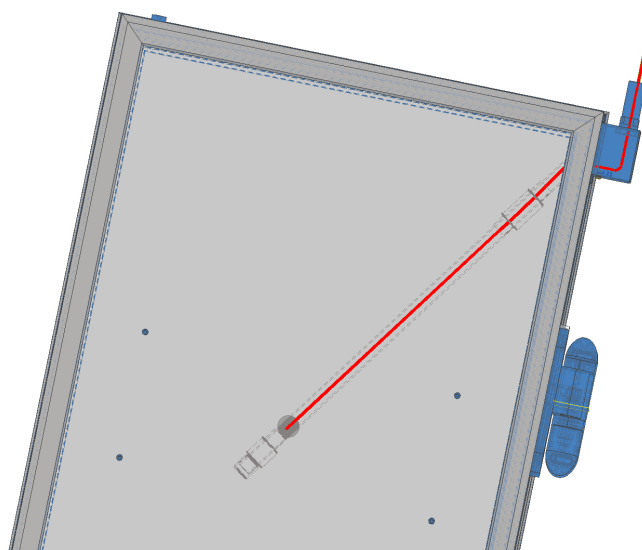
2 - Once the electrical panel has been secured, adjust the height of the door sensor as indicated below:



3 - Proceed to make the electrical connections as specified in the supplied wiring diagrams. Pass the wiring as indicated below:



4 - Now pass the display wires through the cable through-hole on the door. Insert the wires from the ends without terminals and pull them out from the junction box in the top corner of the door.

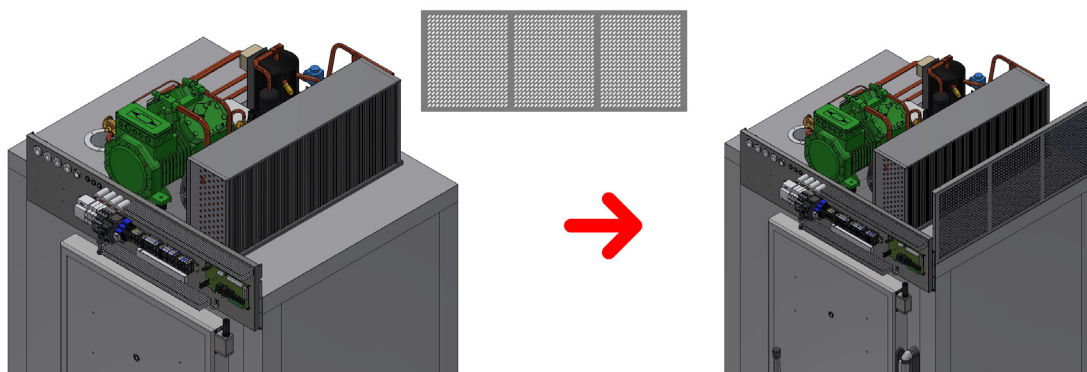


Once the display wires have been passed, connect them to the relative terminals of the power board as indicated in the supplied wiring diagram.

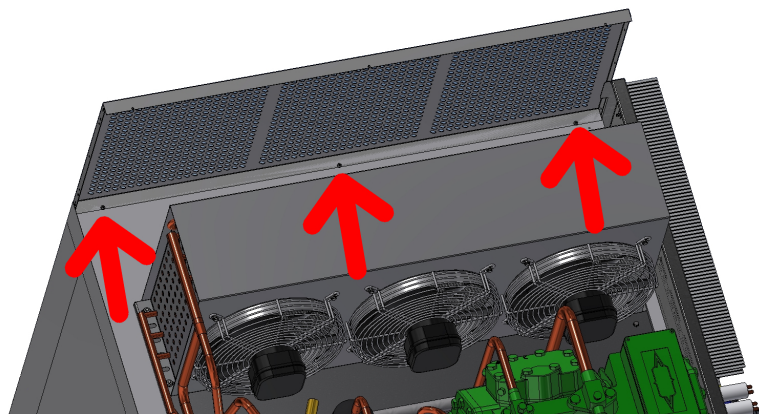
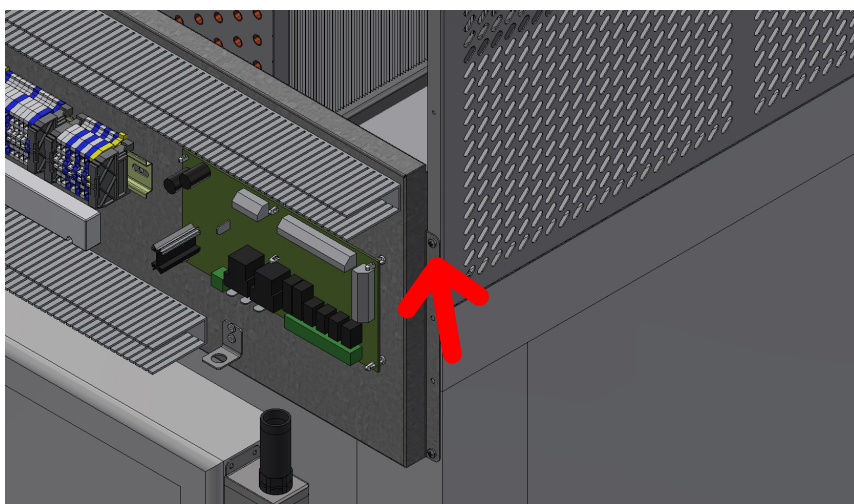
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

5 - The top part of the cell can now be completed.

Take the right slotted plate, fix it to the side of the electrical panel and proceed to also fasten the three screws on the top cell panel. During positioning operations, keep the component aligned with the edge of the outer wall.



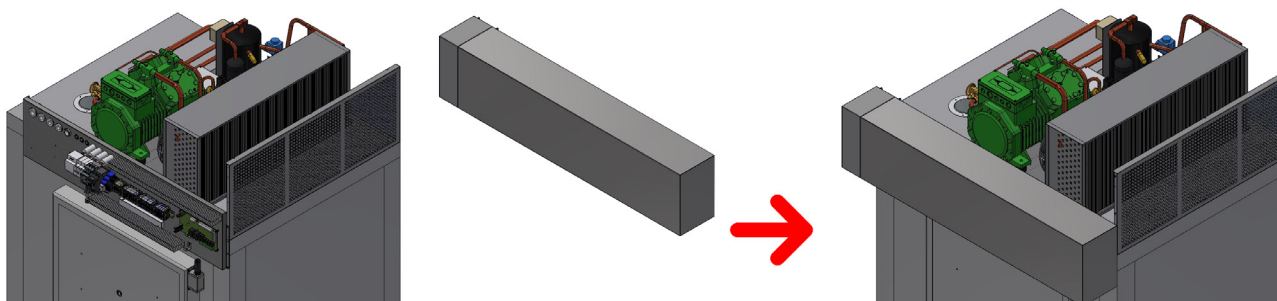
Following are the instructions to secure the plate:



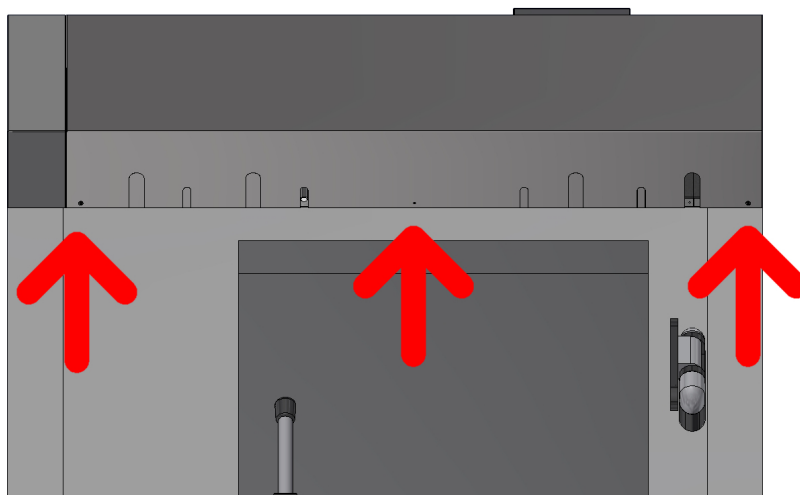
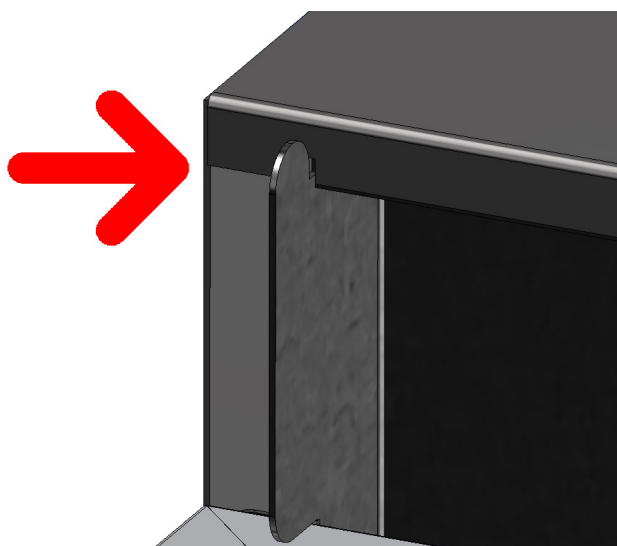
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

6 - The electrical panel can now be closed with the relative closing panel.

The panel locks into the two slots located at the ends of the electrical panel, and once positioned, is secured with the three supplied screws.



Following is an illustration of the interlocking points of the electrical panel cover, and the three screw fastening points are highlighted.

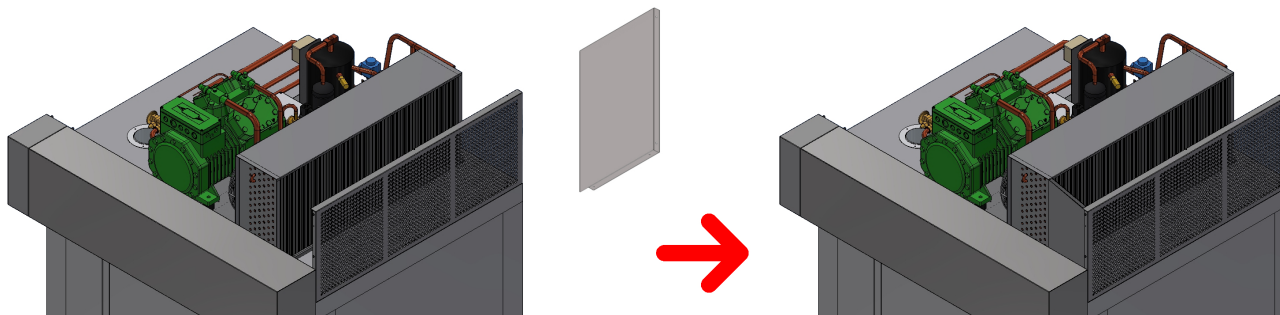


## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

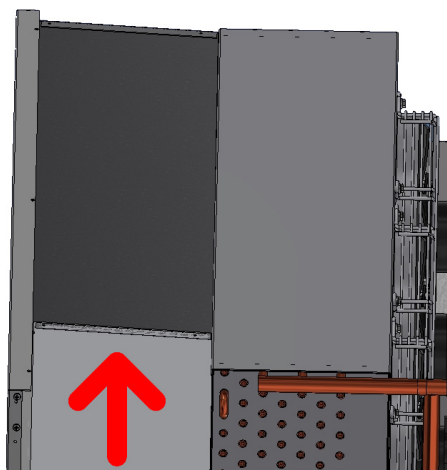
7 - To guarantee the correct air flow to the capacitor, it must be interposed between the slotted plate previously installed and the capacitor itself.

The conveyor is composed of three plates that are fixed to the top cell panel, to the slotted plate and between them.

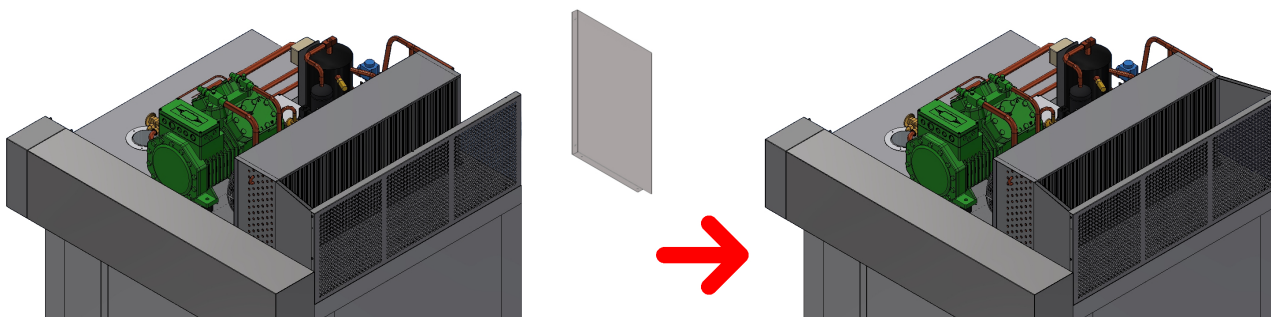
Position the plate from the side of the electrical panel and proceed to secure it with the relative screws



Following is a detail of attachment to the top cell panel.



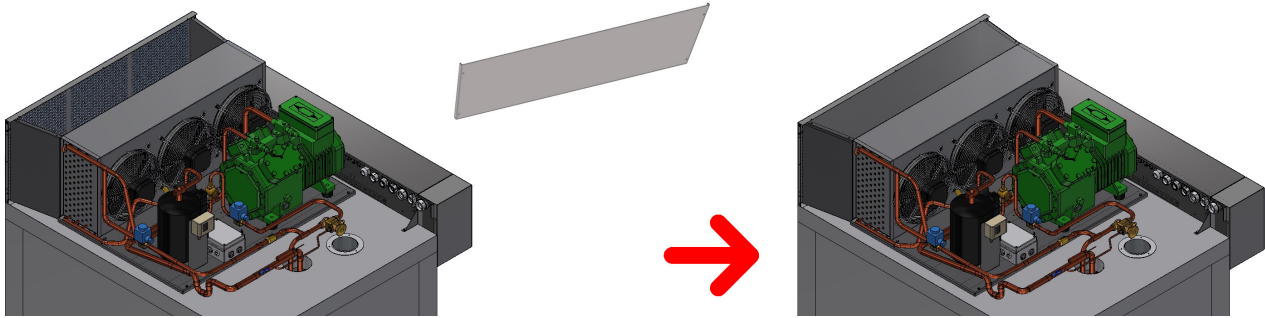
Similarly, proceed to install the plate opposite to the one just installed, the fixing process is the same.



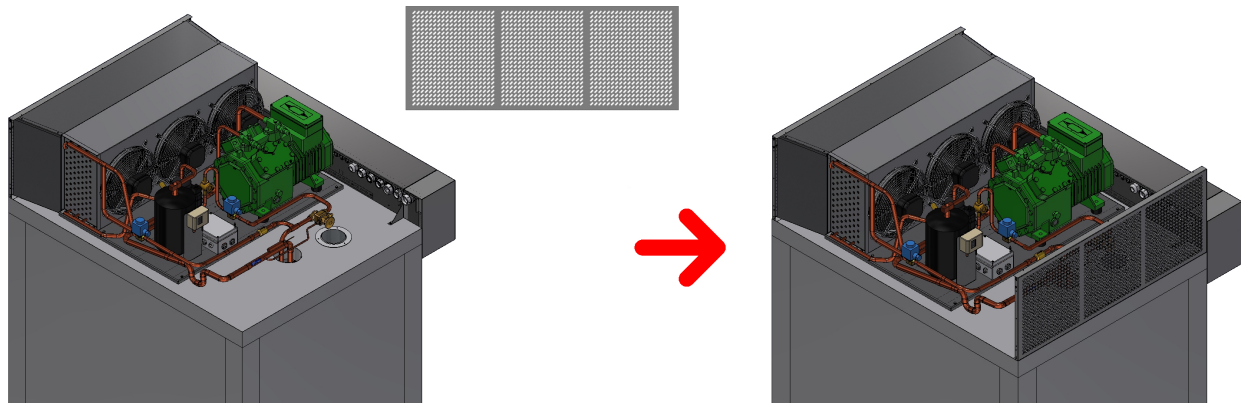


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

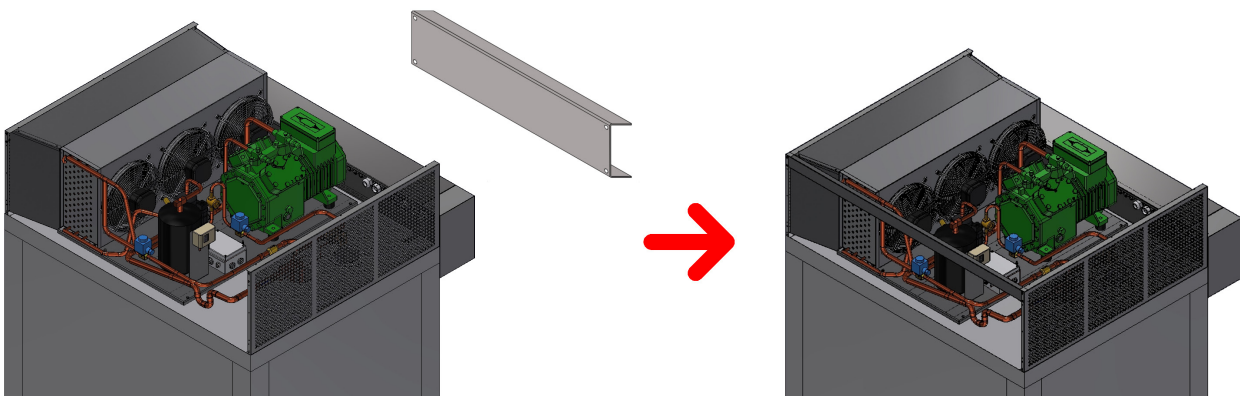
Install the top closure plate of the air conveyor and secure it with the relative screws.



8 - Take the left slotted plate, fix it to the side of the electrical panel and proceed to also fasten the three screws on the top cell panel. During positioning operations, keep the component aligned with the edge of the outer wall.



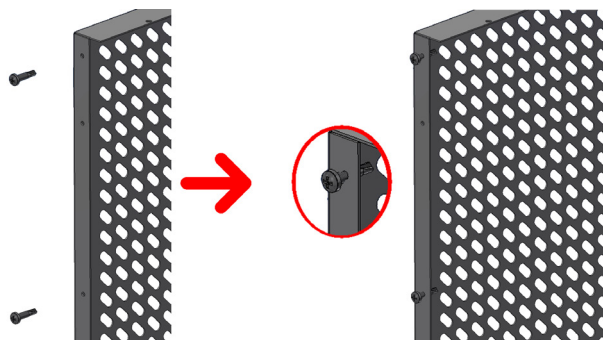
9 - Now take the connecting bars of the two slotted plates and secure them with the 4 relative screws, to both the right and left plate.



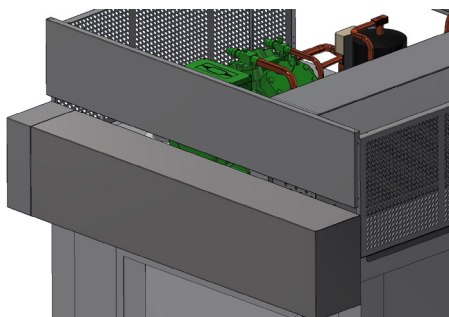
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

10 - To close the front part of the condensing unit compartment, the 4 screws on the slotted plate must be almost completely screwed in. The front top closure engages by way of the slots on the casing. Insert the 4 screw heads into the holes with the larger diameter, then pushing downward, engage the plate.

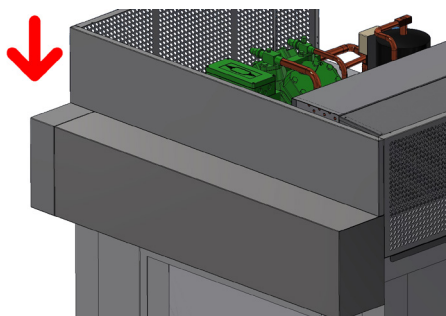
Tighten the screws as shown in the photo:



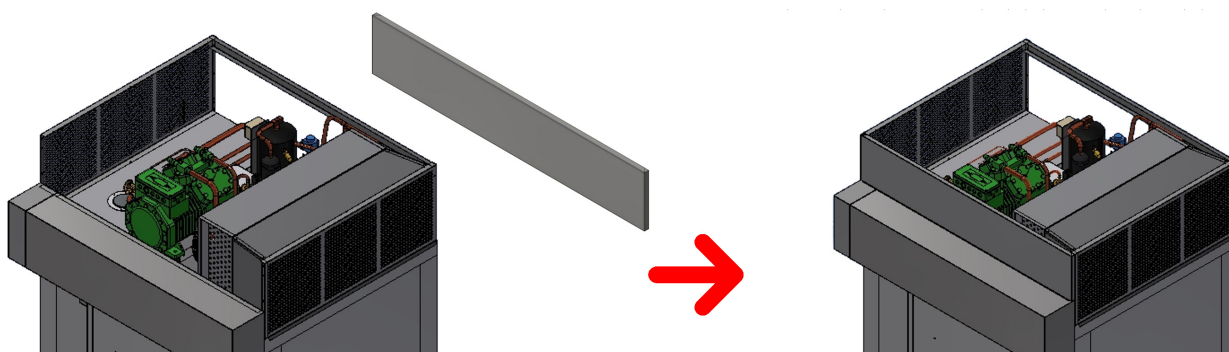
Position the plate by inserting the screw heads in the slots:



Slide the plate downwards so that it hooks in:

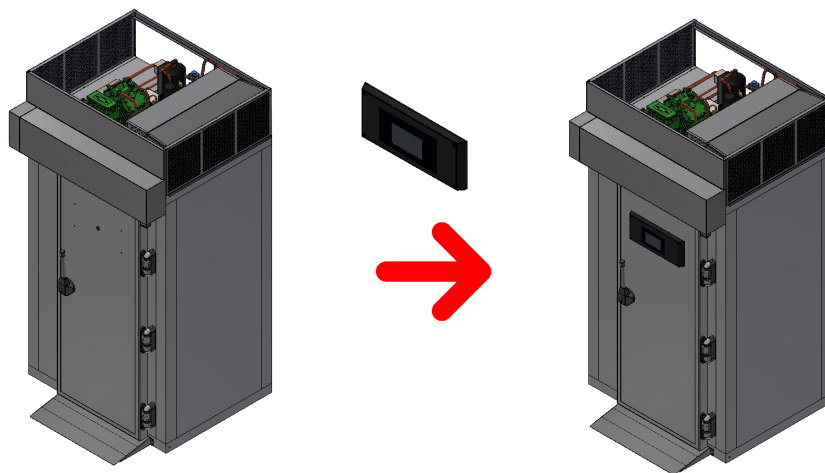


Following is a detail of the installed component:



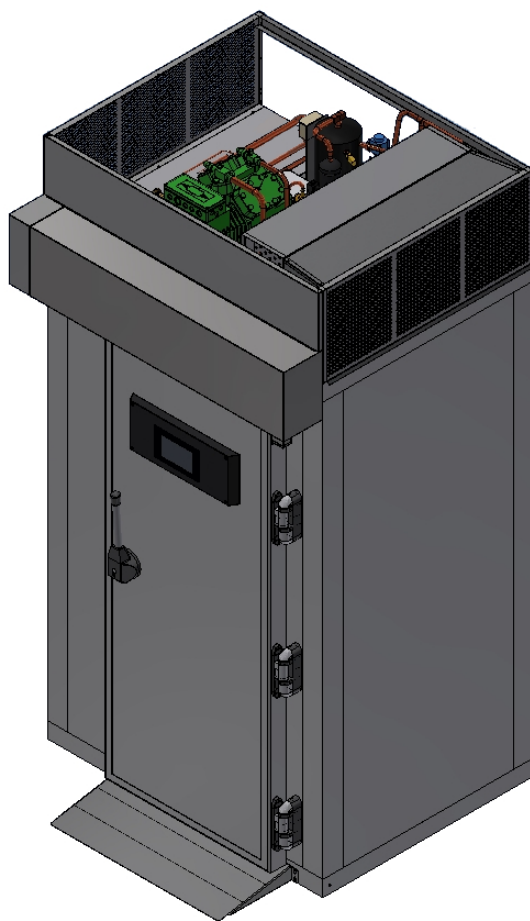
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

11 - The final operations for the assembly of the cell involve the installation of the display and its support structure. The display is supplied already assembled on the support structure with 6 screws. It is sufficient to insert the previously passed wire connector into its counterpart on the PCB and secure the structure to the door, using the 4 supplied screws.



We remind you to check the correct positioning of the door and adjust it if necessary, as explained in chapter 4.3 point 16.

Assembly operations for the ROLL-IN blast chiller cell are now complete.





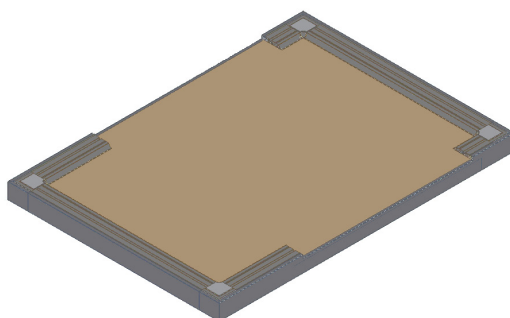
## **6 - Cell assembly 20-40T tunnel**

## 6.1 - OPERATIONS SPECIFIC TO TUNNEL CELLS

At the time of placing the order, the cells can be equipped with two doors for cases where it is necessary to have one door for trolley entry and one for trolley exit. As explained in chapter 3, tunnel cells have a floor panel with double access. Moreover, a blind electrical panel must be installed housing connections for the second door switch, the connection for the door frame heater and the grounding connection for the door panel.

Following are the operations that differ with respect to the normal cells.

Perform all panel preparation operations up to **chapter 4.3 step 3** for 20 and 40T cells. The floor panel will have the following layout



Proceed to position the panel as illustrated in chapter 4.3 step 3 and install the left side panel as explained in chapter 4.3 step 4.

The door panel will be installed in the place of the rear panel. In this case, the door panel is without the display positioning holes.

Front door panel



Rear door panel

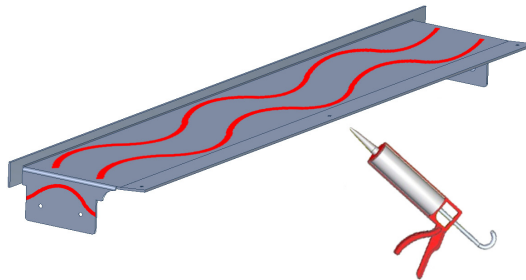


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

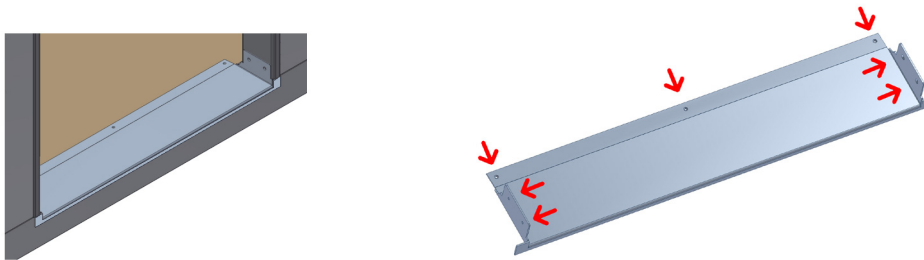
Proceed to assemble the cell walls and position the evaporator up until chapter 4.3 step 8.

As the cell has two doors, a second doorstep plate will also need to be installed. The fixing procedure is identical for both plates.

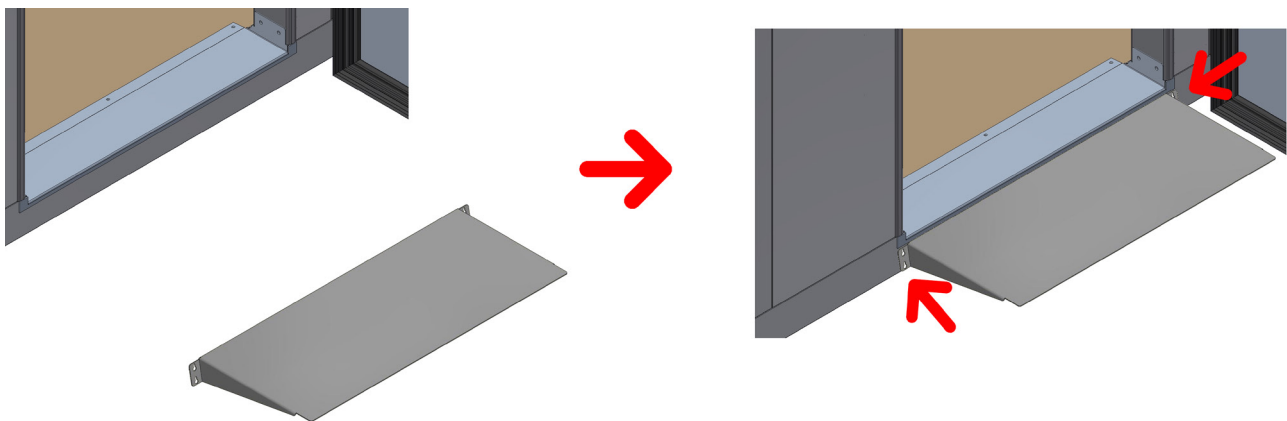
Take the doorstep plate and apply silicone on the bottom part:



Align the doorstep plate and once positioned, attach it using the 7 supplied screws.



Proceed to carry out all steps until chapter 4.3 step 12, and when requested, secure the second cell access ramp using the dedicated screws.



Note that in tunnel cells 20 and 40 T, there is only one trolley stop plate. The one on the floor is missing, therefore only the right plate needs to be secured as explained in chapter 4.3 step 12.

## 6.2 - INSTALLATION OF ELECTRICAL PANELS

Once the cell assembly steps have been carried out, proceed to install the main electrical panel above the front door as illustrated in chapter 4.3 step 13 and make the connections, completing all steps until chapter 4.3 step 14 inclusive.

The blind electrical panel must be installed above the rear door in order to connect the following rear door functions:

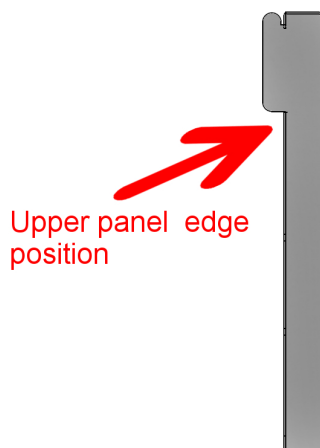
**Door switch**

**Door frame hot cable**

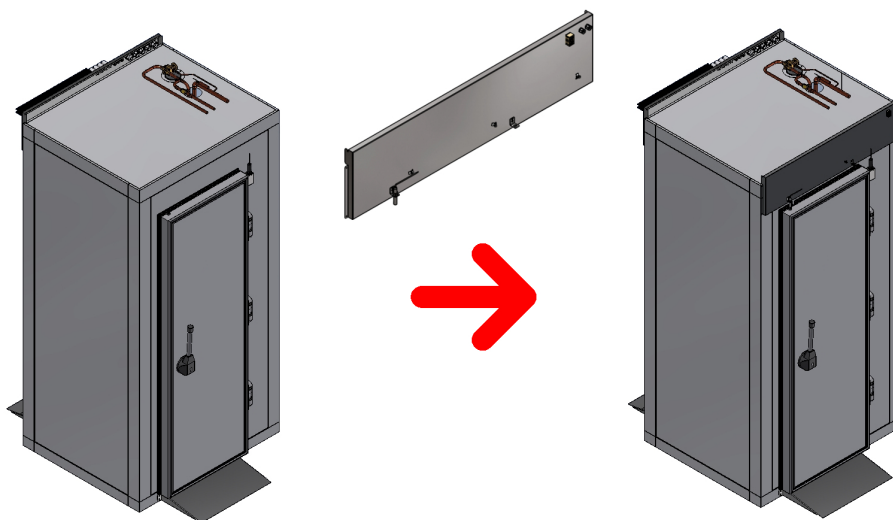
**Electrical panel and door panel grounding**

Installation is identical to that for the front electrical panel:

The structure of the electrical panel allows it to be laid on the top edge of the top cell panel and then secured using the supplied screws.

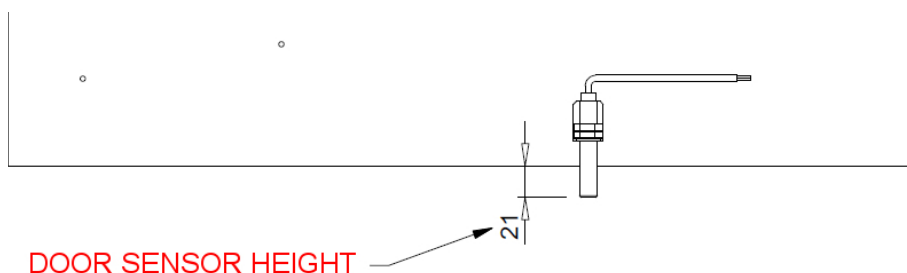


Position the electrical panel on the top cell panel, and using a screw gun secure the 4 fastening screws.



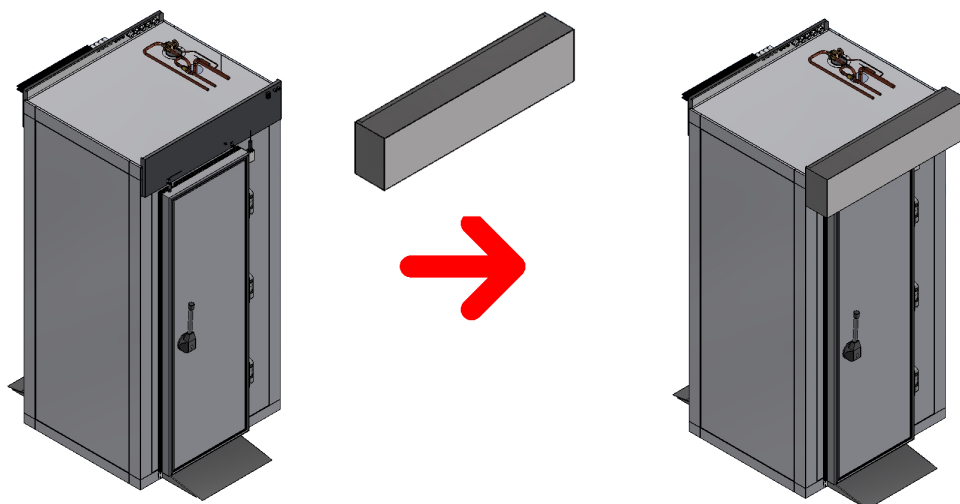
# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Once the electrical panel has been secured, adjust the height of the door sensor as indicated below:



Make the electrical connections illustrated in chapter 4.3 step 14 and then proceed to connect the wires from the terminal of the blind electrical panel to the relative terminals as explained in the machine's wiring diagram. It is also important to remember to connect the ground cable coming from the door to a screw in the blind electrical panel, and the main electrical panel to the relative ground terminals.

Once the connections have been made, the panel cover can be installed, proceeding as illustrated in chapter 4.3 step 15.

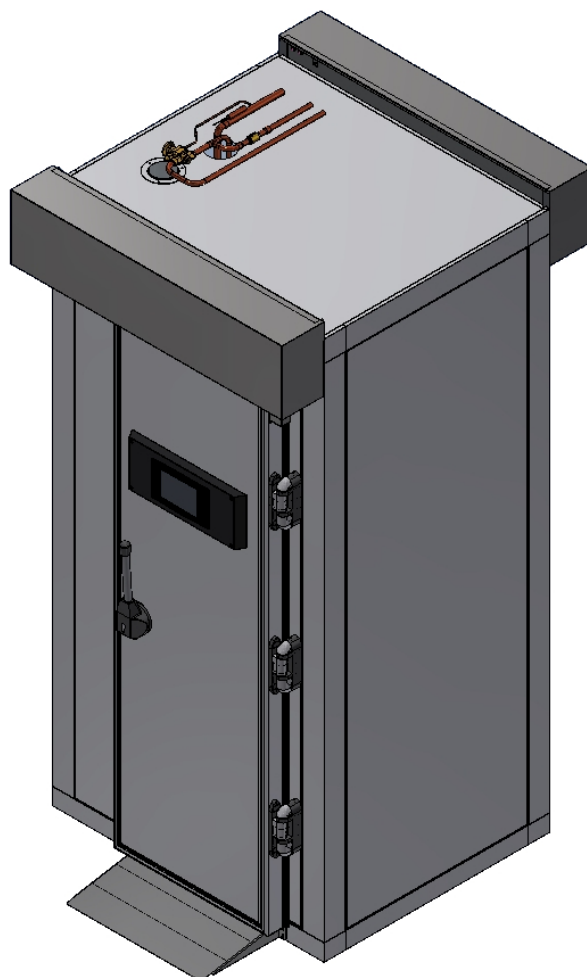


Pass the wire of the display on the front door as explained in chapter 4.3 step 14 and complete the assembly operations described in chapter 4.3 steps 15 and 16.

We remind you to check the correct positioning of both doors and adjust them if necessary, as explained in chapter 4.3 point 16.

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Assembly operations for the tunnel ROLL-IN blast chiller cell are now complete.



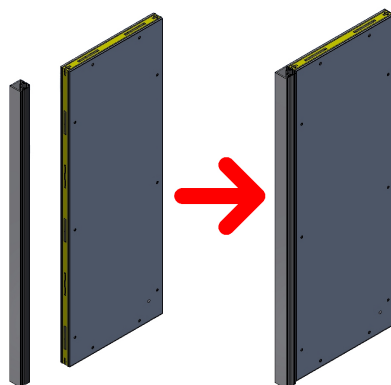
# **7 - Cell assembly 60-80-100-120T**

## 7.1 - INSTALLATION OF CELL COMPONENTS

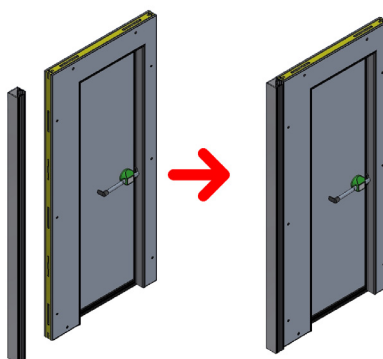
Cells 60-80-100-120T are modular, that is, to switch for example from a 60T to 80T, a cell module is added consisting in a floor, evaporator wall with drain hole, front evaporator wall, evaporator and top panel. The cells are exclusively the TUNNEL type, that is, with front door panel and rear door panel. The doors can be ordered with left or right handed opening. We remind you that doors are non-reversible.

1 - Identify and prepare the panels as illustrated in chapters 4.1 and 4.2 of this manual.

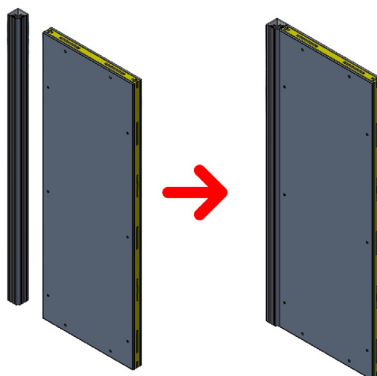
With respect to 20T and 40T cells, the first assembly operation involves the installation of one corner profile only on the left side panel (panel with evaporator condensate water drain hole).



2 - Proceed to install the rear left corner profile (view from inside cell) on the rear door panel.



3 - Proceed to install the rear right corner profile on the first right side panel (side opposite evaporator)





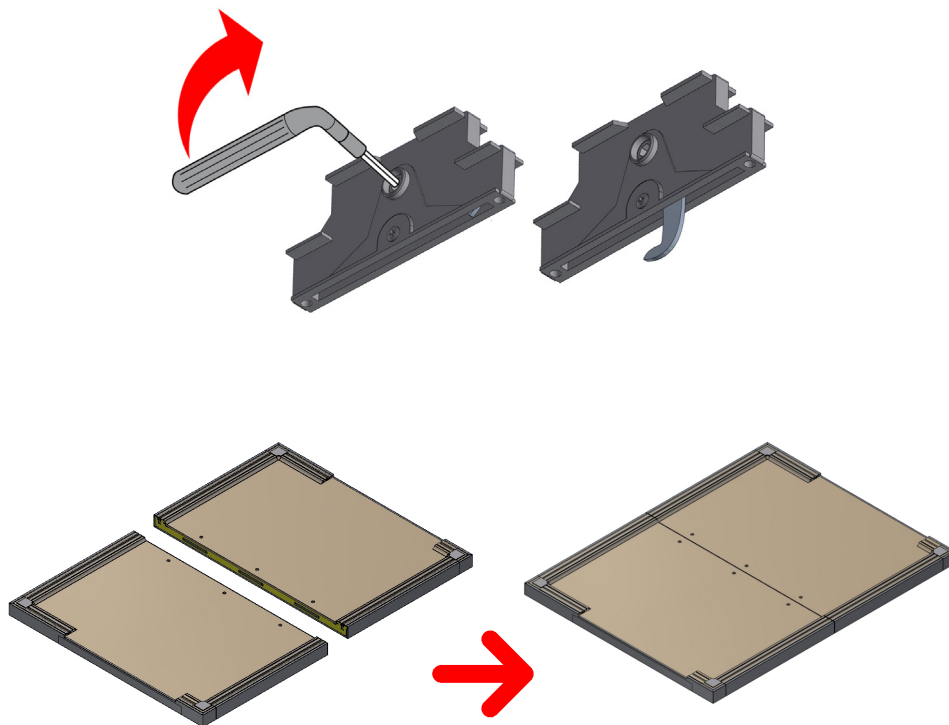
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

4 - Position the floor panels in the area where the cell will be installed.

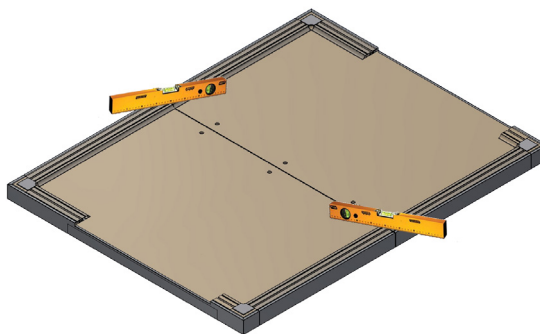
Remove all the protective film from the external surfaces of the panels.

Join the two panels using the L hex key supplied with the panels.

The holes to rotate the hooks and secure the panels are found on the inner edge of the panels. Insert the key and rotate by 90° to activate the cam:



Make sure the floor is levelled, otherwise level it by inserting shims under the floor panel.



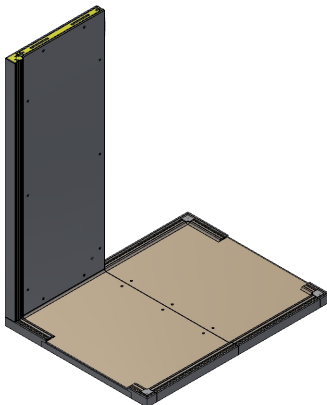
Apply the silicone on the bottom of the floor panel, this is needed to make sure there are no water infiltrations under the panel. Moreover, the silicone will ensure improved insulation of the panel against the floor itself. See chapter 4.3 for this step.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

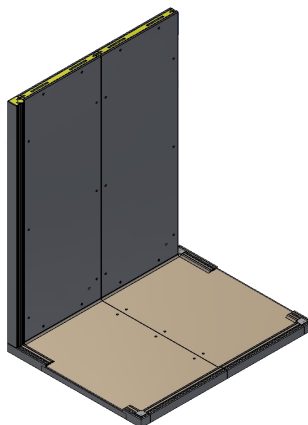
5 - Following the instructions of chapter 4.3 step 4, proceed to install the various panels **taking care to apply the silicone on the contact areas and to properly tighten the hooks** as explained in the various chapters.

Follow the steps below:

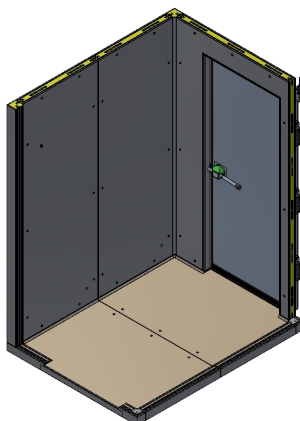
a - installation of left side panel with corner upright



b - install the second left side panel

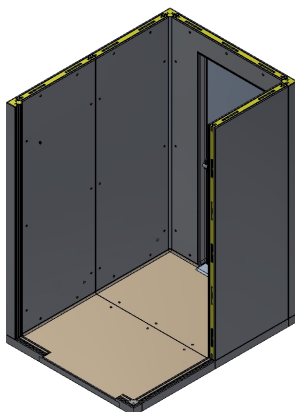


c - install the rear panel with door (without display)

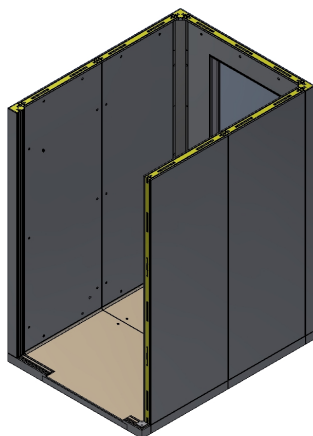


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

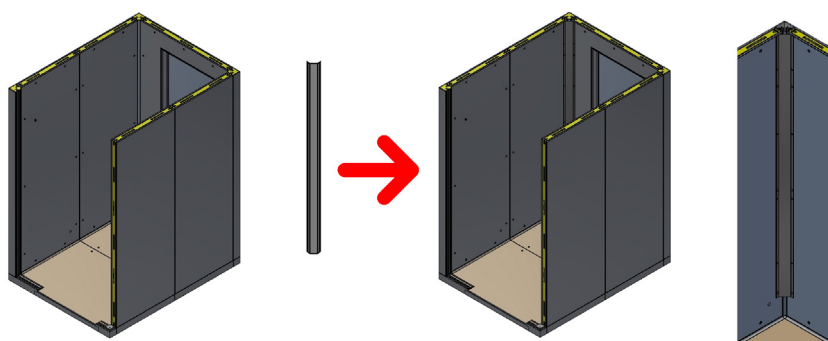
d - now install the right side panel complete with corner profile



e - now install the second right side panel

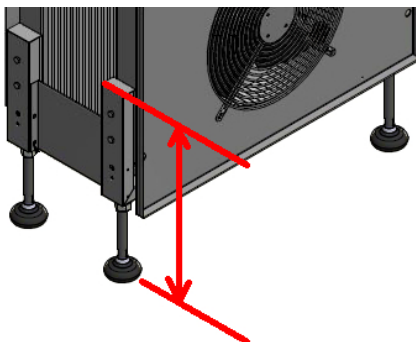


f - As illustrated in chapter 15.5, proceed to install the right deflector

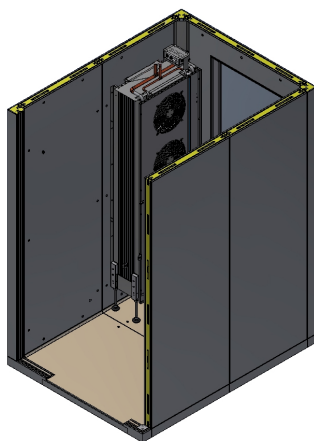


## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

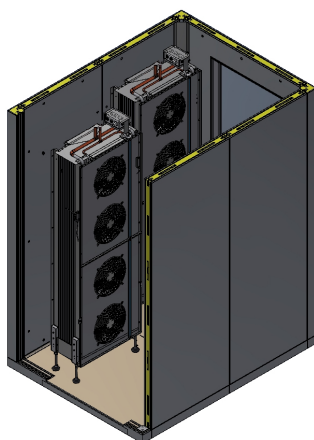
g - Take the first evaporator assembly, from its extended position, unscrew the legs and extend them to a total length of **395 mm (+0;-5 mm)**. This measurement must be inclusive of the leg cap and the end of the leg support itself:



Once all four legs have been adjusted, position the evaporator alongside the left panel, inserting the condensate water drain pipe as explained in chapter 4.3 step 8. Now firmly secure the evaporator with the supplied screws as explained in chapter 4.3 step 8.

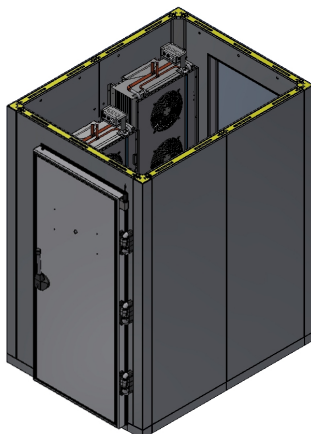


h - proceed to position the second evaporator in the cell, but do not place it in the final position insofar as the cell first needs to be closed with the door panel.



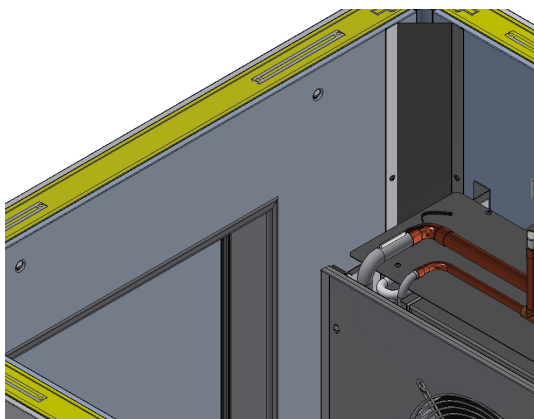
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

i - Now secure the front door panel and close the cell with the right corner upright. Follow the instructions in chapter 4.3 steps 6 and 7.



l - Once the external panels of the cell have been assembled, it is possible to mount the second deflector

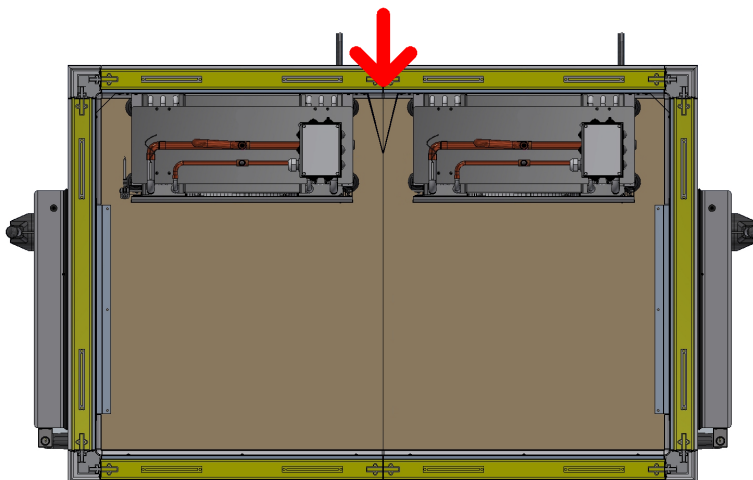
Align the upper edge of the deflector with the upper edge of the panels and secure it with at least 6 self-tapping screws, in the inner left corner.



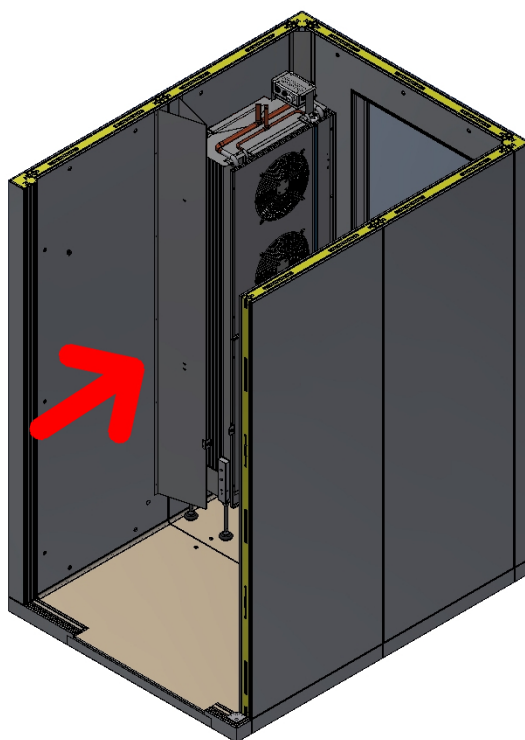
Once the deflector has been secured, position the second evaporator, inserting the condensate water drain pipe in the existing hole on the side panel and permanently secure it as explained in chapter 4.3 step 8.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

m - After permanently securing the second evaporator, secure the central deflector exactly halfway between the two evaporators. The deflector must be positioned flush with the top edge of the cell just like the side ones, and secured with the relative screws.

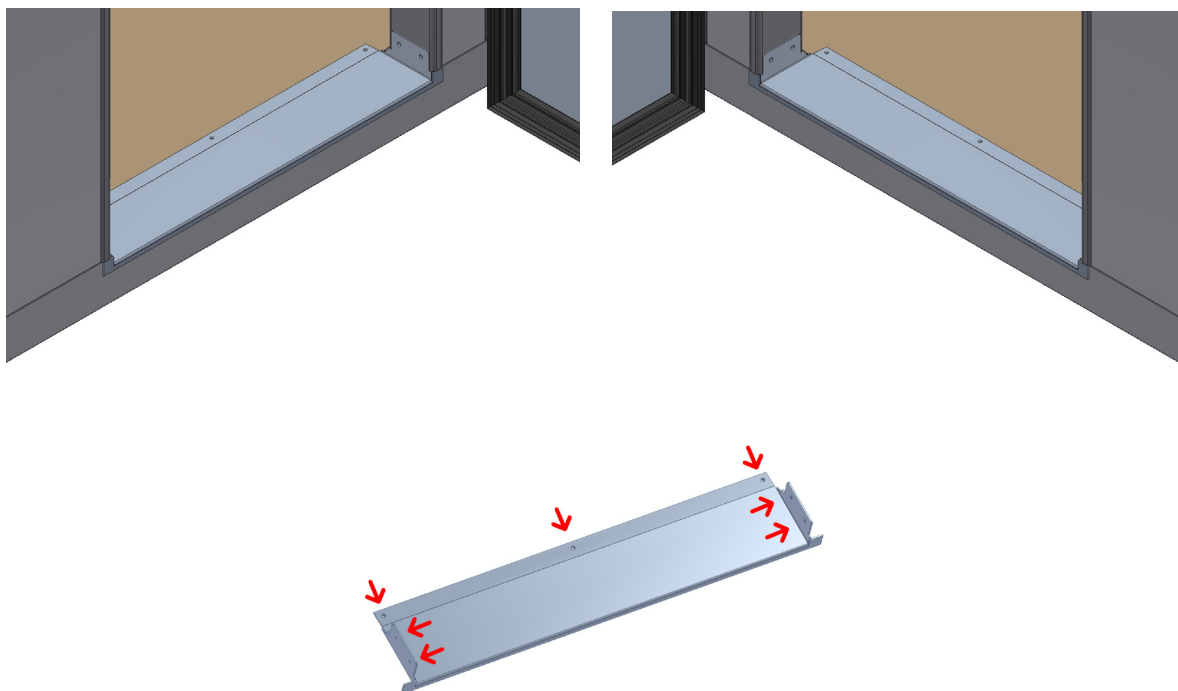


For the sole purpose of demonstrating the positioning of the central deflector, the door panel and second evaporator have been removed from the following image:



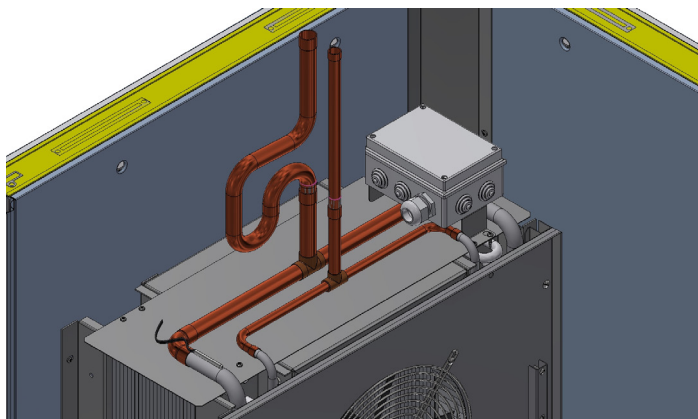
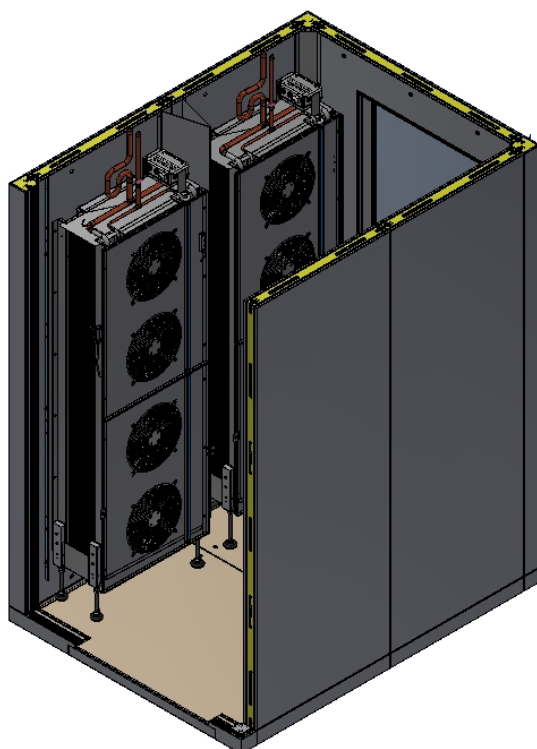
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

n - as illustrated in chapter 4.3 step 8, proceed to install the doorstep protective plate. Apply the silicone and position both doorsteps, then secure them with the relative screws.



o - At this point, the extension delivery and suction pipes can be secured. Proceed as explained in chapter 4.3 step 9 and repeat the operations for both evaporators.

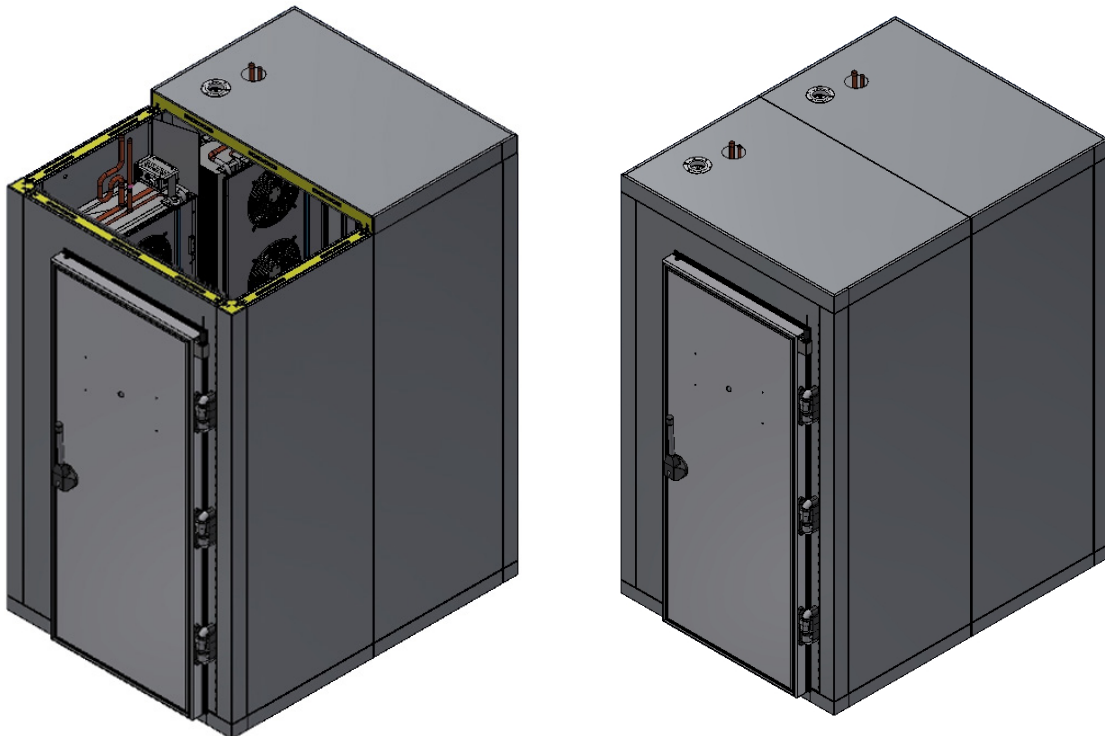
In order to show the assembly of both evaporators in detail, the door panel has been temporarily removed in the following photo:



# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

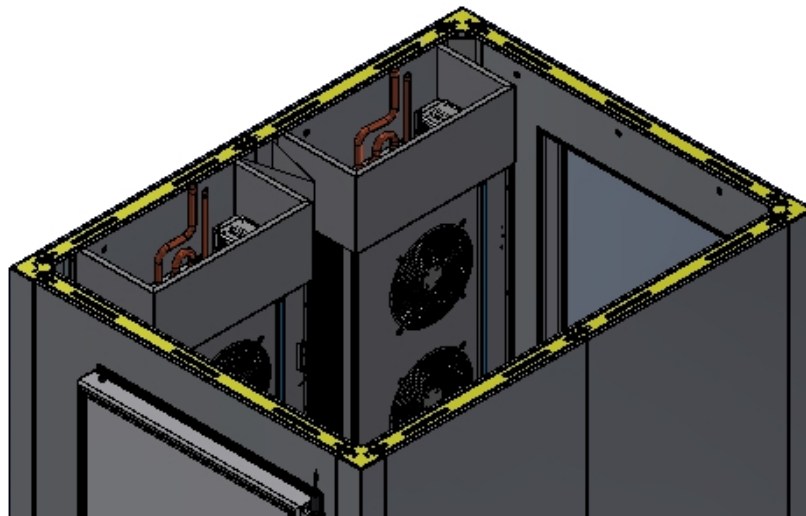
p - After having connected the pipes to both evaporators, the top panels (roof) of the cell can be positioned. The panels must be joined to each other, it is advisable to proceed in this order:

- 1 - Apply silicone on the edges of the panels
- 2 - Position the top rear panel without securing the blocking hooks
- 3 - Position the second roof panel alongside the first
- 4 - Tighten the central hooks so that the two panels are aligned and joined to each other
- 5 - Proceed to block the roof assembly to the side panels by cross-fastening so that the top part of the cell is perfectly aligned.



After having positioned and secured the roof assembly, proceed to install the covering plates of both evaporators and secure them with the dedicated screws as explained in chapter 4.3 step 12.

In order to show both components in detail, the cell roof has been temporarily removed in the following photo:

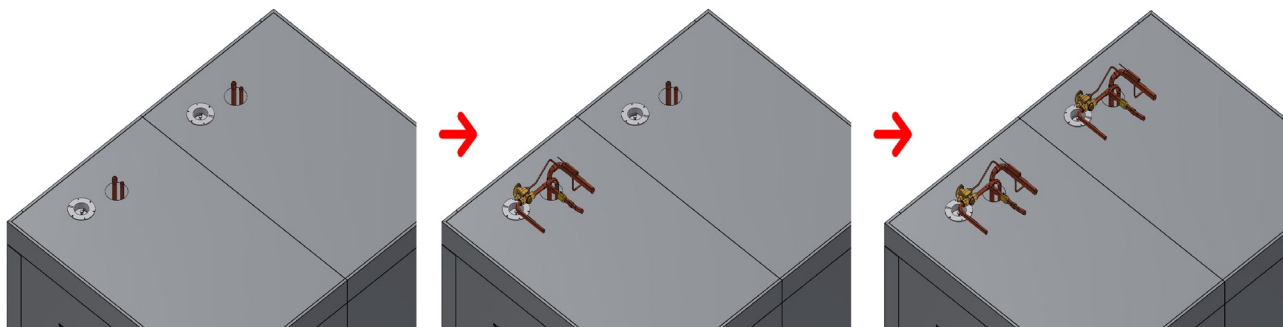




## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

6 - After having completed the installation of the top panel, proceed to install the pipes kit with thermal expansion valve for both evaporators.

Insert the pipes on their respective counterparts emerging from the roof, protect the valve with a damp cloth and the hole in the top panel using a refractory material, then proceed to weld the gas delivery and return pipes.

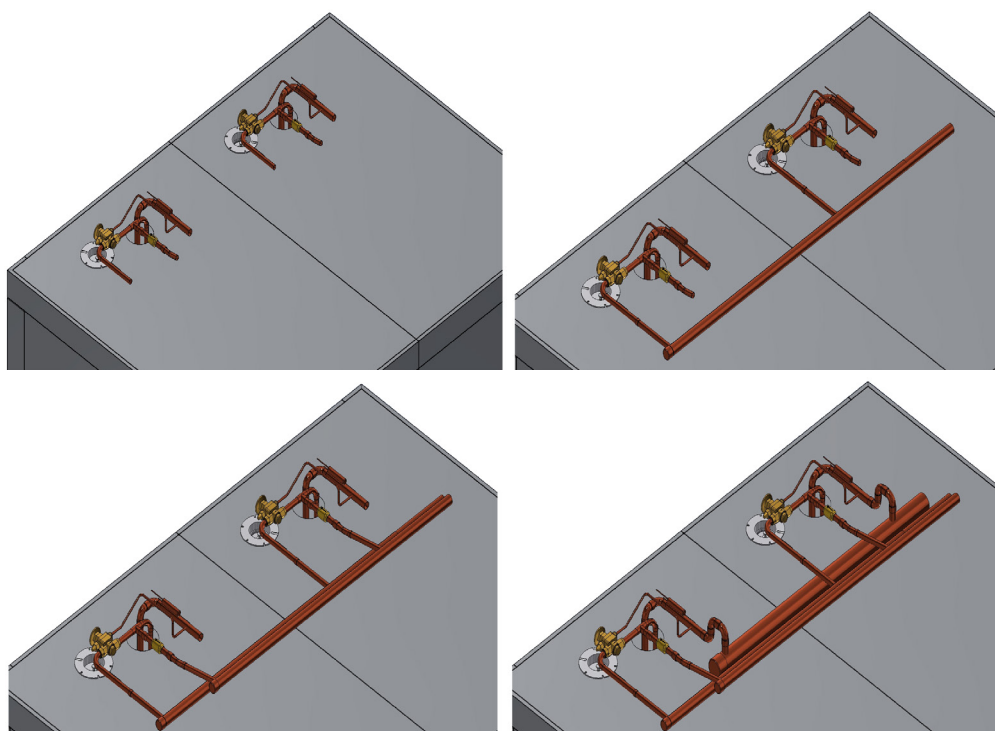


Once welding is complete and after waiting for the welds to cool, the cables can be inserted into the cell through the pipe through-hole.

A multicore cable protrudes from the junction box above each evaporator, pass this cable through the hole alongside the delivery and return pipes. Moreover, take the food probe supplied with the cell components, position the probe on the support to the left of the first evaporator on the door with display side, and pass the wiring alongside the gas delivery and return pipes. Finally, pass the evaporator temperature probe and the cell probe cable alongside the other cables. Secure them temporarily above the top roof panel.

After passing the cables, isolate the delivery and return pipes with insulating material more or less until the open ends of the pipes. Moreover, it is now possible to close the top panel hole with expanding foam so as to completely insulate the inside of the cell from the outside.

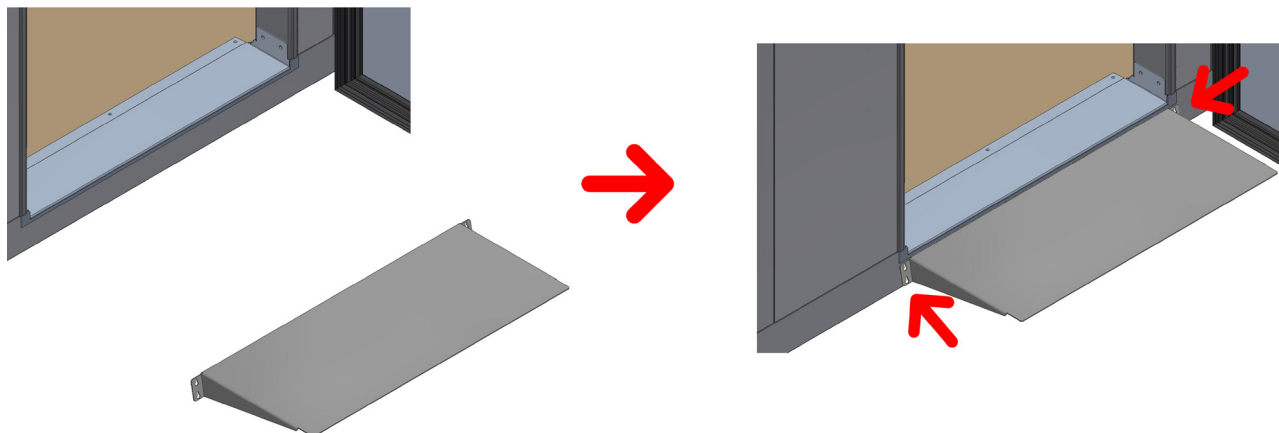
Then connect the pipes between the two valves for delivery, return and hot gas. Then connect them to the condensing unit and insulate them as specified.



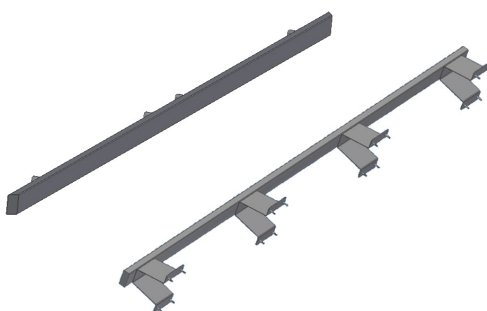
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

7 - It is now possible to install the ramps and the trolley stop profiles:

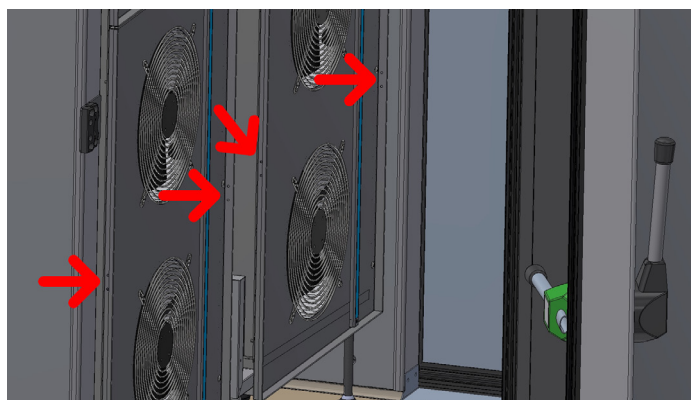
a- Take the ramps and the 4+4 supplied screws. Open the door, rest the door on the floor and bring it into contact with the base of the cell; once the fixing points have been identified, using a screw gun, secure the 4 screws. Repeat this procedure for the second ramp.



b - Take both trolley stop profiles supplied together with the cell components and the relative fastening screws.



Position the evaporator side profile in correspondence with the holes on the evaporator closure plate, and secure the 8 mounting screws.



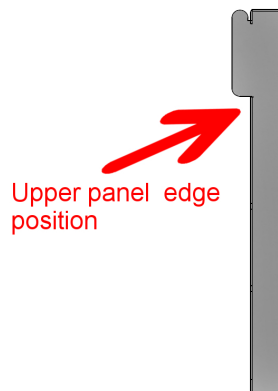
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

After having mounted the first trolley stop profile, position the second trolley stop profile, screwing it to the right side wall with a screw gun. To determine its position, refer to the trolleys in your possession to make sure the geometry of the trolley is able to strike the walls of the cells itself.



8 - Once the last components have been assembled inside the cell, the electrical panels can be installed. This too is installed using self-tapping screws.

The structure of the electrical panel allows it to be laid on the top edge of the top cell panel and then secured using the supplied screws.

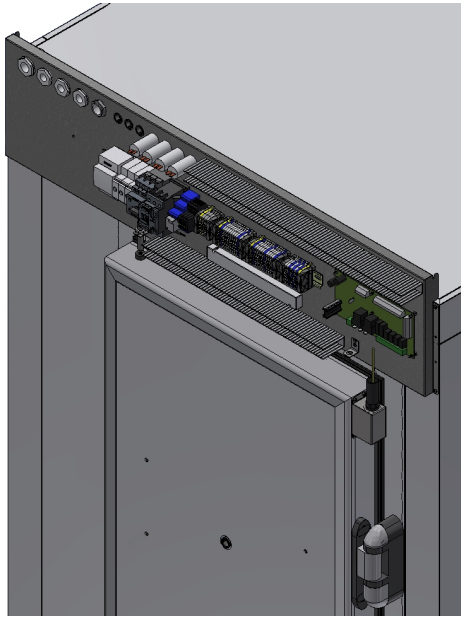


We remind you that tunnel cells are supplied with 2 electrical panels:

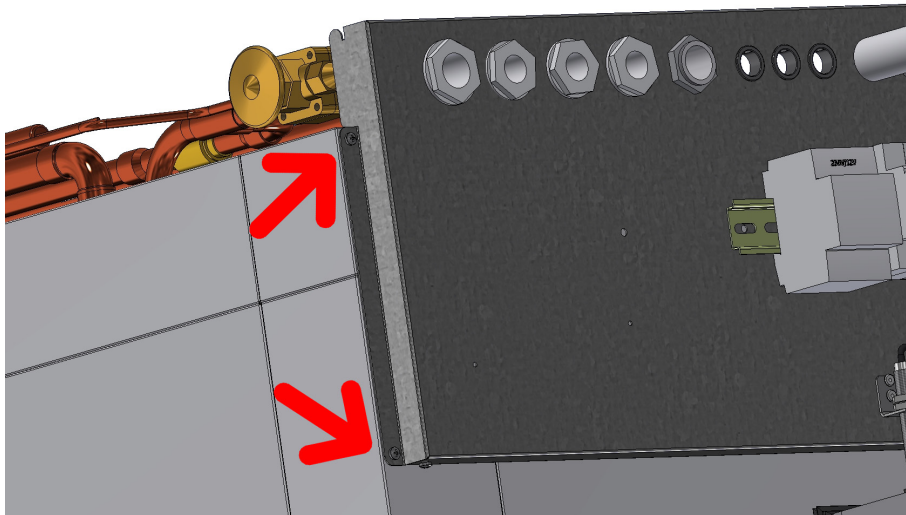
- 1 - main electrical panel (to be installed on the door with display side)
- 2 - blind electrical panel with only the second door switch

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

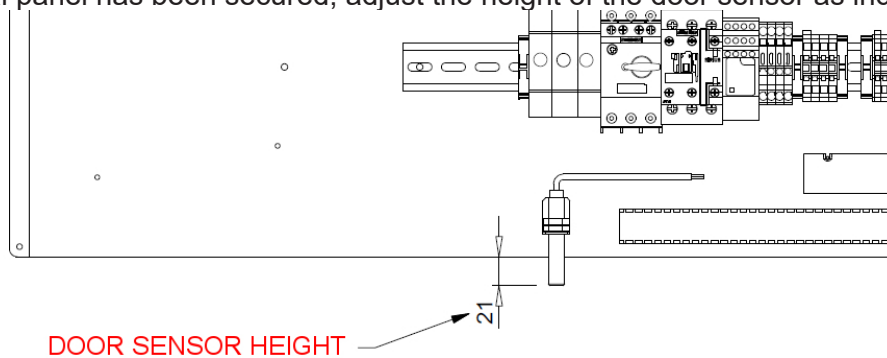
a - Position the main electrical panel on the top cell panel, and using a screw gun secure the 4 fastening screws.



Following is an illustration of the four fixing points for the electrical panel.

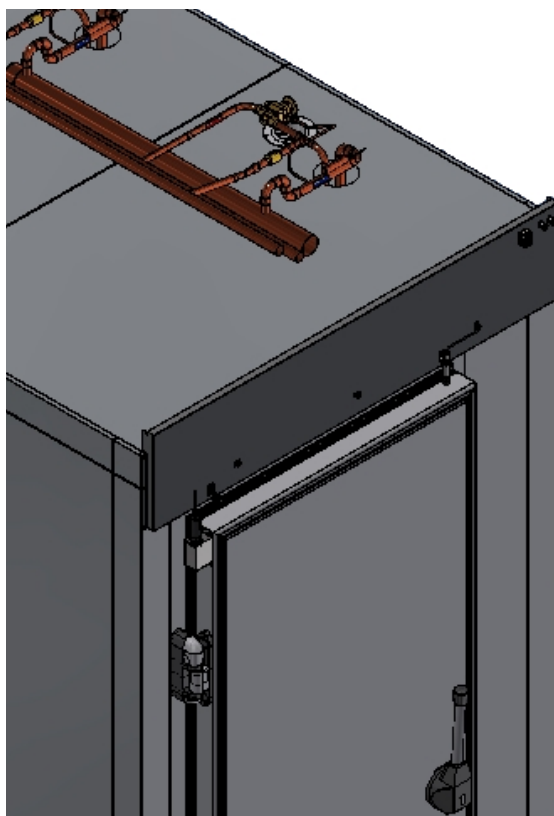


b - Once the electrical panel has been secured, adjust the height of the door sensor as indicated below:

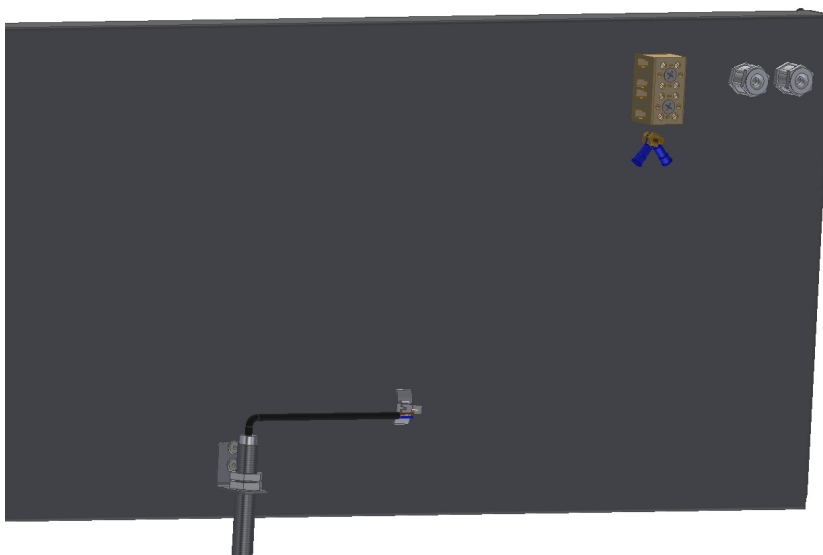


## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

c - Position the second (blind) electrical panel and after having secured it with the dedicated screws, adjust the height of the door sensor as previously explained in point b.

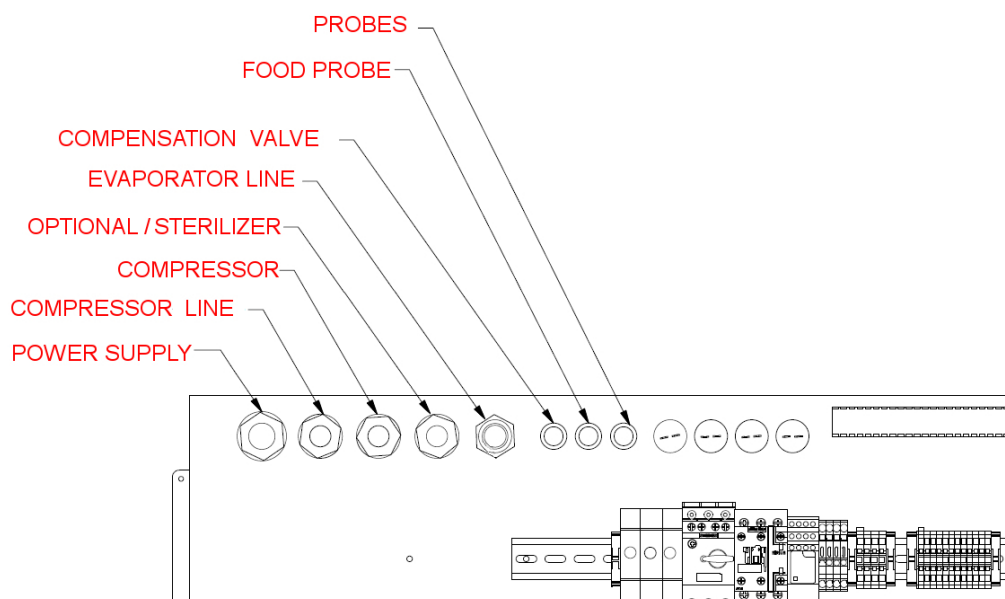


From the terminal block on the blind electrical panel, connect the two cables supplied with the cell components to connect the door sensor, door frame heater and door grounding functions to the main electrical panel. Pass them through the two cable glands and connect them to the main electrical panel.

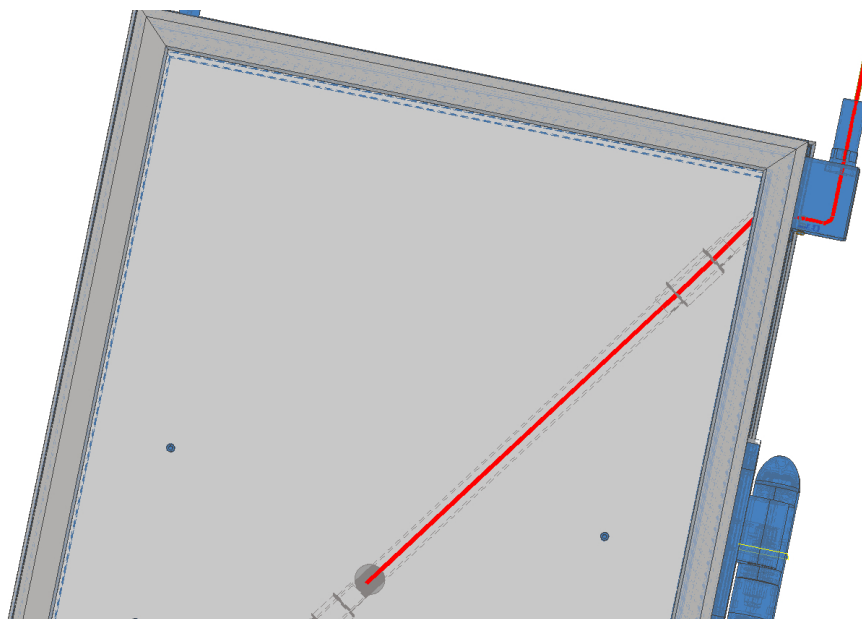


# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

**9 - Electrical connections.** After having positioned and secured both electrical panels, proceed to make the electrical connections as indicated by the supplied wiring diagrams. Pass the wiring as indicated below:



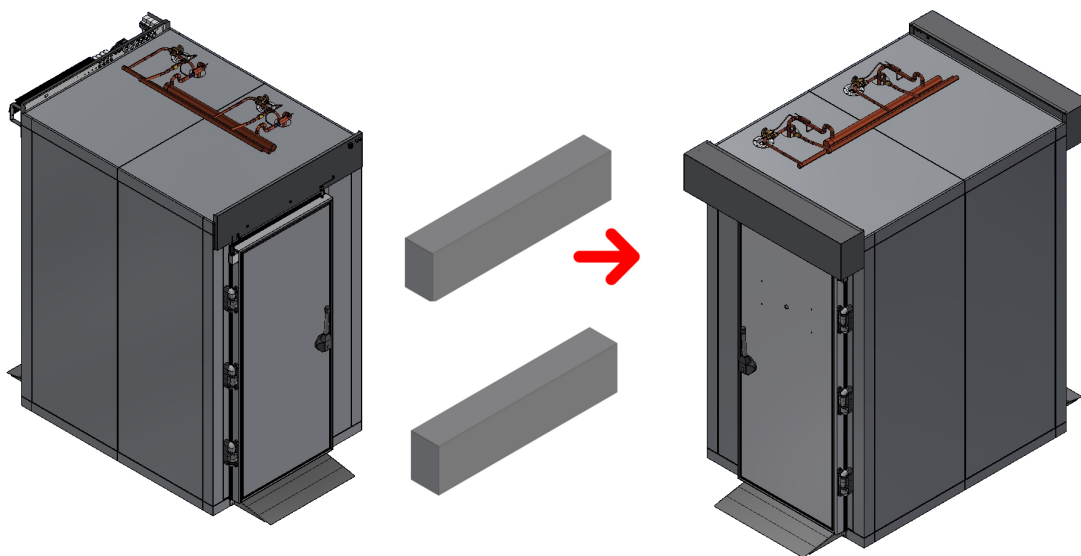
Now pass the display wires through the cable through-hole on the door. Insert the wires from the ends without terminals and pull them out from the junction box in the top corner of the door.



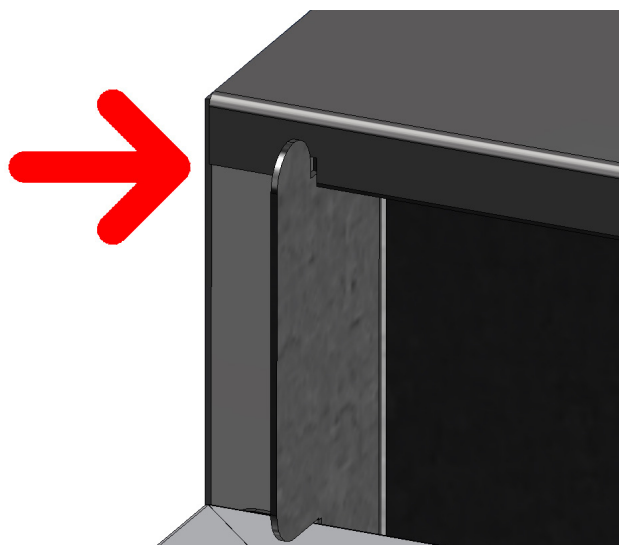
Once the display wires have been passed, connect them to the relative terminals of the power board as indicated in the supplied wiring diagram.

## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

10 - After having made all the electrical connections, the electrical panel covers can be installed. The panels lock into the two slots located at the ends of the electrical panel plate, and once positioned, are secured with the three screws supplied for each one.



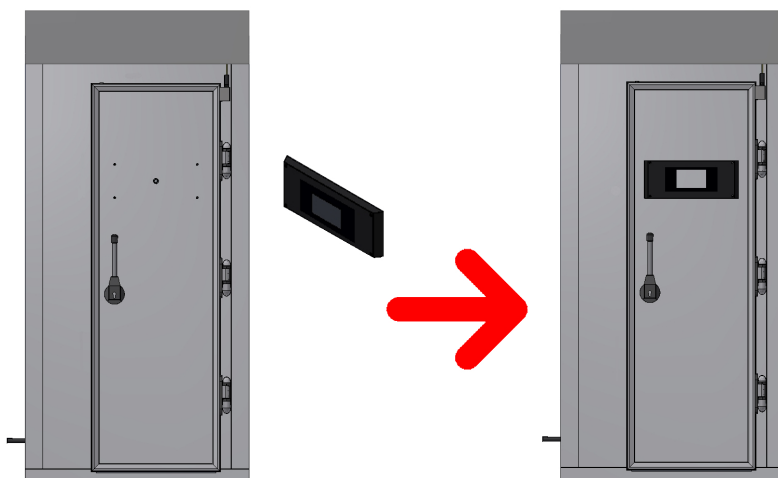
Following is an illustration of the two interlocking points of the electrical panel cover, and the three screw fastening points are highlighted.





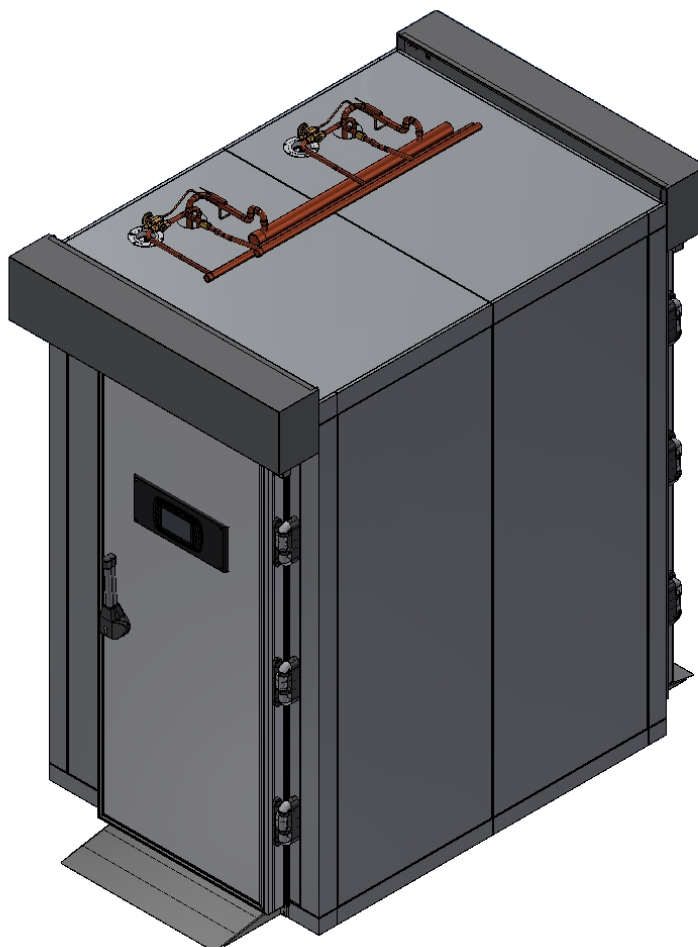
## MULTI-PURPOSE ROLL-IN BLAST CHILLERS

11 - The final operations for the assembly of the cell involve the installation of the display and its support structure. The display is supplied already assembled on the support structure with 6 screws. It is sufficient to insert the previously passed wire connector into its counterpart on the PCB and secure the structure to the door, using the 4 supplied screws.



We remind you to check the correct positioning of both doors and adjust them if necessary, as explained in chapter 4.3 point 16.

Assembly operations for the ROLL-IN blast chiller cell are now complete.



N.B. Cells 80-100 and 120T are the modular type, repeat the steps where necessary.



## **8 - ETL (UL) CELLS' SPECIFIC COMPONENTS**

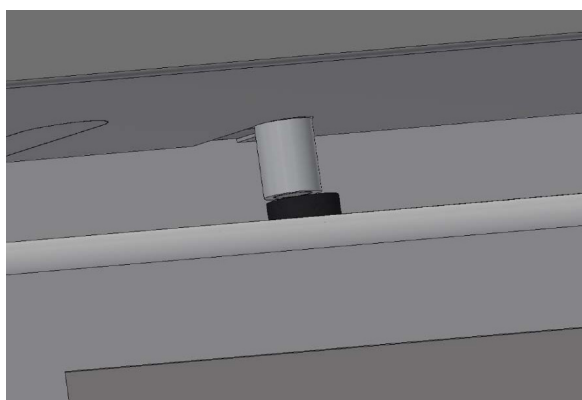
## 8.1 - ETL (UL) SPECIFIC COMPONENTS

The ETL (UL) cells dedicated to the North American markets need to be equipped with specific components. Check at the time of assembly, the presence of the following components and their correct installation:

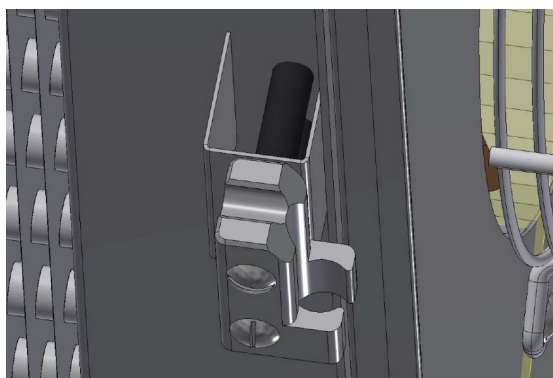
- 1 - The adjustable legs of the evaporator are prepared with a pre-installed stainless steel tube cover (item 74702101).



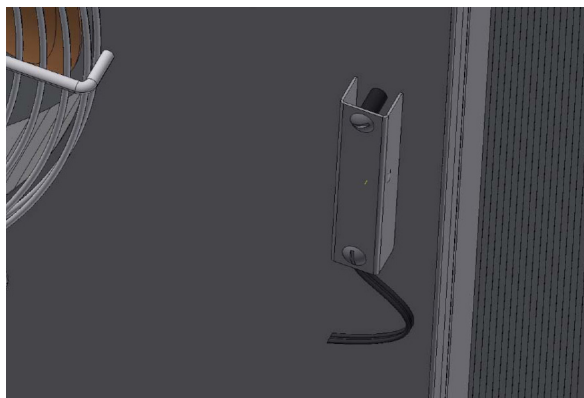
- 2 - The cylindrical sensor for the door contact is fitted with a screwed aluminum cover (item 74702129) pre-installed.



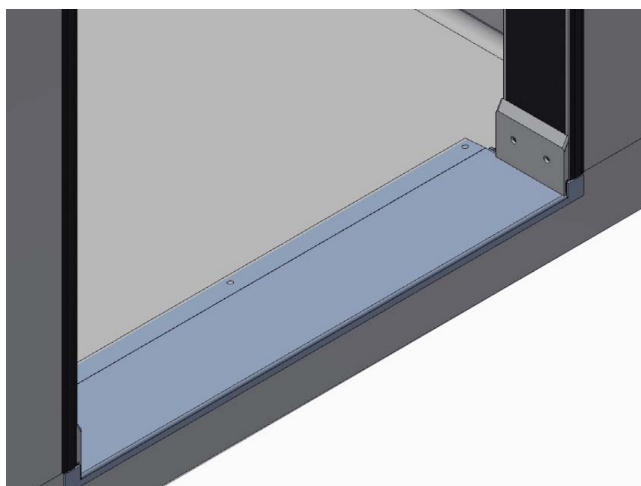
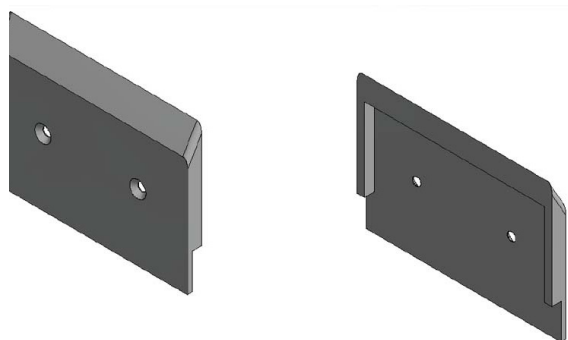
- 3 - The fixing screws of the probe holder are fitted with pre-installed plastic cover tubes (item 74702128)



- 4 - The fixing screws of the cell probe cover sheet are fitted with pre-installed plastic cover tubes (item 74702126).



- 5- Once the cell has been installed and the threshold cover plate has been fixed, install the two aluminum protections using the screws supplied in the kit.



# **9 - Instructions for CPU connection and first start-up**

## 9.1 - CPU CONNECTION

Connection and welding tasks must be performed by qualified personnel having the technical skills required by law in the Country where the machine is installed.

!!! Caution !!! Inject nitrogen to leak in the pipes prior to welding the structure.

The correct design of the piping system ensures ideal performance and prevents damage to the system

All systems have been designed to in any case ensure oil return to the compressor.

More specifically, the suction line must be slanted toward the compressor (slope of at least 3%) to ensure a minimum gas flow rate of 4m/sec.

If the gas pipelines display vertical segments, you will have to arrange syphons: the speed of the gas flowing in these segments must reach at least 10-15m/sec.

If it is necessary for the suction pipe to rise up as compared to the evaporator's position, we recommend a vertical rise and to include syphons to allow for oil return. Always install the first syphon on the outlet of the evaporator pipes.

To make this connection, install the liquid line, suction and hot gas piping in accordance with the diameter of the connections available on the condensing unit.

For tube sizes for evaporator-unit distances up to 10 metres, see the details reported on the technical data sheets of the condensing units.

For greater lengths, size the diameters so that the right gas speed is guaranteed.

Always insulate the hot gas suction line with an anti-condensate pipe at least 13 mm thick.

It is crucial for the system to properly work and for compressor durability to correctly perform a vacuum test run of the system, so as to ensure that air content and especially the humidity are below the tolerated values.

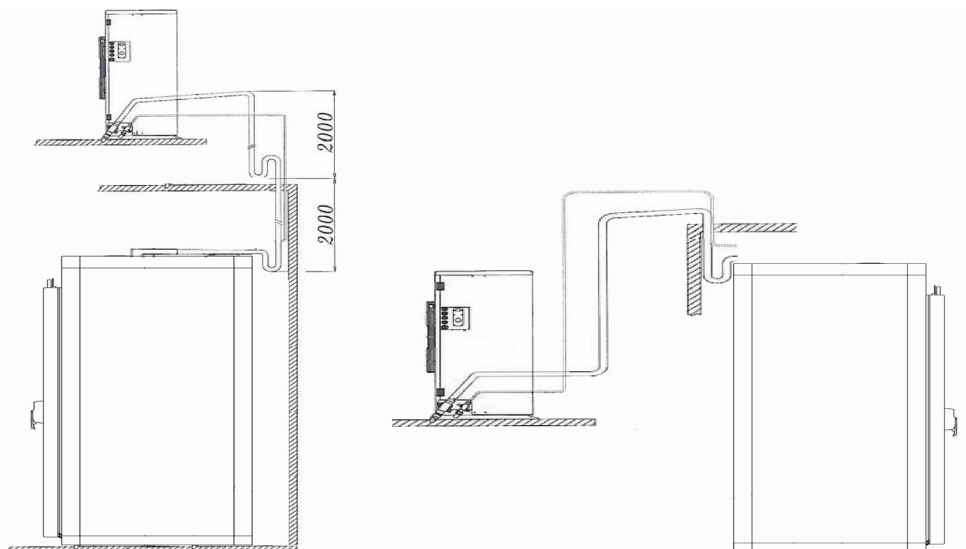
We recommend to run a vacuum test on both circuit sides, with the compressor valves shut. At any rate, the result aimed for is a pressure of less than 5 Pa.

TO AVOID IRREPARABLE DAMAGE TO THE COMPRESSOR, DONOT START IT RUNNING WHEN EMPTY WITHOUT HAVING FIRST SUPPLIED GAS. DURING THE VACUUM AND GAS SUPPLY OPERATIONS, REMEMBER TO POWER THE COIL OF THE SOLENOID VALVE OF THE LIQUID AND HOT GAS LINE WITH VOLTAGE, OR BY USING THE SPECIFIC MAGNETS.

After a vacuum test, the system must be filled with the type of refrigerant gas indicated on the rating plate of the machine and of the condensing unit. To correctly supply the refrigerant gas, we recommend that after having run the vacuum, you pump part of the gas into compressor to "break the void"; then, start the compressor running to intake the remaining portion of loaded gas.

To make sure the quantity of gas supplied is the right one, read the value on the gauges connected to the already installed pressure inlets. The pressure values must be compatible with the machine's operating condition.

THE MIXTURES OF REFRIGERANT GAS MUST BE SUPPLIED TO THE SYSTEM IN THEIR LIQUID STATE.



## 9.2 - ELECTRICAL CONNECTIONS

The connection must be performed by qualified personnel having the technical skills required by law in the Country where the machine is installed.

Place a differential circuit breaker with an intervention curve of type C ( $10+15 I_n$ ) between the power supply line and the electrical board on board the machine, and be sure the line voltage matches the one indicated on the label fitted on the machine (allowed tolerance:  $\pm 10\%$  of the rated voltage).

To properly size the differential circuit breaker, remember to take account of the power absorption indicated on the label.

**PLEASE NOTE:** The circuit breaker must be placed right next to the machine, so that the technician can clearly see and reach it if there is need to perform maintenance.

The power cable section must be appropriate for the machine's power output (which can be read on the label applied onto the machine).

It is obligatory by law to connect the machine to an efficient earthing system. No liability is accepted for the non-observance of this requirement or if the electrical network to which you are connecting the machine is not up to the currently enforced standards.

In machines with a three-phase power supply, it is necessary to assist to fan start-up, in order to check that they are rotating in the right direction; if the direction is different from the one pointed to by the arrow on the label next to the fans, turn the machine off and invert the two power line phases. Once this operation has been completed, the unit can be restarted.

**IMPORTANT: THE SCROLL COMPRESSORS ONLY PROVIDE COMPRESSION IN A CERTAIN DIRECTION OF ROTATION.**

The three-phase compressors can rotate in both directions, depending on how the phases are connected to the terminals T1, T2 and T3. Since there is a 50% chance that the connections are made in such a way that rotation is reverse, it is important to check that the direction is correct.

The operator performs this check by observing decrease in the suction pressure and increase of the inlet pressure that starts the compressor running.

If rotation is inverted, a louder sound level is generated than the one emitted during normal system operation and the current absorbed is higher than the values referred to in the manual. We recommend that you assemble a protector to spot inverted phases, which will intervene when the phases have not been properly connected.

Follow the instructions in the wiring diagrams annexed to the machine when wiring the cables.

## 9.3 - CONDENSATE DRAIN CONNECTION

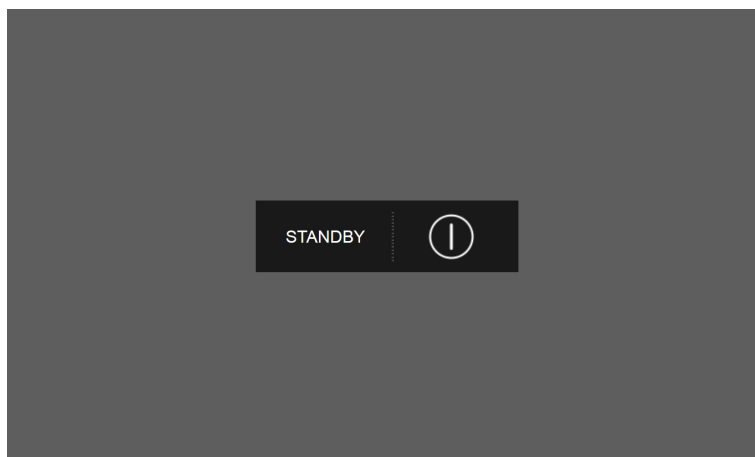
Connect the condensate water drain pipe coming from the evaporator to a syphoned pit outside the blast chilling cell. The drain pipe's heating resistance must be the same along the entire inner span of the pipe.

## 9.4 - TEST

After having made all the refrigeration connections, electrical connections and gas load, proceed to test for the correct operation of the parts.

After having powered the machine and once the software has loaded, the STAND-BY screen appears.

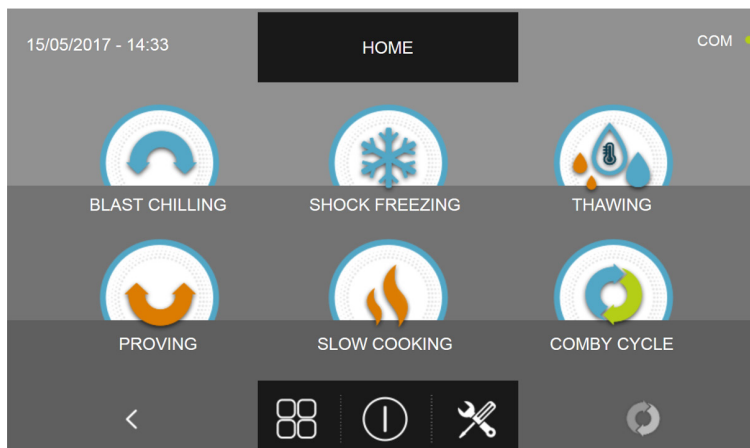
The wording STAND-BY on the display indicates that the machine is not operational.



To access the various menus, the ON button must be pressed



The display will open the HOME PAGE screen, where the desired cycles can be selected.



N.B. Depending on the machine model, the Home Page may have limited icons. See the user manual for your model.

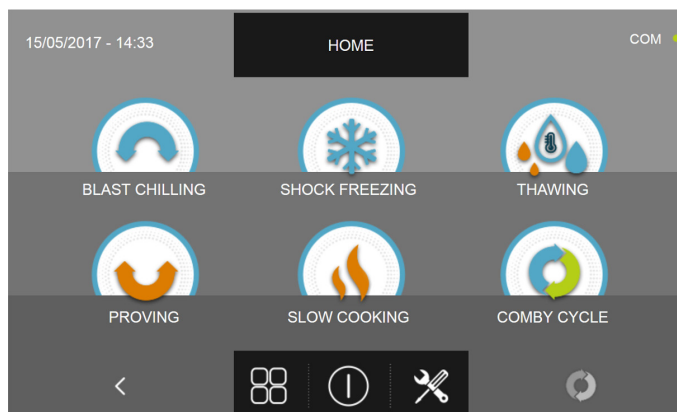
# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

## 9.4.1 - SERVICE MENU

The menu, which is password protected, allows access to the machine's programming and maintenance functions.

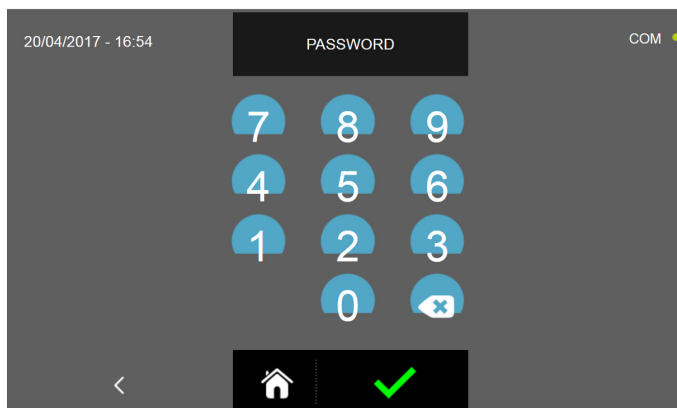


From the HOME PAGE, press the icon to access the service menu.



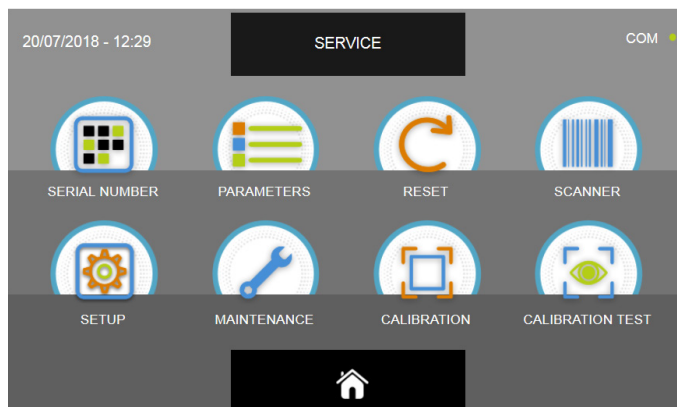
N.B. Depending on the machine model, the Home Page may have limited icons. See the user manual for your model.

Once the Service icon has been pressed, a page opens to insert the access password



Insert the code: 1976 and press the confirm button (green indicator)

Access is thus provided to the Service menu:



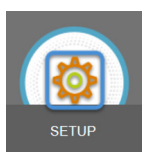


## 9.4.2 - SETUP

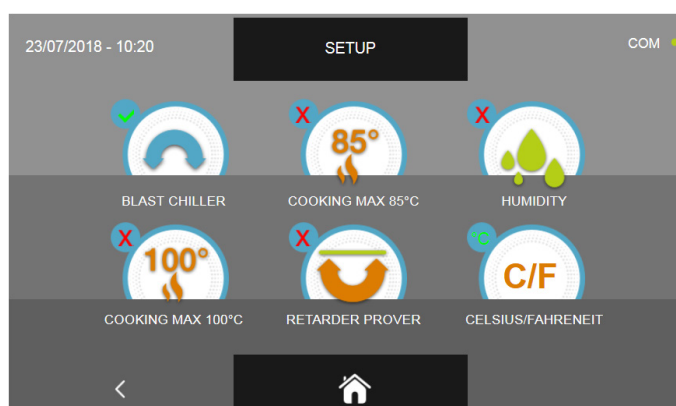
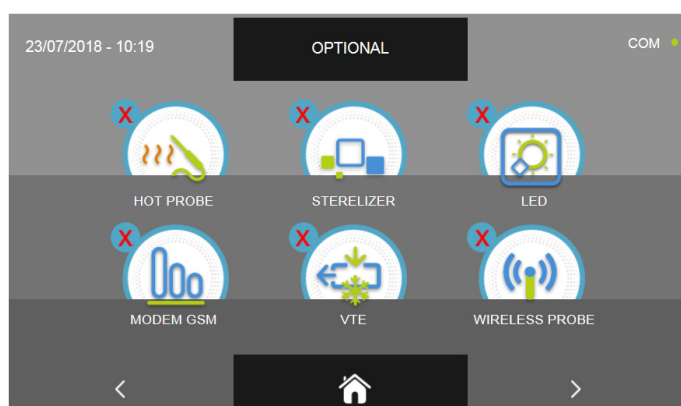
The SETUP menu allows the activation of optionals and changes to the basic operational settings of the machine. Check that the optionals requested during the machine order phase have been correctly enabled.

The menu consists in two pages with the following icons:

OPTIONAL	DESCRIPTION
HOT PROBE	Activation of probe heating function
STERILIZER	Activation of sterilizer function
LED	Enabling of button to turn on internal cell light
GSM MODEM	Activation of GSM card and transmission of messages via GSM (function not currently available)
VTE	Activation of electronic thermostatic valve
WIRELESS	Activation of data transmission for wireless probe
BLAST CHILLER	Activation of blast chilling function (START model only)
COOKING MAX 85°C	Activation of slow cooking function max 85°C in cell (ALL IN ONE model only)
HUMIDITY	Activation of humidity probe function (Fermalievita models only)
COOKING MAX 100°C	Activation of slow cooking function max 100°C in cell (function not currently available)
RETARDER PROVER	Activation of Retarder Proving (Fermalievita models only)
CELSIUS FAHRENHEIT	Option to select unit of measure of Temperature

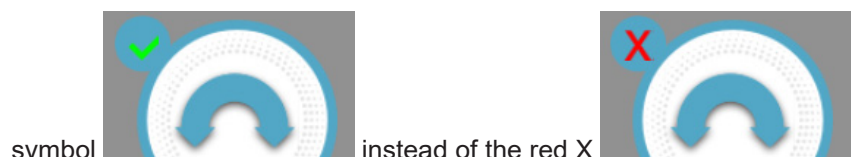


When the icon is pressed, the first page of optionals appears.



By pressing the icon it is possible to skip to the next page.

To activate a function, simply press the icon of reference. If the function is active, the top left icon will show a green tick



symbol instead of the red X

To return to the home page, press the icon:



To return to the previous page and then the service menu, press the icon:

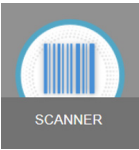


**Do not activate any optionals unless you are certain that the component is effectively installed on the machine.**

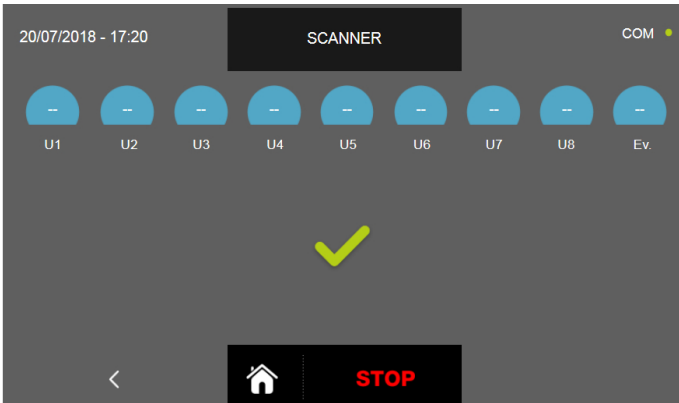
**In case of doubt, contact the service centre and quote the machine serial number.**

9.4.3 - SCANNER

The SCANNER menu allows the activation of individual output relays and the relative components of the power board connected to them. Test all the functions before running the machine test cycle. This function is also particularly useful if during servicing, the operation of components needs to be tested.







When the icon is pressed, the function activation pages appear.





The functions that can be activated in order and individually are:

Name	Function
U1	Compressor
U2	Heating
U3	Service (door frame heater, compensation valve)
U4	Pump down
U5	Sterilisation
U6	Probe heating
U7	Hot gas valve
U8	Alarm / Lighting
EV	Evaporator fans


To run a test on single components, press the key . Once a function is activated, instead of the symbol , the value of the power absorbed is shown in the relative field, e.g. .

press the key  again to stop the function and skip to the next. Repeat until you reach the function you intend to test.

Alternatively, each activation has a time-out of 3 minutes, that is, it automatically stops after 3 minutes and to skip to the next function, the key  must be pressed.

To end the test, press the key .

To return to the home page, press the icon: .

To return to the previous page and then the service menu, press the icon: .

# 10 - Equipment Register

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

This register applies to equipment containing Fluorinated Gases; operations to test the system and the correct operation of components must be performed, in addition to during the first installation, periodically every six months

## DEFINITION OF OPERATOR:

The F-gas regulation sets out that the operator of equipment is responsible for compliance with regulatory obligations. The operator is defined as a “natural or legal person who exercises effective control over the technical operation of equipment and systems”. Based on this definition, the owner of the system containing fluorinated gases is not automatically the operator of the equipment.

“Effective control over the technical operation” of equipment or a system includes, in principle, the following elements:

- free access to the system, which involves the possibility of monitoring components and their operation, and the possibility of granting access to third parties;
- control over operation and ordinary management (for example, making the decision to turn the equipment on and off);
- the power (including financial power) to make decisions in relation to technical modifications (for example, the replacement of a component, the installation of a permanent leak detection system), modifications to the quantity of fluorinated gases in the equipment or system, and the execution of tests and inspections (for example, checks for leaks) or repairs.

Normally, the operator of equipment for domestic use or small commercial equipment is an individual and generally the owner of the equipment, while in commercial and industrial applications, in the majority of cases the operator is a legal person (normally a company) that has the task of issuing instructions to employees regarding the ordinary technical operation of the equipment.

In some cases, in particular in the presence of large installations, contracts are stipulated with service companies for the execution of maintenance and repair operations. In these cases, the determination of the operator depends on contractual and practical agreements between the parties.

## SYSTEM IDENTIFICATION SHEET

### EQUIPMENT AND/OR SYSTEM IDENTIFICATION

Type of equipment : ..... Serial no. : .....

Remote condensing unit : ..... Serial no. : .....

Type of refrigerant : .....

Total refrigerant load: (Kg) : .....

Place of installation : .....

St.: .....no.....

Location : ..... Municipality : .....Pr : .....

Date of installation : .....

Installation carried out by : .....

### OPERATOR IDENTIFICATION (see definition on previous page)

First Name and Last Name (or company name) : .....

St.: .....no.....

Location : ..... Municipality : .....Pr : .....

Tel. : .....Fax : .....

email : .....

### TECHNICIAN IDENTIFICATION

First Name and Last Name: ..... Firm : .....

St.: .....no.....

Location : ..... Municipality : .....Pr : .....

Tel. : .....Fa...x : .....

email : .....

Technician's certificate of registration no. : .....

### VACUUM OPERATIONS AND NITROGEN CHARGE VERIFICATION

During the installation record in the given numeric order the following values:

1- Nitrogen charge pressure (bar): .....

2- Nitrogen holding time (hh:mm): .....

3- Vacuum pressure (bar): .....

4- Vacuum holding time (hm:mm): .....

## PERIODIC INSPECTIONS

The following inspections must be made after having turned on the machine and while running a shock freezing cycle with a set cell temperature of  $-30^{\circ}\text{C}$ . Record the following data after the cell reaches temperature, wait 5 minutes after the compressor resets. Go to the Input/Output screen and check the values of:

VALUE	Unit	1 <sup>st</sup> installation	6 months	12 months	18 months
Cell air temperature	$^{\circ}\text{C}$				
Food probe temperature					
Pt1	$^{\circ}\text{C}$				
Pt2	$^{\circ}\text{C}$				
Pt3	$^{\circ}\text{C}$				
Pt4	$^{\circ}\text{C}$				
Evaporator temperature	$^{\circ}\text{C}$				
Capacitor temperature	$^{\circ}\text{C}$				
Door switch status	open / closed				

Connect the High and Low pressure gauges to the condensing unit, and using a multimeter with current clamp for the compressor connections and machine power supply connections, record the values of:

VALUE	Unit	1 <sup>st</sup> installation	6 months	12 months	18 months
Delivery pressure	bar				
Suction pressure	bar				
Delivery pipe temperature	$^{\circ}\text{C}$				
Suction pipe temperature	$^{\circ}\text{C}$				
Overheating measured on condensing unit	$^{\circ}\text{C}$				
Current absorbed by compressor	A				
Current absorbed by machine	A				
Compressor supply voltage					
L1-L2	V				
L2-L3	V				
L1-L3	V				

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

VALUE	Unit	1 <sup>st</sup> installation	6 months	12 months	18 months
Machine supply voltage					
L1-L2	V				
L2-L3	V				
L1-L3	V				
L1-N	V				
L2-N	V				
L3-N	V				

On the condensing unit, check the liquid tell-tale and record the colour (refrigeration circuit humidity index):

- ☐ Green / DRY  
☐ Yellow / WET

The green / dry value is to be considered the correct operating condition.  
The yellow / wet value is to be considered a critical condition.

## LEAK TEST

Leak detector make and serial no. : .....

Sensitivity (g/year) : .....

Date of last calibration : .....

Test	Outcome 1 <sup>st</sup> installation		6 months		12 months		18 months	
	NO	YES	NO	YES	NO	YES	NO	YES
Condensing unit	<input type="checkbox"/>	<input type="checkbox"/>						
Suction line	<input type="checkbox"/>	<input type="checkbox"/>						
Delivery line	<input type="checkbox"/>	<input type="checkbox"/>						
Hot gas line	<input type="checkbox"/>	<input type="checkbox"/>						
Expansion and equalisation valve	<input type="checkbox"/>	<input type="checkbox"/>						
Evaporator	<input type="checkbox"/>	<input type="checkbox"/>						

# MULTI-PURPOSE ROLL-IN BLAST CHILLERS

Also check the torque of the filter bolts :

Torque wrench make and serial no. : .....

Torque wrench measuring range : .....

Date of last calibration : .....

Value measured : .....

The limit value is set at 28 Nm.

Using a multimeter or suitable tool, check the ground continuity between the grounding line of the electrical panel and the following components :

Test	Test outcome 1 <sup>st</sup> installation		6 months		12 months		18 months	
	yes	no	yes	no	yes	no	yes	no
Cell panels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Door panel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evaporator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condensing unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Also check the operation of the following installed electrical components :

Test	Test outcome 1 <sup>st</sup> installation		6 months		12 months		18 months	
	OK	NOK	OK	NOK	OK	NOK	OK	NOK
Door frame heater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evaporator tray heater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condensate drain heater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Check the correct closure of the cell door, adjust the hinges and stop plate if necessary as explained in the installation manual.



## TEST OUTCOMES

The tests had the following outcomes:

☐ Machine operates correctly

☐ Machine needs to be repaired due to the following reason \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

☐ Machine to be re-inspected within \_\_\_\_\_ months due to \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## NOTES :

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Date ..... Signature .....(maintenance technician)

Date ..... Signature .....(operator or system owner)



SCAN TO DISCOVER MORE INFORMATION!

