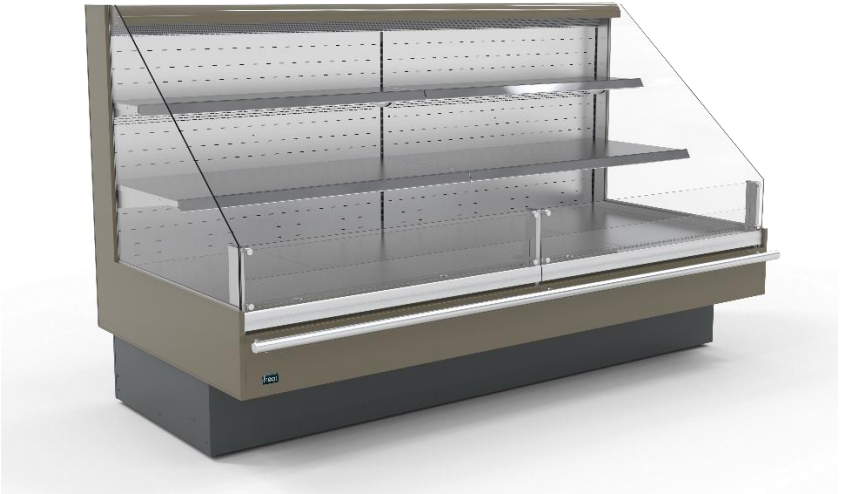


OPERATION MANUAL

SERVE-OVER

VEGA SPACE QB H1 / H2



freor
thinking green


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1. GENERAL INFORMATION

1.1. Manufacturer information

Manufacturer, address	FREOR LT, UAB Katiliskiu St. 92, LT - 02212 Vilnius, Lithuania T: +370 5 232 9188	
	Made in Lithuania	

Customer	
Installation date	
Installation place	
Start of the product operation	



The serve-over Vega Space H1 / H2 is labelled with technical data sticker. The sticker is attached to back part of refrigeration unit. The sticker provides information about model, voltage, and product code. It is strongly recommended to read sticker information before starting any work with serve-over. (**Fig. 1.**).





FREOR LT, UAB Katiliskiu St. 92 LT-02212 Vilnius, Lithuania freor@freor.com www.freor.com			
Type:			
Serial no:			
Year:			
Product code:			
Rated voltage, [V]: Frequency, [Hz]: Rated current, [A]: Defrost power input, [W]: Anti-condensation heating element power input, [W]: High pressure, [Bar]: Low pressure, [Bar]: Max pressure, [Bar]: Climate class:			
Refrigerant:		GWP:	
Quantity of refrigerant, [kg]:			
CO2 equivalent mass of the F-gas, [t]:			
 MADE IN LITHUANIA			
			

Fig. 1. Example of sticker

- Intention of this document is to provide information about maintaining and operating of the serve-over Vega Space H1 / H2.
- In accordance with the EU Directive - the refrigeration unit is electrical refrigeration machine; therefore, the focus is to ensure safety during operation.
- The operation manual of the serve-over Vega Space H1 / H2 must be kept at the place of operation. It must be available to technical personnel, service personnel and repair specialists at any time.

Dimensions

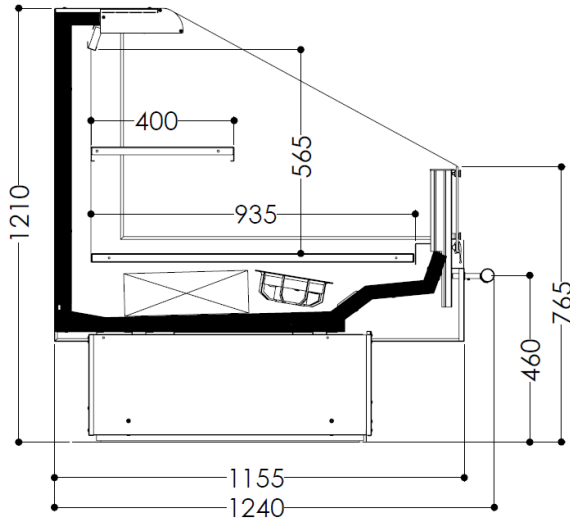


Fig. 2. Dimensions of Vega Space QB H1

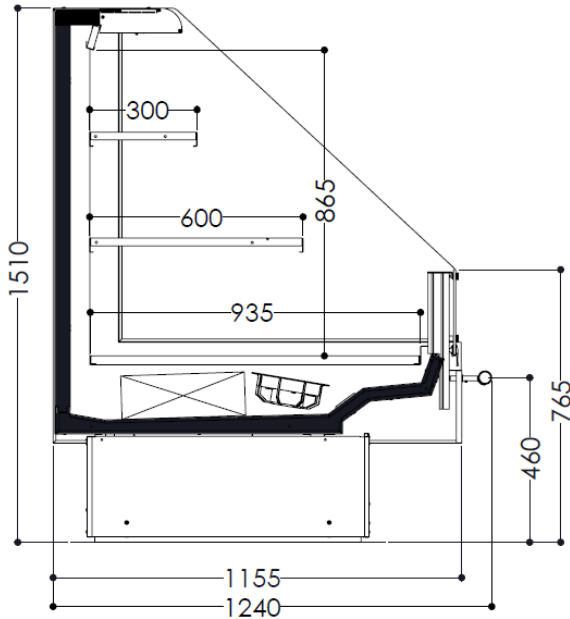


Fig. 3. Dimensions of Vega Space QB H2

1.2. Package dimensions

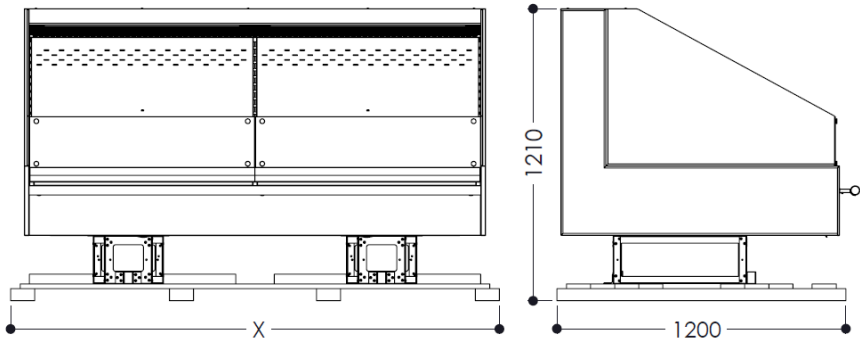


Fig. 6. Vega Space QB H1 package dimensions.

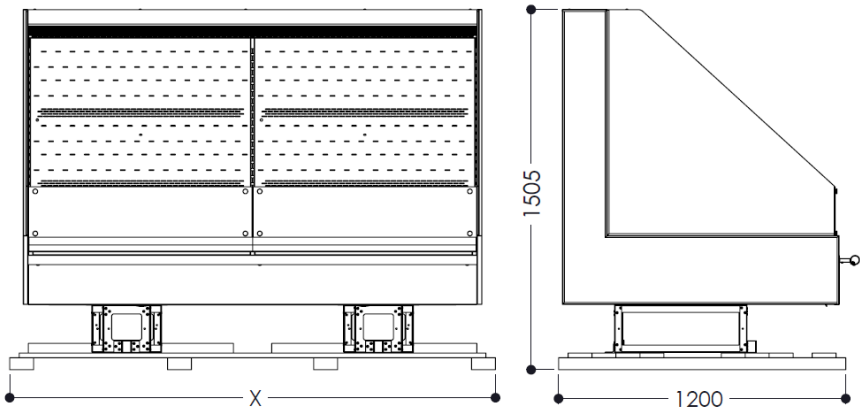


Fig. 7. Vega Space QB H2 package dimensions.

Length of serve-over

Length of package (X)

3750 (mm)	3900 (mm)
2500 (mm)	2650 (mm)
1880 (mm)	1880 (mm)
1250 (mm)	1450 (mm)

2. SAFETY

2.1. Dangers due to misuse

- Only start up and operate the appliance once it has been properly set up and installed and has no obvious defects.
- Do not make any technical changes to the appliance.
- Do not store any explosive substances, such as aerosol containers with flammable propellant gas, in the serve-over.
- Do not make any technical changes to the serve-over.

2.2. R290 refrigeration cabinets safety guidelines

Refrigerant R290 (propane gas) is classified as refrigerants of safety group A3. Based on the refrigerant charges commonly used in commercial systems, the system design and risk analysis are in accordance with explosion protection regulations (defined by standard EN378-1).

Safety guidelines:

- Keep ignition sources away (heat, sparks, open flames, hot surfaces).
- Use a damp cloth or sponge to remove condensation water and for cleaning. Do not use dry clothes or sponges to dry the unit. (Risk of electrostatic charge and sparking).
- Before starting-up and restarting, fill the drain with approx. 2 litres of water. Prevents carry-over of refrigerant into drains.
- It is prohibited to cover any ventilation opening of the unit. Safe minimum distance must be kept (between units) to ensure sufficient air access.
- Do not use any mechanical devices or other means (e.g., ice scrapers) to accelerate the defrosting.
- Do not use steam or high-pressure cleaners for basic cleaning.
- Only install the units in well-ventilated rooms.
- Do not install the units in cellars or lowered rooms.
- Do not damage the refrigerant circuit.
- Do not expose the unit to temperatures higher than 70°C during transportation and storage.
- Avoid transmitting pulsations and vibrations to the unit.
- Do not allow external forces to act on the appliance, e.g., careless handling with a forklift or floor cleaning machine.
- Do not crush or bend pipes.
- Only qualified maintenance personnel may carry out work on the refrigerant circuit.
- Only open the refrigerant circuit and suck off the refrigerant in well-ventilated rooms outside store business hours (when customers are not present) or outdoors.

- Disconnect the unit prior to all maintenance, service, or repair work.
- Disposal of the unit must be performed following Waste & Disposal-Recycling Regulations requirements.

Failure to comply with safety requirements could lead to potential health injuries and safety risks.

2.3. Material damage during prolonged shutdown

- Operate the appliance in a stable operating position (horizontal alignment).
- Operate the device only on the designated adjustable feet.
- Read the installation notes (see chapters 4.2 and 4.3).
- Do not operate the unit above the climate class specified on the technical data sticker.
- Check that the unit is in proper condition. Any damage must be repaired immediately.
- In the event of a power failure, stored products must be inspected by the operating company (temperature check).
- Check the area in which goods are placed for foreign objects. Remove goods stored incorrectly immediately.
- Do not set up or store the unit outdoors. To ensure good air circulation, maintain minimum distances to surrounding walls and other units.
- Do not attach stickers or films to glass surfaces.
- Do not operate the serve-over if there is any glass damage (cracks, breaks).

2.4. Personal protective equipment

Use hand protection:

- Protection from heavy equipment parts during transport, unpacking, installation, and disposal.
- Protection from sharp edges when unpacking and during setup and installation.
- Protection from sharp edges when unpacking and during setup and installation.
- Protection from contact with liquid/leaking refrigerant in the event of leakage in the refrigerant circuit.
- Protection from low temperature during loading and cleaning.
- For removing glass parts and glass splinters in the event of glass breakage.

Use eye protection:

- Protection from contact with liquid/leaking refrigerant in the event of leakage in the refrigerant circuit.

Wear protective clothing:

- When loading the serve-over with products, wear appropriate clothing (cold protection).

2.5. Electrical voltage

Only qualified staff may carry out work on the electrical system. In the event of fault messages or damage to the serve-over, contact the maintenance service.

Electrical safety guidelines:

- Do not connect a damaged appliance or damaged parts (such as connecting cables) to the power supply.
- Check to ensure safety devices are complete and working.
- Do not remove protective devices and covers attached to the unit.
- Note the following before connecting to the power supply:
 - Applicable local electrical safety regulations.
 - Applicable standards and safety instructions.
 - The power supply voltage and frequency must match the specifications on the technical data sticker.
- Only trained operating personnel may disconnect the unit.
- Observe the following safety rules if the unit is damaged during operation or prior to maintenance:
 - Disconnect the unit (switch off all sources of electrical power).
 - Secure the appliance against reconnection.
- Only qualified staff may replace damaged parts (e.g.: connecting cables, lights).
- Do not use extension cords or multiple socket strips.
- Do not use steam or high-pressure cleaners for basic cleaning.
- Do not damage concealed electrical parts. The operator must not drill into the unit or carry out any other work on it.

2.6. Refrigerant circuit

Only qualified staff may carry out work on the refrigerant circuit. In the event of fault messages or damage to the appliance, contact the maintenance service.

2.7. Opening/closing the doors

Hand or other body parts may become caught on side of door hinge.

- When opening/closing the door, do not reach into the opening gap, especially on the hinge side.
- Look out for other persons when opening/ closing the door.

2.8. Recommended working conditions and ambient temperature

The serve-over to be operated under suitable ambient conditions (climate class 3):

- Ambient temperature must not fall below +16°C and not exceed +25°C (improper temperature can affect the operation of the serve-over).
- Relative humidity should not exceed 60% (excess of humidity can affect the dew point parameters).
- Front airflow rates up to 0.2 m/s (strong front airflow can harm the internal circulation of the open serve-over).
- It is forbidden to exceed the maximum allowable loading of serve-over shelves.
- Recommended arrangement of the shelves is specified in the main layout.
- It is forbidden to cover air circulation channels (suitable goods arrangement to be used).

2.9. Purpose of use

The serve-over Vega Space H1/H2 is intended to be used for the presentation chilled products. Vega Space H1/H2 provides average operating temperature (0...+10°C) in the inner space of the serve-over.

It is forbidden to upload the serve-over with warm goods (temperature of goods to be lower than serve-over operating temperature).

The recommended temperature of uploaded goods is specified by standards of the respective organizations. DIN10508 requirements for the temperatures of uploaded goods are provided below:

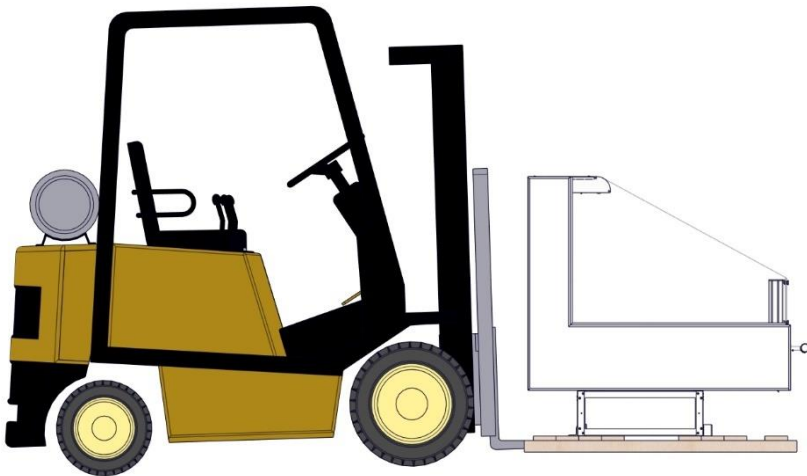
≤+10 °C	Fruits, vegetables, butter, cheese, and cheese products
≤+8 °C	Pasteurized products, sour milk
≤+7 °C	Milk and dairy products, delicacies, ready-made food, snacks, sandwiches, green salad, game, salad with mayonnaise sauce, cooked meat products, eggs and their products, sauces
≤+4 °C	Household poultry, minced meat and products, rabbit meat, wild hare meat
≤+3 °C	By-products
≤+2 °C	Pre-packed minced meat, fresh fish (on ice)

The manufacturer is not liable for any damages caused by unintended purpose use of serve-over Vega Space H1/H2 is exempted from warranty obligations.

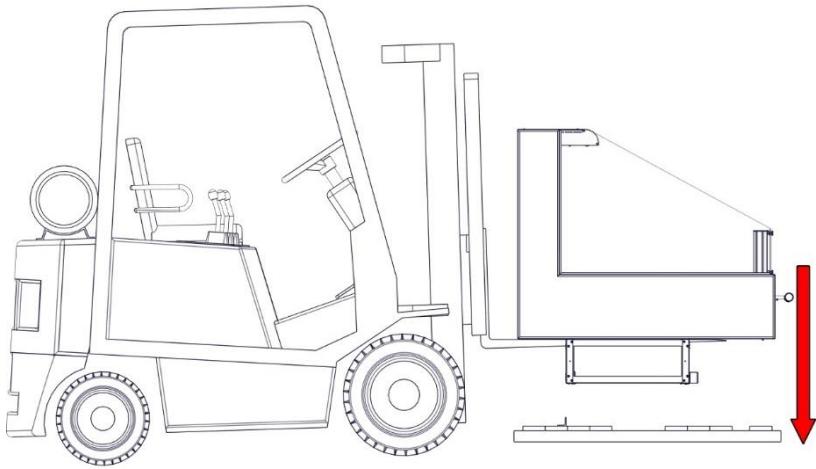
3. UNPACKING

Note the following to prevent the collision or risk of injury to persons when transporting units with forklift:

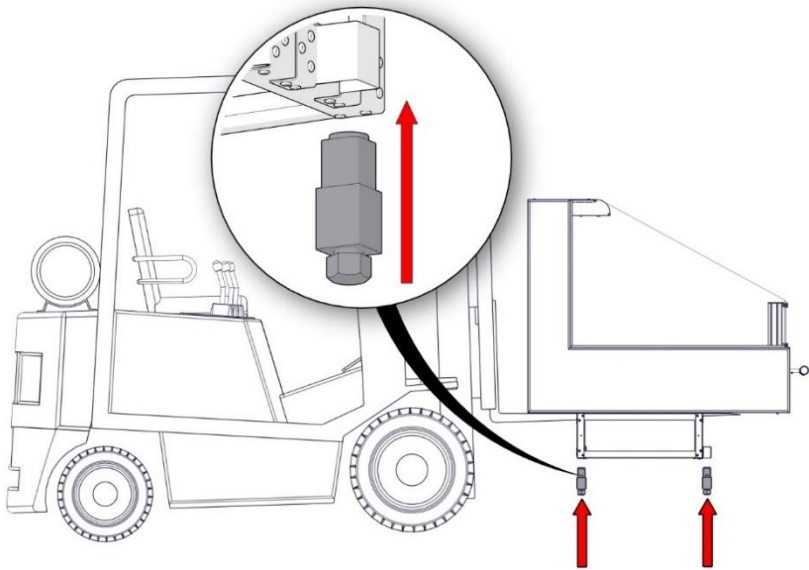
- Observe transport routes for forklift.
- Secure transported units.
- Only trained personnel may operate industrial trucks.
- Note the centre of gravity of the unit for safe lifting of the load with the forklift. Information is provided on the front and back of the unit packaging.



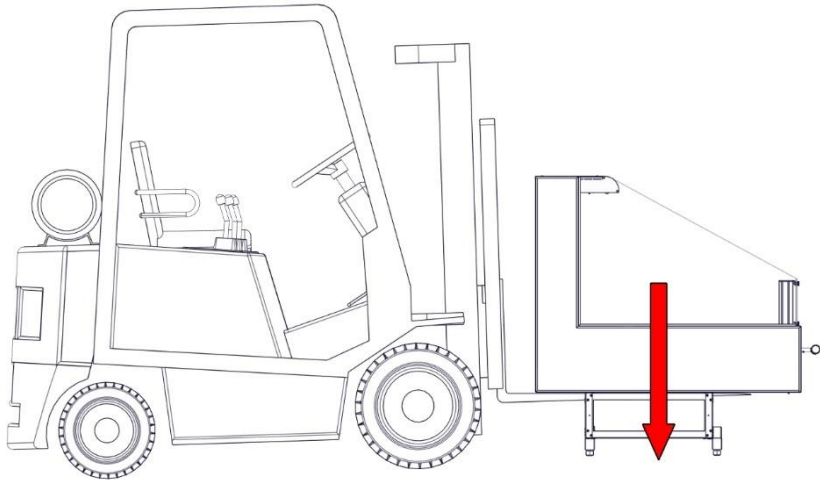
Use appropriate equipment for unit transportation (refer to unit weight and dimension information).



Lift the serve-over. Remove pallet's screws. Remove the pallet. Screws M6x100 ISO 7380.



Install the plastic legs.



Lower the serve-over.

4. INSTALLATION

4.1. Requirements for installation the serve-over

Installation of the unit must be performed following next requirements:

- The unit must be aligned horizontally (both depth and length) and installed in the stable position.
- Set up the unit only on the designated adjustable legs.
- It is forbidden to install the unit close to any heating equipment or any HVAC elements (air outlet etc.).
- Keep a sufficient distance around the unit. It must be possible to open the doors without any obstructions.

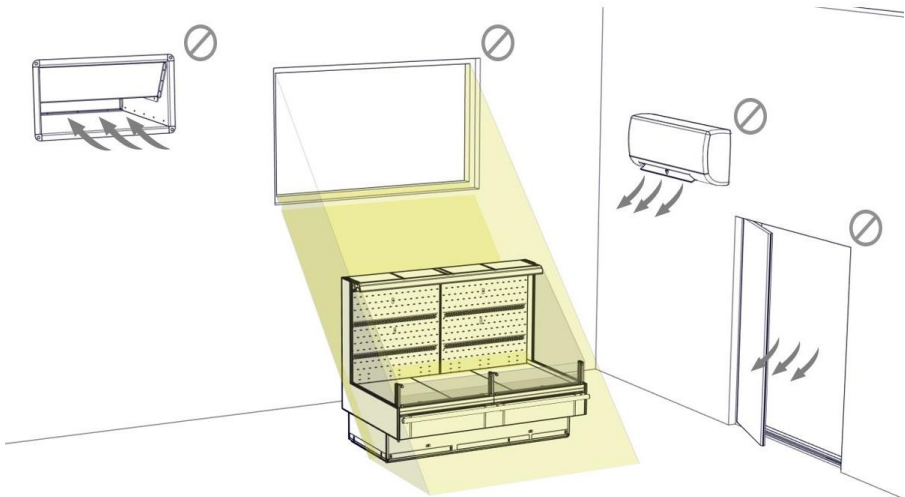


Fig. 21. Example of unsuitable ambient conditions

4.2. Installation of Vega Space H1/H2



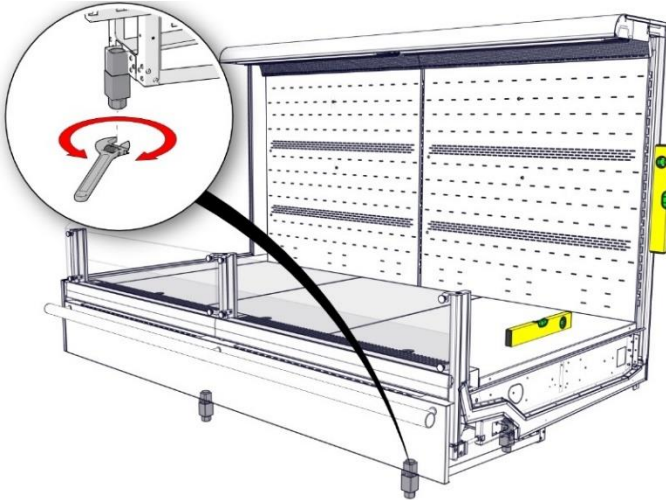
X2



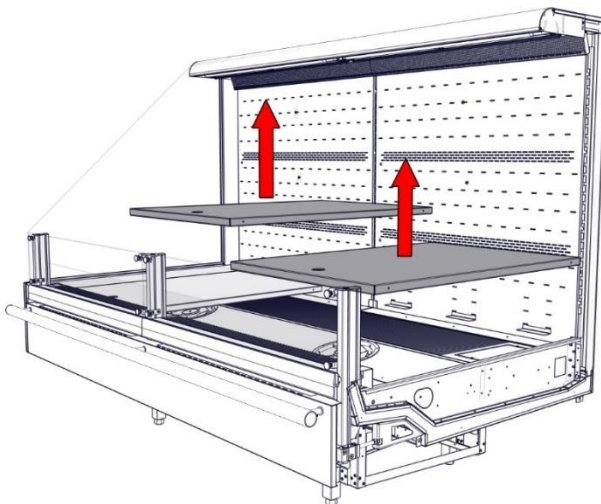
Size 17, 32



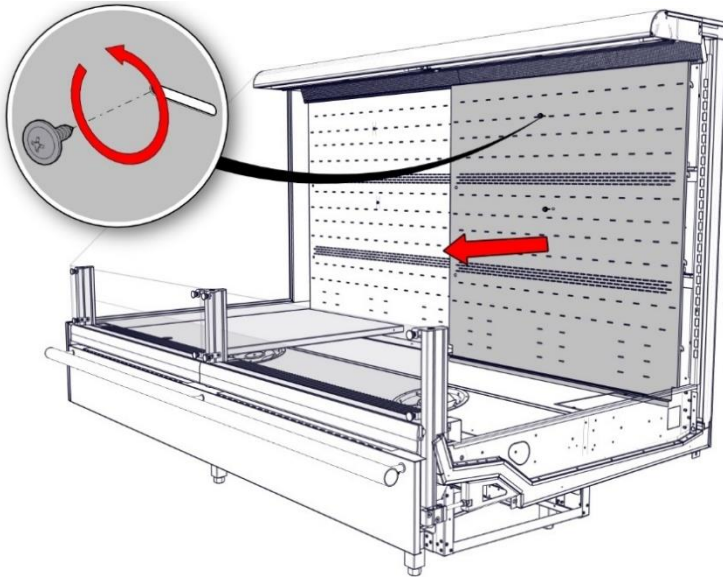
PH2



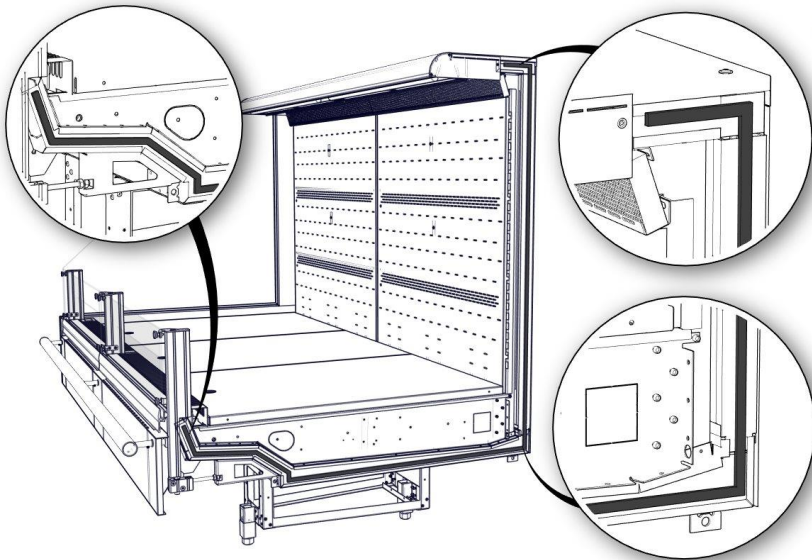
Using the front and rear legs, perform horizontal and vertical pre-adjustment of the serve-over. The legs are adjustable up to 5 cm.



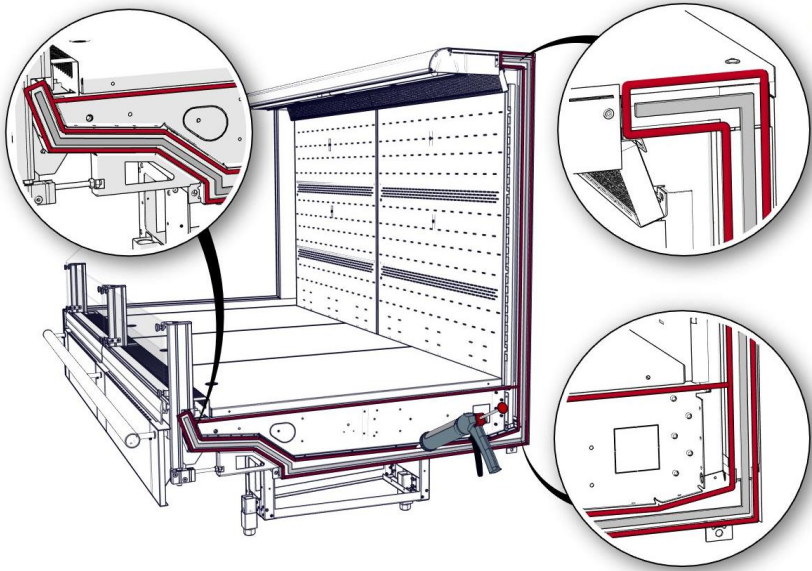
Remove bottom shelves at the side of junction.



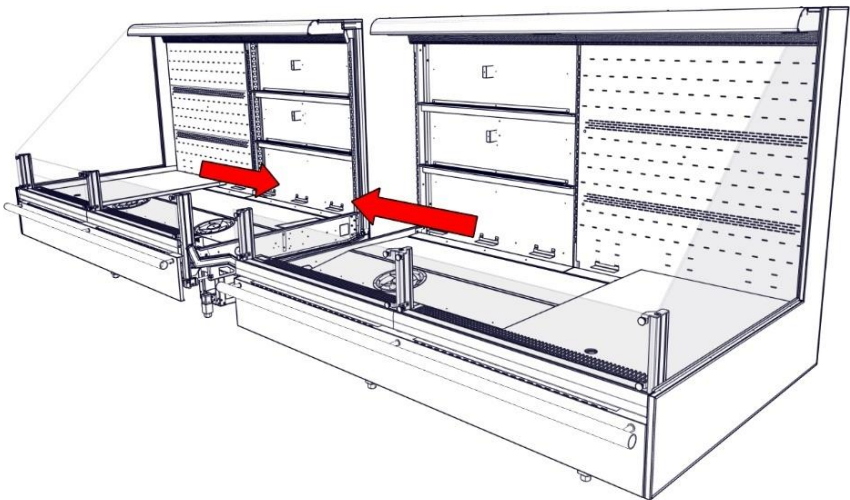
Remove the inner wall decoration at the side of junction.



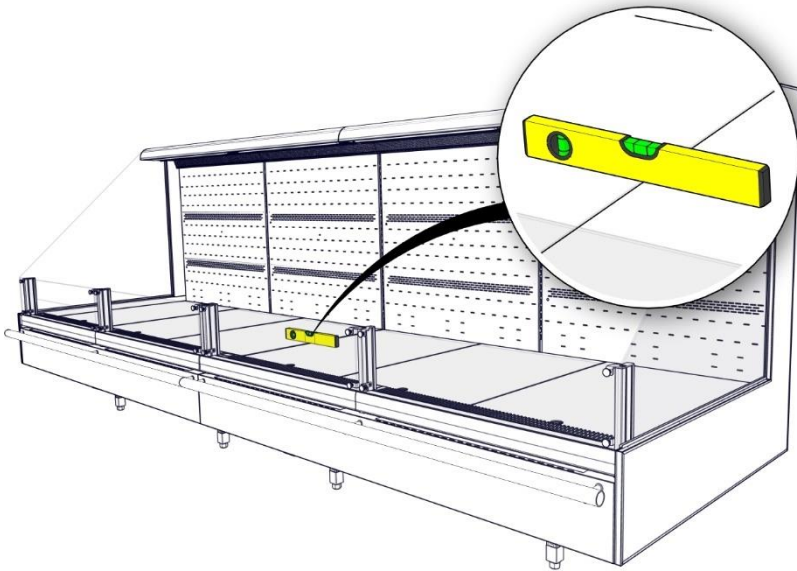
Apply the foam tape around perimeter of connection.



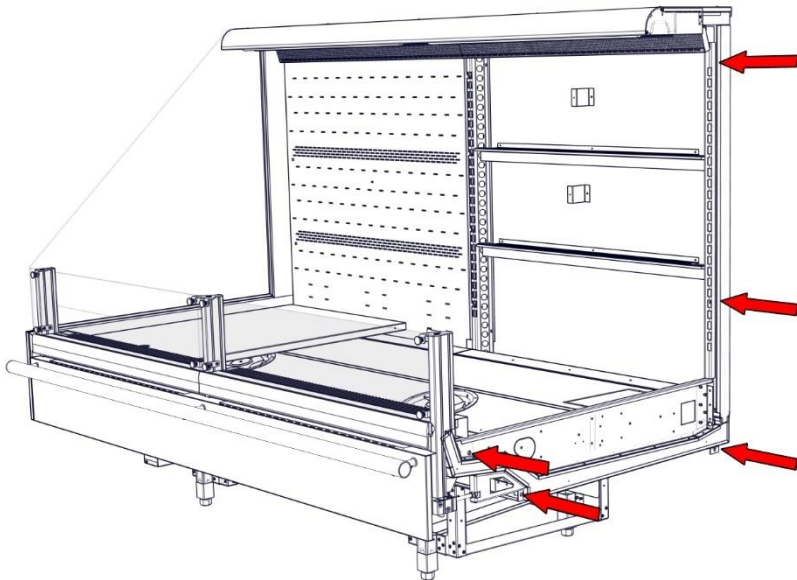
Apply silicone to seal the perimeter of connection.



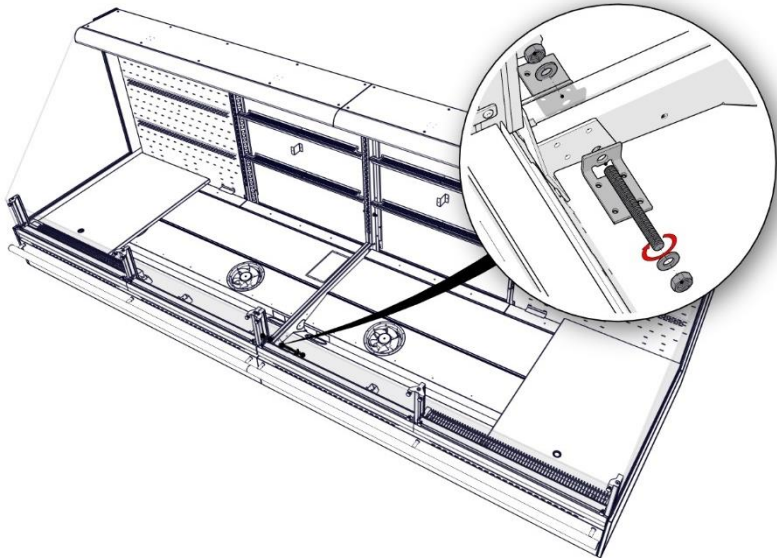
Insert bumper connection pipe to connect the bumpers. Push the serve-overs together.



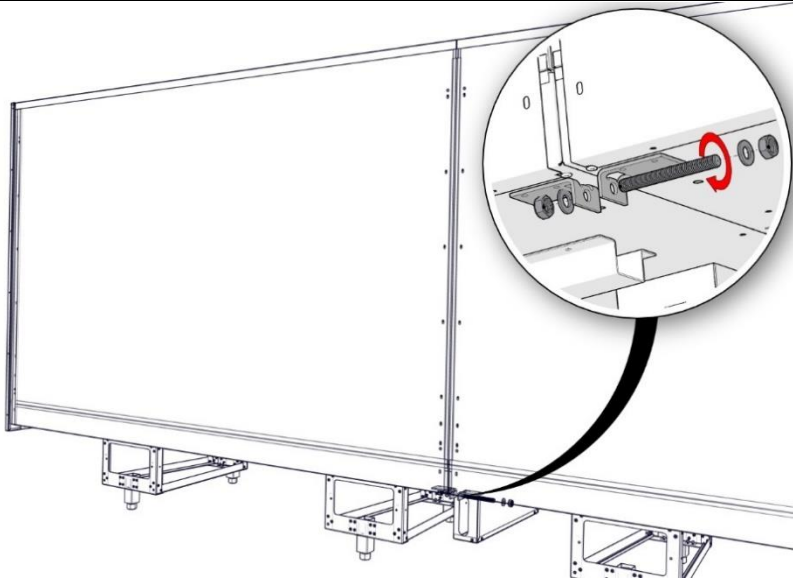
With help of spirit level, check if both serve-overs are horizontal.



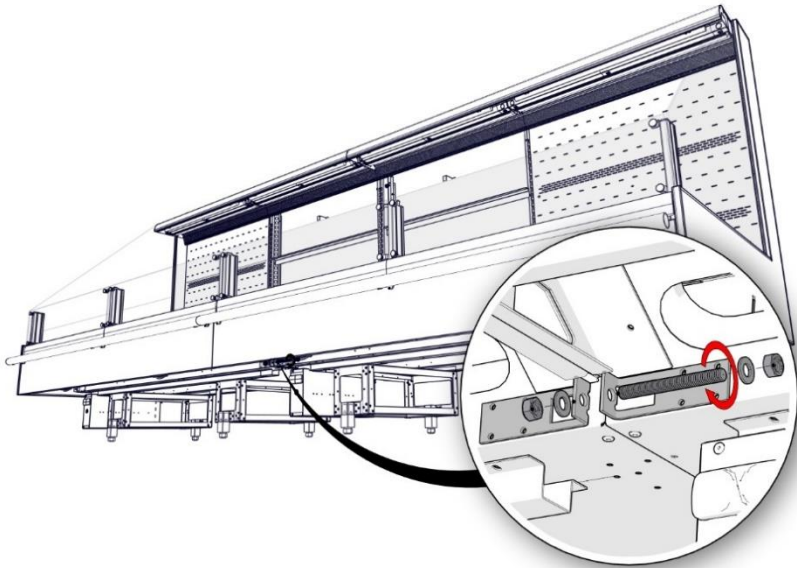
All 5 connection slot positions in the figure.



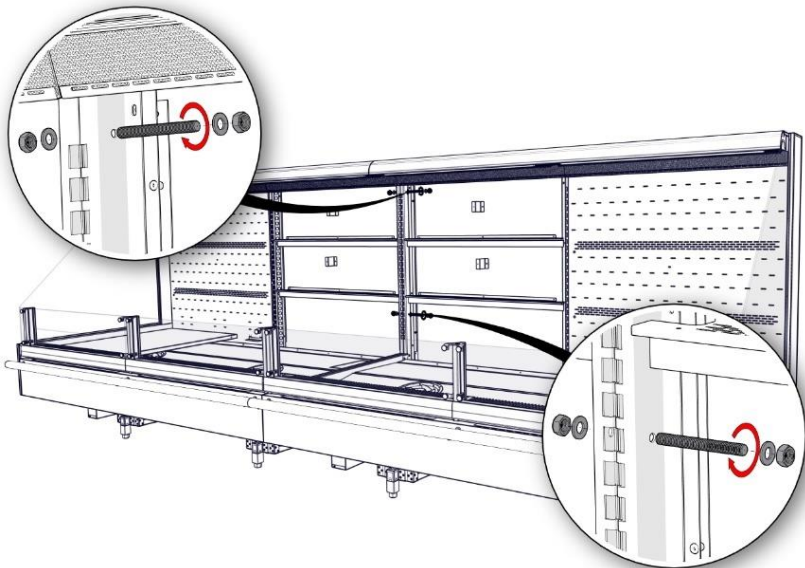
Inner front connection slot position. Connection slots are fixed together with threaded pin – M10x90 ISO 7985.



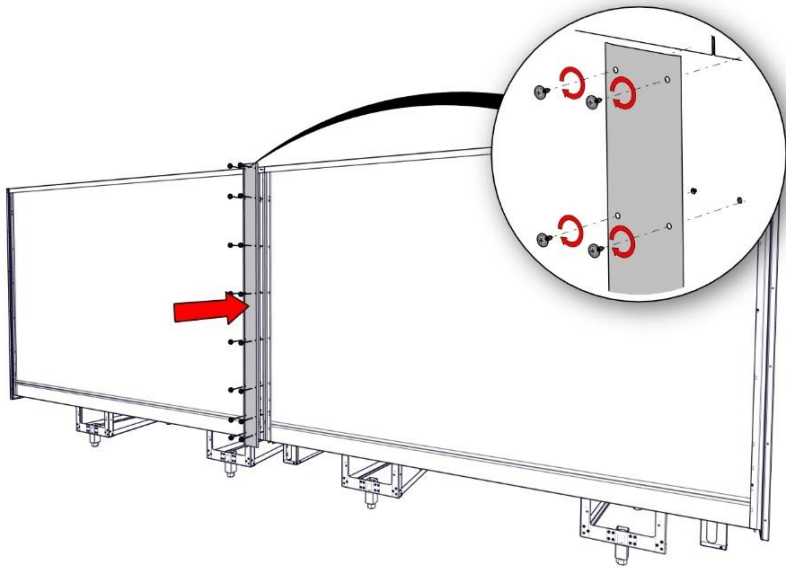
Outer back connection slot position. Connection slots are fixed together with threaded pin – M10x90 ISO 7985.



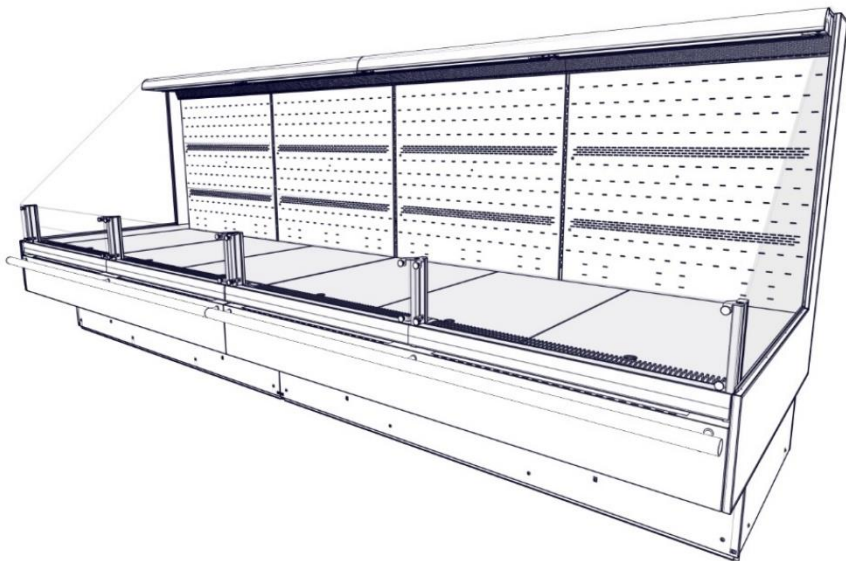
Outer front connection slot position. Connection slots are fixed together with threaded pin – M10x90 ISO 7985.



Inner back connection slot positions. Connection slots are fixed together with threaded pin – M10x90 ISO 7985.



Screw on the connection plate with self-tapping screws D4,2x13.



The example of installed serve-overs.

5. INSTALLATION OF DUST COVERS



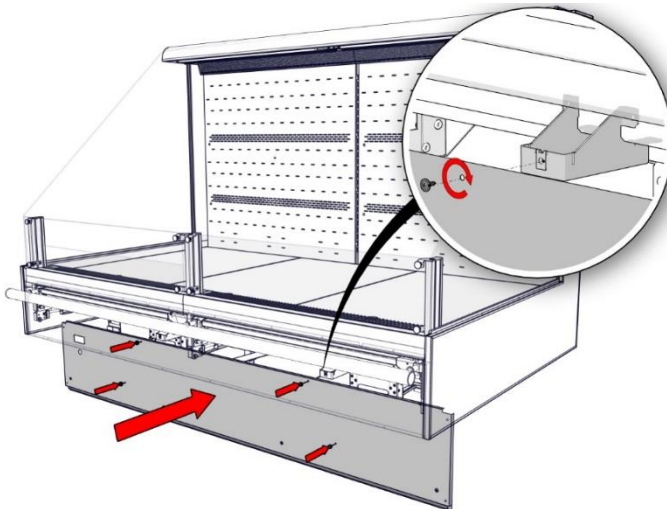
X1



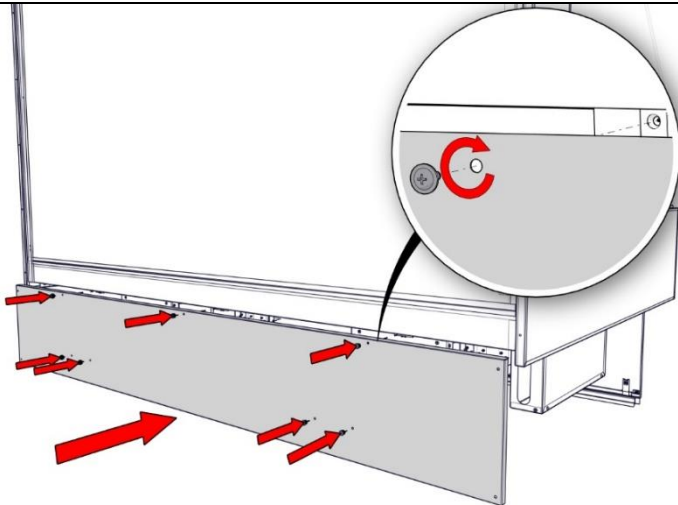
PH2



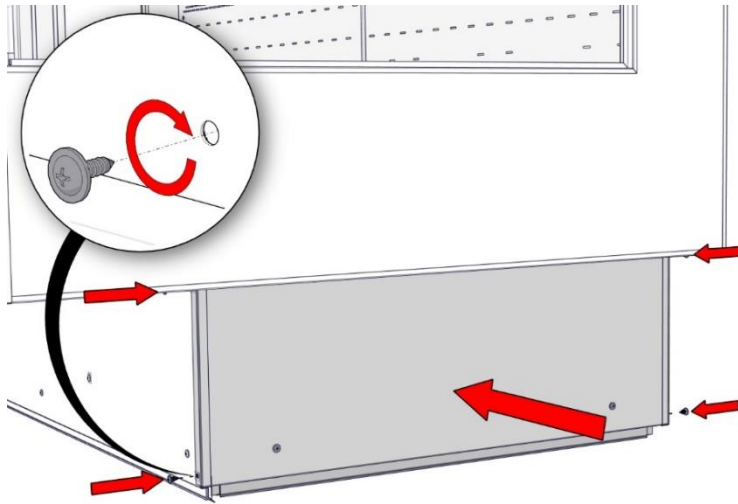
15 min



Fix the front dust cover with self-tapping screws D4,2x13.



Fix the rear dust covers and cover connector with self-tapping screws D4,2x13.



Fix the side dust covers with self-tapping screws D4,2x13.

6. INSTALLATION OF LEG PANELS



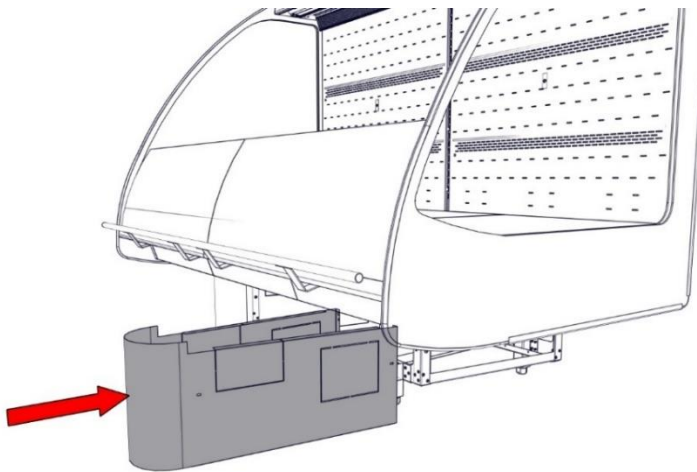
X1



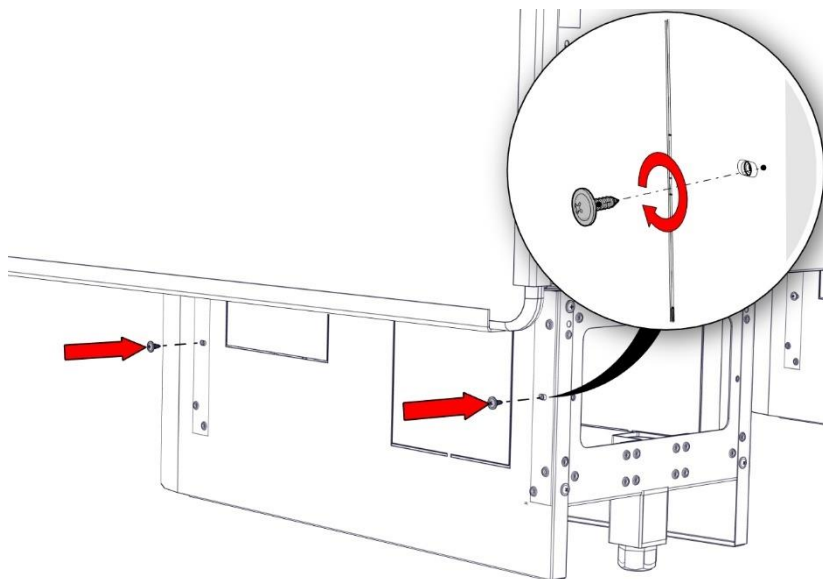
PH2



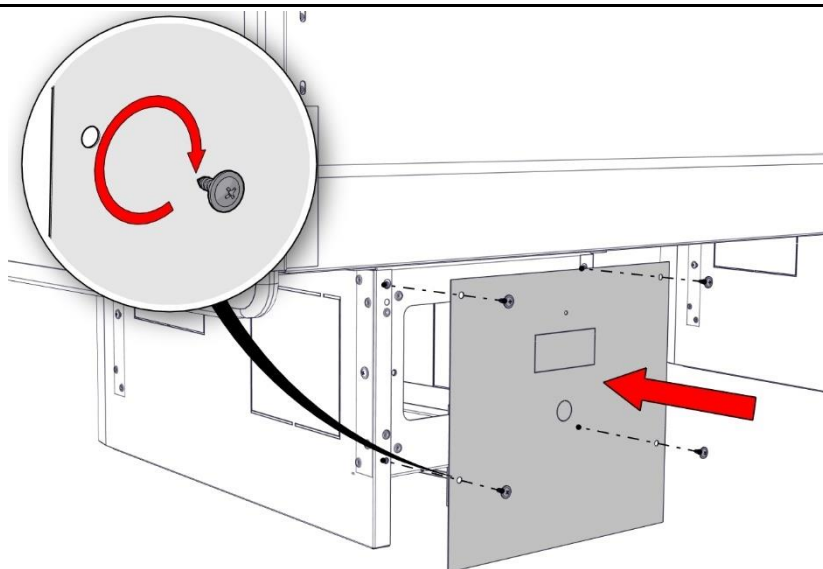
15 min



Attach the front panel to the leg.



Fix the sides of the panel with self-tapping screws D4.2x13.



Fix the back panel with self-tapping screws D4,2x13.

7. INSTALLATION OF THE BUMPER



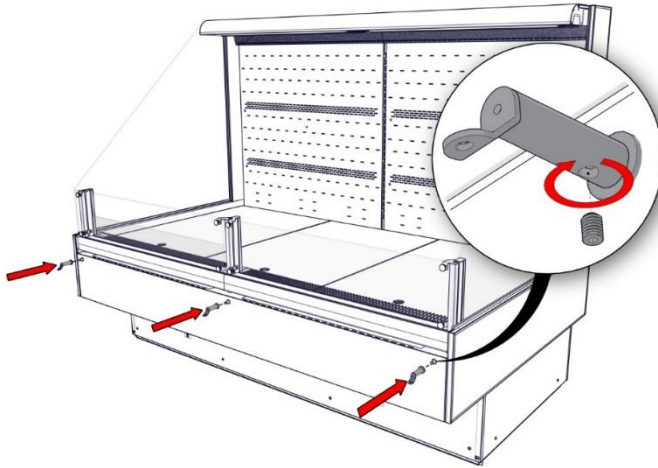
X1



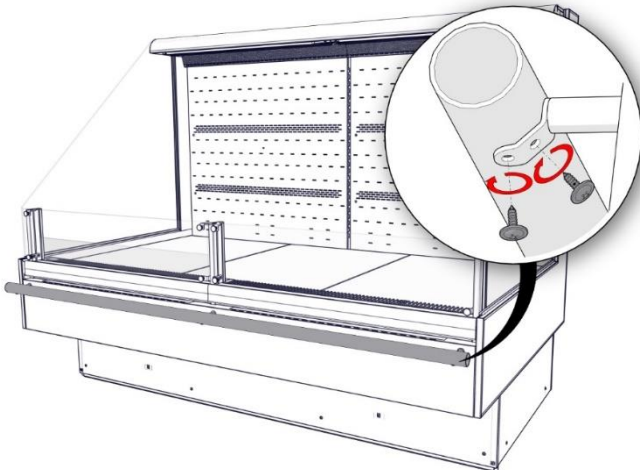
Hex 4



15 min



Slide the bumper brackets into the holders on front decoration. Fix them in place with set head screws.



Fix the bumper with self-tapping screws D4,2x13.

8. GLASS STAND ADJUSTMENT ON VEGA SPACE QB



X1



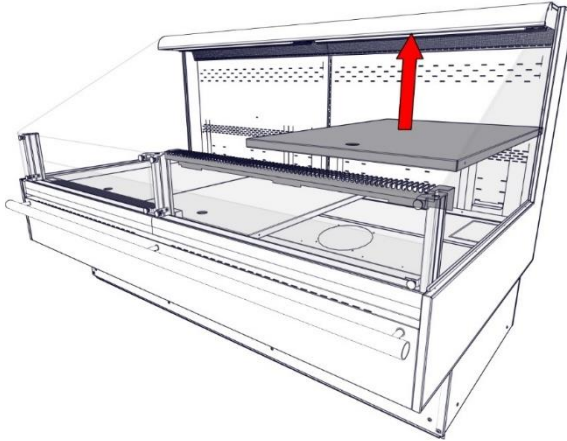
10, 13



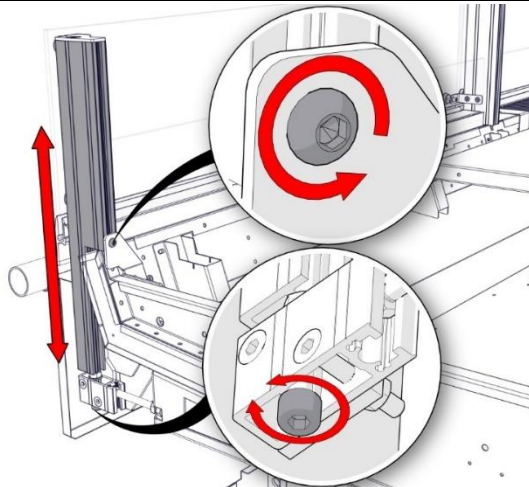
Hex 4, 6



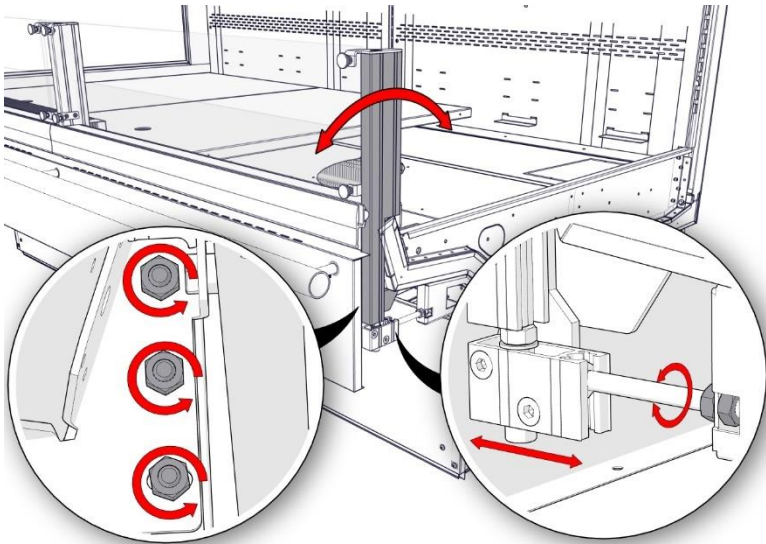
15 min



Remove the bottom shelves and air intake grille to get access to stand adjustment bolts.



If vertical stand adjustment is needed, slightly loosen the screw indicated in the top of the figure above. Adjust the stand vertically by rotating the screw indicated at the bottom of the figure above. After adjustment, tighten the screw loosened before.



To adjust the angle of the stand, slightly loosen the bolts indicated on the left of figure above. Adjust the stand angle by rotating the bolts indicated on the right of figure above. After adjustment, tighten the bolts loosened before.

9. ELECTRICAL CONNECTION

9.1. Connecting the unit to the power supply

Unit connection to the to the power supply must be carried out only by qualified personnel.

Note the following before connecting the unit:

- Applicable local electrical safety regulations.
- The power supply voltage and frequency must match the specifications on the technical data sticker.
- Do not connect a damaged unit or damaged parts (such as electrical cables) to the power supply.
- Only connect the unit to a mains circuit with protective grounding.
- Do not use extension cords or multiple socket strips.

10. DRAINAGE

10.1. Drainage system

Serve-over Vega Space H1/H2 to be equipped with suitable drainage system. The condensate can be drained to the tub trough the drainage siphon.

Also, condensate drainage can be connected to the common sewerage system. Drainage connection points are indicated in the furniture layouts. It is necessary to check the condensate collection tub to prevent it from the entry of food remains, sand or larger dust particles.

11. MAINTENANCE

11.1. Information on temperatures

Before uploading the products into the serve-over, it is necessary to set the temperature to maintain in the internal space of the serve-over. The temperature is set in control. The temperature should be suitable for display of foreseen products. Recommended temperatures are listed in chapter 2.10. The actual temperature is shown in the thermometer of the serve-over. If the actual temperature is higher than that set in the control, reduce the temperature in the control. Products must be uploaded into the cooled inner space of the serve-over.

11.2. Defrosting

Warm ambient air can get into the serve-over. It is very likely when the showcase is without doors or its door left open. Due to it, the evaporator can frost. Evaporators must be regularly defrosted using programs set in the control. During the defrosting refrigeration is not run.

11.3. Cleaning

The serve-over must be regularly cleaned, as food products are sensitive to bacteria and microorganisms.

Regular cleaning:

- The serve-over must be cleaned at least once a week. If needed, when contamination is detected, the serve-over must be cleaned more often.
- Serve-over inner space, shelves, interior and exterior plastic, and glass parts of the serve-over must be thoroughly cleaned as well as the floor where the serve-over is installed, must be washed.
- Washing of the plastic parts must be performed using warm water and a non-abrasive cleaning agent dedicated for plastics.
- Metal components must be cleaned using warm water and a non-aggressive, corrosion-free cleaning agent. After washing, it is necessary to remove any

moisture residue and to dry up the surface. Chromed surfaces must be cleaned with suitable cleaning agents. After cleaning, they must be dried up with a soft cloth that does not leave dust.

- Painted components must be cleaned with liquid cleaning agents without abrasive materials. It is recommended to use special detergents purposed for painted surfaces. The surfaces must be well dried up after washing. The paint damage can cause metal corrosion at the scratch place.
- Glass parts can be washed using the household window cleaning agents.
- Some units have a wooden finish. Wood and surfaces of wooden products must be cleaned dry. Also, wood polishers can be used. If necessary, surfaces can be cleaned with a damp cloth and then dried thoroughly.
- Protect electrical installations from moisture during cleaning.
- It is necessary to regularly check drainage system.
- Washing the serve-over with high-pressure washers is strictly forbidden.

Deep cleaning

Deep cleaning of the serve-over must be performed once every 4 weeks. The serve-over must be cleaned and disinfected to eliminate pathogenic microorganisms.

- Make sure that defrosting is in progress.
- Remove the products from the serve-over, and temporarily place them in the freezer compartment.
- Disconnect electrical installations.
- Remove the bottom shelves, air circulation grids, and evaporator covers.
- Clean the ventilator of the serve-over from plaque. Remove foreign bodies from the structures of the evaporator and ventilators.
- Make sure that the drainage openings are not clogged, and condensate drains freely.
- Remove dust, possible residue of food products and the condensate residue from surfaces.
- Disinfect the internal space of the serve-over.
- Clean and disinfect detached parts and dry them.
- Assemble the detached components into the structure.
- Switch on the power supply to the serve-over.
- When the temperature in the internal space reaches the one that is specified in the control, bring cooled products back into the cabinet.

12. INNER LIGHTING

Available lighting options:

- The unit with the fluorescent lamp.
- The unit with LED column.

13. ENERGY SAVING

The serve-over can be supplied with a door or mechanical night curtains. This option is available on request. During non-business hours of the shop, an open serve-over be closed with night curtains (if present). Make sure that products arrangement does not disturb to close the curtain. If the cabinet is with doors, make sure that the doors are fully closed. The lighting of the serve-over must be turned off.

14. DISPOSAL

A used serve-over can be restored and reused. If it is necessary to completely stop the operation of the refrigerated cabinet, the following steps must be taken:

- Turn off the power supply.
- Disconnect of the glycol piping.
- Collect the refrigerant from the freezing coil.
- The elements of the refrigerated cabinet require specific disposal; therefore, it is necessary to contact organizations that dispose of certain types of materials.

15. STORAGE

If temporary storage and subsequent use of the serve-over is expected (during repair of the shopping premise or change location of the cabinet), the equipment must be stored in a well-ventilated room with temperature higher than 0°C. It is forbidden to leave the cabinets outdoors. It is necessary to put on cover the serve-over or to make other structures protecting the unit against external damage.

16. TESTING

Each refrigerated cabinet is factory tested. During the testing, the following checks are carried out:

- Hermetic tightness.
- Pressure tests of the freezing coil.
- Checks of electrical installation.
- Load tests.

After the multi-decks are installed, each serve-over and the overall system must be inspected before their start-up.

17. ACCESSORIES

Variety of special accessories available on request, such as: partitions, tabs, price holders, a drainage collection tub, evaporation baths, safety bumpers, etc. For more information, please call FREOR LT or sales partner.

18. TECHNICAL DATA

18.1. Electrical layouts

The layouts are in the electrical console.

18.2. Failures and troubleshooting



Repair of the internal freezing coil of the serve-over, check the refrigerant amount and replacement of parts may only be carried out by a specialist qualified to work with F and OAM gases.

Only an electrician with the respective qualification may carry out inspection and repair of electrical installation.

Description of controller errors can be found in the instructional manual of the controller manufacturer.

Possible causes:

Error signal	Potential reason	Troubleshooting
The high temperature in the inner space of the serve-over	Power supply failure (the system does not receive the power supply).	Check electrical installations, network, and fuses.
	The temperature of the uploaded products is higher than the temperature in the internal space of the serve-over.	Remove warm products from the cabinet and freeze them up to the necessary temperature in the freezer compartments.
	Contamination of the freezing coil. Damage of the tightness of the freezing coil. Failure of the control valve (TRV / ERV). Leakage of the refrigerant.	Call the refrigeration technician/service department.
	Defrosting malfunction. Failure of defrosting heating elements. Malfunction of the electromagnetic valve functionality. Failure of the defrosting clock. Failure of the control system. The icing of the evaporator. High load in the serve-over, unsuitable number of products.	Check loads of the shelves and air circulation flows. Reset factory settings in the control. Call the refrigeration technician/service department.
	Failure of the fans.	Call the manufacturer or qualified representative.

<p>The serve-over is out of order.</p>	<p>Power supply malfunction.</p>	<p>Check for the phase matching (in the event of changing phases, one-phase cabinet elements can be operational). Check switches. Check the power network.</p>
<p>The compressor is out of order.</p>	<p>Refrigeration cycle malfunction. Signals of the pressure sensors.</p>	<p>Fluctuations of the electrical network voltage. Contamination of refrigerant filter. Leakage of the refrigerant in the system. Call the refrigeration technician/service department.</p>

19. MEANINGS OF SYMBOLS

Symbol	Meaning	Type
	Qualified specialist	
	Work clothing	
	Protective gloves	
	Brittle surfaces;	
	Wrench	Sizes: 17, 32
	Screwdriver	PH2
	Rubber hammer	1
	Protective goggles	
	Silicone pistol	1
	Clamp	2

Date	Work	Name

Date	Work	Name

Date	Work	Name

Date	Work	Name



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