INSTALLATION AND MAINTENANCE MANUAL

ONEGA R290

SOLID LINES

frost-trol

TRANSLATION OF THE ORIGINAL DOCUMENT	For additional copies visit: www.frost-trol.com	Versión: 7 D004002

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DECLARACIÓN DE CONFORMIDAD CE

EC Declaration of Conformity/*Déclaration de confomité CE/Konformitätserklärung/Conformiteitsverklaring*

frost-trol

Nosotros, los abajo firmantes,
We, the undersigned,
Nous, signataires du texte ci-dessous
Wir, di Unterzeichner,
Wij, ondergetekenden,

Fabricante / *Manufacturer / Hersteller / Fabrikant*:	**Frost-trol, S.A.**
Dirección / Address / Adresse / Adres:	Avda. del Castell Vell, 176; 12004 Castellón
País / *Country / Land / Land:*	España/Spain/Espagne/Spanien/Spanje
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Fax / *Fax number / Faxnummer / Faxnummer:*	0034 964 21 51 48

declaramos bajo nuestra sola responsabilidad que los productos a que se refiere esta declaración son conformes a las siguientes directivas y normas:
declare under our sole responsibility that the products to which this declaration relates conform to the following directives:
déclarons sous notre seule résponsabilité que les produits concernant cette déclaration sont conformes aux directives suivantes:
erklären hiermit in alleiniger Verantwortung, dass die Produkte auf die sich diese Erklärung bezieht, den folgenden Richtlinien entsprechen:
verklaren onder eigen verantwoordelijkheid dat de producten op deze verklaring in overeenstemming zijn met de volgende richtlijnen:

• Directiva de máquinas / *Machinery Directive / Directive des machines / Richtlinie für Maschinen / Richtlijn van de machines*	2006/42/CE
• Directiva de baja tensión / *Low Voltage Directive / Directive de basse tensión / Niederspannungsrichtlinie / Laagspanningsrichtlijn*	2014/35/UE
• Directiva de compatibilidad electromagnética / *Electromagnetic Compatibility Directive / Directive CompatibilitéElectromagnétique / Richtlinie über elektromagnetische Verträglichkeit / Richtlijn Compatibiliteit*	2014/30/UE
• Directiva de equipos a presión / *Pressure Equipment Directive / Directive sur les équipements sous pression / Richtlinie über Druckgeräte / Richtlijn PED*	2014/68/UE
• Reglamento relativo al control de las temperaturas en los medios de transporte y los locales de depósito y almacenamiento de alimentos ultracongelados destinados al consumo humano / Regulation on the monitoring of temperatures in the means of transport, warehousing and storage of quick-frozen foodstuffs intended for human consumption. / Réglementation relatif au contrôle des températures dans les moyens de transport et les locaux d'entreposage et de stockage des aliments surgelés destinés à l'alimentation humaine. / Verordnung zur Überwachung der Temperaturen von tief gefrorenen Lebensmitteln in Beförderungsmitteln sowie Einlagerungs- und Lagereinrichtungen / Regulering 2005 betreffende de temperatuurcontrole in vervoermiddelen en in opslagruimten van diepvriesproducten bestemd voor menselijke consumptie.	37/2005/CE
• Sistemas de Refrigeración y Bombas de Calor. Requisitos de Seguridad y Medioambientales / *Refrigerating systems and heat pumps. Safety and environmental requirements* / Systèmes frigorifiques et pompes à chaleur - Exigences de sécurité et d'environnement / Kälteanlagen und Wärmepumpen - Sicherheitstechnische und umweltrelevante Anforderungen / Koelsystemen en warmtepompen. Veeleisende van Veiligheid en Milieu	UNE-EN 378-1:2008+A1:2011 UNE-EN 378-2:2008+A1:2009 UNE-EN 378-3:2008 UNE-EN 378:2008.
• Muebles frigoríficos comerciales / *Refrigerated display cabinets / Meubles frigorifiques de vente / Verkaufskühlmöbel / Commerciële koeling kasten*	UNE-EN ISO 23953-1:2015 UNE-EN ISO 23953-2:2015
• Aparatos electrodomésticos y análogos / *Household and similar electrical appliances / Appareils électrodomestiques et analogues / Sicherheit elektrischer Geräte für den Hausgebrauch undähnliche Zwecke / Huishoudelijke en soortgelijke elektrische toestellen —Veiligheid*	EN 60335-2-89:2010 EN 60335-2-89/A1:2016 EN 60335-1:2012 EN 60335-1/A11:2014
• Seguridad de las máquinas. Requisitos de higiene para el diseño de las máquinas */Safety of machinery - Hygiene requirements for the design of machinery / Sécurité des machines - Prescriptions relatives à l'hygiène lors de la conception des machines*	UNE-EN ISO 14159:2008
• Seguridad de las máquinas. Principios de diseño ergonómico. Parte 1: Terminología y principios generales. Parte 2: Interacciones entre el diseño de las máquinas y las tareas de trabajo. / *Safety of machinery - Ergonomic design principles. Part 2: Interactions between the design of machinery and work tasks - Part 1: Terminology and general principles / Sécurité des machines - Principes ergonomiques de conception - Partie 1: Terminologie et principes généraux. Principes ergonomiques de conception - Partie 2: Interactions entre la conception des machines et les tâches du travail*	UNE-EN 614-1:2006+A1:2009 UNE-EN 614-2:2001+A1:2008

Modelo: *Model:* *Modèle:* *Modell:* *Model:*	Nombre y cargo del expeditor: *Name of and position of issuer:* *Nom et fonction de l'émetteur:* *Name und Position desErstellers*
Número de serie: *Serial number:* *Numéro de série:* *Seriennummer:* *Serienummer:*	frost-trol, S.A. Tel. 964 342 740 - Fax 964 215 148 Ctra. Valencia-Barcelona, Km. 68'9 Apdo.55 -12004 CASTELLÓN - España Jorge Patiño Pérez, Technical Manager

FECHA DE EMISIÓN: DATE OF ISSUE: DATE D'ÉMISSION: DATUM DER AUSSTELLUNG: DATUM VAN UITGIFTE:	11/04/2022		**D003583-6**

SAFETY ADVICE

	This cabinet contains flammable refrigerant R290.
	The refrigerated display cabinet must not be installed in places where explosive gases are present. Do not expose the equipment to atmospheric agents.
	Packaging materials (plastic bags, nails, screws, polystyrene, etc.) should not be left within reach of children as they pose potential sources of danger.
	Poor levelling could result in problems with the drainage of water resulting from defrosting, which could cause the unit to break down.
	It's mandatory to leave 8cm between the cabinet rear wall and the supermarket wall to ensure the airflow.
	Keep clear of obstructions all ventilation openings of the cabinet enclosure.
	Don't use metallic or cutting objects to accelerate the defrost process. It may scratch or damage inner surfaces.
	Gloves should be worn to protect hands when cleaning inside the evaporator and the condenser. This will protect hands against possible cuts or scratches from the unit's internal elements.
	Make sure that the drainage holes are not obstructed by any remaining merchandise, as this could impede the drainage of excess water resulting from defrosting.
	Do not use any electrical appliances inside the storage compartments for the food frozen by the equipment, unless recommended by the manufacturer.
	Do no damage the refrigerating circuit.

	Do not expose the equipment to atmospheric agents.
	Do not store explosive substances such as aerosol cans with a flammable propellant in the refrigerated cabinet.
	Keeping pharmaceuticals, glass bottles or flasks in the cabinet is strictly forbidden.
	Only qualified personnel can remove panels or guards, and specially the electric board cover, when this requires the use of tools.
	Before obtaining access to terminals, all supply circuits must be disconnected.
	Unplug the cabinet before performing any form on internal servicing of the unit.
	The power cords must be properly spread out, safe from shocks and far from liquids, water and heat sources, and in perfect condition. The use of adaptor plugs is forbidden.
	If the power cord is damaged, it must be replaced by the manufacturer in order to avoid a hazard.
	Earthing is mandatory according to current legislation, as is providing protection against power surges, short circuits and indirect contacts.
	Ensure that the power supply voltage meets the details on the rating plate of the cabinet. The cabinet must be properly connected to the earthing system.
	Do not use direct or indirect water jets on the cabinet. Do not touch the equipment with damp or wet hands or feet; do not use it while barefoot.
	Parts that form the refrigeration circuit must not be cut or separated until the refrigerant has been removed for recovery at a specialized centre.

	The components of the refrigerating circuit must not be cut or separated.
	It is completely forbidden to perforate the cabinet. If this occur, it could create irreparable damages.
	If you wish to stick adhesive signs onto the cabinet, only use thin foil. Do not lay thick insulating layers on the external walls of the equipment as this could compromise cabinet performance.
	In order to reduce flammability-related risks, this cabinet may only be installed by suitably qualified personnel.
	Product that you load into the cabinet must always be cooled to at least the cabinet's conservation temperature. The cabinet is not able to reduce the temperature of products, only conserve them.
	Gloves should be worn during product loading operations.
	Any other use not explicitly mentioned in this handbook must be considered as hazardous. The manufacturer disclaims all liability for damage resulting from improper, incorrect or unreasonable use.

1. GENERAL INFORMATION

Welcome to the new series of plug-in refrigerated display cabinets from Frost-trol for the sale of perishable food products. We are delighted by your decision to choose us.

This assembly and maintenance manual has been especially designed with a view to assist maintenance staff by facilitating the installation of these cabinets, thus making their task more pleasant, as well as to gain optimal productivity from these units and also so that the Marketing Director is able to gain the maximum commercial return possible.

Read this manual carefully and store it with the refrigeration unit. Pay particular attention to the sections that emphasize your safety. Follow these instructions to ensure that the unit will run smoothly and its life span may be long and productive.

The A-weighted emission sound pressure level is below 70dB(A).

1.1. DESCRIPTION OF REFRIGERATED DISPLAY CABINET

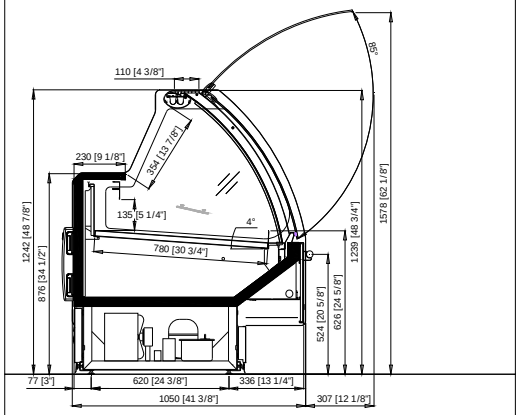
Onega is our most versatile built-in counter that has been designed specifically for the sale of refrigerated products.

This model is offered in our most common versions: assisted service and self-service. In both cases, its wide load capacity and its great visibility, thanks to the minimum number of arms used, its soft rounded lines and its wide display end walls, make this serve-over counter an ideal horizontal refrigerated cabinet for the sale of meat, delicatessen, dairy products and drinks.

The cabinet has a wide range of optional accessories. If you need details about its assemblage, please contact with Frost-trol, S.A.

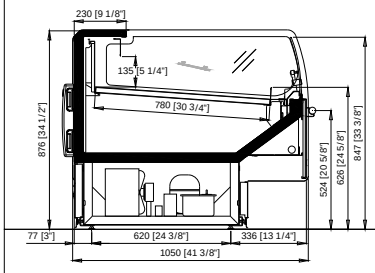
1.2. GENERAL CHARACTERISTICS

PVTR7813C



MÓDULOS					
937	1250	1875	2500	3125	3750

PVLS7813C



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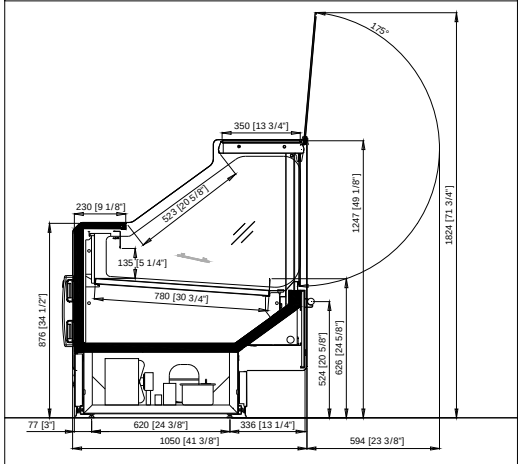
PVCU7813C



MÓDULOS					
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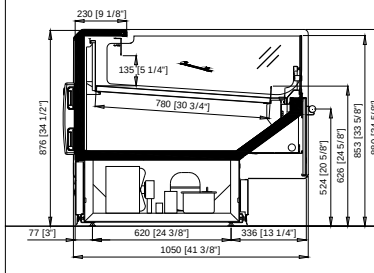
PVLR7813C



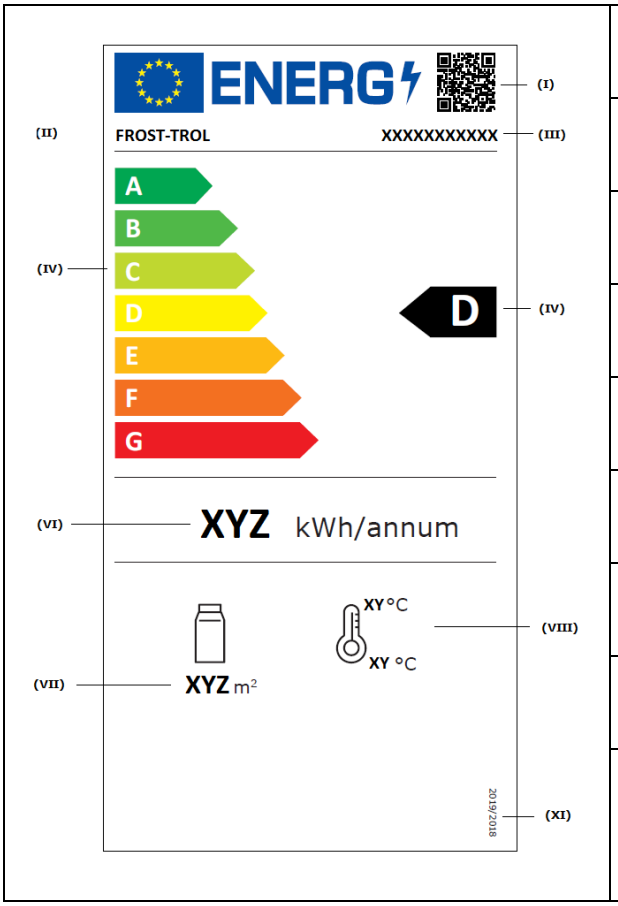
MÓDULOS					
937	1250	1875	2500	3125	3750

1.3. TECHNICAL INFORMATION AND ACCESS TO EPREL

Effective 1 March 2021, it will be possible to search for the energy labels and information data sheets on the EPREL database.
EPREL is the European product database for energy labelling according to the 2019/2018 Regulation (EU) that establishes the minimum energy efficiency standards of refrigerating cabinets.

The label provides information on the annual consumption of the appliance, the TDA values and the maximum and minimum product temperature.

In order to access the EPREL database, you can either scan the QR code from the energy label provided with the appliance or access the EPREL website and introduce the model identifier (see Table 1).



(I)	QR CODE
(II)	BRAND NAME
(III)	MODEL IDENTIFIER
(IV)	EFFICIENCY CLASS SCALE
(V)	EFFICIENCY CLASS
(VI)	AE (kWh/year)
(VII)	EXPOSITION SURFACE (m^2)
(VIII)	MAXIMUM AND MINIMUM PRODUCT TEMPERATURE
(XI)	NUMBER OF REGULATION

Table 1. Energetic label

1.4. SHOP CONDITIONS

Frost-trol refrigerated display cabinets are designed to operate in air-conditioned areas that maintain an air temperature of 25º C and a maximum relative humidity of 60 % (climate class 3, in accordance with ISO EN 23953-2). The performance of the refrigerated display cabinet is adversely affected when operated under air

temperatures and humidity conditions that are higher than those for which they have been designed.

1.5. FIXATION OF THE RECOMMENDED TEMPERATURE IN EACH COMPARTIMENT

Each cabinet, depending on the model and its options, is technically defined by a different temperature depending on the application and it's designed for preserving a certain type of product.

TEMPERATURE CLASS	TEMPERATURE OF APPLICATION	MAXIMUM TEMPERATURE OF THE HOTTEST PRODUCT	MINIMUM TEMPERATURE OF THE COLDEST PRODUCT
	[°C]	[°C]	[°C]
M0	0/1	+4	-1
M1	0/+2	+5	-1
M2	+2/+4	+7	-1
H2	+4/+8	+10	-1

Table 2. Temperature depending on class for refrigeration cabinets.

TEMPERATURE CLASS	TEMPERATURE OF APPLICATION	MAXIMUM TEMPERATURE OF THE HOTTEST PRODUCT	MINIMUM TEMPERATURE OF THE COLDEST PRODUCT
	[°C]	[°C]	[°C]
L1	-15/-18	-15	-18
L2	-12/-18	-12	-18
L3	-12/-15	-12	-15

Table 3. Temperature depending on class for freezing cabinets.

1.6. OPERATING THE COOLING SYSTEM

The condensing unit requires an air temperature of at least 20ºC and a maximum of 30ºC for efficient ventilation of the condenser. The minimum temperature of the condenser should never fall below 20ºC.

1.7. RECEIPT OF REFRIGERATED CABINET

Check the unit carefully to make sure that it is not damaged and no part or accessory is missing. For information about missing parts or accessories please contact the Frost-Trol Commercial Department or our official representative for your country.
This refrigerated display cabinet has been thoroughly inspected to ensure the highest level of quality. Any order for components should be made to Frost-Trol or

our official representative for your country within 48 hours of receipt of the cabinet.

1.8. DAMAGE SUSTAINED IN TRANSIT

If the cabinet has sustained any damage in transit, then you must make a claim with the Shipping Company immediately, by stating the damage on the delivery note and having this signed by the carrier.

1.9. TECHNICAL ASSISTANCE

Should you have any technical queries concerning the installation of the refrigerated display cabinet or cooling system, please contact our Technical Department.
If you need to get in contact with Frost-Trol with regard to a specific element, please make sure that you are able to quote the model and serial number. This information can be found on the nameplate, which is located inside the refrigerated display cabinet.

1.10. STORAGE

Do not storage the cabinet outdoors; do not expose to climatic conditions or to direct sunlight.

The cabinet with plastic cover may reach temperatures above 80° C in the sun, which might result in the deformation of plastic parts.

Check the good condition of the packaging before storing the cabinet.

2. INTALLATION OF REFRIGERATED DISPLAY CABINET

2.1. CABINET LOCATION

Handling operations and installation of the cabinet are reserved for skilled person.

Consult the Construction Manager or the person responsible for the installation of unit. Ask them to inform you of its installation location or if there are any changes to where it is to be installed.

Check that the installation location chosen is suitable. To do this, make sure that there is no air flow present, as this could affect the units by blowing hot air into them. The unit must not be installed near air conditioning air discharge openings, ventilators, doors or other machines that, due to their location, could expel warm air from their condensing units into the cabinet or onto its condensing unit.

	The refrigerated display cabinet must not be installed in places where explosive gases are present. Do not expose the equipment to atmospheric agents.

If the chosen location is not suitable for the installation of the cabinet, inform the Construction Manager or the person responsible for the supermarket accordingly, so that they can either specify another location or make the necessary modifications that would make the original location suitable (closure of air vents, removal of ventilators, closure of doors, etc.).

During the installation (or while carrying out maintenance) you must always wear proper safety equipment to preserve your security.

	It's mandatory to leave 8cm between the cabinet rear wall and the supermarket wall to ensure the airflow.

	Keep the condensing unit openings free from obstructions.

2.2. UPACKING

Unpacking is reserved for skilled personnel.

The refrigerated cabinet is protected by plastic wrapping. Remove this and take out the accessories which can be found inside the cabinet:

Using a fork-lift truck or pallet-lift, lift the cabinet, remove the wooden or plastic supports and replace them with the plastics bases that can be found inside the cabinet with the other accessories.

Packaging materials (plastic bags, nails, screws, polystyrene, etc.) should not be left within reach of children as they pose potential sources of danger.

2.3. LEVELLING

Use the adjustable bases to level the unit. Poor levelling could result in problems with the defrost-water drainage, which could then freeze and thus cause the unit to break down.

Poor levelling could result in problems with the drainage of water resulting from defrosting, which could cause the unit to break down.

IMPORTANT!

The surfaces that the lines are to be placed on may not be perfectly horizontal. Therefore it would be best to first take the section of line that is to be placed onto the highest part of the surface and screw its adjustable bases to their smallest possible heights whilst allowing the section to remain horizontal. This will ensure that the bases on the end sections do not need to be excessively extended.

2.4. THERMOSTATIC VALVE CONTROL

In order to obtain maximum evaporator efficiency, the expansion valves should be adjusted to have a reheating value of 3 to 6 degrees.

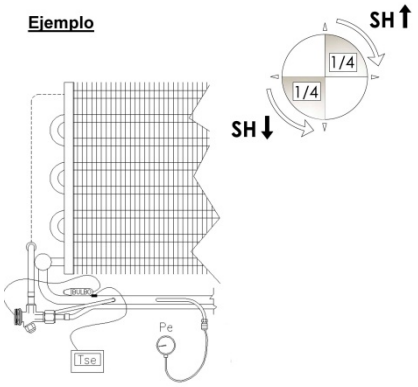
When viewed from the front, the expansion valve is situated on the far left of the unit.To ascertain the reheating value measure the evaporation pressure on the Schrader valve, which is located on the unit. Read the pressure on the pressure gauge, which also displays the temperature, Te, that corresponds to the evaporation pressure.

Measure the exact aspiration line temperature using the thermocouple in front of the thermostatic expansion valve bulb. This will ensure that you obtain the temperature of the evaporator's exit, Tse. The difference between the two temperatures is the reheating value, Tr, in the evaporator:

Tse-Te=Tr

To adjust the reheating remove the cap from the thermostatic expansion valve reheating screw and turn it anti-clockwise to lower the reheating, or clockwise to increase the reheating.

Turn the screw in no more than quarter turn movements at a time and wait 15 minutes between each adjustment so that the system can stabilize. Once an adequate reheating value has been obtained, replace the cap on the thermostatic expansion valve reheating screw and close its lid.



Muebles refrigeración *

	REFRIG.	Pe		T_e
1	R404A	3,92	→	-6
	R134a	1,34	→	-6

2 Tse= -2 ºC

3 SH = Tse – Te = -2 – (-6) = 4 K ✓

Muebles congelación

	REFRIG.	Pe		T_e
1	R404A	0,78	→	-33

2 Tse= -29 ºC

3 SH = Tse – Te = -29 – (-33) = 4 K ✓

2.5. ELECTRICAL CONNECTION

The assembly, installation and connection of these cabinets must be carried out by a certified technician.

Consult the circuit diagrams that are supplied with each cabinet when carrying out the electrical connections and observe all of your country's safety regulations in full.

Before plugging into the mains, check that the supply voltage is the same as the voltage indicated on the nameplate. The electricity supply should be adequate for maximum consumption.

⚠	The power cords must be properly spread out, safe from shocks and far from liquids, water and heat sources, and in perfect condition. The use of adaptor plugs is forbidden.

⚠	If the power cord is damaged, it must be replaced by the manufacturer in order to avoid a hazard.

Technical cabinet data are showed in the nameplate (see Chapter 5).
Electric diagrams are in the electric box inside a plastic package.

Earthing is mandatory according to current legislation, as is providing protection against power surges, short circuits and indirect contacts.

2.6. CLEANING

Before the first use, it's mandatory to clean the unit thoroughly, both inside and out, with non-abrasive detergents and rinse well with water. Dry the inside with a cloth so that no water remains inside the unit (see Chapter 4).

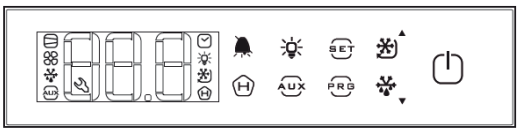
3. OPERATION

3.1. INITIAL START-UP

Before starting up the unit, allow at least one hour to pass in order to let the oil levels to stabilize, as they would have been displaced during transportation.

Connect the cabinet to the mains and the display will light up showing two horizontal strips. These indicate that the control is conducting a self-test.

After approximately 5 seconds the temperature that has been read by the control will appear on the display and the unit will actuate itself.



n.	*Bouton*
1	*ON/OFF*
2	*UP/CC*
3	*SET*
4	*LIGHT*
5	*MUTE*
6	*HACCP*
7	*AUX*
8	*PRG*
9	*DOWN/DEF*

Table 4.Display.

The temperature controls and defrost times that we recommend for each cabinet are based on our experience and laboratory tests. Different air conditions could require controls that are different from those recommended.

The control components may only be operated by the technician responsible for the installation.

The functions available to users are shutdown, start-up of the unit from the circuit board and the start-up of the lighting from its corresponding switches.

3.2. HOW TO SET THE SET POINT (DESIRED TEMPERATURE VALUE)

Step	Action	Effect	Meaning
1	Press SET for 1 seconds	After 1 second the display will show the current set point	This the currently active control set point
2	Press UP/CC or DOWN/DEF	The value on the display will increase or decrease	Set the desired value
3	Press SET	The controller will show the temp. read by the probes again	The set point is modified and saved

Table 5.How to set the set point.

3.3. HOW TO ACCESS AND SET PARAMETERS

- type “F” (FREQUENT, not protected by password)
- type “C” (CONFIGURATION, password protected)

Step	Action	Effect	Meaning
1	Press PRG for 3 seconds	After 3 seconds the display will show the 1st parameter, “0” (Password)	Access to type “F” parameters is direct without password
2	Press UP/CC or DOWN/DEF	The value on the display will increase or decrease.	Enter the password “22” to access the type “C” parameters or whatever different value for the type “F” parameters.
3	Press SET	The display will show “St” (Setpoint)	This is the current value of the Setpoint
4	Press UP/CC or DOWN/DEF	If the password set is 22 the display will scroll the list of type “C” parameters (CONFIGURATION) otherwise the list of type “F” parameters (FREQUENT)	Set the desired value
5	Press SET	The display will show the parameter name	This is the current value of the parameter
6	Press UP/CC or DOWN/DEF	The value on the display will increase or decrease	Set the desired value
7	Press SET	The display will show the parameter name again	IMPORTANT: parameters not yet saved
8	Repeat steps 2, 3, 4 & 5 for all parameters required		
9	Press PRG for 5 seconds	The controller will display the temperature read by the probes again	IMPORTANT: only now have all the parameters been updated

Table 6. How to access and set parameters.

3.4. ACCESSING THE PARAMETERS BY SELECTING CATEGORY

Step	Action	Effect	Meaning
1	Press PRG	The display will show the name of the functional block that the parameter belongs to.	Example “CMP” for the compressor parameters, “dEF" for defrost parameters.
2	Press UP/CC ou DOWN/DEF	The display will shown the name of the other funcional blocks.	Example “Fan” for the fan parametres.
3	Press SET	The display will show the name of the first parameter in the functional block selected.	Example “F0” for ‘Fan’.

Table 7.Accessing the parameters by selecting category.

Category	Parameters	Message	Icon
Probe parameters	/	'Pro'	
Control parameters	R	'Ctl'	
Compressor parameters	C	'CMP'	
Defrost parameters	D	'dEF'	
Alarm parameters	A	'ALM'	
Fan parameters	F	'Fan'	
Configuration parameters	H configuration	'CnF'	
HACCP parameters	H HACCP	'HcP'	
RTC parameters	rtc	'rtc'	

Table 8. Icônes.

For both types of access (type "F" and type "C") there is a timeout (no button on the keypad pressed for 1 min), the procedure is ended without saving the parameter.

3.5. ALARMS WITH MANUAL RESET

The alarms with manual reset can be reset by pressing the PRG and UP/CC for more than 3 s.

3.6. MANUAL DEFROST

As well as the automatic defrost function, a manual defrost can be enabled, if the temperature conditions allow, by pressing the DOWN button for more than 5 s.

3.7. PRODUCT LOADING AND PRESERVATION

Please, don't load product before three hours since starting up the cabinet. Anycase, always check the working temperature before loading products inside.

	Loaded product should be at least at its range temperature or better. The cabinet is not able to decrease product temperature; cabinet only is able to preserve temperature.

Please note the following points when loading the cabinet:

- Do not exceed the maximum load limit;
- Do not obstruct the aspiration grid or air discharge conduits;
- Do not load products that have higher temperatures than the cabinet's operating temperature;

- Load the products into the cabinet in such a way that you can ensure good stock rotation;
- Empty spaces should be left between products to ensure perfect air circulation around them.

Gloves should be worn when loading products into the cabinet.

The cabinet doors should be closed as long as possible. In this way, excessive energy consumptions as well as frost buildup on the inner walls will be avoided.

An improper preservation temperature may turn the foodstuffs into something harmful for the consumer's health and facilitate germ and toxin spreading.
The preservation period will depend on the type of product and the storage temperature.

4. MAINTENANCE AND CLEANING

Unplug the cabinet before performing any form on internal servicing of the unit.

Any maintenance operation not described in these instructions must be done by authorized personnel.

Perishable products are sensitive to the bacteria proliferation. Therefore, cabinet cleaning has to be made following next generic rules.

Establish a routine cleaning schedule to ensure an adequate level of hygiene of your cabinet. In this way you will ensure an optimal performance of the cabinet and a longer service life.

TYPE	ZONE	PÉRIODICITÉ
CLEANING	EXTERNAL PARTS	WEEKLY
CLEANING	INNER PARTS	MONTHLY
CLEANING	CONDENSER	MONTHLY
MAINTENANCE	DOORS	MONTHLY
CLEANING	GENERAL	EVERY 2 OR 3 MONTHS

Table 9. Cleaning routine

Do not allow any water to spatter or be sprayed over the unit's electrical elements. Should this happen, make sure that they are dry before the unit is started up again.

If cabinet has to be shutoff for a long time, take out perishable products located inside, switch-off the unit and then, clean the cabinet following the procedure described before. Finally, leave the doors half-open to avoid unpleasant smells.

IMPORTANT!

The components of the refrigerating circuit must not be cut or separated.

4.1. GENERIC CLEANING ROUTINE

Clean the cabinet with non-abrasive detergents. Cleaning products have to be suitable for use with foodstuffs. Ensure a good rinse to remove all detergent remnants. After the cabinet cleaning, rinse and dry it with a nonabrasive dry cloth until no water remains.

Never use products which contain alcohol, solvents, acetone or chlorine. Avoid the use of metallic brushes.

For glass surfaces cleaning, use specific products for it. Water use, will carry on calcareous deposits. For cleaning the fixed glass, pleas follow the procedure described in the next section.

4.2. INTERNAL CLEANING PROCEDURE

To ensure an adequate level of hygiene of your cabinet you must clean and disinfect the inner parts of the cabinet almost every 30 days. To do so :

- Remove the cabinet products and put i tonto an adequate cold storage.
- Apply a defrost.
- Wait until the inner cabinet parts reach ambient temperature and no frost rests remain.

	The inside of the cabinet must not be cleaned using water jets.

	Don't use metallic or cutting objects to accelerate the process. It may scratch or damage inner surfaces.

- Clean inner parts with warm water and neutral soap.
- Dry the surface with a soft cloth.
- Ensures all the surface are well dried.
- Close the cabinet doors and switch on the cabinet.
- Wait until cabinet temperature is correct before loading product inside.

Cleaning procedures **never** must be made in the presence of products.

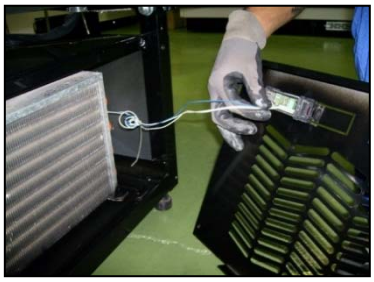
	Gloves should be worn to protect hands when cleaning inside the evaporator and the condenser. This will protect hands against possible cuts or scratches from the unit's internal elements.

	Make sure that the drainage holes are not obstructed by any remaining merchandise, as this could impede the drainage of excess water resulting from defrosting.

4.3. CONDENSER CLEANING PROCEDURE

An inadequate cleaning of condenser will lead to increased energy consumption and could also cause the compressor break down.

- Unplug the unit from the mains;
- Loose the fastening screws and remove the protection grille carefully. Take care to disconnect the cable of the electronic display, if so.



Gloves should be worn to protect hands against cuts or scratches from the unit's internal elements.

- Use a soft nonmetal brush or a vacuum cleaner.

- Mount and screw the front grille.
- Finally, plug de cabinet.

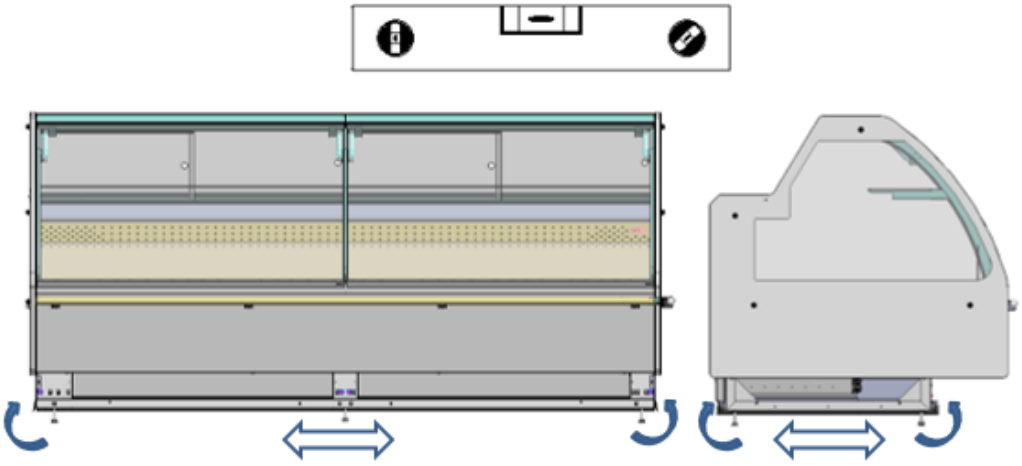
The condenser's coil must be cleaned 12 times a year. Otherwise, the efficiency of the appliance might drop significantly.

4.4. FRONT GLASS ADJUSTMENT

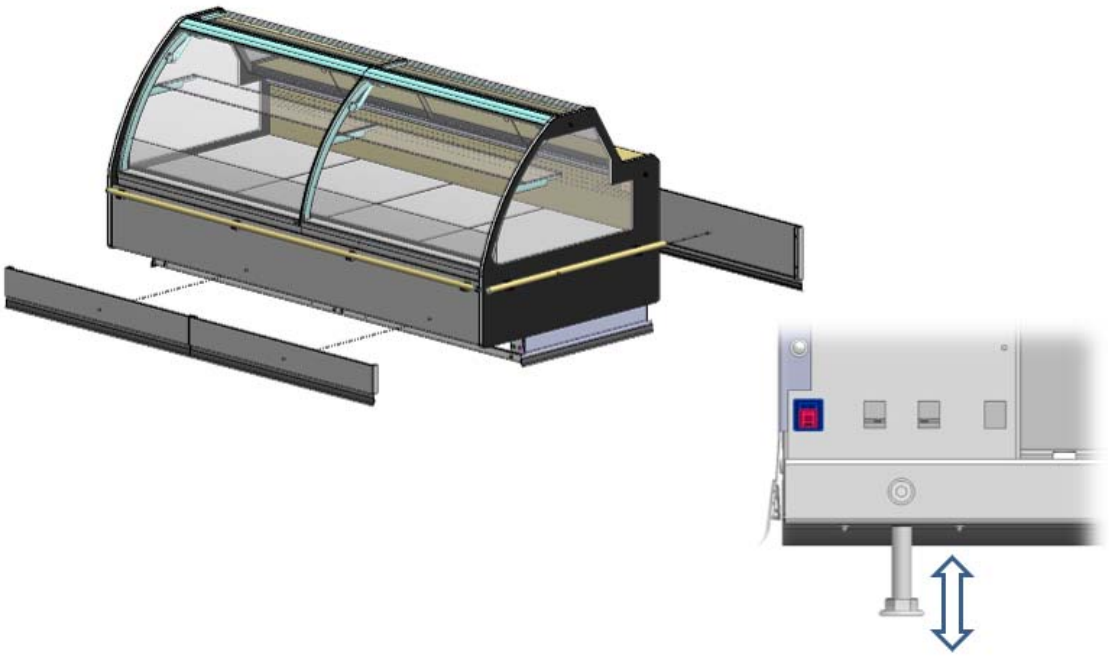
⚠	Always use the personal and/or collective protective equipment necessary. The execution of these adjustments may require more than one person. Always hold the front glass securely for preventing it from falling.

This procedure applies to the TR display counters from the Solid Lines range by Frost-trol, S.A.

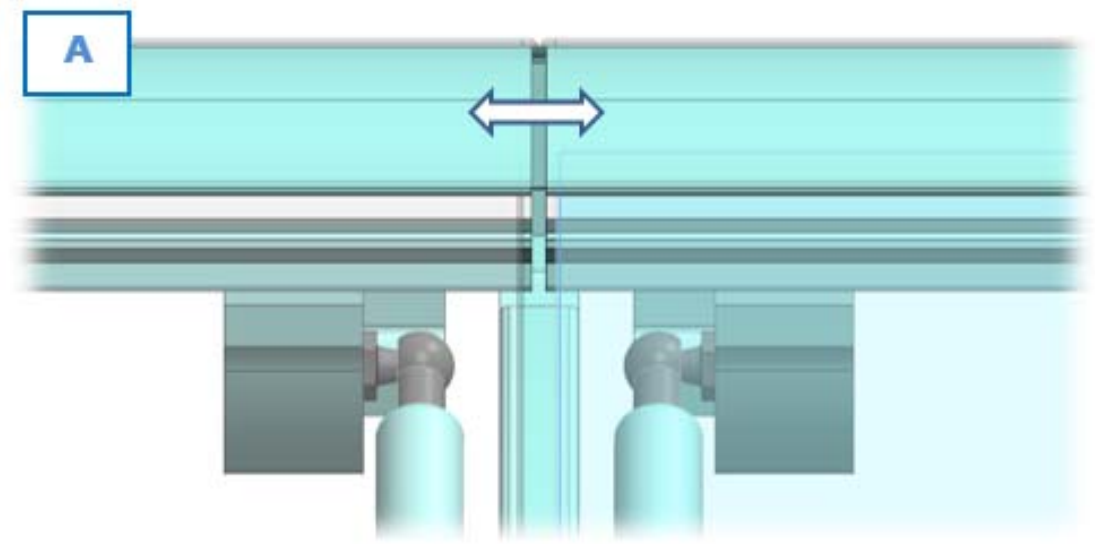
1. Firstly, the levelling of the appliance shall be checked both longitudinally and transversally.

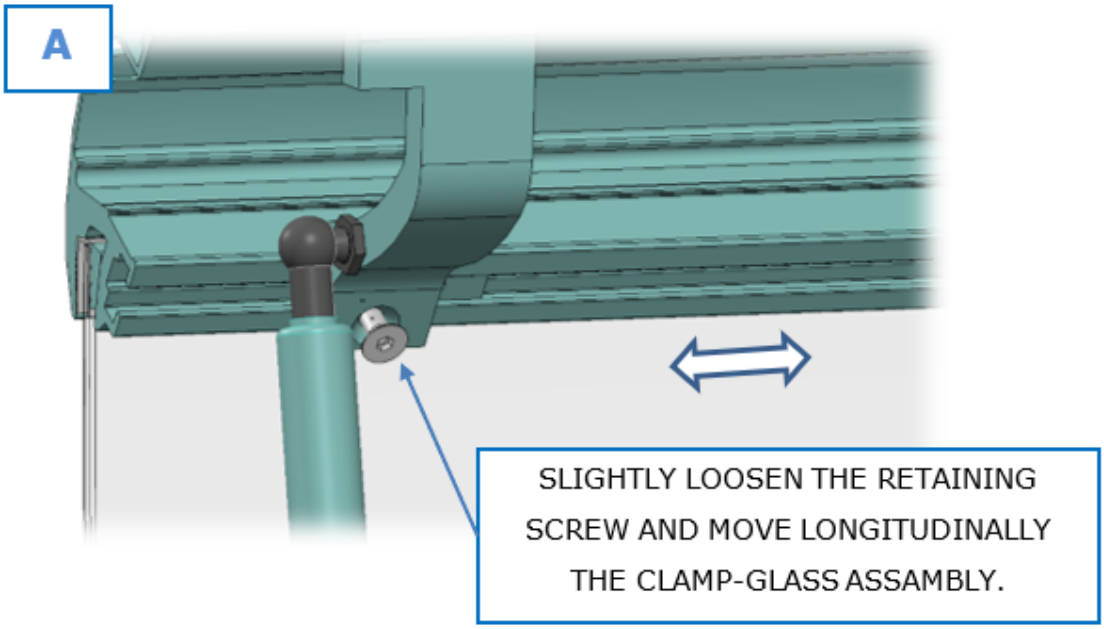


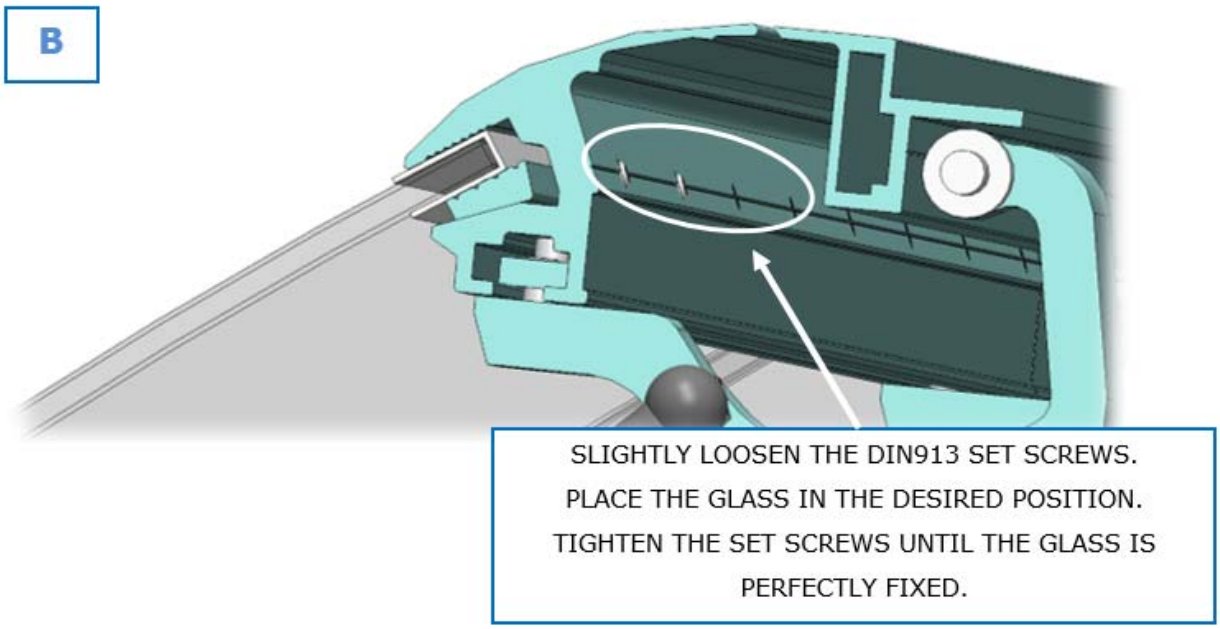
2. If the appliance is not levelled in some of its directions, remove the bottom coverings for enabling access to the adjustable feet. Check especially the central foot adjustment.

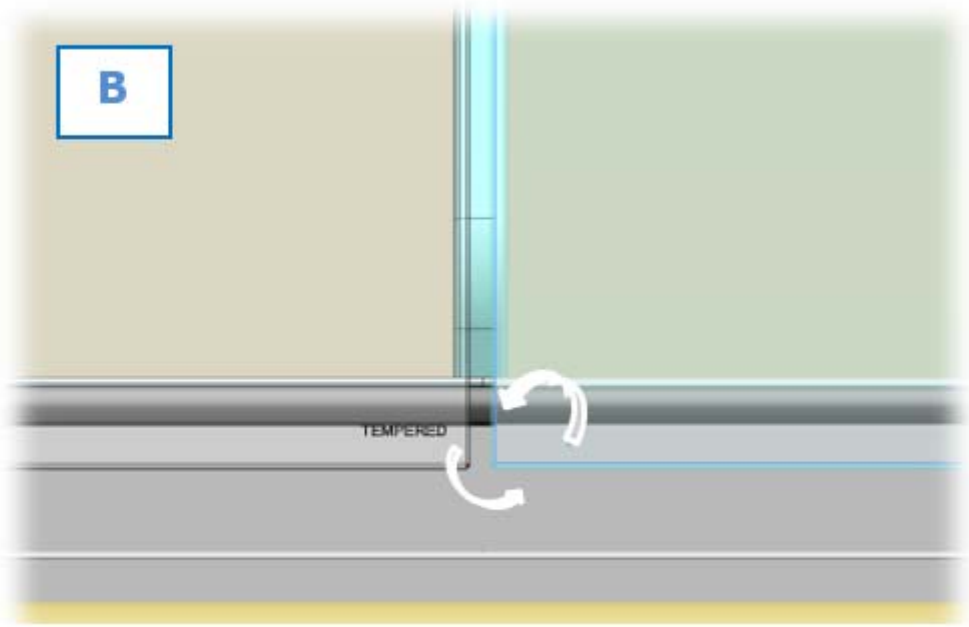


3. There are two possibilities for levelling the front glass. In both cases, check the adjustment both keeping the glass open and closed.









If after having carried out this procedure you have not been able to precisely adjust the front glasses, please contact the technical support team of Frost-trol, S.A.

5. SPARE PARTS REQUEST

Before contacting the Spare Parts Department, kindly compile the following information:

Model *:

Cabinet series number *:

Manufacture year *:

Part number according to spare parts cross-section **:

Length of the part (if applicable):

Colour of the part (if painted):

Left of right (if necessary)***:

Quantity:

*The series number is indicated inside the refrigerated cabinet, on the characteristics plate.
** Taking the customer's standing position as a reference.
*** You may request to Frost-trol the spare parts cross-section.

frost-trol CE Manufactured by Frost-trol, S.A. Avda. del Castell Vell, 176 -12004 - Castellón – Spain				
MODEL:		YEAR:		
Nº		W. ORDER:		
VOLTAGE:		V ~		
FREQUENCY:		Hz		
MAXIMUM COLD POWER:			A	W
MAXIMUM DEFROST POWER:			A	W
LIGHTING POWER:			A	W

REFRIGERANT:		
REFRIGERANT CHARGE CIRC. 1:	kg	
REFRIGERANT CHARGE CIRC. 2:	kg	
MAX PRESSURE:	kPa (bar)	
OPERATING TEMPERATURE:	ºC	
CLIMATIC CLASS:		
INSULATION BLOWING GAS:		
INDEX PROTECTION:		
Read installation and maintenance manual available at: www.frost-trol.com or calling: +34 964 34 27 40		

Table 10. Name plate

According to point 2 in the Annex II from the Regulation 2019/2024 (Ecodesign), the following components will be available as spare parts for at least eight years from the moment that the last unit of the model enters the market: Thermostats, starting relays, defrosting heating resistors, temperature sensors, software and firmware, circuit plaques, light sources, door hinges and handles, remote controls, levers and buttons, gaskets, racks, crates and stands for storage. For other components, consult availability.

6. FAULTS AND REPAIRS

6.1. MALFUNCTIONS

In the event of malfunction, the operator should take all necessary measures to prevent the products from deteriorating.

6.1.1. THE UNIT DOESN'T START UP OR IT STOPS:

- Check that the electricity supply is sufficient.
- Check the status of electrical protection systems.
- Check the plugs.

If the malfunction is not due to any of the above causes, call immediately to the after-sales department and store the foods in cold rooms to ensure the preservation of the product temperature.

6.1.2. THE UNIT DOES NOT GET COLD ENOUGH:

- Check that the cabinet has been correctly loaded, i.e. the products do not exceed the maximum load limit and the conservation temperature is suitable for the products;
- Check that there is no air flow that will affect the operation of the unit;
- Check that condenser is free of dust or any other material that could impede air circulation;
- Check the status of the pressure switches and reset if necessary;
- Check the doors and plastic profiles status;
- Check the cabinet level;
- Check the configuration of the electronic controller;
- Check the climatic conditions.

If the malfunction is not due to any of the above causes, call immediately to the after-sales department and store the foods in cold rooms to ensure the preservation of the product temperature.

In case of malfunctioning, the following information is completely necessary to find the reasons of the trouble and suggest the solution for it:

Cabinet model, serial number and manufacturing date (in the case name plate):

Store conditions (RH in %, room temperature):

If there are any air draughts affecting the cabinet (doors, air conditioners, other plug in cabinets near, etc.) (a handmade drawing or photos could be appreciated);

Thermostat setting:

Defrost interval:

Defrost endurance time:

End defrost temperatura:

State of the fans on defrost cycle (on ? off?):

Evaporating pressure (measured at the cabinet, on the Schrader valve):

Supply air temperature (measured at the honeycomb or air grids):

Return air temperature (at the return air grid or glass, depending on the model):

Line voltage measured at the cabinet's terminal board (for plug in):

Compressor amps (for plug in):

Defrost heaters amps (when it's mounted):

Other details, or photos, that could help will redound to find a quicker solution.

6.2. FINAL SHUTDOWN

We, Frost-trol SA, declare this product is covered by Directive 2002/96/CE (Waste Electrical and Electronic Equipment) designed to halt the increase of this type of waste and promote recycling as well as decreasing disposal.

The symbol of the crossed-out waste bin that appears on the Nameplate declares:

- that the product was put in circulation after 13th August 2005;
- that the product is subject to separate collection and must not be treated like normal domestic waste or sent to dumps for disposal.

This cabinet contains refrigerant, polyurethane foam, oil, plastic and metallic, electric and electronic elements. Therefore its destruction or recovery should be carried out in accordance with current legislation at an authorised waste dumping ground. Parts that form the refrigeration circuit must not be cut or separated until the refrigerant has been removed for recovery.

Therefore, when the cabinet has reached the end of its working life and thus needs to be removed, the user is required to deliver the product for disposal to the collection centre specified by the local authorities for recovery and recycling of professional WEEE.

In the case of trade-in of the old product for a new one, the user can ask the seller to take delivery of the old one, no matter what the brand.

The manufacturer is responsible for making recovery, disposal and treatment of its products feasible at the end of their useful life, either directly or via a collective system.
Violations of the regulation call for specific sanctions, to be established autonomously by each EU member country with its own legislation, binding equally on all those subject to its laws.

6.3. DISMANTLING THE CABINET

In accordance with the waste disposal regulations in each country and in respect of the environment, please differentiate the parts of the cabinet so as to be able to dispose of them separately or recycle them adequately.
None of the parts that make up the cabinet can be disposed of together with urban solid waste, except for the metallic components which, in any case, are not classified as special waste in most European countries.

	Parts that form the refrigeration circuit must not be cut or separated until the refrigerant has been removed for recovery at a specialized centre.

	Because of its flammability R290 refrigerant requires special cares during the dismantling process of the cabinet. Rooms must be well ventilated, sparks mustn't be done and personnel involved must be speciallized.

6.4. DECLARTION OF ROHS CONFORMITY

We, Frost-trol, S.A. declare under our sole responsibility that the refrigerated cabinet complies with the provisions of Directive 2002/96/EEC (RoHS). In all the homogeneous materials used for its production, any content of lead, mercury, hexavalent chrome, polybrominated biphenyl (PBB), and polybrominated diphenil ether (PBDE) does not exceed, in weight 0.1%; that of cadmium does not exceed, in weight 0.01%. This declaration is based on declaration of our raw materials suppliers.

7. GUARANTEE

The guarantee is established for a duration of 12 months.

Any use of the appliance different from those specified in this manual will be considered as dangerous and/or inadequate. The manufacturer eludes all responsibilities derived from an inappropriate, incorrect or unreasonable use.

Frost-trol, S.A.

Technical Department

Avda. del Castell Vell, 176

12004 Castellón (Spain).

Phone.: 0034 964 34 27 40

Fax: 0034 964 21 51 48

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