



**Manuale di Istruzioni
Instruction manual**

CR165 CR219 CR271



Ver. 1.0





Isotherm refrigerators are designed to guarantee correct function, even in difficult environmental/marine conditions. They excel in terms of the most important characteristics for the marine environment: reliability and low energy consumption.

Equipped with a hermetic seal cooling system, they guarantee the least possible energy consumption and reduced maintenance.

All models are very easy to install. They can withstand lateral movement of 30°.

To guarantee the most efficient function possible of the Isotherm refrigerator, comply with the following instructions:

- Avoid opening the refrigerator doors if not necessary.
- Ensure good compressor and condenser ventilation.
- Check that the electrical system is in good condition. Inspect batteries and charge levels regularly. Always start the engine up with a separate battery unit. Keep to the instructions concerning the electrical wiring and fuse box, closely.
- Keep the inside of the refrigerator/freezer clean.
- Leave the refrigerator/freezer doors slightly open when the ship is not in use for long periods of time.

Battery sensor

To protect the battery from running down completely, a voltage sensor will turn the compressor off automatically at the following levels:

VOLTAGE	Cut-Out	Cut-In
12V	9.6V	10.9V
24V	21.3V	22.7V

Safety instructions

When connected up to the quay mains electrics, ensure that the current generator is set up with a trip switch.

Warning!

Never leave uncovered wires connected to the electrical supply.

Warning!

Never connect the battery charger to the refrigerator directly. New battery charger contain an explosive gas in addition to the acid.

Warning!

Never cover the ventilation openings of the compressor unit. Do not dispose of coolant in the air.

Installation

Almost all ships have a specific area for refrigerator installation. The Isotherm refrigerator has been designed to comply with normal installation dimensions.

The compressor must remain in a vertical position, but will also work for short periods at an oscillation of 30° or more.

The minimum compulsory requirements for on board installation are as follows:

- 2 cm space above the refrigerator (between the refrigerator and the furniture line);
- To the side, the refrigerator walls can be placed in contact with the furniture.

Recommended installation:

To maximise refrigerator performance and efficiency (optimal function and energy saving), we recommend addition a further 2 cm space on each side, to the minimum requirement of 2 cm above the refrigerator.

It is important not to pierce the sides of the refrigerator where the yellow warning label is placed (Fig.1, Fig.2).

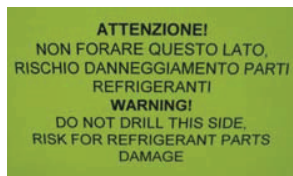


Fig. 1

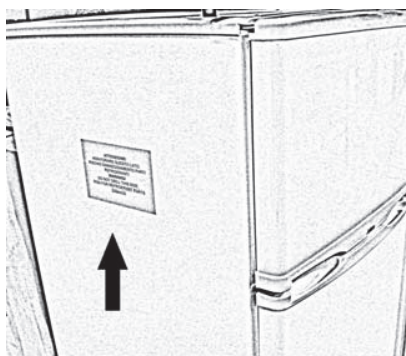


Fig. 2

This is because the evaporator is foamed at the sides of the refrigerator and applying any rod or support risks piercing this, causing refrigerant gas to leak out and irreparably damaging the product. Fix the product at its base and at the top, using the specific rods (supplied) as shown in figures 3 and 4:

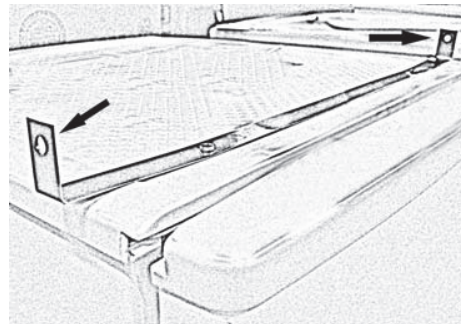


Fig. 3

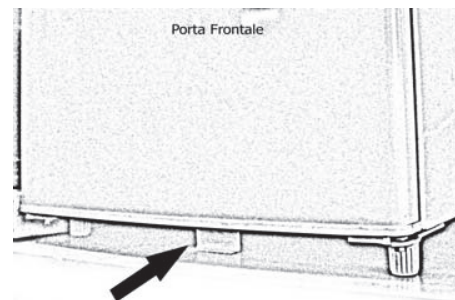


Fig. 4

Important: never remove the support feet.

Ventilation

It is extremely important that the compressor unit is appropriately aired and that the flow of fresh air is always guaranteed.

The natural ventilation from the bottom upwards can be increased with ventilation openings at the level of the refrigerator back.

Electrical wiring and connections

Comply with the following warnings for refrigerator connection:

- Always use appropriate section wires. The following table gives the minimum sections:

Section mm ²	Diameter r	Max. wire length 12V mt/ft	Max. wire length 24V mt/ft
2.5	12	2.5/8	5/16
4	10	4/13	8/26
6	10	6/19	12/39

- Always connect the refrigerator directly to the battery or main battery switch. If connected by means of the main boat control panel or other, it may lead to a lowering of voltage that should be considered when calculating wiring section. The system must have a 15A fuse for 12V, or 7.5A for 24V. If a switch is to be used, it must be at least 20A to avoid loss of voltage.
- Connect the red wire (+) to the positive pole and the black wire (-) to the negative pole.
- Never connect the refrigerator directly to the battery charger. This could be connected to the battery pack.

Temperature regulation

The refrigerator is equipped with a thermostat dial and built-in ON/OFF switch. By rotating the dial to the end of the scale, you will hear a click indicating that the appliance has been turned off.

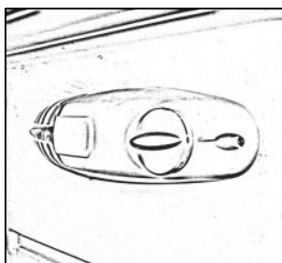


Fig. 5

- 0** = OFF position. The appliance is off
- 1** = ON position, minimum refrigeration
- 7** = ON position, maximum refrigeration

Replacing the bulb

To replace the bulb, set the thermostat to 0 (OFF, light off), apply gentle pressure to the transparent cover lever (Fig. 6), pushing outwards as shown in Fig. 7.

The bulb attachment is type E14, 12V/24V, Max 15W.

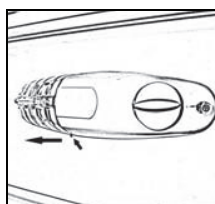


Fig.6

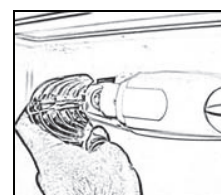


Fig.7

Defrost

Defrosting should be carried out when the layer of ice is 3-4mm thick. Rotate the thermostat to the OFF position (end of scale).

Store foods and liquids in a cool place during defrost.

Do not use a metal spatula to remove the layer of ice.

Do not turn back on until the refrigerator is fully defrosted, dry and clean.

Clean the condensation drainage pipe and check that it is not blocked.

Maintenance

Isotherm refrigerators have a hermetic seal cooling system that requires no maintenance nor topping up of coolant liquid. The refrigerator can be left on board the boat all winter (if the temperature goes below 0, the compressor may not start).

Maintenance, no less than once a year, may merely involve cleaning dust from the condenser. Use a soft brush and no sharp tools.

Leave the inside of the refrigerator clean and dry. Clean the condensation drain and check that it is not blocked.

Leave the refrigerator/freezer doors slightly open when the appliance is not in use, to allow for appropriate ventilation within the units. Set the thermostat to 0 (OFF) to avoid any wastage of current caused by the light being on.

Drainage and condensation

The Isotherm refrigerator is supplied with a drainage pipe directly connected to the appliance, Fig. 4.

Unwind the drainage pipe and connect to an appropriate drain, Fig. 5.

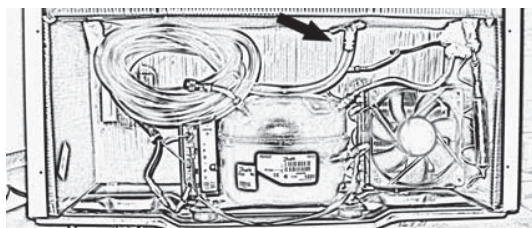


Fig. 4

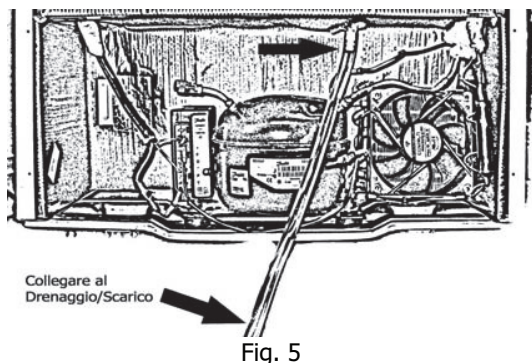


Fig. 5

Two-door Isotherm refrigerator/freezer

For two-door refrigerator/freezers, priority has been given to energy saving. Consumption is very limited compared to refrigerator volume and capacity.

3. It is quite normal for the refrigerator compartment to take from 6 to 12 hours to reach the temperature selected, particularly if filled with food.
4. If room temperature is very high, better results will be obtained by setting the thermostat to an interim point (pos. 4) rather than selecting a lower temperature.

TECHNICAL INFORMATION

Voltage	12/24 Volts
Consumption 12V	6A (compressor operating)
Average consumption 12V	2.3 – 2.5 A
Compressor	Danfoss BD50F
Coolant	R134a, 0.13 Kg
Fuse	12V – 15A / 24V – 7.5A